

Osmond and Gardner Modelling

Austria IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	2720.38	53.34	51	P, C	99.46	14734.62	0.0000
AGE-PERIOD	189.17	4.20	45	Cohort	92.28	1004.04	0.0000
AGE-COHORT	109.59	3.04	36	Period	86.67	581.63	0.0000
PERIOD-COHORT	39.69	0.99	40	Age	63.21	210.55	0.0000
FULL AGE-PERIOD-COHORT	14.60	0.46	32			77.45	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.853135	71.307440
35	2.245803	176.117635
40	2.631203	427.762379
45	2.905534	804.515283
50	3.145976	1399.510878
55	3.364818	2316.424381
60	3.578851	3791.850012
65	3.770769	5898.870903
70	3.969111	9313.454743
75	4.176783	15023.917838

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.124042	1.330582
1986	0.061690	1.152631
1991	0.032192	1.076942
1996	-0.003278	0.992479
2001	-0.135271	0.732367
2006	-0.205872	0.622484

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.019788	0.955459
1911	0.003028	1.006997
1916	0.053043	1.129909
1921	0.049716	1.121284
1926	0.021119	1.049831
1931	0.033572	1.080369
1936	-0.059190	0.872589
1941	-0.066129	0.858759
1946	-0.097286	0.799308
1951	-0.063818	0.863339
1956	-0.132431	0.737172
1961	-0.158760	0.693809
1966	-0.210606	0.615735
1971	-0.217644	0.605837
1976	-0.131580	0.738618

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Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	100.0	69.0	86.0	90.0	56.0	44.0
EXP	100.6	84.0	90.9	78.7	49.6	44.0
CHI	0.0	2.7	0.3	1.6	0.8	0.0
35 - OBS	247.0	216.0	199.0	211.0	146.0	99.0
EXP	246.1	214.1	200.6	207.9	143.5	106.1
CHI	0.0	0.0	0.0	0.0	0.0	0.5
40 - OBS	664.0	518.0	492.0	446.0	349.0	283.0
EXP	632.9	510.3	494.5	448.5	369.6	298.0
CHI	1.5	0.1	0.0	0.0	1.1	0.8
45 - OBS	932.0	959.0	906.0	889.0	629.0	610.0
EXP	980.2	1007.7	891.5	847.4	613.6	588.7
CHI	2.4	2.4	0.2	2.0	0.4	0.8
50 - OBS	1949.0	1360.0	1650.0	1465.0	1081.0	896.0
EXP	2045.8	1421.0	1598.3	1387.0	1061.8	893.9
CHI	4.6	2.6	1.7	4.4	0.3	0.0
55 - OBS	3206.0	2784.0	2109.0	2454.0	1555.0	1385.0
EXP	3234.5	2756.9	2102.0	2331.5	1627.4	1447.1
CHI	0.3	0.3	0.0	6.4	3.2	2.7
60 - OBS	4161.0	4201.0	3933.0	2970.0	2558.0	2112.0
EXP	4084.7	4187.5	3900.8	2957.1	2663.0	2145.1
CHI	1.4	0.0	0.3	0.1	4.1	0.5
65 - OBS	4768.0	4942.0	5364.0	5013.0	3149.0	3206.0
EXP	4824.8	4850.0	5402.2	4991.6	3109.4	3266.1
CHI	0.7	1.7	0.3	0.1	0.5	1.1
70 - OBS	8095.0	5411.0	5975.0	6451.0	4932.0	3751.0
EXP	7978.6	5317.2	5996.3	6599.8	5023.3	3704.4
CHI	1.7	1.7	0.1	3.4	1.7	0.6
75 - OBS	8381.0	7932.0	5865.0	6741.0	6412.0	5725.0
EXP	8381.0	8050.1	5903.3	6891.1	6215.1	5622.1
CHI	0.0	1.7	0.2	3.3	6.2	1.9

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Austria IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	71.307440
35	176.117635
40	427.762379
45	804.515283
50	1399.510878
55	2316.424381
60	3791.850012
65	5898.870903
70	9313.454743
75	15023.917838

PERIOD	EFFECT	LOWER	UPPER
% Period Change	84.9961	81.9961	87.9961

1981	1.330582		
1986	1.152631		
1991	1.076942		
1996	0.992479		
2001	0.732367		
2006	0.622484		
2011	0.529087	0.510413	0.547762
2016	0.449704	0.418519	0.482009
2021	0.382231	0.343169	0.424149
2026	0.324881	0.281385	0.373235

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.955459	1.000000	
1911	1.006997	2.000000	
1916	1.129909	4.000000	
1921	1.121284	8.000000	
1926	1.049831	16.000000	
1931	1.080369	32.000000	
1936	0.872589	64.000000	
1941	0.858759	128.000000	
1946	0.799308	256.000000	
1951	0.863339	512.000000	
1956	0.737172	1024.000000	
1961	0.693809	2048.000000	
1966	0.615735	4096.000000	
1971	0.605837	8192.000000	
1976	0.560718	EXTRAPOLATION	0.738618
1981	0.524781	EXTRAPOLATION	
1986	0.491147	EXTRAPOLATION	
1991	0.459669	EXTRAPOLATION	
1996	0.430208	EXTRAPOLATION	

Osmond and Gardner Modelling

**Austria IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	81.5	49.8	50.4	49.8	35.7	32.8	-	-	-	-
	EXP	81.9	60.6	53.3	43.6	31.6	24.9	19.8*	15.7*	12.5*	10.0*
	Elow							19.1	14.7	11.2	8.6
	Eup							20.5	16.9	13.9	11.4
35	OBS	188.0	176.8	138.7	123.1	80.8	62.0	-	-	-	-
	EXP	187.3	175.3	139.8	121.3	79.4	66.4	52.2*	41.6*	33.1*	26.3*
	Elow							50.4	38.7	29.7	22.8
	Eup							54.1	44.5	36.7	30.2
40	OBS	512.8	400.1	395.7	311.2	205.2	155.7	-	-	-	-
	EXP	488.8	394.1	397.7	313.0	217.4	164.0	137.1*	107.9*	85.8*	68.3*
	Elow							132.3	100.4	77.0	59.1
	Eup							142.0	115.6	95.2	78.4
45	OBS	888.1	757.9	703.8	723.2	445.2	360.0	-	-	-	-
	EXP	934.1	796.3	692.5	689.3	434.3	347.5	262.1*	219.2*	172.4*	137.2*
	Elow							252.8	204.0	154.8	118.8
	Eup							271.3	234.9	191.3	157.6
50	OBS	1916.6	1347.2	1336.2	1172.7	900.8	643.7	-	-	-	-
	EXP	2011.8	1407.6	1294.3	1110.2	884.9	642.2	513.7*	387.5*	324.1*	254.9*
	Elow							495.6	360.6	291.0	220.8
	Eup							531.9	415.4	359.6	292.9
55	OBS	3207.2	2912.9	2184.1	2078.0	1295.7	1191.4	-	-	-	-
	EXP	3235.8	2884.6	2176.8	1974.3	1356.0	1244.9	903.5*	722.7*	545.2*	455.9*
	Elow							871.6	672.6	489.5	394.9
	Eup							935.4	774.7	605.0	523.8
60	OBS	5762.9	4603.2	4448.2	3298.1	2290.8	1857.6	-	-	-	-
	EXP	5657.3	4588.4	4411.8	3283.8	2384.8	1886.7	1732.0*	1257.0*	1005.6*	758.5*
	Elow							1670.9	1169.9	902.8	657.0
	Eup							1793.2	1347.3	1115.9	871.4
65	OBS	8764.1	7768.4	6622.1	6352.2	3817.7	3095.3	-	-	-	-
	EXP	8868.6	7623.9	6669.3	6325.0	3769.7	3153.3	2494.7*	2290.2*	1662.1*	1329.6*
	Elow							2406.6	2131.4	1492.3	1151.6
	Eup							2582.7	2454.7	1844.4	1527.5
70	OBS	12661.1	12343.5	11206.5	9485.3	7235.2	5122.5	-	-	-	-
	EXP	12479.0	12129.5	11246.5	9704.0	7369.1	5058.8	4231.6*	3347.7*	3073.4*	2230.5*
	Elow							4082.3	3115.6	2759.3	1931.9
	Eup							4381.0	3588.2	3410.4	2562.5
75	OBS	19100.2	17182.3	18163.3	16355.1	11917.4	10288.7	-	-	-	-
	EXP	19100.2	17438.2	18281.8	16719.4	11551.3	10103.8	6936.2*	5802.0*	4590.1*	4213.9*
	Elow							6691.4	5399.7	4121.0	3649.8
	Eup							7181.0	6218.8	5093.5	4841.1
30-79	OBS	3352.9	2947.0	2730.1	2403.5	1667.5	1337.1	-	-	-	-
	EXP	3358.9	2942.7	2729.9	2401.0	1670.6	1338.4	1045.9*	851.5*	686.2*	553.5*
	Elow							1008.9	792.5	616.1	479.4
	Eup							1082.8	912.7	761.5	635.9

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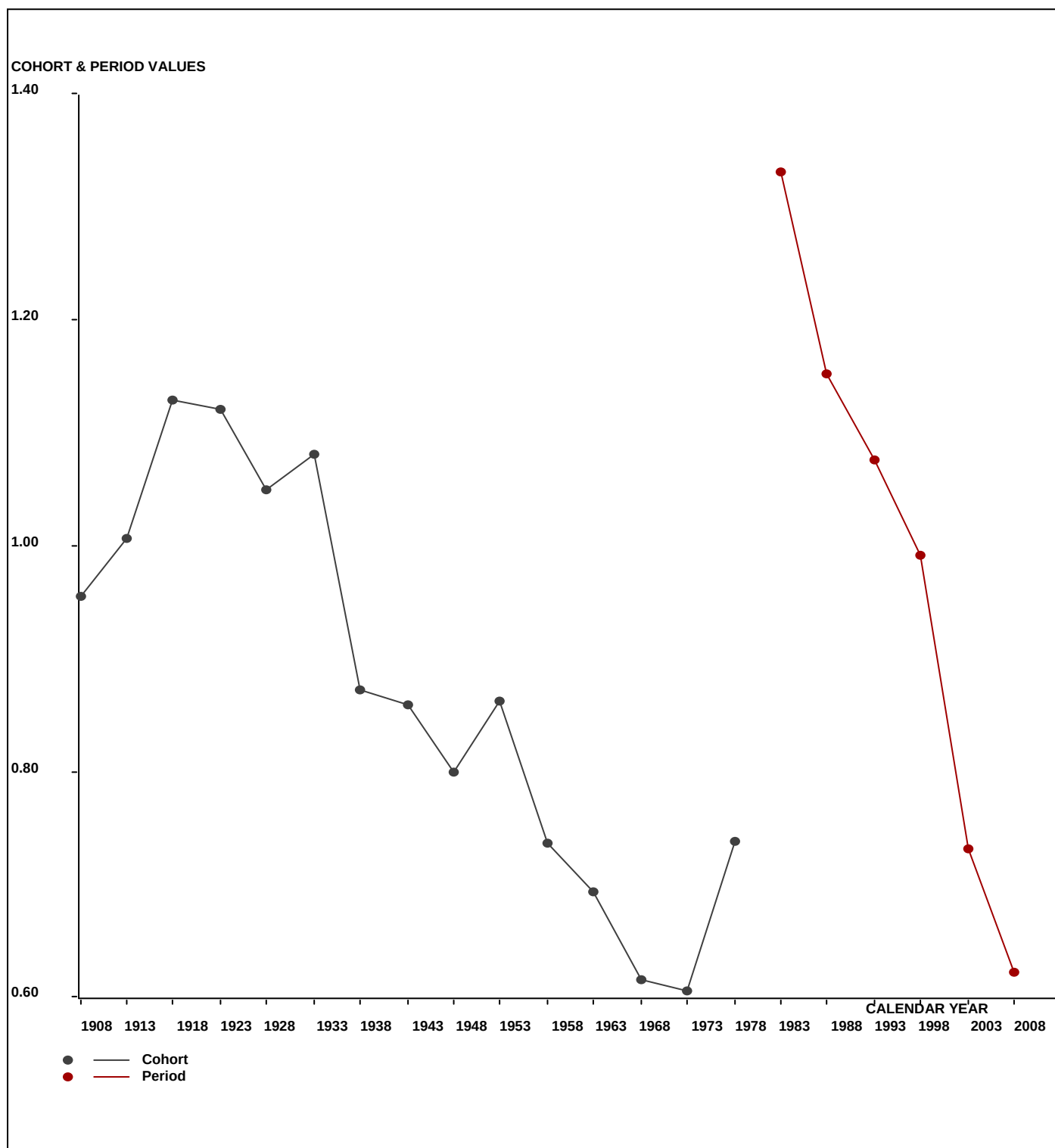
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	100.0	69.0	86.0	90.0	56.0	44.0	-	-	-	-
	EXP	100.6	84.0	90.9	78.7	49.6	33.4	27.6*	22.6*	18.3*	14.1*
	CHI	0.003	2.683	0.267	1.629	0.833	3.362	-	-	-	-
35 -	OBS	247.0	216.0	199.0	211.0	146.0	99.0	-	-	-	-
	EXP	246.1	214.1	200.6	207.9	143.5	106.1	71.2*	58.6*	48.2*	39.0*
	CHI	0.003	0.017	0.013	0.046	0.043	0.471	-	-	-	-
40 -	OBS	664.0	518.0	492.0	446.0	349.0	283.0	-	-	-	-
	EXP	632.9	510.3	494.5	448.5	369.6	298.0	219.7*	147.5*	121.5*	99.8*
	CHI	1.526	0.117	0.013	0.014	1.148	0.754	-	-	-	-
45 -	OBS	932.0	959.0	906.0	889.0	629.0	610.0	-	-	-	-
	EXP	980.2	1007.7	891.5	847.4	613.6	588.7	473.9*	349.1*	234.9*	193.6*
	CHI	2.373	2.353	0.237	2.043	0.385	0.770	-	-	-	-
50 -	OBS	1949.0	1360.0	1650.0	1465.0	1081.0	896.0	-	-	-	-
	EXP	2045.8	1421.0	1598.3	1387.0	1061.8	893.9	856.8*	689.5*	508.9*	342.7*
	CHI	4.581	2.618	1.670	4.392	0.346	0.005	-	-	-	-
55 -	OBS	3206.0	2784.0	2109.0	2454.0	1555.0	1385.0	-	-	-	-
	EXP	3234.5	2756.9	2102.0	2331.5	1627.4	1447.1	1220.1*	1171.0*	944.8*	698.4*
	CHI	0.252	0.267	0.023	6.435	3.221	2.668	-	-	-	-
60 -	OBS	4161.0	4201.0	3933.0	2970.0	2558.0	2112.0	-	-	-	-
	EXP	4084.7	4187.5	3900.8	2957.1	2663.0	2145.1	1916.9*	1622.6*	1564.3*	1265.9*
	CHI	1.424	0.044	0.265	0.056	4.140	0.509	-	-	-	-
65 -	OBS	4768.0	4942.0	5364.0	5013.0	3149.0	3206.0	-	-	-	-
	EXP	4824.8	4850.0	5402.2	4991.6	3109.4	3266.1	2635.5*	2375.0*	2021.1*	1957.5*
	CHI	0.669	1.744	0.271	0.092	0.504	1.107	-	-	-	-
70 -	OBS	8095.0	5411.0	5975.0	6451.0	4932.0	3751.0	-	-	-	-
	EXP	7978.6	5317.2	5996.3	6599.8	5023.3	3704.4	3937.7*	3194.9*	2907.4*	2489.3*
	CHI	1.698	1.655	0.076	3.354	1.658	0.587	-	-	-	-
75 -	OBS	8381.0	7932.0	5865.0	6741.0	6412.0	5725.0	-	-	-	-
	EXP	8381.0	8050.1	5903.3	6891.1	6215.1	5622.1	4235.5*	4581.2*	3740.9*	3450.2*
	CHI	0.000	1.733	0.248	3.272	6.241	1.884	-	-	-	-
30-79	OBS	32503.0	28392.0	26579.0	26730.0	20867.0	18111.0	-	-	-	-
	EXP	32509.3	28398.7	26580.5	26740.5	20876.3	18104.8	15594.9*	14212.0*	12110.2*	10550.6*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

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Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

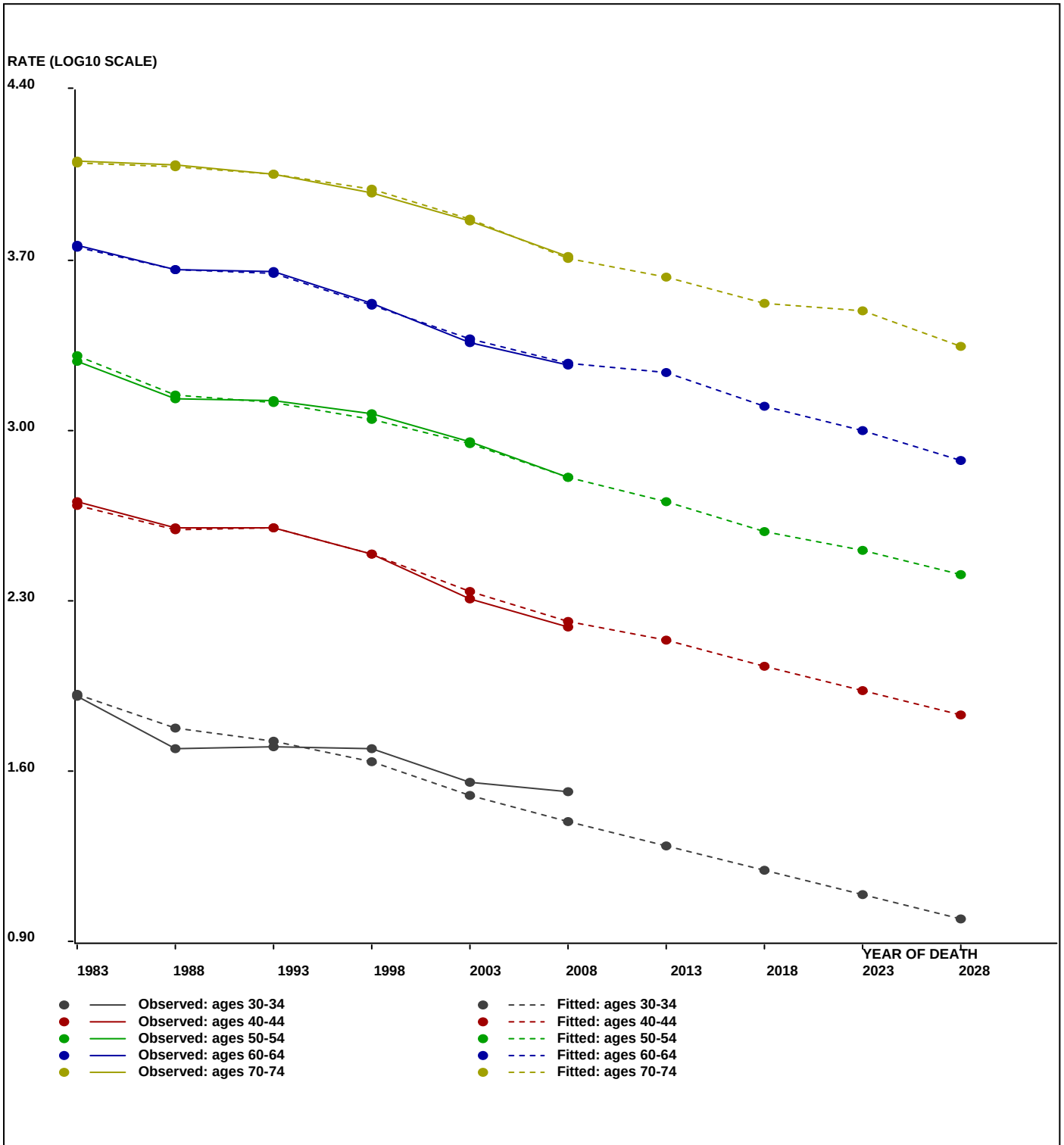


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Austria IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



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 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	19.8	52.2	137.1	262.1	513.7	903.5	1732.0	2494.7	4231.6	6936.2
2016	PRE	15.7	41.6	107.9	219.2	387.5	722.7	1257.0	2290.2	3347.7	5802.0
2021	PRE	12.5	33.1	85.8	172.4	324.1	545.2	1005.6	1662.1	3073.4	4590.1
2026	PRE	10.0	26.3	68.3	137.2	254.9	455.9	758.5	1329.6	2230.5	4213.9

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	27.6	71.2	219.7	473.9	856.8	1220.1	1916.9	2635.5	3937.7	4235.5
2016	PRE	22.6	58.6	147.5	349.1	689.5	1171.0	1622.6	2375.0	3194.9	4581.2
2021	PRE	18.3	48.2	121.5	234.9	508.9	944.8	1564.3	2021.1	2907.4	3740.9
2026	PRE	14.1	39.0	99.8	193.6	342.7	698.4	1265.9	1957.5	2489.3	3450.2

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Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	2660.44	52.17	51	P, C	99.79	14883.52	0.0000
AGE-PERIOD	28.83	0.64	45	Cohort	80.16	153.02	0.0000
AGE-COHORT	52.10	1.45	36	Period	89.02	276.62	0.0000
PERIOD-COHORT	10.91	0.27	40	Age	47.59	57.90	0.0333
FULL AGE-PERIOD-COHORT	5.72	0.18	32			30.33	0.5511

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.513621	32.630302
35	1.798988	62.948904
40	2.110237	128.895415
45	2.343933	220.766505
50	2.587188	386.534354
55	2.813859	651.416262
60	3.078537	1198.220408
65	3.351597	2246.970393
70	3.644914	4414.826285
75	3.933617	8582.566661

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.185066	1.531318
1986	0.085247	1.216879
1991	-0.014830	0.966429
1996	-0.066303	0.858414
2001	-0.251366	0.560576
2006	-0.404747	0.393780

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.060245	1.148800
1911	0.046092	1.111967
1916	0.052862	1.129436
1921	0.010327	1.024065
1926	-0.044141	0.903356
1931	-0.021055	0.952675
1936	-0.082138	0.827680
1941	-0.082724	0.826563
1946	-0.101873	0.790909
1951	-0.071715	0.847784
1956	-0.056896	0.877211
1961	-0.048305	0.894735
1966	-0.089245	0.814245
1971	-0.085229	0.821809
1976	-0.122701	0.753875

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Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	52.0	46.0	50.0	43.0	22.0	13.0
EXP	52.0	48.3	48.1	41.2	23.6	13.0
CHI	0.0	0.1	0.1	0.1	0.1	0.0
35 - OBS	98.0	85.0	76.0	82.0	48.0	34.0
EXP	100.2	79.3	76.6	82.9	51.9	32.5
CHI	0.0	0.4	0.0	0.0	0.3	0.1
40 - OBS	228.0	153.0	130.0	138.0	100.0	77.0
EXP	211.3	160.6	131.3	139.1	109.9	75.1
CHI	1.3	0.4	0.0	0.0	0.9	0.0
45 - OBS	268.0	271.0	230.0	212.0	151.0	140.0
EXP	293.6	281.0	217.2	197.5	153.4	131.8
CHI	2.2	0.4	0.8	1.1	0.0	0.5
50 - OBS	565.0	376.0	392.0	338.0	218.0	192.0
EXP	573.4	393.0	381.3	327.8	220.4	185.8
CHI	0.1	0.7	0.3	0.3	0.0	0.2
55 - OBS	900.0	704.0	551.0	519.0	358.0	235.0
EXP	900.8	721.8	503.2	545.8	346.6	252.8
CHI	0.0	0.4	4.6	1.3	0.4	1.3
60 - OBS	1364.0	1208.0	994.0	768.0	612.0	398.0
EXP	1356.7	1202.1	975.4	766.6	620.0	424.3
CHI	0.0	0.0	0.4	0.0	0.1	1.6
65 - OBS	2074.0	1815.0	1600.0	1449.0	840.0	773.0
EXP	2114.2	1781.3	1589.0	1450.2	859.9	757.5
CHI	0.8	0.6	0.1	0.0	0.5	0.3
70 - OBS	4857.0	2718.0	2243.0	2285.0	1616.0	1063.0
EXP	4806.4	2659.9	2329.6	2328.3	1607.2	1053.6
CHI	0.5	1.3	3.2	0.8	0.0	0.1
75 - OBS	6625.0	5310.0	3006.0	3153.0	2365.0	1791.0
EXP	6625.0	5361.1	3025.0	3109.7	2338.4	1791.6
CHI	0.0	0.5	0.1	0.6	0.3	0.0

Osmond and Gardner Modelling

Austria Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
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Projections using parameters Log Transformed

AGE	EFFECT
30	32.630302
35	62.948904
40	128.895415
45	220.766505
50	386.534354
55	651.416262
60	1198.220408
65	2246.970393
70	4414.826285
75	8582.566661

PERIOD	EFFECT	LOWER	UPPER
% Period Change	70.2456	67.2456	73.2456

1981	1.531318		
1986	1.216879		
1991	0.966429		
1996	0.858414		
2001	0.560576		
2006	0.393780		
2011	0.276613	0.264800	0.288426
2016	0.194308	0.178066	0.211260
2021	0.136493	0.119742	0.154738
2026	0.095880	0.080521	0.113339

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.148800	1.000000	
1911	1.111967	2.000000	
1916	1.129436	4.000000	
1921	1.024065	8.000000	
1926	0.903356	16.000000	
1931	0.952675	32.000000	
1936	0.827680	64.000000	
1941	0.826563	128.000000	
1946	0.790909	256.000000	
1951	0.847784	512.000000	
1956	0.877211	1024.000000	
1961	0.894735	2048.000000	
1966	0.814245	4096.000000	
1971	0.821809	8192.000000	
1976	0.812381	EXTRAPOLATION	0.753875
1981	0.802284	EXTRAPOLATION	
1986	0.792312	EXTRAPOLATION	
1991	0.782465	EXTRAPOLATION	
1996	0.772740	EXTRAPOLATION	

Osmond and Gardner Modelling

**Austria Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	42.4	33.2	29.3	23.8	14.0	9.7	-	-	-	-
	EXP	42.4	34.8	28.2	22.8	15.0	10.4	7.2*	5.0*	3.5*	2.4*
	Elow							6.9	4.6	3.1	2.0
	Eup							7.6	5.5	4.0	2.9
35	OBS	74.6	69.6	53.0	47.8	26.6	21.3	-	-	-	-
	EXP	76.2	64.9	53.4	48.3	28.7	20.4	14.1*	9.8*	6.8*	4.7*
	Elow							13.5	9.0	6.0	4.0
	Eup							14.7	10.7	7.7	5.6
40	OBS	176.1	118.2	104.5	96.3	58.8	42.4	-	-	-	-
	EXP	163.1	124.1	105.6	97.1	64.6	41.3	29.3*	20.3*	14.1*	9.8*
	Elow							28.0	18.6	12.4	8.2
	Eup							30.6	22.1	16.0	11.6
45	OBS	255.4	214.2	178.7	172.5	106.9	82.6	-	-	-	-
	EXP	279.8	222.1	168.7	160.7	108.6	77.8	49.7*	35.3*	24.5*	17.0*
	Elow							47.6	32.3	21.5	14.3
	Eup							51.8	38.3	27.8	20.1
50	OBS	555.6	372.5	317.4	270.6	181.7	137.9	-	-	-	-
	EXP	563.9	389.3	308.8	262.4	183.7	133.5	95.7*	61.2*	43.4*	30.1*
	Elow							91.6	56.0	38.0	25.3
	Eup							99.8	66.5	49.2	35.6
55	OBS	900.3	736.6	570.6	439.5	298.3	202.2	-	-	-	-
	EXP	901.1	755.2	521.1	462.2	288.8	217.5	158.1*	113.3*	72.4*	51.3*
	Elow							151.3	103.8	63.5	43.1
	Eup							164.8	123.1	82.1	60.7
60	OBS	1889.1	1323.7	1124.2	852.8	548.1	350.1	-	-	-	-
	EXP	1879.0	1317.2	1103.2	851.3	555.2	373.2	281.0*	204.2*	146.3*	93.5*
	Elow							269.0	187.2	128.4	78.6
	Eup							293.0	222.1	165.9	110.6
65	OBS	3812.2	2853.0	1975.3	1836.1	1018.4	746.3	-	-	-	-
	EXP	3886.2	2800.1	1961.7	1837.6	1042.5	731.4	491.6*	370.1*	269.0*	192.8*
	Elow							470.6	339.2	236.0	161.9
	Eup							512.6	402.4	305.0	227.9
70	OBS	7596.6	6200.3	4206.9	3359.8	2370.7	1451.7	-	-	-	-
	EXP	7517.5	6067.7	4369.3	3423.5	2357.7	1438.9	1009.4*	678.5*	510.9*	371.3*
	Elow							966.3	621.8	448.2	311.8
	Eup							1052.5	737.7	579.2	438.9
75	OBS	15098.3	11502.5	9309.3	7649.8	4395.6	3218.7	-	-	-	-
	EXP	15098.3	11613.3	9368.0	7544.7	4346.2	3219.7	1965.0*	1378.4*	926.5*	697.6*
	Elow							1881.0	1263.2	812.8	585.9
	Eup							2048.9	1498.7	1050.4	824.7
30-79	OBS	1651.1	1267.4	963.0	798.2	495.0	341.8	-	-	-	-
	EXP	1654.1	1265.3	963.4	797.8	495.4	342.5	230.0*	161.7*	114.1*	81.9*
	Elow							220.2	148.2	100.1	68.8
	Eup							239.8	175.8	129.3	96.8

Osmond and Gardner Modelling

**Austria Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

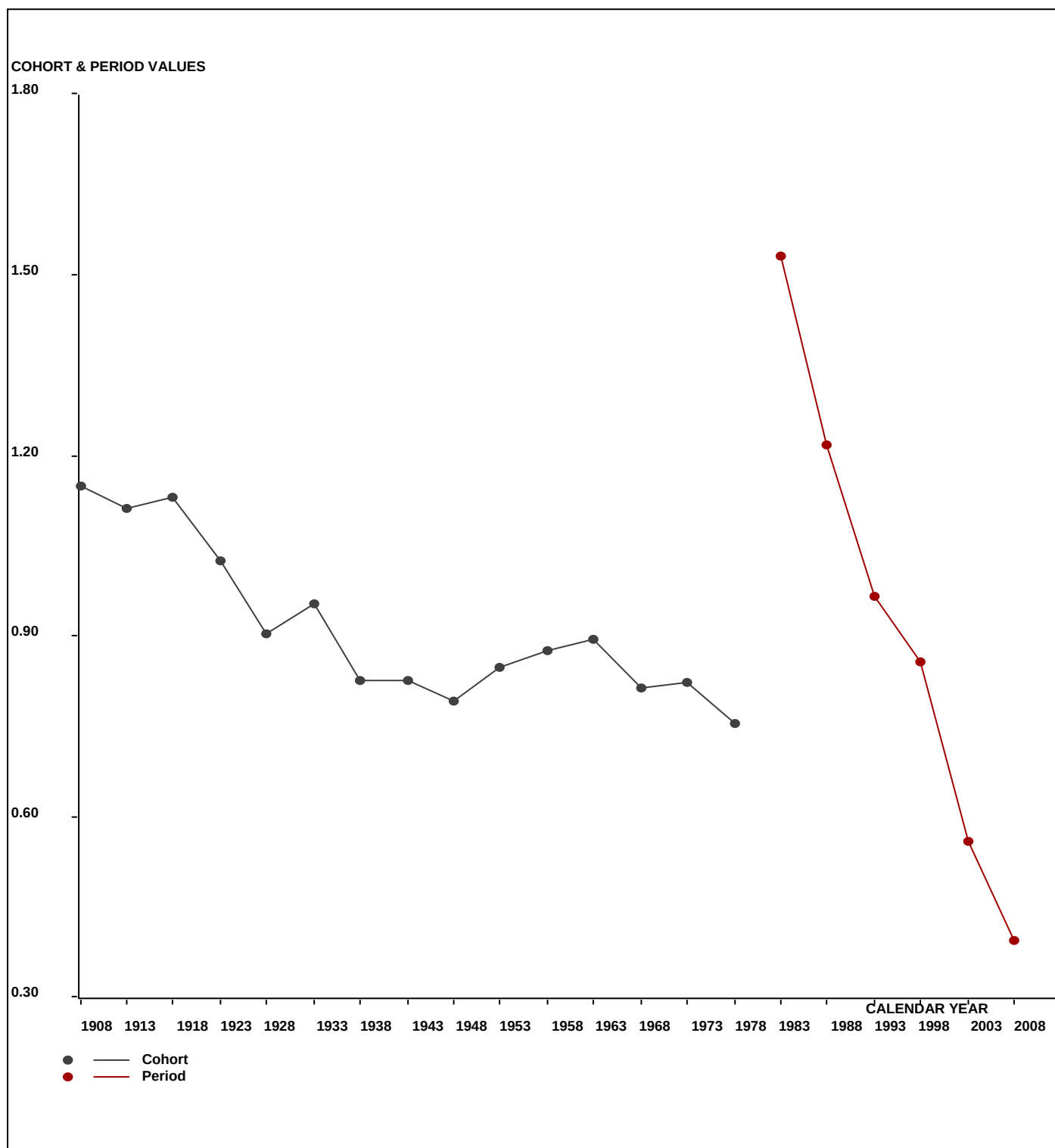
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	52.0	46.0	50.0	43.0	22.0	13.0	-	-	-	-
	EXP	52.0	48.3	48.1	41.2	23.6	14.0	10.1*	7.2*	5.1*	3.4*
	CHI	0.000	0.109	0.071	0.081	0.102	0.073	-	-	-	-
35 -	OBS	98.0	85.0	76.0	82.0	48.0	34.0	-	-	-	-
	EXP	100.2	79.3	76.6	82.9	51.9	32.5	19.3*	13.8*	9.9*	7.0*
	CHI	0.047	0.406	0.004	0.009	0.296	0.066	-	-	-	-
40 -	OBS	228.0	153.0	130.0	138.0	100.0	77.0	-	-	-	-
	EXP	211.3	160.6	131.3	139.1	109.9	75.1	46.9*	27.8*	20.0*	14.3*
	CHI	1.327	0.361	0.013	0.009	0.897	0.047	-	-	-	-
45 -	OBS	268.0	271.0	230.0	212.0	151.0	140.0	-	-	-	-
	EXP	293.6	281.0	217.2	197.5	153.4	131.8	89.9*	56.2*	33.3*	24.0*
	CHI	2.237	0.355	0.752	1.065	0.037	0.512	-	-	-	-
50 -	OBS	565.0	376.0	392.0	338.0	218.0	192.0	-	-	-	-
	EXP	573.4	393.0	381.3	327.8	220.4	185.8	159.6*	108.8*	68.1*	40.5*
	CHI	0.124	0.737	0.301	0.315	0.027	0.204	-	-	-	-
55 -	OBS	900.0	704.0	551.0	519.0	358.0	235.0	-	-	-	-
	EXP	900.8	721.8	503.2	545.8	346.6	252.8	213.5*	183.5*	125.5*	78.6*
	CHI	0.001	0.437	4.550	1.319	0.374	1.253	-	-	-	-
60 -	OBS	1364.0	1208.0	994.0	768.0	612.0	398.0	-	-	-	-
	EXP	1356.7	1202.1	975.4	766.6	620.0	424.3	311.0*	263.6*	227.6*	156.1*
	CHI	0.039	0.029	0.354	0.002	0.102	1.629	-	-	-	-
65 -	OBS	2074.0	1815.0	1600.0	1449.0	840.0	773.0	-	-	-	-
	EXP	2114.2	1781.3	1589.0	1450.2	859.9	757.5	519.3*	383.8*	327.1*	283.8*
	CHI	0.765	0.637	0.076	0.001	0.462	0.316	-	-	-	-
70 -	OBS	4857.0	2718.0	2243.0	2285.0	1616.0	1063.0	-	-	-	-
	EXP	4806.4	2659.9	2329.6	2328.3	1607.2	1053.6	939.3*	647.5*	483.3*	414.4*
	CHI	0.533	1.270	3.218	0.807	0.048	0.083	-	-	-	-
75 -	OBS	6625.0	5310.0	3006.0	3153.0	2365.0	1791.0	-	-	-	-
	EXP	6625.0	5361.1	3025.0	3109.7	2338.4	1791.6	1199.9*	1088.4*	755.1*	571.2*
	CHI	0.000	0.488	0.119	0.604	0.302	0.000	-	-	-	-
30-79	OBS	17031.0	12686.0	9272.0	8987.0	6330.0	4716.0	-	-	-	-
	EXP	17033.6	12688.4	9276.7	8989.1	6331.3	4719.1	3508.7*	2780.7*	2055.1*	1593.3*
	O/E	1.000	1.000	0.999	1.000	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

Austria Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

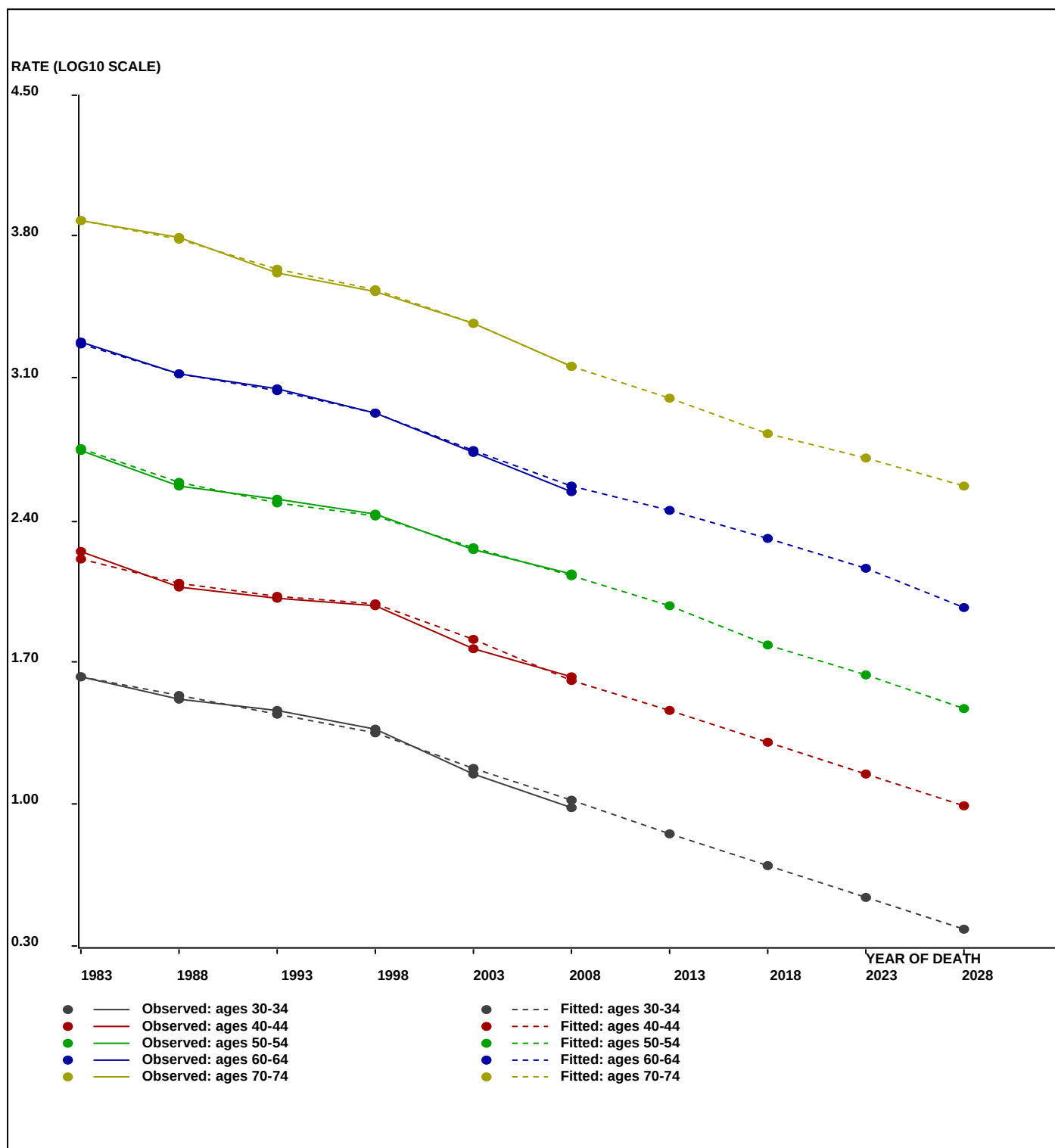


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Austria Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Austria Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	7.2	14.1	29.3	49.7	95.7	158.1	281.0	491.6	1009.4	1965.0
2016	PRE	5.0	9.8	20.3	35.3	61.2	113.3	204.2	370.1	678.5	1378.4
2021	PRE	3.5	6.8	14.1	24.5	43.4	72.4	146.3	269.0	510.9	926.5
2026	PRE	2.4	4.7	9.8	17.0	30.1	51.3	93.5	192.8	371.3	697.6

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	10.1	19.3	46.9	89.9	159.6	213.5	311.0	519.3	939.3	1199.9
2016	PRE	7.2	13.8	27.8	56.2	108.8	183.5	263.6	383.8	647.5	1088.4
2021	PRE	5.1	9.9	20.0	33.3	68.1	125.5	227.6	327.1	483.3	755.1
2026	PRE	3.4	7.0	14.3	24.0	40.5	78.6	156.1	283.8	414.4	571.2

Osmond and Gardner Modelling

Austria Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	305.04	5.98	51	P, C	98.38	1627.90	0.0000
AGE-PERIOD	54.88	1.22	45	Cohort	91.01	291.93	0.0000
AGE-COHORT	12.59	0.35	36	Period	60.80	66.84	0.0013
PERIOD-COHORT	9.11	0.23	40	Age	45.85	48.41	0.1699
FULL AGE-PERIOD-COHORT	4.93	0.15	32			26.22	0.7539

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.136078	13.679741
35	1.626411	42.306862
40	2.123928	133.023346
45	2.524202	334.350252
50	2.829125	674.722057
55	3.071851	1179.915823
60	3.265546	1843.085636
65	3.412658	2586.172980
70	3.517018	3288.651095
75	3.576664	3772.799791

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.048963	1.119343
1986	0.041484	1.100231
1991	0.032583	1.077912
1996	-0.005335	0.987790
2001	-0.045834	0.899841
2006	-0.078063	0.835481

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.096290	1.248217
1911	0.029404	1.070050
1916	0.009987	1.023263
1921	0.014377	1.033658
1926	0.012440	1.029059
1931	0.016166	1.037924
1936	-0.066099	0.858818
1941	-0.016647	0.962394
1946	-0.010532	0.976041
1951	0.019917	1.046927
1956	-0.067593	0.855868
1961	-0.170657	0.675060
1966	-0.245921	0.567648
1971	-0.169999	0.676084
1976	-0.407633	0.391171

Osmond and Gardner Modelling

Austria Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value

Fitting the FULL AGE-PERIOD-COHORT Model

Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	13.0	16.0	16.0	19.0	15.0	6.0
EXP	19.7	17.9	17.0	13.8	13.0	6.0
CHI	2.3	0.2	0.1	1.9	0.3	0.0
35 - OBS	56.0	65.0	52.0	49.0	43.0	36.0
EXP	60.7	59.5	56.0	48.4	39.1	38.2
CHI	0.4	0.5	0.3	0.0	0.4	0.1
40 - OBS	177.0	207.0	200.0	157.0	122.0	104.0
EXP	185.6	185.0	186.7	161.2	137.4	114.7
CHI	0.4	2.6	1.0	0.1	1.7	1.0
45 - OBS	325.0	466.0	444.0	407.0	369.0	334.0
EXP	337.3	448.0	452.8	425.0	363.8	319.5
CHI	0.4	0.7	0.2	0.8	0.1	0.7
50 - OBS	800.0	641.0	860.0	811.0	764.0	676.0
EXP	797.1	643.6	864.3	812.7	762.7	671.5
CHI	0.0	0.0	0.0	0.0	0.0	0.0
55 - OBS	1365.0	1282.0	1041.0	1326.0	1253.0	1202.0
EXP	1358.6	1287.8	1054.7	1324.6	1243.7	1199.7
CHI	0.0	0.0	0.2	0.0	0.1	0.0
60 - OBS	1547.0	1915.0	1815.0	1433.0	1765.0	1691.0
EXP	1539.7	1904.4	1823.2	1408.0	1782.3	1708.8
CHI	0.0	0.1	0.0	0.4	0.2	0.2
65 - OBS	1580.0	1886.0	2315.0	2135.0	1620.0	2164.0
EXP	1611.5	1871.1	2323.7	2092.5	1648.5	2153.8
CHI	0.6	0.1	0.0	0.9	0.5	0.0
70 - OBS	2563.0	1605.0	1939.0	2228.0	2095.0	1759.0
EXP	2518.4	1623.0	1953.6	2273.5	2093.7	1727.9
CHI	0.8	0.2	0.1	0.9	0.0	0.6
75 - OBS	2313.0	2005.0	1392.0	1580.0	1916.0	1787.0
EXP	2313.0	2050.5	1343.7	1587.7	1879.7	1820.5
CHI	0.0	1.0	1.7	0.0	0.7	0.6

Osmond and Gardner Modelling

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 Projections using parameters Log Transformed

AGE	EFFECT
30	13.679741
35	42.306862
40	133.023346
45	334.350252
50	674.722057
55	1179.915823
60	1843.085636
65	2586.172980
70	3288.651095
75	3772.799791

PERIOD	EFFECT	LOWER	UPPER
% Period Change	92.8477	89.8477	95.8477
1981	1.119343		
1986	1.100231		
1991	1.077912		
1996	0.987790		
2001	0.899841		
2006	0.835481		
2011	0.775725	0.750660	0.800789
2016	0.720242	0.674451	0.767538
2021	0.668728	0.605978	0.735667
2026	0.620898	0.544457	0.705120

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.248217	1.000000	
1911	1.070050	2.000000	
1916	1.023263	4.000000	
1921	1.033658	8.000000	
1926	1.029059	16.000000	
1931	1.037924	32.000000	
1936	0.858818	64.000000	
1941	0.962394	128.000000	
1946	0.976041	256.000000	
1951	1.046927	512.000000	
1956	0.855868	1024.000000	
1961	0.675060	2048.000000	
1966	0.567648	4096.000000	
1971	0.676084	8192.000000	
1976	0.593171	EXTRAPOLATION	0.391171
1981	0.556821	EXTRAPOLATION	
1986	0.522699	EXTRAPOLATION	
1991	0.490667	EXTRAPOLATION	
1996	0.460599	EXTRAPOLATION	

Osmond and Gardner Modelling

**Austria Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	10.6	11.5	9.4	10.5	9.6	4.5	-	-	-	-
	EXP	16.0	12.9	10.0	7.7	8.3	6.8	5.9*	5.2*	4.5*	3.9*
	Elow							5.7	4.8	4.1	3.4
	Eup							6.1	5.5	4.9	4.4
35	OBS	42.6	53.2	36.2	28.6	23.8	22.5	-	-	-	-
	EXP	46.2	48.7	39.0	28.2	21.6	23.9	19.5*	17.0*	14.8*	12.9*
	Elow							18.8	15.9	13.4	11.3
	Eup							20.1	18.1	16.3	14.6
40	OBS	136.7	159.9	160.8	109.6	71.7	57.2	-	-	-	-
	EXP	143.3	142.8	150.1	112.5	80.8	63.1	69.8*	56.8*	49.5*	43.2*
	Elow							67.5	53.2	44.9	37.9
	Eup							72.0	60.6	54.5	49.0
45	OBS	309.7	368.3	344.9	331.1	261.2	197.1	-	-	-	-
	EXP	321.4	354.0	351.8	345.8	257.5	188.6	147.2*	162.8*	132.6*	115.6*
	Elow							142.5	152.5	120.2	101.4
	Eup							152.0	173.5	145.9	131.3
50	OBS	786.7	635.0	696.4	649.2	636.7	485.7	-	-	-	-
	EXP	783.9	637.5	699.9	650.5	635.6	482.5	353.3*	275.9*	305.1*	248.5*
	Elow							341.9	258.3	276.4	217.9
	Eup							364.7	294.0	335.6	282.2
55	OBS	1365.5	1341.4	1078.1	1122.8	1044.0	1034.0	-	-	-	-
	EXP	1359.1	1347.4	1092.3	1121.7	1036.3	1032.1	783.4*	573.7*	447.9*	495.3*
	Elow							758.1	537.2	405.9	434.3
	Eup							808.7	611.4	492.7	562.5
60	OBS	2142.6	2098.3	2052.7	1591.3	1580.6	1487.3	-	-	-	-
	EXP	2132.5	2086.7	2062.0	1563.5	1596.1	1503.0	1496.8*	1136.1*	832.0*	649.6*
	Elow							1448.5	1063.9	754.0	569.6
	Eup							1545.2	1210.7	915.3	737.7
65	OBS	2904.2	2964.6	2858.0	2705.4	1964.0	2089.3	-	-	-	-
	EXP	2962.2	2941.2	2868.7	2651.5	1998.6	2079.4	1958.1*	1950.1*	1480.2*	1084.0*
	Elow							1894.8	1826.1	1341.3	950.5
	Eup							2021.4	2078.1	1628.3	1231.0
70	OBS	4008.7	3661.3	3636.7	3276.0	3073.3	2402.2	-	-	-	-
	EXP	3939.0	3702.4	3664.2	3342.9	3071.5	2359.7	2455.2*	2311.9*	2302.4*	1747.6*
	Elow							2375.8	2164.9	2086.4	1532.5
	Eup							2534.5	2463.7	2532.9	1984.7
75	OBS	5271.3	4343.2	4310.9	3833.4	3561.1	3211.5	-	-	-	-
	EXP	5271.3	4441.7	4161.4	3852.2	3493.6	3271.6	2513.5*	2615.1*	2462.5*	2452.5*
	Elow							2432.3	2448.9	2231.5	2150.5
	Eup							2594.7	2786.9	2709.0	2785.1
30-79	OBS	1129.0	1066.6	1026.0	925.7	825.2	745.4	-	-	-	-
	EXP	1130.9	1066.3	1025.6	925.4	825.8	745.5	665.1*	594.8*	511.7*	430.4*
	Elow							643.6	557.0	463.7	377.4
	Eup							686.6	633.8	563.0	488.8

Osmond and Gardner Modelling

**Austria Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

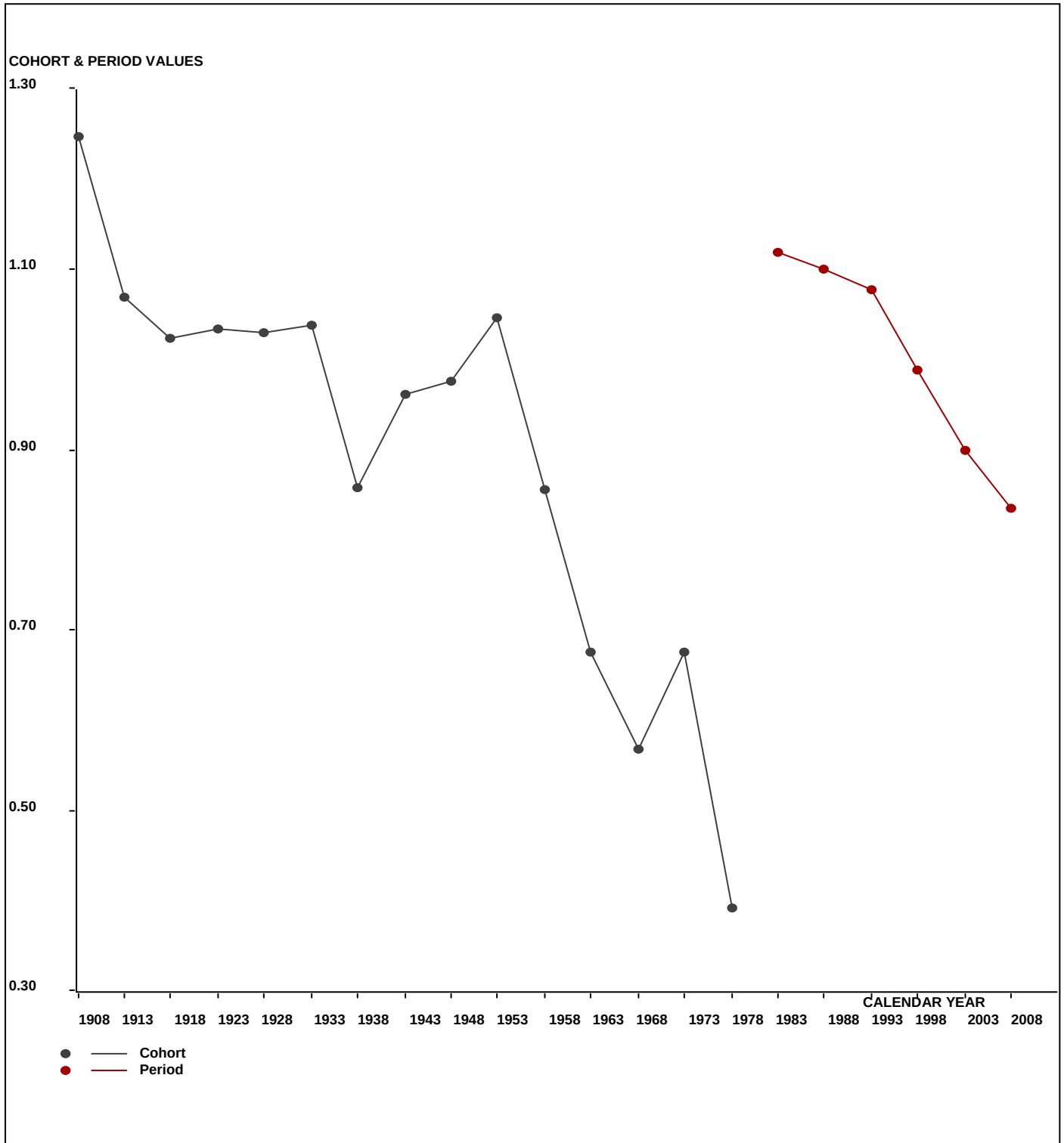
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	13.0	16.0	16.0	19.0	15.0	6.0	-	-	-	-
	EXP	19.7	17.9	17.0	13.8	13.0	9.1	8.2*	7.4*	6.6*	5.5*
	CHI	2.267	0.194	0.057	1.916	0.295	1.055	-	-	-	-
35 -	OBS	56.0	65.0	52.0	49.0	43.0	36.0	-	-	-	-
	EXP	60.7	59.5	56.0	48.4	39.1	38.2	26.5*	23.9*	21.5*	19.1*
	CHI	0.368	0.503	0.287	0.008	0.399	0.123	-	-	-	-
40 -	OBS	177.0	207.0	200.0	157.0	122.0	104.0	-	-	-	-
	EXP	185.6	185.0	186.7	161.2	137.4	114.7	111.8*	77.7*	70.2*	63.1*
	CHI	0.395	2.628	0.953	0.107	1.726	0.992	-	-	-	-
45 -	OBS	325.0	466.0	444.0	407.0	369.0	334.0	-	-	-	-
	EXP	337.3	448.0	452.8	425.0	363.8	319.5	266.2*	259.3*	180.6*	163.1*
	CHI	0.448	0.724	0.171	0.766	0.075	0.658	-	-	-	-
50 -	OBS	800.0	641.0	860.0	811.0	764.0	676.0	-	-	-	-
	EXP	797.1	643.6	864.3	812.7	762.7	671.5	589.3*	490.8*	479.0*	334.1*
	CHI	0.010	0.011	0.022	0.003	0.002	0.030	-	-	-	-
55 -	OBS	1365.0	1282.0	1041.0	1326.0	1253.0	1202.0	-	-	-	-
	EXP	1358.6	1287.8	1054.7	1324.6	1243.7	1199.7	1057.9*	929.5*	776.2*	758.7*
	CHI	0.030	0.026	0.179	0.001	0.069	0.004	-	-	-	-
60 -	OBS	1547.0	1915.0	1815.0	1433.0	1765.0	1691.0	-	-	-	-
	EXP	1539.7	1904.4	1823.2	1408.0	1782.3	1708.8	1656.6*	1466.6*	1294.3*	1084.1*
	CHI	0.034	0.059	0.037	0.444	0.168	0.186	-	-	-	-
65 -	OBS	1580.0	1886.0	2315.0	2135.0	1620.0	2164.0	-	-	-	-
	EXP	1611.5	1871.1	2323.7	2092.5	1648.5	2153.8	2068.7*	2022.2*	1799.8*	1595.9*
	CHI	0.617	0.119	0.032	0.864	0.493	0.048	-	-	-	-
70 -	OBS	2563.0	1605.0	1939.0	2228.0	2095.0	1759.0	-	-	-	-
	EXP	2518.4	1623.0	1953.6	2273.5	2093.7	1727.9	2284.6*	2206.3*	2178.0*	1950.3*
	CHI	0.789	0.200	0.110	0.912	0.001	0.559	-	-	-	-
75 -	OBS	2313.0	2005.0	1392.0	1580.0	1916.0	1787.0	-	-	-	-
	EXP	2313.0	2050.5	1343.7	1587.7	1879.7	1820.5	1534.8*	2064.9*	2006.9*	2008.0*
	CHI	0.000	1.008	1.735	0.038	0.702	0.615	-	-	-	-
30-79	OBS	10739.0	10088.0	10074.0	10145.0	9962.0	9759.0	-	-	-	-
	EXP	10741.6	10090.7	10075.8	10147.4	9964.0	9763.7	9604.6*	9548.7*	8813.3*	7982.0*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Austria Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

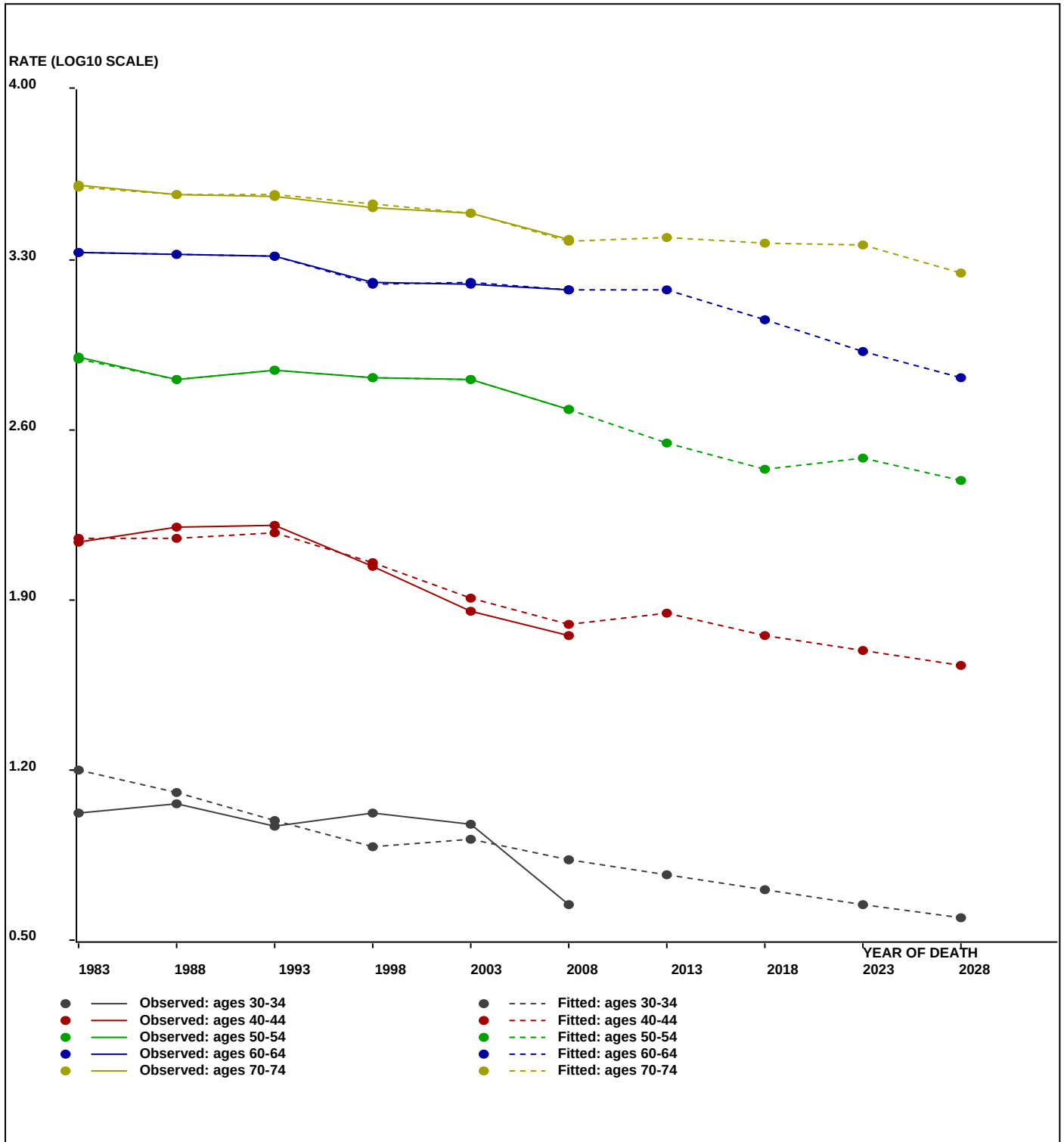


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Austria Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Austria Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	5.9	19.5	69.8	147.2	353.3	783.4	1496.8	1958.1	2455.2	2513.5
2016	PRE	5.2	17.0	56.8	162.8	275.9	573.7	1136.1	1950.1	2311.9	2615.1
2021	PRE	4.5	14.8	49.5	132.6	305.1	447.9	832.0	1480.2	2302.4	2462.5
2026	PRE	3.9	12.9	43.2	115.6	248.5	495.3	649.6	1084.0	1747.6	2452.5

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	8.2	26.5	111.8	266.2	589.3	1057.9	1656.6	2068.7	2284.6	1534.8
2016	PRE	7.4	23.9	77.7	259.3	490.8	929.5	1466.6	2022.2	2206.3	2064.9
2021	PRE	6.6	21.5	70.2	180.6	479.0	776.2	1294.3	1799.8	2178.0	2006.9
2026	PRE	5.5	19.1	63.1	163.1	334.1	758.7	1084.1	1595.9	1950.3	2008.0

Osmond and Gardner Modelling

Austria COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	102.24	2.00	51	P, C	87.83	548.48	0.0000
AGE-PERIOD	26.41	0.59	45	Cohort	52.91	143.08	0.0000
AGE-COHORT	23.03	0.64	36	Period	45.98	122.74	0.0000
PERIOD-COHORT	13.71	0.34	40	Age	9.24	73.36	0.0010
FULL AGE-PERIOD-COHORT	12.44	0.39	32			66.57	0.0003

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.913382	8.191851
35	1.205136	16.037491
40	1.353629	22.575078
45	1.698092	49.899052
50	2.028549	106.794477
55	2.367861	233.270969
60	2.674617	472.734173
65	2.973198	940.150914
70	3.230322	1699.503994
75	3.489954	3089.967656

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.095943	1.247219
1986	0.036314	1.087211
1991	-0.001836	0.995781
1996	-0.051789	0.887587
2001	-0.014794	0.966509
2006	-0.075634	0.840168

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.016122	1.037819
1911	-0.028254	0.937013
1916	-0.001084	0.997506
1921	-0.007530	0.982812
1926	0.004909	1.011367
1931	0.028998	1.069050
1936	-0.036404	0.919593
1941	-0.000060	0.999863
1946	0.012351	1.028846
1951	0.055713	1.136875
1956	-0.011361	0.974180
1961	-0.066393	0.858237
1966	-0.211061	0.615091
1971	-0.262411	0.546498
1976	-0.664488	0.216527

Osmond and Gardner Modelling

Austria COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	10.0	20.0	10.0	5.0	2.0	2.0
EXP	14.3	12.0	11.9	8.1	6.8	2.0
CHI	1.3	5.3	0.3	1.2	3.4	0.0
35 - OBS	32.0	25.0	18.0	19.0	14.0	14.0
EXP	27.0	24.2	22.3	20.9	17.2	11.8
CHI	0.9	0.0	0.8	0.2	0.6	0.4
40 - OBS	44.0	30.0	25.0	29.0	25.0	26.0
EXP	36.5	32.7	31.8	28.0	31.8	21.2
CHI	1.6	0.2	1.4	0.0	1.5	1.1
45 - OBS	75.0	66.0	52.0	59.0	57.0	70.0
EXP	60.1	68.6	65.8	61.9	66.4	61.0
CHI	3.7	0.1	2.9	0.1	1.3	1.3
50 - OBS	152.0	117.0	126.0	111.0	138.0	123.0
EXP	144.8	107.8	131.3	121.8	140.8	121.7
CHI	0.4	0.8	0.2	1.0	0.1	0.0
55 - OBS	287.0	279.0	193.0	261.0	244.0	273.0
EXP	294.1	259.1	206.3	244.5	278.4	259.0
CHI	0.2	1.5	0.9	1.1	4.2	0.8
60 - OBS	442.0	435.0	425.0	352.0	486.0	514.0
EXP	418.4	474.4	445.0	347.5	510.1	464.6
CHI	1.3	3.3	0.9	0.1	1.1	5.3
65 - OBS	589.0	612.0	806.0	715.0	704.0	824.0
EXP	636.3	639.1	766.9	704.0	689.2	818.0
CHI	3.5	1.1	2.0	0.2	0.3	0.0
70 - OBS	1264.0	830.0	885.0	1017.0	1235.0	928.0
EXP	1269.9	808.0	886.8	1037.6	1197.0	961.5
CHI	0.0	0.6	0.0	0.4	1.2	1.2
75 - OBS	1755.0	1459.0	1014.0	1115.0	1650.0	1485.0
EXP	1755.0	1453.2	991.1	1111.0	1625.1	1544.3
CHI	0.0	0.0	0.5	0.0	0.4	2.3

Osmond and Gardner Modelling

Austria COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	8.191851
35	16.037491
40	22.575078
45	49.899052
50	106.794477
55	233.270969
60	472.734173
65	940.150914
70	1699.503994
75	3089.967656

PERIOD	EFFECT	LOWER	UPPER
% Period Change	86.9281	83.9281	89.9281
1981	1.247219		
1986	1.087211		
1991	0.995781		
1996	0.887587		
2001	0.966509		
2006	0.840168		
2011	0.730341	0.705136	0.755546
2016	0.634872	0.591807	0.679448
2021	0.551882	0.496692	0.611015
2026	0.479740	0.416864	0.549474

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.037819	1.000000	
1911	0.937013	2.000000	
1916	0.997506	4.000000	
1921	0.982812	8.000000	
1926	1.011367	16.000000	
1931	1.069050	32.000000	
1936	0.919593	64.000000	
1941	0.999863	128.000000	
1946	1.028846	256.000000	
1951	1.136875	512.000000	
1956	0.974180	1024.000000	
1961	0.858237	2048.000000	
1966	0.615091	4096.000000	
1971	0.546498	8192.000000	
1976	0.480068	EXTRAPOLATION	0.216527
1981	0.414476	EXTRAPOLATION	
1986	0.357846	EXTRAPOLATION	
1991	0.308953	EXTRAPOLATION	
1996	0.266741	EXTRAPOLATION	

Osmond and Gardner Modelling

**Austria COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	8.1	14.4	5.9	2.8	1.3	1.5	-	-	-	-
	EXP	11.6	8.7	7.0	4.5	4.3	3.3	2.5*	1.9*	1.4*	1.0*
	Elow							2.4	1.7	1.3	0.9
	Eup							2.6	2.0	1.5	1.2
35	OBS	24.4	20.5	12.5	11.1	7.7	8.8	-	-	-	-
	EXP	20.6	19.8	15.6	12.2	9.5	7.4	5.6*	4.2*	3.2*	2.4*
	Elow							5.4	3.9	2.9	2.1
	Eup							5.8	4.5	3.5	2.7
40	OBS	34.0	23.2	20.1	20.2	14.7	14.3	-	-	-	-
	EXP	28.2	25.3	25.6	19.5	18.7	11.7	9.0*	6.9*	5.2*	3.9*
	Elow							8.7	6.4	4.6	3.4
	Eup							9.3	7.4	5.7	4.4
45	OBS	71.5	52.2	40.4	48.0	40.3	41.3	-	-	-	-
	EXP	57.2	54.2	51.1	50.4	47.0	36.0	22.4*	17.3*	13.2*	9.9*
	Elow							21.6	16.1	11.9	8.6
	Eup							23.2	18.5	14.6	11.4
50	OBS	149.5	115.9	102.0	88.9	115.0	88.4	-	-	-	-
	EXP	142.4	106.8	106.3	97.5	117.3	87.4	66.9*	41.7*	32.2*	24.6*
	Elow							64.6	38.9	29.0	21.4
	Eup							69.2	44.6	35.7	28.2
55	OBS	287.1	291.9	199.9	221.0	203.3	234.8	-	-	-	-
	EXP	294.2	271.1	213.6	207.0	232.0	222.8	166.0*	127.1*	79.2*	61.2*
	Elow							160.2	118.5	71.3	53.1
	Eup							171.7	136.0	87.7	70.0
60	OBS	612.2	476.6	480.7	390.9	435.2	452.1	-	-	-	-
	EXP	579.5	519.8	503.2	385.9	456.8	408.6	392.5*	292.4*	223.9*	139.5*
	Elow							379.0	272.5	201.5	121.2
	Eup							406.1	312.9	247.9	159.8
65	OBS	1082.6	962.0	995.0	906.0	853.5	795.5	-	-	-	-
	EXP	1169.7	1004.6	946.8	892.1	835.6	789.8	706.4*	678.6*	505.5*	387.1*
	Elow							682.1	632.5	454.9	336.4
	Eup							730.8	726.2	559.6	443.4
70	OBS	1977.0	1893.4	1659.9	1495.4	1811.7	1267.3	-	-	-	-
	EXP	1986.1	1843.1	1663.2	1525.6	1756.0	1313.1	1241.0*	1110.1*	1066.3*	794.3*
	Elow							1198.2	1034.8	959.7	690.2
	Eup							1283.9	1188.0	1180.6	909.7
75	OBS	3999.6	3160.5	3140.3	2705.2	3066.7	2668.8	-	-	-	-
	EXP	3999.6	3147.8	3069.3	2695.5	3020.4	2775.4	2075.3*	1961.5*	1754.5*	1685.3*
	Elow							2003.7	1828.4	1579.0	1464.4
	Eup							2146.9	2099.2	1942.5	1930.2
30-79	OBS	455.6	392.1	365.6	327.2	356.9	310.4	-	-	-	-
	EXP	456.7	392.2	366.4	327.2	358.3	310.0	261.9*	230.8*	194.7*	157.4*
	Elow							252.8	215.2	175.3	136.8
	Eup							270.9	247.0	215.6	180.3

Osmond and Gardner Modelling

**Austria COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

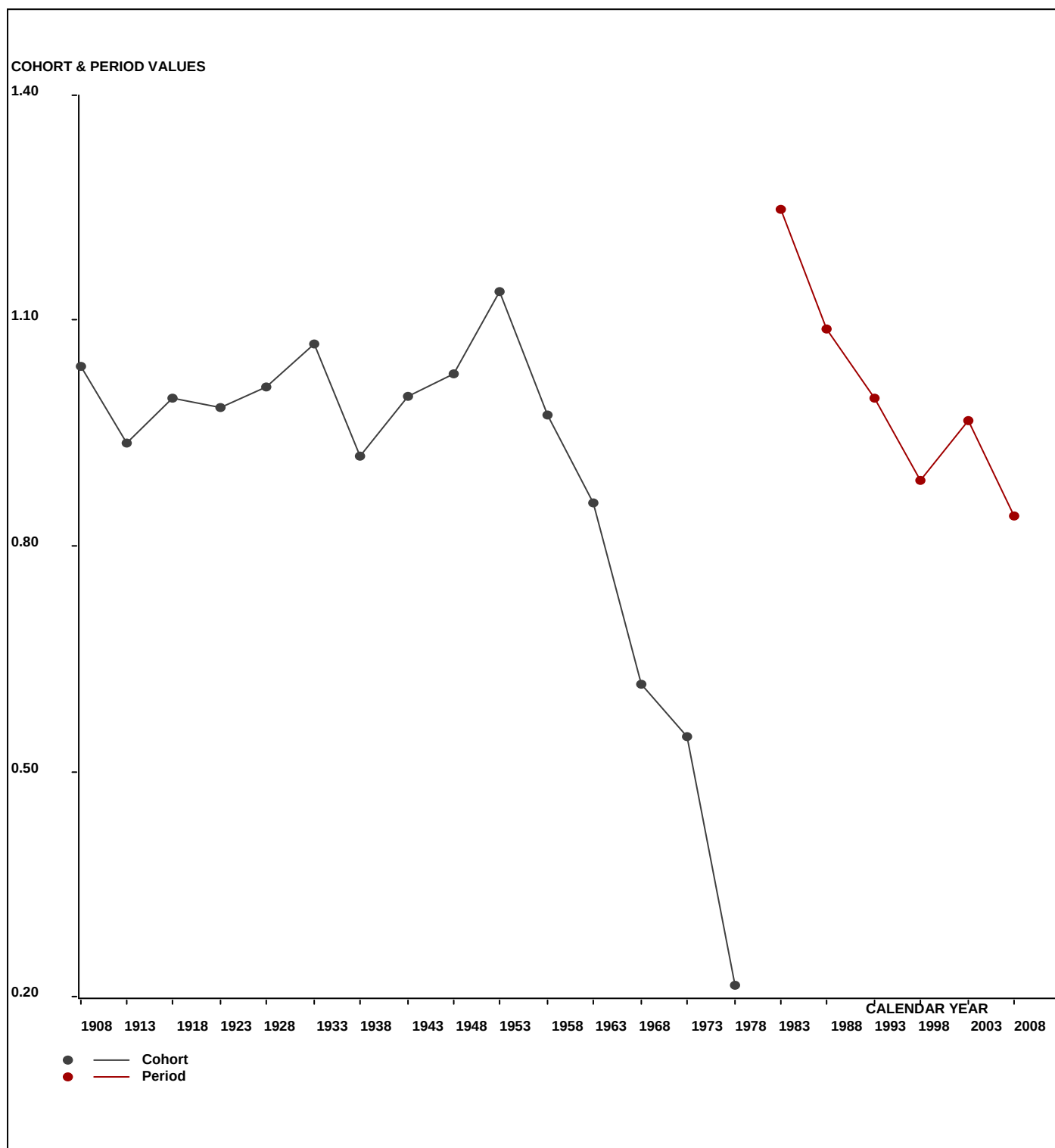
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	10.0	20.0	10.0	5.0	2.0	2.0	-	-	-	-
	EXP	14.3	12.0	11.9	8.1	6.8	4.4	3.5*	2.7*	2.0*	1.5*
	CHI	1.272	5.279	0.317	1.171	3.369	1.336	-	-	-	-
35 -	OBS	32.0	25.0	18.0	19.0	14.0	14.0	-	-	-	-
	EXP	27.0	24.2	22.3	20.9	17.2	11.8	7.7*	6.0*	4.6*	3.5*
	CHI	0.910	0.026	0.838	0.180	0.605	0.427	-	-	-	-
40 -	OBS	44.0	30.0	25.0	29.0	25.0	26.0	-	-	-	-
	EXP	36.5	32.7	31.8	28.0	31.8	21.2	14.4*	9.4*	7.3*	5.7*
	CHI	1.562	0.222	1.446	0.038	1.470	1.085	-	-	-	-
45 -	OBS	75.0	66.0	52.0	59.0	57.0	70.0	-	-	-	-
	EXP	60.1	68.6	65.8	61.9	66.4	61.0	40.5*	27.6*	18.0*	14.0*
	CHI	3.717	0.102	2.897	0.135	1.324	1.340	-	-	-	-
50 -	OBS	152.0	117.0	126.0	111.0	138.0	123.0	-	-	-	-
	EXP	144.8	107.8	131.3	121.8	140.8	121.7	111.6*	74.2*	50.6*	33.1*
	CHI	0.358	0.787	0.214	0.963	0.056	0.015	-	-	-	-
55 -	OBS	287.0	279.0	193.0	261.0	244.0	273.0	-	-	-	-
	EXP	294.1	259.1	206.3	244.5	278.4	259.0	224.1*	205.9*	137.2*	93.7*
	CHI	0.173	1.524	0.853	1.117	4.248	0.755	-	-	-	-
60 -	OBS	442.0	435.0	425.0	352.0	486.0	514.0	-	-	-	-
	EXP	418.4	474.4	445.0	347.5	510.1	464.6	434.4*	377.4*	348.3*	232.8*
	CHI	1.332	3.270	0.895	0.059	1.142	5.253	-	-	-	-
65 -	OBS	589.0	612.0	806.0	715.0	704.0	824.0	-	-	-	-
	EXP	636.3	639.1	766.9	704.0	689.2	818.0	746.3*	703.7*	614.6*	569.9*
	CHI	3.521	1.147	1.989	0.171	0.316	0.044	-	-	-	-
70 -	OBS	1264.0	830.0	885.0	1017.0	1235.0	928.0	-	-	-	-
	EXP	1269.9	808.0	886.8	1037.6	1197.0	961.5	1154.9*	1059.4*	1008.7*	886.4*
	CHI	0.027	0.601	0.004	0.408	1.205	1.167	-	-	-	-
75 -	OBS	1755.0	1459.0	1014.0	1115.0	1650.0	1485.0	-	-	-	-
	EXP	1755.0	1453.2	991.1	1111.0	1625.1	1544.3	1267.2*	1548.7*	1429.9*	1379.8*
	CHI	0.000	0.023	0.530	0.015	0.381	2.277	-	-	-	-
30-79	OBS	4650.0	3873.0	3554.0	3683.0	4555.0	4259.0	-	-	-	-
	EXP	4656.3	3879.1	3559.2	3685.2	4562.9	4267.5	4004.7*	4015.0*	3621.3*	3220.4*
	O/E	0.999	0.998	0.999	0.999	0.998	0.998	-	-	-	-

Osmond and Gardner Modelling

Austria COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

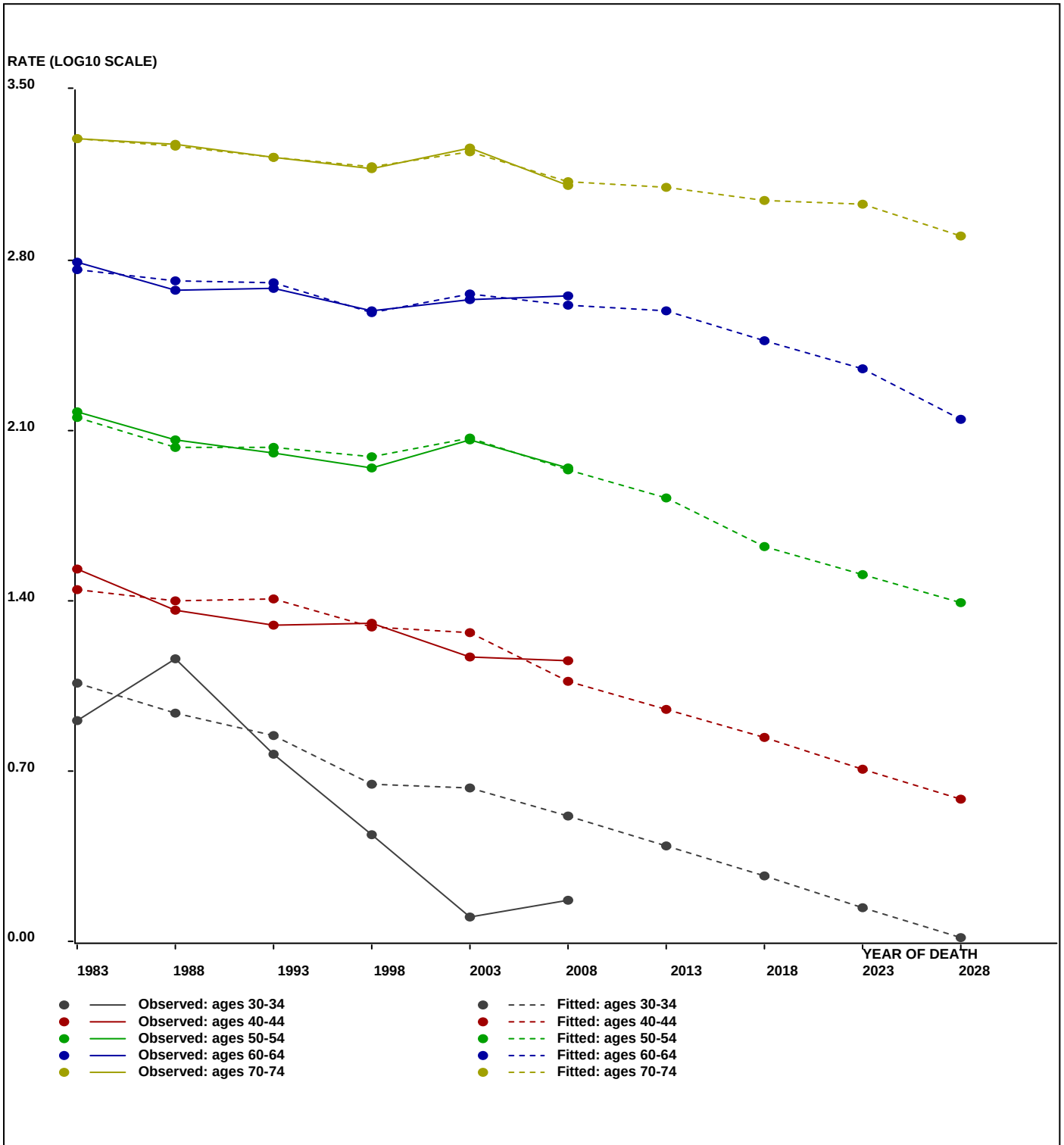


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Austria COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Austria COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	2.5	5.6	9.0	22.4	66.9	166.0	392.5	706.4	1241.0	2075.3
2016	PRE	1.9	4.2	6.9	17.3	41.7	127.1	292.4	678.6	1110.1	1961.5
2021	PRE	1.4	3.2	5.2	13.2	32.2	79.2	223.9	505.5	1066.3	1754.5
2026	PRE	1.0	2.4	3.9	9.9	24.6	61.2	139.5	387.1	794.3	1685.3

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	3.5	7.7	14.4	40.5	111.6	224.1	434.4	746.3	1154.9	1267.2
2016	PRE	2.7	6.0	9.4	27.6	74.2	205.9	377.4	703.7	1059.4	1548.7
2021	PRE	2.0	4.6	7.3	18.0	50.6	137.2	348.3	614.6	1008.7	1429.9
2026	PRE	1.5	3.5	5.7	14.0	33.1	93.7	232.8	569.9	886.4	1379.8

Osmond and Gardner Modelling

Austria IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	1306.19	25.61	51	P, C	98.17	7104.46	0.0000
AGE-PERIOD	81.66	1.81	45	Cohort	70.73	433.71	0.0000
AGE-COHORT	81.18	2.26	36	Period	70.56	431.74	0.0000
PERIOD-COHORT	38.38	0.96	40	Age	37.72	203.89	0.0000
FULL AGE-PERIOD-COHORT	23.90	0.75	32			127.05	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.283223	19.196526
35	1.607057	40.462922
40	1.943839	87.869764
45	2.221693	166.607078
50	2.475092	298.601334
55	2.751443	564.213307
60	3.035183	1084.383512
65	3.327089	2123.681786
70	3.622069	4188.597866
75	3.917957	8278.604334

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.098353	1.254160
1986	0.048907	1.119198
1991	0.036491	1.087653
1996	-0.012143	0.972427
2001	-0.121189	0.756503
2006	-0.224860	0.595854

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.011869	0.973041
1911	0.012650	1.029556
1916	0.052209	1.127740
1921	0.022722	1.053712
1926	0.003705	1.008568
1931	-0.008004	0.981738
1936	-0.083607	0.824885
1941	-0.098814	0.796500
1946	-0.115297	0.766837
1951	-0.064486	0.862013
1956	-0.131956	0.737979
1961	-0.155886	0.698416
1966	-0.261859	0.547193
1971	-0.174039	0.669825
1976	-0.107641	0.780475

Osmond and Gardner Modelling

Austria IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	25.0	11.0	26.0	22.0	16.0	12.0
EXP	25.2	21.8	23.9	17.7	15.2	12.0
CHI	0.0	5.4	0.2	1.0	0.0	0.0
35 - OBS	54.0	42.0	35.0	55.0	30.0	25.0
EXP	50.2	47.3	45.7	45.4	29.3	25.8
CHI	0.3	0.6	2.5	2.0	0.0	0.0
40 - OBS	105.0	92.0	114.0	103.0	65.0	45.0
EXP	112.4	96.7	101.3	89.2	77.0	50.7
CHI	0.5	0.2	1.6	2.1	1.9	0.6
45 - OBS	165.0	196.0	181.0	169.0	139.0	114.0
EXP	179.1	188.3	178.7	171.5	131.6	115.7
CHI	1.1	0.3	0.0	0.0	0.4	0.0
50 - OBS	331.0	243.0	337.0	331.0	264.0	180.0
EXP	384.0	282.1	326.0	282.9	237.7	185.6
CHI	7.3	5.4	0.4	8.2	2.9	0.2
55 - OBS	863.0	611.0	549.0	622.0	385.0	315.0
EXP	912.8	632.2	511.7	540.3	409.2	350.3
CHI	2.7	0.7	2.7	12.4	1.4	3.6
60 - OBS	1629.0	1455.0	1151.0	916.0	782.0	575.0
EXP	1609.7	1503.8	1149.4	854.2	789.0	605.9
CHI	0.2	1.6	0.0	4.5	0.1	1.6
65 - OBS	2527.0	2770.0	2760.0	1922.0	1211.0	1079.0
EXP	2568.4	2650.8	2714.9	1915.4	1252.0	1175.5
CHI	0.7	5.4	0.7	0.0	1.3	7.9
70 - OBS	5917.0	4163.0	4642.0	4264.0	2618.0	1820.0
EXP	5782.4	4036.3	4659.9	4379.9	2741.0	1832.6
CHI	3.1	4.0	0.1	3.1	5.5	0.1
75 - OBS	8315.0	8278.0	6394.0	7026.0	6052.0	4000.0
EXP	8315.0	8415.3	6482.2	7150.5	5889.0	3822.1
CHI	0.0	2.2	1.2	2.2	4.5	8.3

Osmond and Gardner Modelling

Austria IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	19.196526
35	40.462922
40	87.869764
45	166.607078
50	298.601334
55	564.213307
60	1084.383512
65	2123.681786
70	4188.597866
75	8278.604334

PERIOD	EFFECT	LOWER	UPPER
% Period Change	78.7643	75.7643	81.7643
1981	1.254160		
1986	1.119198		
1991	1.087653		
1996	0.972427		
2001	0.756503		
2006	0.595854		
2011	0.469320	0.451445	0.487196
2016	0.369657	0.342034	0.398352
2021	0.291157	0.259139	0.325710
2026	0.229328	0.196335	0.266314

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.973041	1.000000	
1911	1.029556	2.000000	
1916	1.127740	4.000000	
1921	1.053712	8.000000	
1926	1.008568	16.000000	
1931	0.981738	32.000000	
1936	0.824885	64.000000	
1941	0.796500	128.000000	
1946	0.766837	256.000000	
1951	0.862013	512.000000	
1956	0.737979	1024.000000	
1961	0.698416	2048.000000	
1966	0.547193	4096.000000	
1971	0.669825	8192.000000	
1976	0.606350	EXTRAPOLATION	0.780475
1981	0.584311	EXTRAPOLATION	
1986	0.563072	EXTRAPOLATION	
1991	0.542606	EXTRAPOLATION	
1996	0.522884	EXTRAPOLATION	

Osmond and Gardner Modelling

**Austria IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	20.6	8.0	15.9	12.7	10.2	8.9	-	-	-	-
	EXP	20.8	15.9	14.6	10.2	9.7	6.9	5.3*	4.0*	3.0*	2.3*
	Elow							5.1	3.7	2.7	2.0
	Eup							5.5	4.3	3.4	2.7
35	OBS	41.9	34.7	24.9	33.3	17.1	15.6	-	-	-	-
	EXP	38.9	39.0	32.5	27.5	16.7	16.1	11.5*	8.7*	6.6*	5.0*
	Elow							11.1	8.1	5.9	4.3
	Eup							12.0	9.4	7.4	5.8
40	OBS	82.0	71.7	92.7	72.8	39.2	25.4	-	-	-	-
	EXP	87.8	75.4	82.4	63.1	46.4	28.6	27.6*	19.7*	14.9*	11.3*
	Elow							26.6	18.2	13.3	9.7
	Eup							28.7	21.2	16.7	13.2
45	OBS	158.8	154.6	140.7	137.6	98.3	68.3	-	-	-	-
	EXP	172.4	148.5	139.0	139.7	93.0	69.3	42.8*	41.3*	29.4*	22.3*
	Elow							41.2	38.2	26.2	19.1
	Eup							44.4	44.5	32.9	25.9
50	OBS	316.9	237.5	267.4	260.5	216.3	127.3	-	-	-	-
	EXP	367.7	275.7	258.7	222.7	194.7	131.3	97.9*	60.4*	58.2*	41.5*
	Elow							94.1	55.9	51.8	35.5
	Eup							101.6	65.1	65.1	48.2
55	OBS	674.7	599.1	543.1	503.1	307.9	260.6	-	-	-	-
	EXP	713.7	619.9	506.2	437.0	327.3	289.8	195.4*	145.7*	89.9*	86.7*
	Elow							188.0	134.8	80.0	74.2
	Eup							202.9	157.0	100.6	100.6
60	OBS	1450.2	1184.3	1159.5	932.8	647.6	470.2	-	-	-	-
	EXP	1433.0	1224.0	1157.9	869.8	653.4	495.5	438.7*	295.8*	220.5*	136.1*
	Elow							422.0	273.7	196.3	116.5
	Eup							455.4	318.8	246.7	158.0
65	OBS	2955.2	2617.1	2368.3	2034.4	1281.8	925.1	-	-	-	-
	EXP	3003.7	2504.5	2329.6	2027.4	1325.2	1007.9	764.3*	676.7*	456.3*	340.1*
	Elow							735.2	626.1	406.1	291.2
	Eup							793.4	729.2	510.5	395.0
70	OBS	5534.4	5452.7	4782.0	3999.3	2971.3	2044.6	-	-	-	-
	EXP	5408.4	5286.7	4800.4	4108.0	3110.8	2058.7	1565.8*	1187.3*	1051.3*	708.9*
	Elow							1506.1	1098.6	935.7	606.9
	Eup							1625.4	1279.5	1176.0	823.2
75	OBS	10102.8	9383.6	10016.3	8335.1	6491.3	5068.1	-	-	-	-
	EXP	10102.8	9539.2	10154.5	8482.7	6316.4	4842.8	3204.9*	2437.5*	1848.4*	1636.5*
	Elow							3082.9	2255.3	1645.1	1401.1
	Eup							3327.0	2626.7	2067.7	1900.5
30-79	OBS	1168.5	1066.5	1030.9	874.7	632.3	465.5	-	-	-	-
	EXP	1176.5	1066.9	1028.1	865.7	636.8	470.5	342.3*	262.5*	201.9*	155.2*
	Elow							329.2	242.8	179.7	132.9
	Eup							355.3	282.8	225.8	180.3

Osmond and Gardner Modelling

**Austria IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

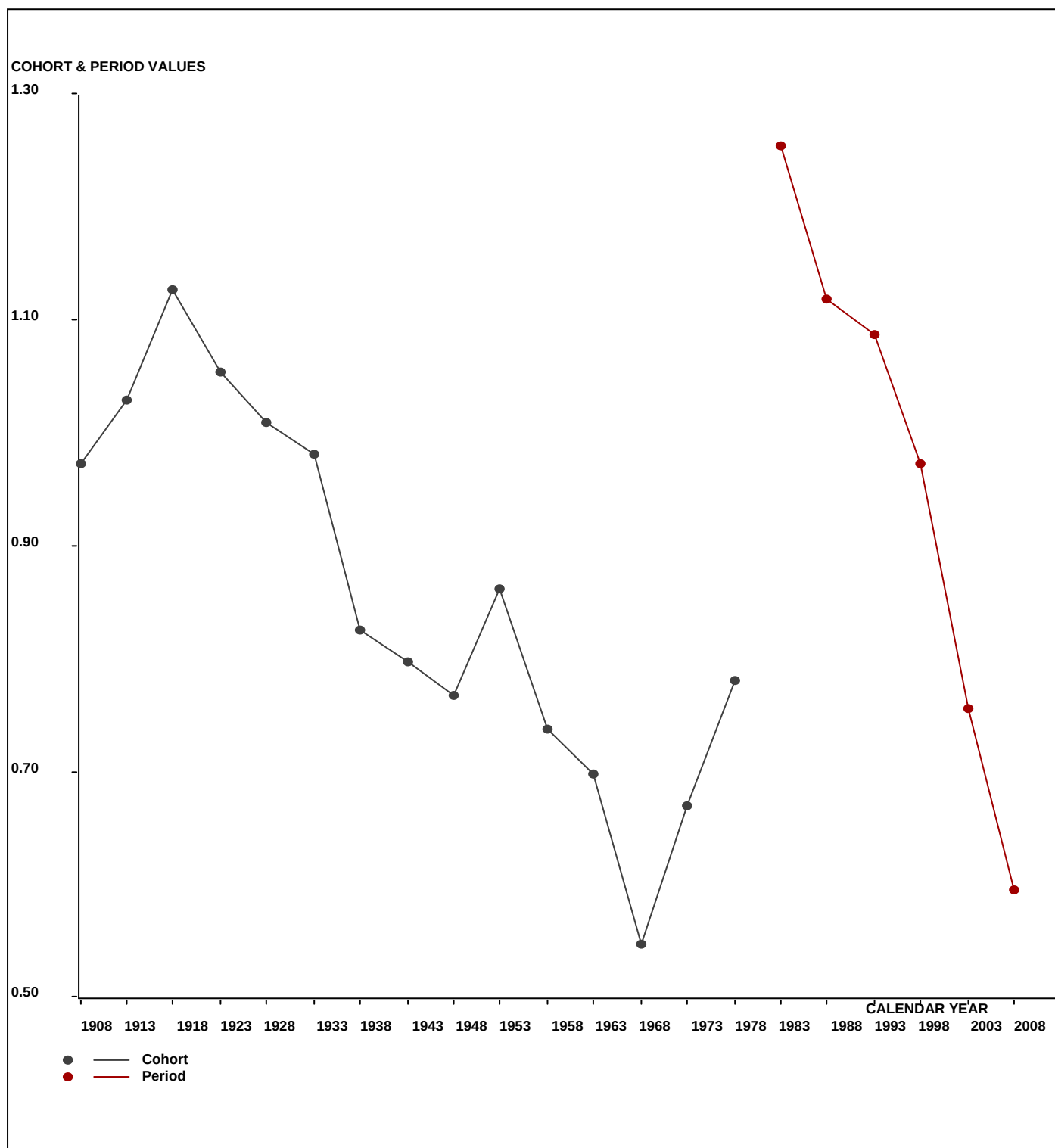
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	25.0	11.0	26.0	22.0	16.0	12.0	-	-	-	-
	EXP	25.2	21.8	23.9	17.7	15.2	9.3	7.3*	5.7*	4.3*	3.2*
	CHI	0.002	5.356	0.186	1.024	0.040	0.769	-	-	-	-
35 -	OBS	54.0	42.0	35.0	55.0	30.0	25.0	-	-	-	-
	EXP	50.2	47.3	45.7	45.4	29.3	25.8	15.8*	12.2*	9.5*	7.2*
	CHI	0.287	0.589	2.514	2.020	0.015	0.026	-	-	-	-
40 -	OBS	105.0	92.0	114.0	103.0	65.0	45.0	-	-	-	-
	EXP	112.4	96.7	101.3	89.2	77.0	50.7	44.5*	27.2*	21.1*	16.4*
	CHI	0.492	0.232	1.590	2.130	1.880	0.649	-	-	-	-
45 -	OBS	165.0	196.0	181.0	169.0	139.0	114.0	-	-	-	-
	EXP	179.1	188.3	178.7	171.5	131.6	115.7	76.0*	66.6*	40.7*	31.6*
	CHI	1.110	0.312	0.029	0.037	0.417	0.025	-	-	-	-
50 -	OBS	331.0	243.0	337.0	331.0	264.0	180.0	-	-	-	-
	EXP	384.0	282.1	326.0	282.9	237.7	185.6	162.7*	106.7*	93.7*	57.3*
	CHI	7.304	5.409	0.372	8.179	2.909	0.170	-	-	-	-
55 -	OBS	863.0	611.0	549.0	622.0	385.0	315.0	-	-	-	-
	EXP	912.8	632.2	511.7	540.3	409.2	350.3	273.1*	239.1*	157.0*	138.0*
	CHI	2.716	0.713	2.724	12.357	1.436	3.559	-	-	-	-
60 -	OBS	1629.0	1455.0	1151.0	916.0	782.0	575.0	-	-	-	-
	EXP	1609.7	1503.8	1149.4	854.2	789.0	605.9	519.2*	404.8*	355.3*	233.6*
	CHI	0.232	1.582	0.002	4.470	0.062	1.572	-	-	-	-
65 -	OBS	2527.0	2770.0	2760.0	1922.0	1211.0	1079.0	-	-	-	-
	EXP	2568.4	2650.8	2714.9	1915.4	1252.0	1175.5	902.4*	776.0*	606.8*	533.8*
	CHI	0.668	5.361	0.748	0.023	1.344	7.926	-	-	-	-
70 -	OBS	5917.0	4163.0	4642.0	4264.0	2618.0	1820.0	-	-	-	-
	EXP	5782.4	4036.3	4659.9	4379.9	2741.0	1832.6	1728.0*	1329.9*	1151.2*	903.1*
	CHI	3.135	3.980	0.069	3.065	5.516	0.086	-	-	-	-
75 -	OBS	8315.0	8278.0	6394.0	7026.0	6052.0	4000.0	-	-	-	-
	EXP	8315.0	8415.3	6482.2	7150.5	5889.0	3822.1	2569.1*	2448.7*	1893.5*	1655.4*
	CHI	0.000	2.241	1.201	2.167	4.514	8.276	-	-	-	-
30-79	OBS	19931.0	17861.0	16189.0	15430.0	11562.0	8165.0	-	-	-	-
	EXP	19939.2	17874.6	16193.8	15447.0	11571.1	8173.6	6298.1*	5416.8*	4333.1*	3579.6*
	O/E	1.000	0.999	1.000	0.999	0.999	0.999	-	-	-	-

Osmond and Gardner Modelling

Austria IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

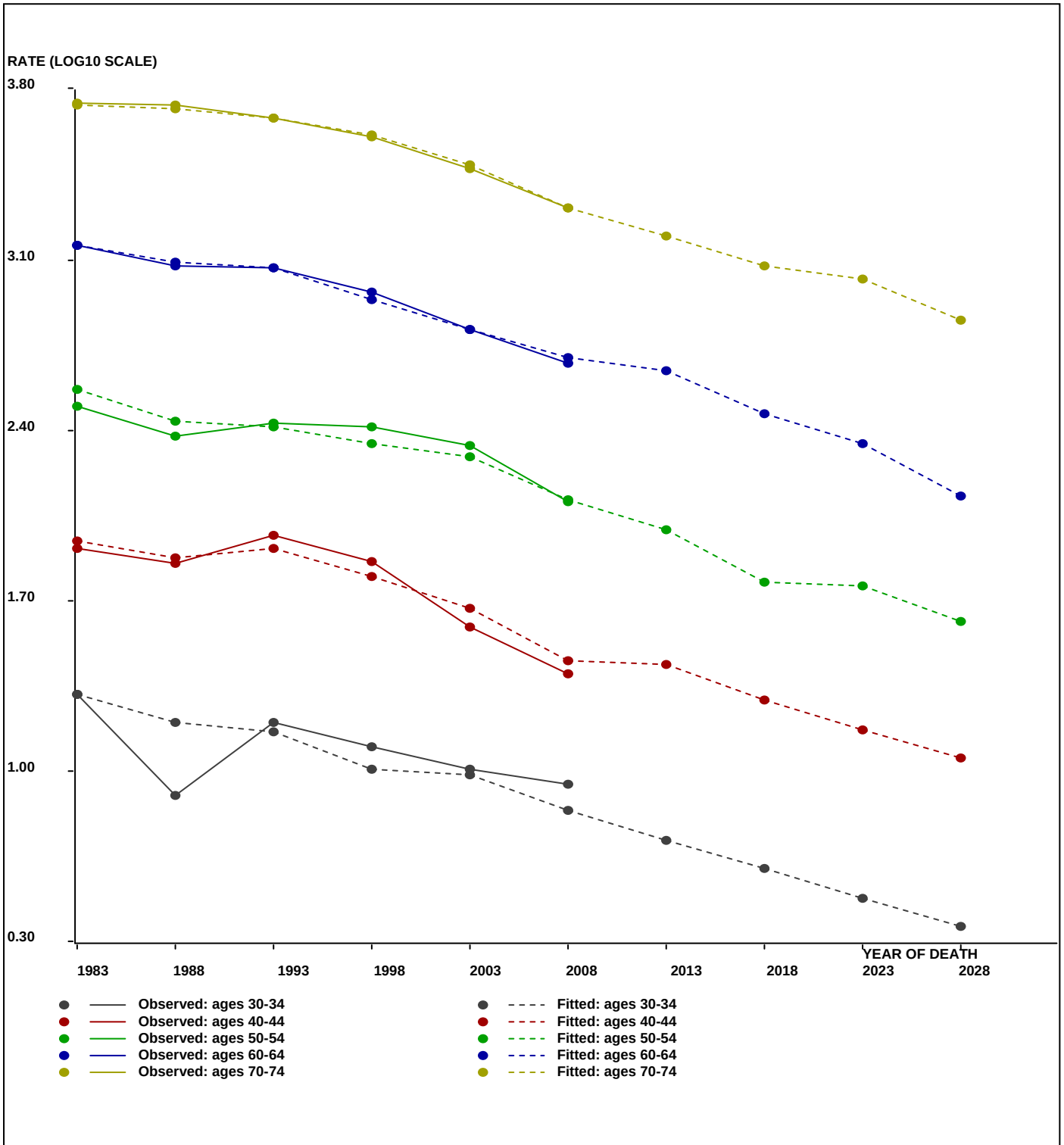


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Austria IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Austria IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	5.3	11.5	27.6	42.8	97.9	195.4	438.7	764.3	1565.8	3204.9
2016	PRE	4.0	8.7	19.7	41.3	60.4	145.7	295.8	676.7	1187.3	2437.5
2021	PRE	3.0	6.6	14.9	29.4	58.2	89.9	220.5	456.3	1051.3	1848.4
2026	PRE	2.3	5.0	11.3	22.3	41.5	86.7	136.1	340.1	708.9	1636.5

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	7.3	15.8	44.5	76.0	162.7	273.1	519.2	902.4	1728.0	2569.1
2016	PRE	5.7	12.2	27.2	66.6	106.7	239.1	404.8	776.0	1329.9	2448.7
2021	PRE	4.3	9.5	21.1	40.7	93.7	157.0	355.3	606.8	1151.2	1893.5
2026	PRE	3.2	7.2	16.4	31.6	57.3	138.0	233.6	533.8	903.1	1655.4

Osmond and Gardner Modelling

Austria Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	2685.27	52.65	51	P, C	99.60	15028.30	0.0000
AGE-PERIOD	74.61	1.66	45	Cohort	85.68	398.31	0.0000
AGE-COHORT	37.97	1.05	36	Period	71.86	201.78	0.0000
PERIOD-COHORT	29.82	0.75	40	Age	64.18	158.70	0.0000
FULL AGE-PERIOD-COHORT	10.68	0.33	32			56.68	0.0046

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.650446	44.714294
35	1.899730	79.383389
40	2.117946	131.203561
45	2.341343	219.453912
50	2.480678	302.467076
55	2.646514	443.112256
60	2.900098	794.507209
65	3.178251	1507.478294
70	3.493036	3111.974424
75	3.805398	6388.484970

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.108373	1.283431
1986	0.046036	1.111825
1991	-0.013062	0.970372
1996	-0.044094	0.903455
2001	-0.181180	0.658900
2006	-0.287067	0.516336

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.161369	1.450005
1911	0.106174	1.276950
1916	0.059714	1.147398
1921	-0.037474	0.917330
1926	-0.110316	0.775683
1931	-0.144641	0.716735
1936	-0.236699	0.579831
1941	-0.236312	0.580348
1946	-0.227530	0.592202
1951	-0.166043	0.682271
1956	-0.164084	0.685355
1961	-0.203020	0.626585
1966	-0.231232	0.587175
1971	-0.363315	0.433196
1976	-0.377895	0.418894

Osmond and Gardner Modelling

Austria Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	53.0	51.0	42.0	36.0	17.0	13.0
EXP	47.6	46.9	44.5	41.2	20.0	13.0
CHI	0.6	0.4	0.1	0.7	0.4	0.0
35 - OBS	81.0	70.0	68.0	76.0	55.0	31.0
EXP	77.8	72.9	74.3	74.3	53.8	28.4
CHI	0.1	0.1	0.5	0.0	0.0	0.2
40 - OBS	137.0	97.0	97.0	118.0	93.0	74.0
EXP	125.2	110.8	106.8	114.9	89.9	70.4
CHI	1.1	1.7	0.9	0.1	0.1	0.2
45 - OBS	157.0	162.0	178.0	185.0	135.0	116.0
EXP	169.7	179.6	162.2	166.1	140.2	118.5
CHI	0.9	1.7	1.5	2.1	0.2	0.1
50 - OBS	270.0	201.0	217.0	223.0	160.0	155.0
EXP	290.6	199.5	214.7	205.6	166.0	151.3
CHI	1.5	0.0	0.0	1.5	0.2	0.1
55 - OBS	541.0	341.0	255.0	323.0	224.0	181.0
EXP	564.2	360.1	252.0	287.2	216.2	188.7
CHI	1.0	1.0	0.0	4.5	0.3	0.3
60 - OBS	1090.0	789.0	553.0	458.0	354.0	262.0
EXP	1050.7	841.8	548.5	408.7	366.9	297.1
CHI	1.5	3.3	0.0	5.9	0.5	4.1
65 - OBS	1862.0	1697.0	1376.0	885.0	513.0	503.0
EXP	1898.3	1627.3	1322.4	922.2	544.1	526.9
CHI	0.7	3.0	2.2	1.5	1.8	1.1
70 - OBS	5482.0	3085.0	2644.0	2300.0	1295.0	815.0
EXP	5452.8	3031.0	2689.0	2325.2	1294.9	829.3
CHI	0.2	1.0	0.8	0.3	0.0	0.2
75 - OBS	9785.0	7972.0	4522.0	4396.0	3088.0	1935.0
EXP	9785.0	8001.4	4540.6	4463.0	3044.2	1866.0
CHI	0.0	0.1	0.1	1.0	0.6	2.6

Osmond and Gardner Modelling

Austria Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	44.714294
35	79.383389
40	131.203561
45	219.453912
50	302.467076
55	443.112256
60	794.507209
65	1507.478294
70	3111.974424
75	6388.484970

PERIOD	EFFECT	LOWER	UPPER
% Period Change	78.3634	75.3634	81.3634

1981	1.283431		
1986	1.111825		
1991	0.970372		
1996	0.903455		
2001	0.658900		
2006	0.516336		
2011	0.404619	0.389129	0.420109
2016	0.317073	0.293261	0.341815
2021	0.248469	0.221011	0.278112
2026	0.194709	0.166561	0.226281

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.450005	1.000000	
1911	1.276950	2.000000	
1916	1.147398	4.000000	
1921	0.917330	8.000000	
1926	0.775683	16.000000	
1931	0.716735	32.000000	
1936	0.579831	64.000000	
1941	0.580348	128.000000	
1946	0.592202	256.000000	
1951	0.682271	512.000000	
1956	0.685355	1024.000000	
1961	0.626585	2048.000000	
1966	0.587175	4096.000000	
1971	0.433196	8192.000000	
1976	0.420860	EXTRAPOLATION	0.418894
1981	0.379917	EXTRAPOLATION	
1986	0.342957	EXTRAPOLATION	
1991	0.309592	EXTRAPOLATION	
1996	0.279474	EXTRAPOLATION	

Osmond and Gardner Modelling

**Austria Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	43.6	37.1	25.6	20.7	10.9	9.7	-	-	-	-
	EXP	39.2	34.1	27.2	23.7	12.8	9.7	6.9*	4.9*	3.4*	2.4*
	Elow							6.6	4.5	3.1	2.1
	Eup							7.1	5.2	3.8	2.8
35	OBS	62.8	57.8	48.3	46.0	31.4	19.4	-	-	-	-
	EXP	60.3	60.2	52.8	44.9	30.7	17.8	13.5*	9.6*	6.8*	4.8*
	Elow							13.0	8.8	6.0	4.1
	Eup							14.0	10.3	7.6	5.6
40	OBS	106.9	75.6	78.9	83.4	56.0	41.8	-	-	-	-
	EXP	97.7	86.4	86.9	81.2	54.2	39.8	23.0*	17.5*	12.4*	8.8*
	Elow							22.1	16.2	11.0	7.5
	Eup							23.9	18.9	13.9	10.2
45	OBS	151.1	127.8	138.4	150.6	95.4	69.5	-	-	-	-
	EXP	163.3	141.6	126.1	135.3	99.1	71.0	52.1*	30.1*	22.9*	16.2*
	Elow							50.1	27.9	20.4	13.9
	Eup							54.1	32.5	25.7	18.9
50	OBS	258.5	196.4	172.2	175.5	131.1	109.6	-	-	-	-
	EXP	278.2	195.0	170.3	161.8	136.0	107.0	76.7*	56.3*	32.6*	24.8*
	Elow							73.7	52.1	29.0	21.2
	Eup							79.6	60.7	36.4	28.8
55	OBS	423.0	334.4	252.3	261.3	179.2	149.7	-	-	-	-
	EXP	441.1	353.1	249.3	232.3	172.9	156.1	122.9*	88.0*	64.6*	37.4*
	Elow							118.2	81.4	57.5	32.0
	Eup							127.6	94.9	72.4	43.4
60	OBS	970.4	642.2	557.1	466.4	293.2	214.3	-	-	-	-
	EXP	935.4	685.2	552.6	416.2	303.8	242.9	219.3*	172.7*	123.7*	90.8*
	Elow							210.9	159.7	110.0	77.7
	Eup							227.7	186.1	138.5	105.6
65	OBS	2177.5	1603.3	1180.7	936.8	543.0	431.3	-	-	-	-
	EXP	2219.9	1537.5	1134.7	976.1	575.9	451.7	361.2*	326.1*	256.7*	183.9*
	Elow							347.4	301.6	228.3	157.3
	Eup							375.0	351.6	287.3	213.7
70	OBS	5127.5	4040.7	2723.7	2157.2	1469.7	915.6	-	-	-	-
	EXP	5100.1	3970.0	2770.1	2180.9	1469.7	931.7	730.8*	584.3*	527.6*	415.3*
	Elow							702.8	540.5	469.3	355.2
	Eup							758.7	629.9	590.5	482.6
75	OBS	11888.9	9036.7	7083.8	5215.0	3312.2	2451.7	-	-	-	-
	EXP	11888.9	9070.0	7113.0	5294.6	3265.1	2364.2	1498.8*	1175.6*	940.0*	848.7*
	Elow							1441.4	1087.3	836.1	726.0
	Eup							1556.2	1267.3	1052.2	986.3
30-79	OBS	1084.0	823.4	629.2	506.9	327.6	238.1	-	-	-	-
	EXP	1086.4	824.8	628.7	502.6	329.6	240.0	175.9*	138.7*	109.9*	86.5*
	Elow							169.2	128.3	97.7	74.0
	Eup							182.6	149.5	123.0	100.5

Osmond and Gardner Modelling

**Austria Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

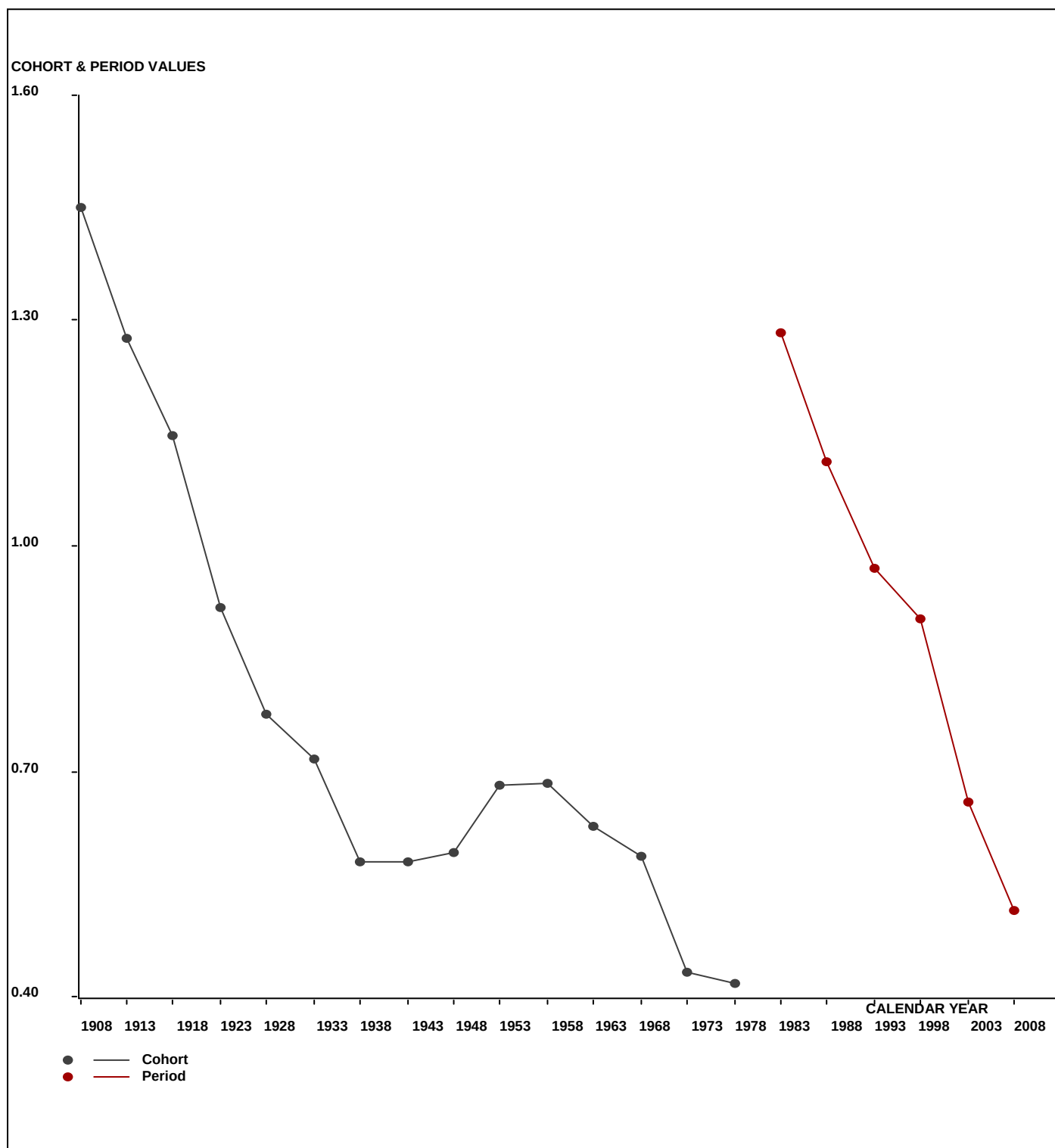
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	53.0	51.0	42.0	36.0	17.0	13.0	-	-	-	-
	EXP	47.6	46.9	44.5	41.2	20.0	13.1	9.5*	6.9*	4.9*	3.3*
	CHI	0.623	0.365	0.145	0.654	0.442	0.000	-	-	-	-
35 -	OBS	81.0	70.0	68.0	76.0	55.0	31.0	-	-	-	-
	EXP	77.8	72.9	74.3	74.3	53.8	28.4	18.5*	13.4*	9.7*	6.9*
	CHI	0.128	0.118	0.537	0.040	0.027	0.242	-	-	-	-
40 -	OBS	137.0	97.0	97.0	118.0	93.0	74.0	-	-	-	-
	EXP	125.2	110.8	106.8	114.9	89.9	70.4	37.1*	24.1*	17.5*	12.7*
	CHI	1.115	1.724	0.902	0.082	0.108	0.179	-	-	-	-
45 -	OBS	157.0	162.0	178.0	185.0	135.0	116.0	-	-	-	-
	EXP	169.7	179.6	162.2	166.1	140.2	118.5	92.6*	48.7*	31.8*	23.0*
	CHI	0.950	1.717	1.538	2.140	0.193	0.052	-	-	-	-
50 -	OBS	270.0	201.0	217.0	223.0	160.0	155.0	-	-	-	-
	EXP	290.6	199.5	214.7	205.6	166.0	151.3	127.5*	99.5*	52.4*	34.2*
	CHI	1.456	0.011	0.026	1.472	0.216	0.090	-	-	-	-
55 -	OBS	541.0	341.0	255.0	323.0	224.0	181.0	-	-	-	-
	EXP	564.2	360.1	252.0	287.2	216.2	188.7	171.7*	144.5*	112.9*	59.5*
	CHI	0.955	1.015	0.036	4.451	0.282	0.314	-	-	-	-
60 -	OBS	1090.0	789.0	553.0	458.0	354.0	262.0	-	-	-	-
	EXP	1050.7	841.8	548.5	408.7	366.9	297.1	259.6*	236.3*	199.3*	155.9*
	CHI	1.470	3.311	0.037	5.940	0.452	4.138	-	-	-	-
65 -	OBS	1862.0	1697.0	1376.0	885.0	513.0	503.0	-	-	-	-
	EXP	1898.3	1627.3	1322.4	922.2	544.1	526.9	426.5*	374.0*	341.4*	288.6*
	CHI	0.693	2.985	2.176	1.502	1.779	1.080	-	-	-	-
70 -	OBS	5482.0	3085.0	2644.0	2300.0	1295.0	815.0	-	-	-	-
	EXP	5452.8	3031.0	2689.0	2325.2	1294.9	829.3	806.5*	654.5*	577.7*	529.1*
	CHI	0.157	0.963	0.754	0.273	0.000	0.248	-	-	-	-
75 -	OBS	9785.0	7972.0	4522.0	4396.0	3088.0	1935.0	-	-	-	-
	EXP	9785.0	8001.4	4540.6	4463.0	3044.2	1866.0	1201.5*	1181.0*	963.0*	858.5*
	CHI	0.000	0.108	0.077	1.007	0.631	2.554	-	-	-	-
30-79	OBS	19458.0	14465.0	9952.0	9000.0	5934.0	4085.0	-	-	-	-
	EXP	19461.8	14471.2	9955.1	9008.5	5936.1	4089.6	3150.9*	2782.7*	2310.5*	1971.7*
	O/E	1.000	1.000	1.000	0.999	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

Austria Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

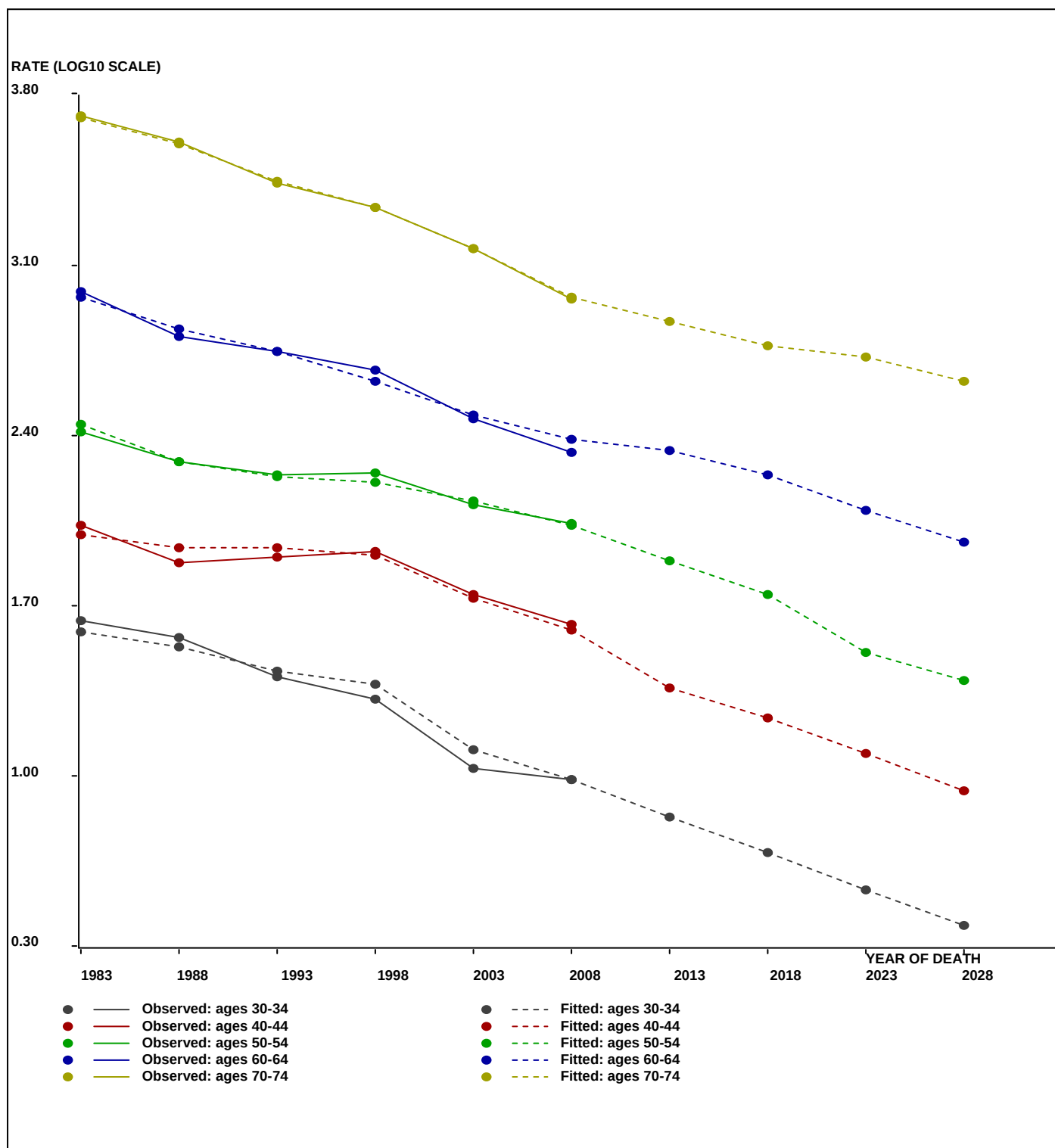


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Austria Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Austria Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	6.9	13.5	23.0	52.1	76.7	122.9	219.3	361.2	730.8	1498.8
2016	PRE	4.9	9.6	17.5	30.1	56.3	88.0	172.7	326.1	584.3	1175.6
2021	PRE	3.4	6.8	12.4	22.9	32.6	64.6	123.7	256.7	527.6	940.0
2026	PRE	2.4	4.8	8.8	16.2	24.8	37.4	90.8	183.9	415.3	848.7

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	9.5	18.5	37.1	92.6	127.5	171.7	259.6	426.5	806.5	1201.5
2016	PRE	6.9	13.4	24.1	48.7	99.5	144.5	236.3	374.0	654.5	1181.0
2021	PRE	4.9	9.7	17.5	31.8	52.4	112.9	199.3	341.4	577.7	963.0
2026	PRE	3.3	6.9	12.7	23.0	34.2	59.5	155.9	288.6	529.1	858.5

Osmond and Gardner Modelling

Austria Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	150.49	2.95	51	P, C	95.53	807.39	0.0000
AGE-PERIOD	63.09	1.40	45	Cohort	89.34	338.99	0.0000
AGE-COHORT	7.85	0.22	36	Period	14.30	42.08	0.2243
PERIOD-COHORT	15.88	0.40	40	Age	57.65	84.79	0.0000
FULL AGE-PERIOD-COHORT	6.72	0.21	32			36.12	0.2821

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.765108	5.822484
35	1.200083	15.851943
40	1.631654	42.820739
45	1.961191	91.451599
50	2.246741	176.498614
55	2.456407	286.026879
60	2.637261	433.771671
65	2.792876	620.691614
70	2.917701	827.373126
75	3.001383	1003.188523

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.052889	0.885341
1986	-0.029019	0.935365
1991	-0.007943	0.981876
1996	0.018187	1.042767
2001	0.012881	1.030103
2006	0.029533	1.070367

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.050333	0.890567
1911	-0.099475	0.795289
1916	-0.056458	0.878096
1921	-0.060033	0.870897
1926	-0.056453	0.878107
1931	-0.041992	0.907838
1936	-0.080588	0.830638
1941	0.052426	1.128303
1946	0.147824	1.405478
1951	0.206449	1.608602
1956	0.178285	1.507598
1961	0.116244	1.306905
1966	-0.011574	0.973702
1971	-0.139229	0.725724
1976	-0.321041	0.477484

Osmond and Gardner Modelling

Austria Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	9.0	13.0	12.0	12.0	2.0	4.0
EXP	10.1	11.3	12.2	10.3	6.8	4.0
CHI	0.1	0.3	0.0	0.3	3.4	0.0
35 - OBS	27.0	35.0	32.0	25.0	27.0	22.0
EXP	25.4	28.9	33.0	35.7	27.9	19.7
CHI	0.1	1.3	0.0	3.2	0.0	0.3
40 - OBS	41.0	68.0	96.0	100.0	94.0	78.0
EXP	54.8	72.2	83.2	95.2	95.7	79.0
CHI	3.5	0.2	2.0	0.2	0.0	0.0
45 - OBS	66.0	127.0	170.0	185.0	184.0	224.0
EXP	69.9	122.4	162.3	188.4	200.9	213.5
CHI	0.2	0.2	0.4	0.1	1.4	0.5
50 - OBS	155.0	154.0	224.0	318.0	357.0	413.0
EXP	148.2	140.3	246.4	328.6	357.0	402.6
CHI	0.3	1.3	2.0	0.3	0.0	0.3
55 - OBS	272.0	230.0	240.0	432.0	542.0	579.0
EXP	284.4	247.7	235.8	416.1	517.8	595.3
CHI	0.5	1.3	0.1	0.6	1.1	0.4
60 - OBS	389.0	441.0	382.0	384.0	598.0	778.0
EXP	375.7	437.7	383.8	369.0	608.8	797.9
CHI	0.5	0.0	0.0	0.6	0.2	0.5
65 - OBS	409.0	551.0	593.0	564.0	487.0	897.0
EXP	412.6	535.2	623.7	555.1	501.8	874.3
CHI	0.0	0.5	1.5	0.1	0.4	0.6
70 - OBS	633.0	503.0	696.0	822.0	679.0	639.0
EXP	622.8	518.8	686.8	807.7	681.7	654.8
CHI	0.2	0.5	0.1	0.3	0.0	0.4
75 - OBS	651.0	648.0	571.0	728.0	870.0	775.0
EXP	651.0	658.3	552.1	768.0	846.0	769.4
CHI	0.0	0.2	0.6	2.1	0.7	0.0

Osmond and Gardner Modelling

Austria Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	5.822484
35	15.851943
40	42.820739
45	91.451599
50	176.498614
55	286.026879
60	433.771671
65	620.691614
70	827.373126
75	1003.188523

PERIOD	EFFECT	LOWER	UPPER
% Period Change	103.9087	100.9087	106.9087

1981	0.885341		
1986	0.935365		
1991	0.981876		
1996	1.042767		
2001	1.030103		
2006	1.070367		
2011	1.112205	1.080094	1.144316
2016	1.155678	1.089909	1.223374
2021	1.200851	1.099814	1.307894
2026	1.247789	1.109808	1.398253

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.890567	1.000000	
1911	0.795289	2.000000	
1916	0.878096	4.000000	
1921	0.870897	8.000000	
1926	0.878107	16.000000	
1931	0.907838	32.000000	
1936	0.830638	64.000000	
1941	1.128303	128.000000	
1946	1.405478	256.000000	
1951	1.608602	512.000000	
1956	1.507598	1024.000000	
1961	1.306905	2048.000000	
1966	0.973702	4096.000000	
1971	0.725724	8192.000000	
1976	0.672211	EXTRAPOLATION	0.477484
1981	0.575862	EXTRAPOLATION	
1986	0.493322	EXTRAPOLATION	
1991	0.422613	EXTRAPOLATION	
1996	0.362039	EXTRAPOLATION	

Osmond and Gardner Modelling

**Austria Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	7.4	9.5	7.3	6.9	1.3	3.0	-	-	-	-
	EXP	8.3	8.2	7.5	5.9	4.4	4.2	3.7*	3.3*	3.0*	2.6*
	Elow							3.6	3.1	2.7	2.3
	Eup							3.8	3.5	3.2	2.9
35	OBS	20.9	28.9	22.7	15.1	15.4	13.8	-	-	-	-
	EXP	19.7	23.9	23.5	21.6	15.9	12.3	11.9*	10.5*	9.4*	8.4*
	Elow							11.5	9.9	8.6	7.4
	Eup							12.2	11.2	10.2	9.4
40	OBS	32.0	53.0	78.1	70.7	56.7	44.0	-	-	-	-
	EXP	42.8	56.3	67.6	67.3	57.6	44.6	34.6*	33.3*	29.6*	26.4*
	Elow							33.6	31.4	27.1	23.4
	Eup							35.6	35.2	32.3	29.5
45	OBS	63.5	100.2	132.2	150.6	130.1	134.2	-	-	-	-
	EXP	67.3	96.5	126.2	153.4	142.0	127.9	99.0*	76.7*	73.8*	65.7*
	Elow							96.2	72.3	67.6	58.4
	Eup							101.9	81.2	80.4	73.6
50	OBS	148.4	150.5	177.8	250.3	292.4	292.1	-	-	-	-
	EXP	141.9	137.1	195.5	258.7	292.5	284.8	256.5*	198.6*	153.8*	148.0*
	Elow							249.1	187.3	140.9	131.7
	Eup							264.0	210.2	167.5	165.9
55	OBS	212.7	225.5	237.4	349.4	433.5	479.0	-	-	-	-
	EXP	222.4	242.9	233.3	336.5	414.1	492.5	479.6*	432.0*	334.4*	259.0*
	Elow							465.8	407.4	306.3	230.4
	Eup							493.4	457.3	364.3	290.2
60	OBS	346.3	359.0	384.8	391.0	495.2	636.3	-	-	-	-
	EXP	334.5	356.3	386.7	375.7	504.2	652.6	776.1*	755.8*	680.8*	527.0*
	Elow							753.7	712.7	623.5	468.7
	Eup							798.5	800.0	741.4	590.6
65	OBS	478.3	520.6	508.8	597.0	515.5	769.1	-	-	-	-
	EXP	482.5	505.6	535.2	587.6	531.1	749.6	970.3*	1153.9*	1123.7*	1012.2*
	Elow							942.2	1088.2	1029.2	900.3
	Eup							998.3	1221.5	1223.9	1134.2
70	OBS	592.1	658.8	717.0	771.0	770.6	717.9	-	-	-	-
	EXP	582.6	679.6	707.5	757.6	773.7	735.6	1038.3*	1343.9*	1598.2*	1556.4*
	Elow							1008.3	1267.4	1463.8	1384.3
	Eup							1068.3	1422.6	1740.7	1744.1
75	OBS	791.0	734.5	894.5	863.6	933.2	981.9	-	-	-	-
	EXP	791.0	746.3	864.9	911.0	907.4	974.8	926.8*	1308.1*	1693.2*	2013.6*
	Elow							900.0	1233.7	1550.7	1790.9
	Eup							953.5	1384.7	1844.1	2256.4
30-79	OBS	185.2	201.3	222.7	253.4	268.9	302.9	-	-	-	-
	EXP	185.9	200.8	223.1	252.6	270.0	303.4	335.4*	361.7*	363.2*	339.9*
	Elow							325.7	341.1	332.6	302.3
	Eup							345.1	382.8	395.5	380.8

Osmond and Gardner Modelling

**Austria Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

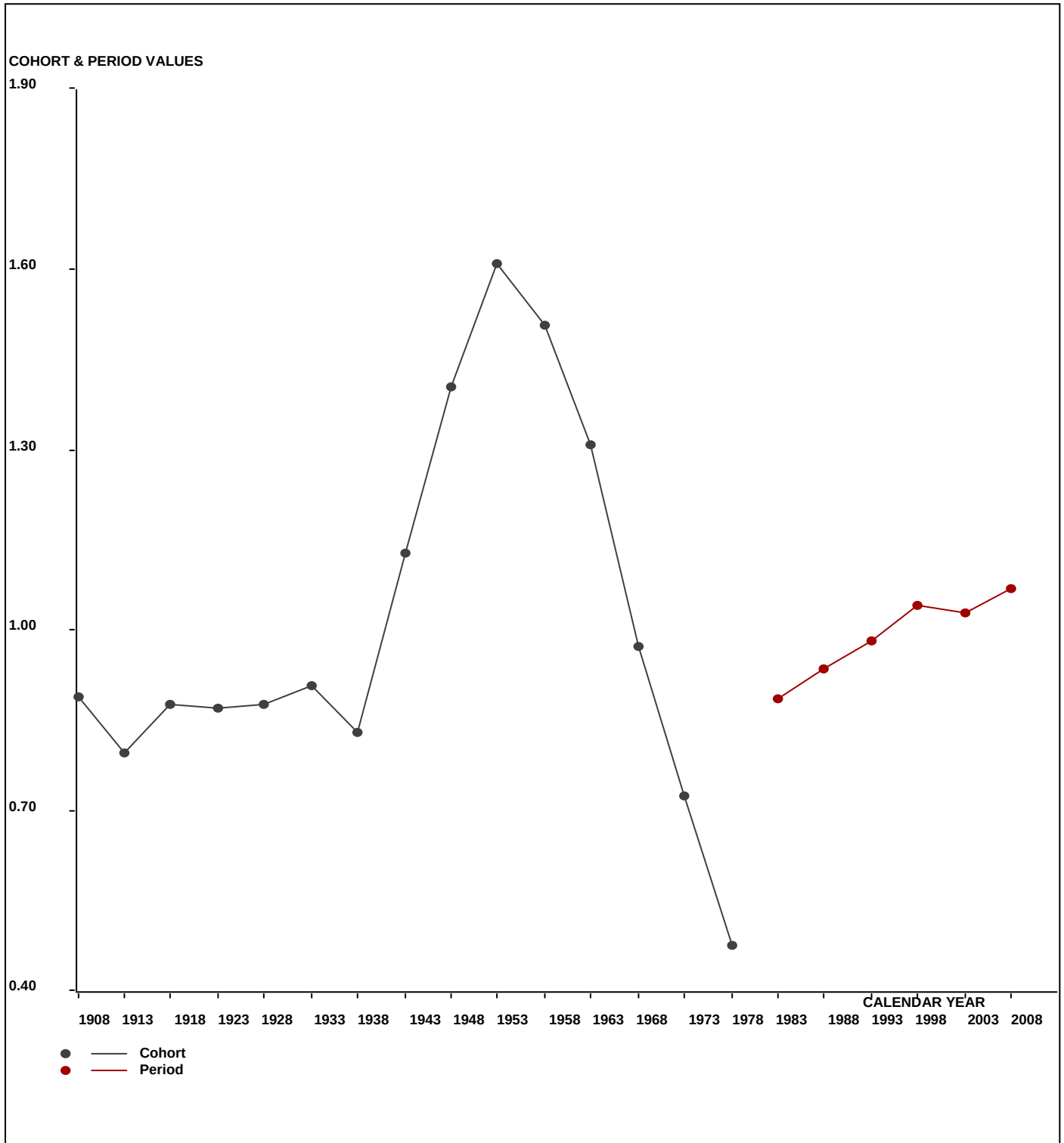
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	9.0	13.0	12.0	12.0	2.0	4.0	-	-	-	-
	EXP	10.1	11.3	12.2	10.3	6.8	5.6	5.1*	4.7*	4.2*	3.6*
	CHI	0.114	0.258	0.005	0.293	3.398	0.473	-	-	-	-
35 -	OBS	27.0	35.0	32.0	25.0	27.0	22.0	-	-	-	-
	EXP	25.4	28.9	33.0	35.7	27.9	19.7	16.2*	14.7*	13.5*	12.0*
	CHI	0.095	1.294	0.032	3.210	0.026	0.273	-	-	-	-
40 -	OBS	41.0	68.0	96.0	100.0	94.0	78.0	-	-	-	-
	EXP	54.8	72.2	83.2	95.2	95.7	79.0	55.7*	45.9*	41.7*	38.1*
	CHI	3.473	0.246	1.980	0.238	0.029	0.014	-	-	-	-
45 -	OBS	66.0	127.0	170.0	185.0	184.0	224.0	-	-	-	-
	EXP	69.9	122.4	162.3	188.4	200.9	213.5	175.8*	123.8*	102.2*	93.0*
	CHI	0.216	0.174	0.363	0.062	1.426	0.520	-	-	-	-
50 -	OBS	155.0	154.0	224.0	318.0	357.0	413.0	-	-	-	-
	EXP	148.2	140.3	246.4	328.6	357.0	402.6	426.6*	350.8*	247.5*	204.4*
	CHI	0.317	1.336	2.037	0.345	0.000	0.267	-	-	-	-
55 -	OBS	272.0	230.0	240.0	432.0	542.0	579.0	-	-	-	-
	EXP	284.4	247.7	235.8	416.1	517.8	595.3	670.2*	709.2*	584.1*	412.5*
	CHI	0.541	1.265	0.075	0.610	1.134	0.447	-	-	-	-
60 -	OBS	389.0	441.0	382.0	384.0	598.0	778.0	-	-	-	-
	EXP	375.7	437.7	383.8	369.0	608.8	797.9	918.5*	1034.2*	1096.8*	904.7*
	CHI	0.472	0.025	0.009	0.612	0.192	0.498	-	-	-	-
65 -	OBS	409.0	551.0	593.0	564.0	487.0	897.0	-	-	-	-
	EXP	412.6	535.2	623.7	555.1	501.8	874.3	1145.5*	1323.2*	1494.4*	1588.5*
	CHI	0.032	0.469	1.508	0.142	0.434	0.590	-	-	-	-
70 -	OBS	633.0	503.0	696.0	822.0	679.0	639.0	-	-	-	-
	EXP	622.8	518.8	686.8	807.7	681.7	654.8	1145.9*	1505.2*	1750.2*	1982.9*
	CHI	0.166	0.483	0.124	0.252	0.011	0.381	-	-	-	-
75 -	OBS	651.0	648.0	571.0	728.0	870.0	775.0	-	-	-	-
	EXP	651.0	658.3	552.1	768.0	846.0	769.4	742.9*	1314.1*	1734.5*	2036.8*
	CHI	0.000	0.162	0.644	2.079	0.680	0.041	-	-	-	-
30-79	OBS	2652.0	2770.0	3016.0	3570.0	3840.0	4409.0	-	-	-	-
	EXP	2654.9	2772.8	3019.4	3574.1	3844.3	4412.1	5302.6*	6425.8*	7069.1*	7276.5*
	O/E	0.999	0.999	0.999	0.999	0.999	0.999	-	-	-	-

Osmond and Gardner Modelling

Austria Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

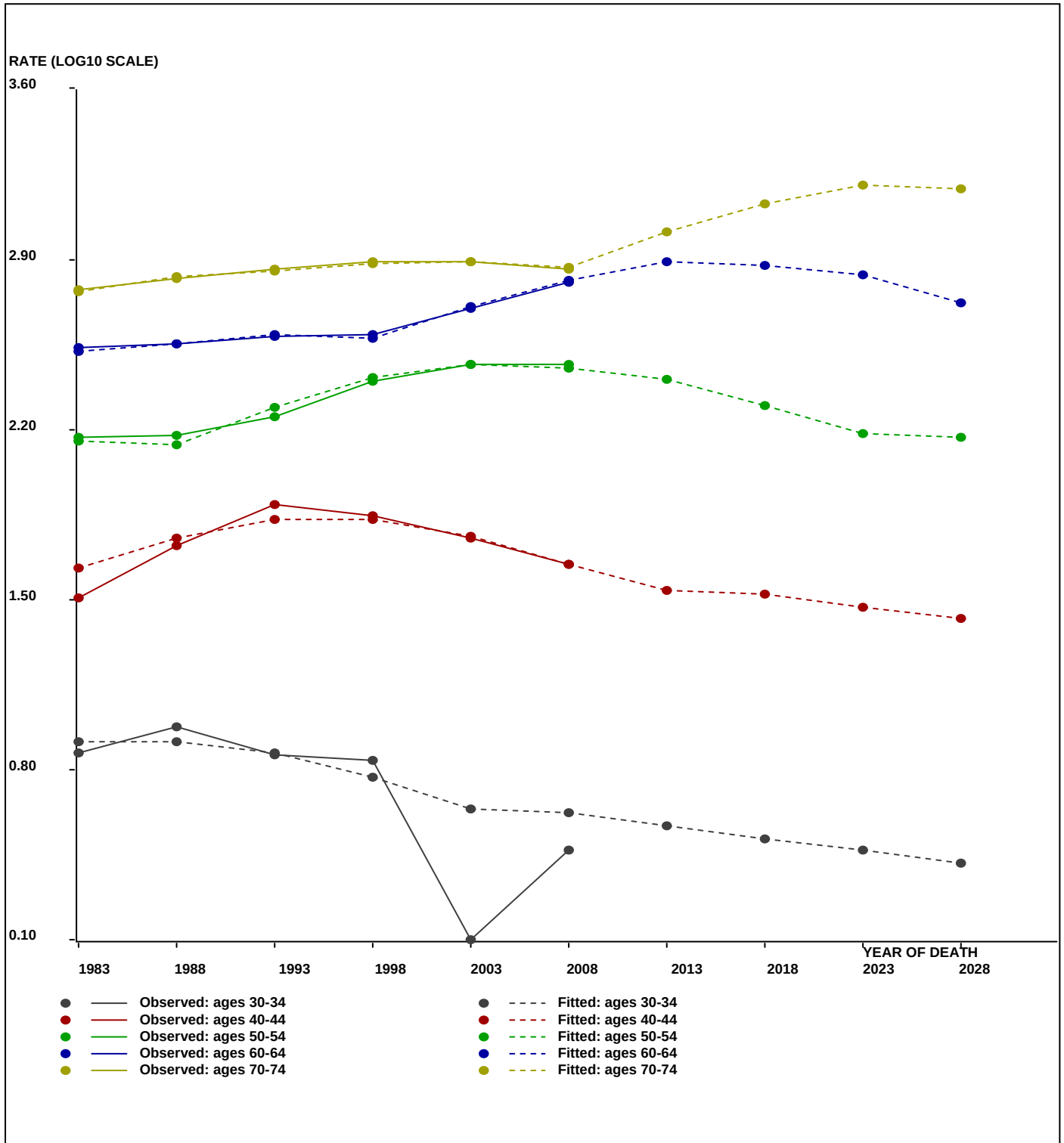


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Austria Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Austria Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	3.7	11.9	34.6	99.0	256.5	479.6	776.1	970.3	1038.3	926.8
2016	PRE	3.3	10.5	33.3	76.7	198.6	432.0	755.8	1153.9	1343.9	1308.1
2021	PRE	3.0	9.4	29.6	73.8	153.8	334.4	680.8	1123.7	1598.2	1693.2
2026	PRE	2.6	8.4	26.4	65.7	148.0	259.0	527.0	1012.2	1556.4	2013.6

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	5.1	16.2	55.7	175.8	426.6	670.2	918.5	1145.5	1145.9	742.9
2016	PRE	4.7	14.7	45.9	123.8	350.8	709.2	1034.2	1323.2	1505.2	1314.1
2021	PRE	4.2	13.5	41.7	102.2	247.5	584.1	1096.8	1494.4	1750.2	1734.5
2026	PRE	3.6	12.0	38.1	93.0	204.4	412.5	904.7	1588.5	1982.9	2036.8

Osmond and Gardner Modelling

Austria COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	48.53	0.95	51	P, C	81.41	261.82	0.0000
AGE-PERIOD	27.55	0.61	45	Cohort	67.25	150.18	0.0000
AGE-COHORT	24.53	0.68	36	Period	63.22	130.76	0.0000
PERIOD-COHORT	11.59	0.29	40	Age	22.12	61.73	0.0153
FULL AGE-PERIOD-COHORT	9.02	0.28	32			48.07	0.0339

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.778903	6.010400
35	0.895891	7.868486
40	1.076238	11.918937
45	1.375439	23.737743
50	1.674311	47.240120
55	1.896862	78.860891
60	2.155133	142.933240
65	2.443824	277.858650
70	2.747900	559.629282
75	3.021475	1050.689941

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.074122	1.186101
1986	0.007918	1.018399
1991	-0.025115	0.943811
1996	-0.087328	0.817846
2001	0.014466	1.033869
2006	-0.009921	0.977416

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.032380	0.928153
1911	-0.061647	0.867666
1916	-0.002084	0.995212
1921	-0.009023	0.979438
1926	-0.008621	0.980346
1931	0.004735	1.010963
1936	-0.036549	0.919288
1941	0.101003	1.261835
1946	0.135125	1.364975
1951	0.134799	1.363953
1956	-0.013710	0.968925
1961	-0.034879	0.922828
1966	-0.180913	0.659306
1971	-0.388478	0.408810
1976	-0.897442	0.126636

Osmond and Gardner Modelling

Austria COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	13.0	10.0	7.0	3.0	4.0	1.0
EXP	11.8	8.2	8.6	5.6	4.0	1.0
CHI	0.1	0.4	0.3	1.2	0.0	0.0
35 - OBS	18.0	15.0	12.0	7.0	5.0	5.0
EXP	16.4	13.2	10.1	9.8	9.4	5.0
CHI	0.1	0.2	0.3	0.8	2.1	0.0
40 - OBS	23.0	24.0	16.0	12.0	14.0	18.0
EXP	22.9	21.3	18.9	13.4	18.9	13.6
CHI	0.0	0.4	0.4	0.1	1.3	1.4
45 - OBS	33.0	41.0	32.0	23.0	31.0	43.0
EXP	26.9	38.7	39.3	32.5	33.6	35.7
CHI	1.4	0.1	1.4	2.8	0.2	1.5
50 - OBS	60.0	58.0	72.0	56.0	75.0	63.0
EXP	59.2	45.3	70.9	67.0	81.3	63.2
CHI	0.0	3.6	0.0	1.8	0.5	0.0
55 - OBS	93.0	94.0	69.0	99.0	137.0	140.0
EXP	117.3	82.8	69.2	100.6	139.1	127.1
CHI	5.0	1.5	0.0	0.0	0.0	1.3
60 - OBS	185.0	171.0	128.0	119.0	209.0	247.0
EXP	186.5	175.3	135.4	105.5	225.2	233.2
CHI	0.0	0.1	0.4	1.7	1.2	0.8
65 - OBS	269.0	306.0	277.0	221.0	252.0	413.0
EXP	280.5	293.3	299.6	217.0	249.5	399.7
CHI	0.5	0.5	1.7	0.1	0.0	0.4
70 - OBS	639.0	412.0	507.0	501.0	522.0	408.0
EXP	615.8	433.0	502.2	478.4	515.4	447.6
CHI	0.9	1.0	0.0	1.1	0.1	3.5
75 - OBS	952.0	795.0	661.0	693.0	1017.0	803.0
EXP	952.0	819.0	630.0	709.5	992.9	819.4
CHI	0.0	0.7	1.5	0.4	0.6	0.3

Osmond and Gardner Modelling

Austria COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	6.010400
35	7.868486
40	11.918937
45	23.737743
50	47.240120
55	78.860891
60	142.933240
65	277.858650
70	559.629282
75	1050.689941

PERIOD	EFFECT	LOWER	UPPER
% Period Change	94.5396	91.5396	97.5396

1981	1.186101		
1986	1.018399		
1991	0.943811		
1996	0.817846		
2001	1.033869		
2006	0.977416		
2011	0.924045	0.894722	0.953367
2016	0.873588	0.819025	0.929911
2021	0.825887	0.749732	0.907031
2026	0.780790	0.686302	0.884714

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.928153	1.000000	
1911	0.867666	2.000000	
1916	0.995212	4.000000	
1921	0.979438	8.000000	
1926	0.980346	16.000000	
1931	1.010963	32.000000	
1936	0.919288	64.000000	
1941	1.261835	128.000000	
1946	1.364975	256.000000	
1951	1.363953	512.000000	
1956	0.968925	1024.000000	
1961	0.922828	2048.000000	
1966	0.659306	4096.000000	
1971	0.408810	8192.000000	
1976	0.354063	EXTRAPOLATION	0.126636
1981	0.276978	EXTRAPOLATION	
1986	0.216676	EXTRAPOLATION	
1991	0.169503	EXTRAPOLATION	
1996	0.132600	EXTRAPOLATION	

Osmond and Gardner Modelling

**Austria COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	10.7	7.3	4.3	1.7	2.6	0.7	-	-	-	-
	EXP	9.7	5.9	5.2	3.2	2.5	2.1	1.5*	1.1*	0.8*	0.6*
	Elow							1.5	1.1	0.8	0.5
	Eup							1.6	1.2	0.9	0.7
35	OBS	14.0	12.4	8.5	4.2	2.9	3.1	-	-	-	-
	EXP	12.7	10.9	7.2	5.9	5.4	3.1	2.6*	1.9*	1.4*	1.0*
	Elow							2.5	1.8	1.3	0.9
	Eup							2.7	2.0	1.5	1.2
40	OBS	18.0	18.7	13.0	8.5	8.4	10.2	-	-	-	-
	EXP	17.8	16.6	15.3	9.4	11.4	7.7	4.5*	3.7*	2.7*	2.0*
	Elow							4.4	3.5	2.5	1.8
	Eup							4.6	3.9	3.0	2.3
45	OBS	31.8	32.3	24.9	18.7	21.9	25.8	-	-	-	-
	EXP	25.9	30.5	30.6	26.5	23.8	21.4	14.5*	8.5*	6.9*	5.1*
	Elow							14.0	7.9	6.3	4.5
	Eup							14.9	9.0	7.6	5.8
50	OBS	57.5	56.7	57.1	44.1	61.4	44.6	-	-	-	-
	EXP	56.6	44.2	56.3	52.7	66.6	44.7	40.3*	27.2*	15.9*	13.1*
	Elow							39.0	25.5	14.5	11.5
	Eup							41.6	29.0	17.5	14.8
55	OBS	72.7	92.2	68.3	80.1	109.6	115.8	-	-	-	-
	EXP	91.7	81.2	68.4	81.4	111.3	105.1	70.6*	63.6*	42.9*	25.2*
	Elow							68.4	59.6	39.0	22.1
	Eup							72.8	67.7	47.2	28.5
60	OBS	164.7	139.2	128.9	121.2	173.1	202.0	-	-	-	-
	EXP	166.0	142.7	136.4	107.5	186.5	190.7	180.1*	121.0*	108.9*	73.6*
	Elow							174.4	113.4	98.9	64.7
	Eup							185.9	128.8	119.6	83.4
65	OBS	314.6	289.1	237.7	233.9	266.7	354.1	-	-	-	-
	EXP	328.0	277.2	257.1	229.7	264.1	342.7	350.5*	331.1*	222.3*	200.2*
	Elow							339.3	310.4	201.8	176.0
	Eup							361.6	352.4	244.2	226.9
70	OBS	597.7	539.6	522.3	469.9	592.4	458.4	-	-	-	-
	EXP	575.9	567.2	517.3	448.7	584.9	502.8	652.5*	667.3*	630.4*	423.4*
	Elow							631.8	625.6	572.3	372.1
	Eup							673.2	710.3	692.3	479.7
75	OBS	1156.7	901.2	1035.5	822.1	1090.8	1017.4	-	-	-	-
	EXP	1156.7	928.4	986.9	841.6	1064.9	1038.2	892.5*	1158.2*	1184.5*	1118.9*
	Elow							864.2	1085.9	1075.2	983.5
	Eup							920.8	1232.9	1300.8	1267.9
30-79	OBS	137.2	122.2	116.3	102.1	131.4	129.5	-	-	-	-
	EXP	138.1	120.5	117.3	102.9	132.9	129.0	125.7*	125.9*	111.8*	90.6*
	Elow							121.7	118.1	101.5	79.6
	Eup							129.7	134.0	122.7	102.6

Osmond and Gardner Modelling

**Austria COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

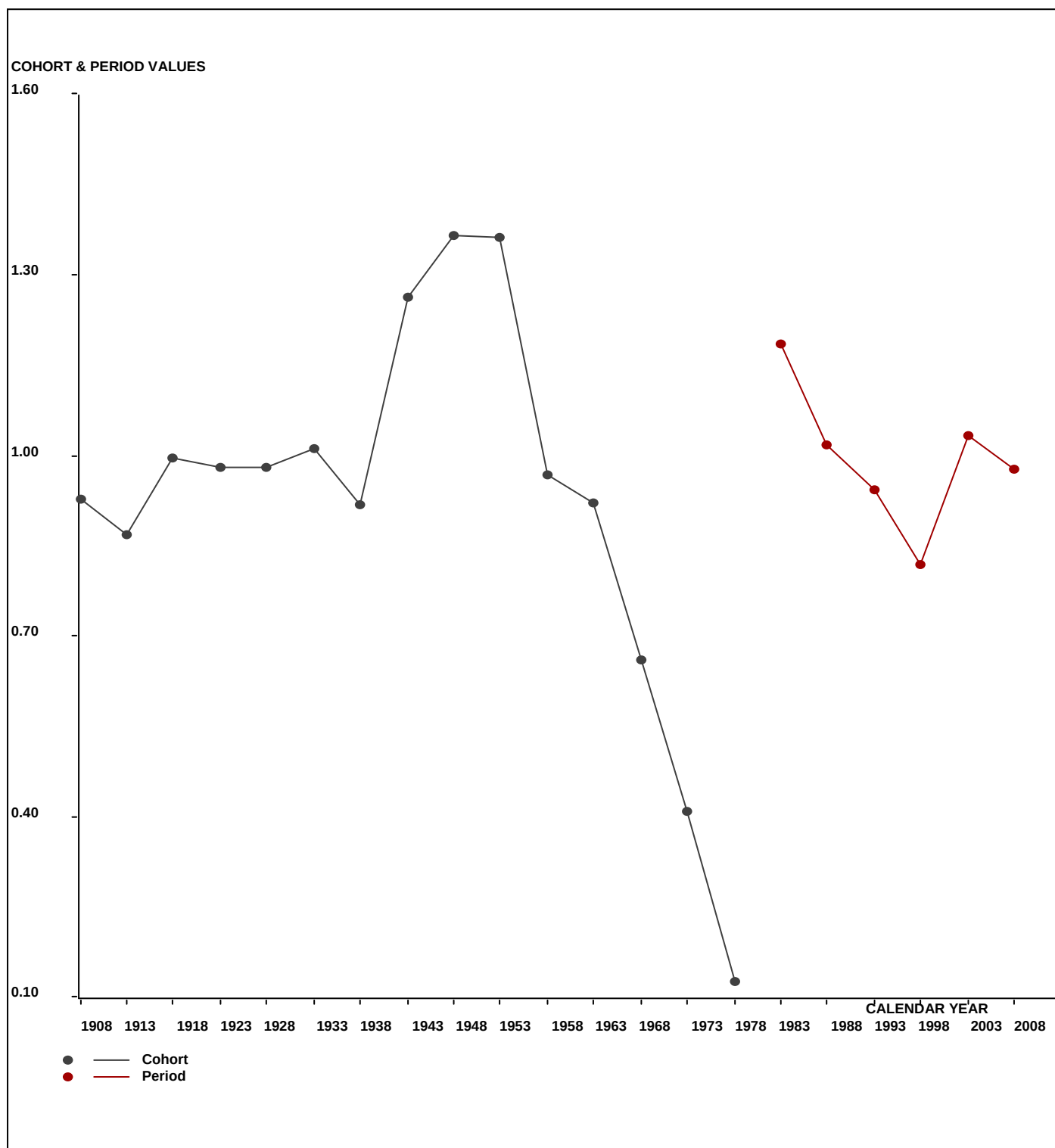
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	13.0	10.0	7.0	3.0	4.0	1.0	-	-	-	-
	EXP	11.8	8.2	8.6	5.6	4.0	2.8	2.1*	1.6*	1.2*	0.9*
	CHI	0.120	0.416	0.290	1.227	0.000	1.154	-	-	-	-
35 -	OBS	18.0	15.0	12.0	7.0	5.0	5.0	-	-	-	-
	EXP	16.4	13.2	10.1	9.8	9.4	5.0	3.5*	2.7*	2.0*	1.5*
	CHI	0.149	0.235	0.345	0.808	2.057	0.000	-	-	-	-
40 -	OBS	23.0	24.0	16.0	12.0	14.0	18.0	-	-	-	-
	EXP	22.9	21.3	18.9	13.4	18.9	13.6	7.3*	5.1*	3.8*	2.9*
	CHI	0.001	0.355	0.436	0.139	1.256	1.421	-	-	-	-
45 -	OBS	33.0	41.0	32.0	23.0	31.0	43.0	-	-	-	-
	EXP	26.9	38.7	39.3	32.5	33.6	35.7	25.7*	13.7*	9.6*	7.3*
	CHI	1.386	0.139	1.367	2.788	0.207	1.480	-	-	-	-
50 -	OBS	60.0	58.0	72.0	56.0	75.0	63.0	-	-	-	-
	EXP	59.2	45.3	70.9	67.0	81.3	63.2	67.0*	48.1*	25.7*	18.0*
	CHI	0.012	3.592	0.017	1.806	0.491	0.001	-	-	-	-
55 -	OBS	93.0	94.0	69.0	99.0	137.0	140.0	-	-	-	-
	EXP	117.3	82.8	69.2	100.6	139.1	127.1	98.7*	104.4*	75.0*	40.1*
	CHI	5.027	1.514	0.000	0.026	0.033	1.313	-	-	-	-
60 -	OBS	185.0	171.0	128.0	119.0	209.0	247.0	-	-	-	-
	EXP	186.5	175.3	135.4	105.5	225.2	233.2	213.2*	165.6*	175.5*	126.3*
	CHI	0.012	0.106	0.402	1.719	1.161	0.820	-	-	-	-
65 -	OBS	269.0	306.0	277.0	221.0	252.0	413.0	-	-	-	-
	EXP	280.5	293.3	299.6	217.0	249.5	399.7	413.8*	379.7*	295.7*	314.2*
	CHI	0.469	0.546	1.707	0.072	0.025	0.443	-	-	-	-
70 -	OBS	639.0	412.0	507.0	501.0	522.0	408.0	-	-	-	-
	EXP	615.8	433.0	502.2	478.4	515.4	447.6	720.2*	747.4*	690.4*	539.4*
	CHI	0.877	1.022	0.046	1.069	0.085	3.504	-	-	-	-
75 -	OBS	952.0	795.0	661.0	693.0	1017.0	803.0	-	-	-	-
	EXP	952.0	819.0	630.0	709.5	992.9	819.4	715.5*	1163.5*	1213.4*	1131.8*
	CHI	0.000	0.705	1.525	0.381	0.587	0.329	-	-	-	-
30-79	OBS	2285.0	1926.0	1781.0	1734.0	2266.0	2141.0	-	-	-	-
	EXP	2289.2	1930.1	1784.1	1739.4	2269.2	2147.4	2266.8*	2631.6*	2492.3*	2182.4*
	O/E	0.998	0.998	0.998	0.997	0.999	0.997	-	-	-	-

Osmond and Gardner Modelling

Austria COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

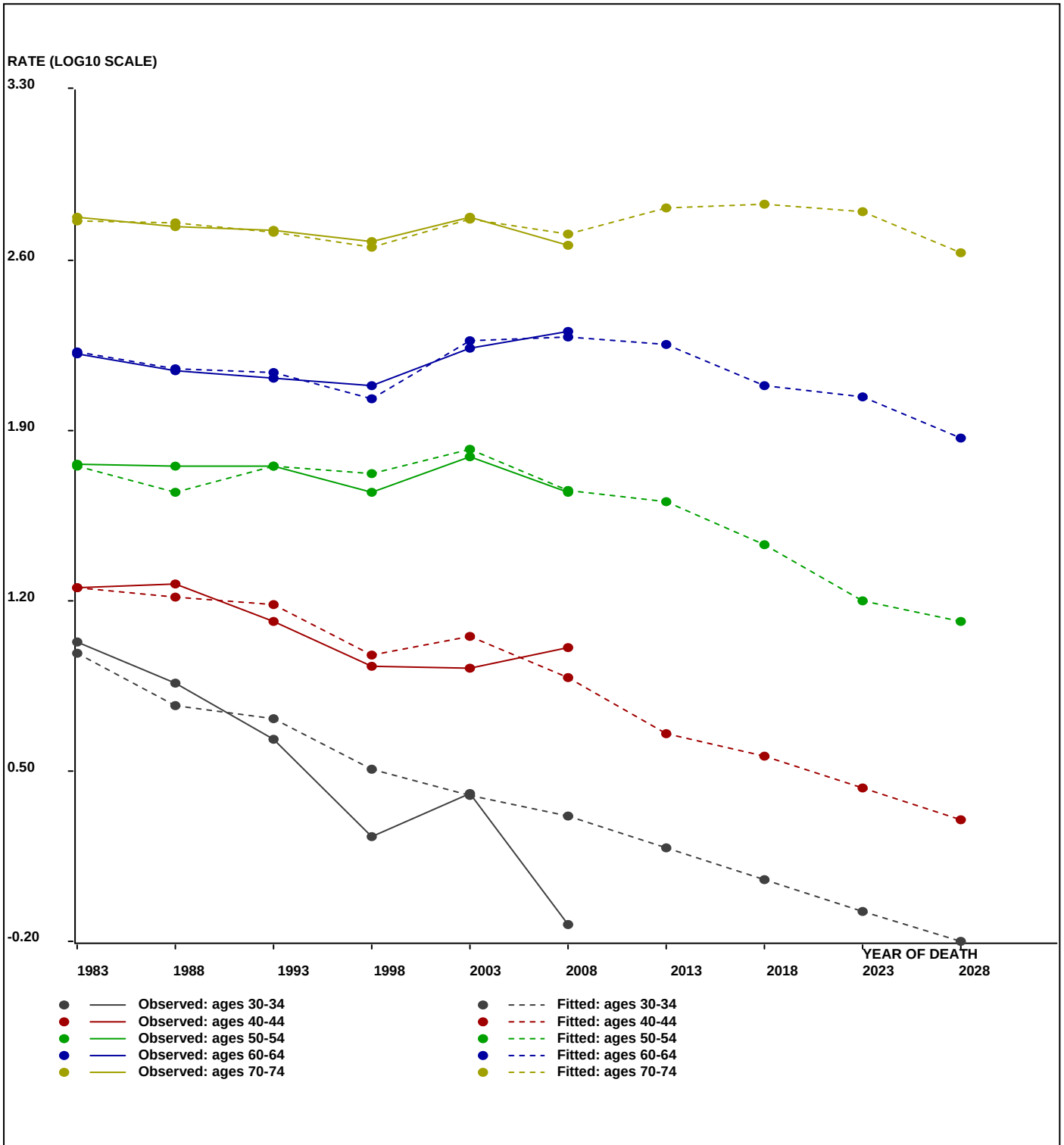


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Austria COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Austria COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	1.5	2.6	4.5	14.5	40.3	70.6	180.1	350.5	652.5	892.5
2016	PRE	1.1	1.9	3.7	8.5	27.2	63.6	121.0	331.1	667.3	1158.2
2021	PRE	0.8	1.4	2.7	6.9	15.9	42.9	108.9	222.3	630.4	1184.5
2026	PRE	0.6	1.0	2.0	5.1	13.1	25.2	73.6	200.2	423.4	1118.9

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	2.1	3.5	7.3	25.7	67.0	98.7	213.2	413.8	720.2	715.5
2016	PRE	1.6	2.7	5.1	13.7	48.1	104.4	165.6	379.7	747.4	1163.5
2021	PRE	1.2	2.0	3.8	9.6	25.7	75.0	175.5	295.7	690.4	1213.4
2026	PRE	0.9	1.5	2.9	7.3	18.0	40.1	126.3	314.2	539.4	1131.8

Osmond and Gardner Modelling

Canada IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	14520.31	284.71	51	P, C	99.55	78996.05	0.0000
AGE-PERIOD	216.47	4.81	45	Cohort	69.55	1148.39	0.0000
AGE-COHORT	80.38	2.23	36	Period	18.00	426.43	0.0000
PERIOD-COHORT	154.83	3.87	40	Age	57.43	821.67	0.0000
FULL AGE-PERIOD-COHORT	65.91	2.06	32			349.68	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.954096	89.969700
35	2.379175	239.428123
40	2.746736	558.130604
45	3.025531	1060.550377
50	3.262738	1831.210152
55	3.441794	2765.627433
60	3.609812	4072.042974
65	3.758277	5731.616114
70	3.907410	8079.975896
75	4.067879	11691.747015

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.116226	1.306851
1986	0.054576	1.133904
1991	0.000232	1.000534
1996	-0.035478	0.921557
2001	-0.096307	0.801111
2006	-0.143265	0.719011

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.167102	1.469272
1911	0.151338	1.416896
1916	0.135409	1.365870
1921	0.085699	1.218146
1926	0.027753	1.065990
1931	-0.034560	0.923506
1936	-0.107027	0.781579
1941	-0.157110	0.696449
1946	-0.210404	0.616022
1951	-0.251306	0.560653
1956	-0.275527	0.530241
1961	-0.336871	0.460394
1966	-0.378624	0.418192
1971	-0.380576	0.416317
1976	-0.540529	0.288052

Osmond and Gardner Modelling

Canada IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	429.0	314.0	242.0	168.0	165.0	104.6
EXP	354.9	326.7	273.5	211.1	165.9	104.6
CHI	15.5	0.5	3.6	8.8	0.0	0.0
35 - OBS	1055.0	779.0	744.0	623.0	483.0	414.4
EXP	903.9	831.8	781.7	680.4	504.6	413.5
CHI	25.3	3.4	1.8	4.8	0.9	0.0
40 - OBS	2092.0	1880.0	1626.0	1522.0	1356.0	1141.7
EXP	1894.8	1838.6	1730.6	1689.9	1404.8	1083.7
CHI	20.5	0.9	6.3	16.7	1.7	3.1
45 - OBS	3796.0	3037.0	2953.0	2823.0	2746.0	2554.6
EXP	3511.3	3095.0	3076.2	3022.1	2804.5	2425.5
CHI	23.1	1.1	4.9	13.1	1.2	6.9
50 - OBS	7172.0	5252.0	4485.0	4433.0	4432.0	4591.0
EXP	6909.7	5181.6	4648.1	4820.6	4505.3	4332.1
CHI	10.0	1.0	5.7	31.2	1.2	15.5
55 - OBS	10977.0	8771.0	6850.0	6244.0	6229.0	6331.3
EXP	11304.4	8824.1	6780.9	6299.8	6203.6	6003.9
CHI	9.5	0.3	0.7	0.5	0.1	17.9
60 - OBS	15864.0	13618.0	11089.0	8765.0	7805.0	8207.9
EXP	16098.7	13708.9	10991.5	8807.4	7799.1	7950.1
CHI	3.4	0.6	0.9	0.2	0.0	8.4
65 - OBS	19786.0	17888.0	15726.0	13404.0	10088.0	9366.2
EXP	20168.3	17966.0	15633.6	13151.8	10039.0	9306.3
CHI	7.2	0.3	0.5	4.8	0.2	0.4
70 - OBS	22560.0	21099.0	19194.0	17899.0	14345.0	10944.1
EXP	22640.7	20950.5	19235.1	17593.6	14237.7	11396.3
CHI	0.3	1.1	0.1	5.3	0.8	17.9
75 - OBS	21609.0	21831.0	20942.0	20578.0	18042.0	14832.9
EXP	21609.0	21750.6	20713.6	20229.2	18029.5	15522.9
CHI	0.0	0.3	2.5	6.0	0.0	30.7

Osmond and Gardner Modelling

Canada IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	89.969700
35	239.428123
40	558.130604
45	1060.550377
50	1831.210152
55	2765.627433
60	4072.042974
65	5731.616114
70	8079.975896
75	11691.747015

PERIOD	EFFECT	LOWER	UPPER
% Period Change	89.7517	86.7517	92.7517

1981	1.306851		
1986	1.133904		
1991	1.000534		
1996	0.921557		
2001	0.801111		
2006	0.719011		
2011	0.645324	0.623754	0.666894
2016	0.579189	0.541117	0.618556
2021	0.519832	0.469428	0.573721
2026	0.466558	0.407236	0.532135

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.469272	1.000000	
1911	1.416896	2.000000	
1916	1.365870	4.000000	
1921	1.218146	8.000000	
1926	1.065990	16.000000	
1931	0.923506	32.000000	
1936	0.781579	64.000000	
1941	0.696449	128.000000	
1946	0.616022	256.000000	
1951	0.560653	512.000000	
1956	0.530241	1024.000000	
1961	0.460394	2048.000000	
1966	0.418192	4096.000000	
1971	0.416317	8192.000000	
1976	0.374747	EXTRAPOLATION	0.288052
1981	0.346020	EXTRAPOLATION	
1986	0.319495	EXTRAPOLATION	
1991	0.295004	EXTRAPOLATION	
1996	0.272390	EXTRAPOLATION	

Osmond and Gardner Modelling

**Canada IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	79.7	52.0	36.7	27.6	29.8	18.6	-	-	-	-
	EXP	65.9	54.1	41.4	34.7	30.0	24.2	20.1*	16.6*	13.8*	11.4*
	Elow							19.4	15.6	12.5	10.0
	Eup							20.8	17.8	15.2	13.0
35	OBS	225.0	142.5	120.9	93.0	76.8	71.8	-	-	-	-
	EXP	192.8	152.2	127.0	101.6	80.2	71.7	57.9*	48.0*	39.8*	33.0*
	Elow							56.0	44.8	35.9	28.8
	Eup							59.8	51.2	43.9	37.6
40	OBS	560.9	398.6	294.2	245.6	198.7	176.8	-	-	-	-
	EXP	508.0	389.9	313.1	272.7	205.9	167.8	149.9*	121.1*	100.4*	83.2*
	Elow							144.9	113.2	90.7	72.6
	Eup							155.0	129.4	110.8	94.9
45	OBS	1171.1	821.8	627.5	511.9	441.1	369.8	-	-	-	-
	EXP	1083.3	837.5	653.7	548.0	450.5	351.1	286.2*	255.7*	206.6*	171.2*
	Elow							276.6	238.9	186.6	149.4
	Eup							295.8	273.1	228.0	195.3
50	OBS	2293.9	1644.9	1231.2	956.0	809.1	739.9	-	-	-	-
	EXP	2210.1	1622.9	1276.0	1039.6	822.5	698.1	544.1*	443.5*	396.3*	320.2*
	Elow							525.9	414.4	357.9	279.5
	Eup							562.2	473.7	437.4	365.2
55	OBS	3741.2	2878.6	2184.7	1759.3	1370.4	1175.7	-	-	-	-
	EXP	3852.8	2896.1	2162.7	1775.0	1364.8	1114.9	946.3*	737.5*	601.2*	537.2*
	Elow							914.7	689.0	542.9	468.9
	Eup							978.0	787.6	663.5	612.7
60	OBS	6387.9	4889.4	3796.0	2918.9	2273.7	1862.1	-	-	-	-
	EXP	6482.4	4922.0	3762.6	2933.0	2271.9	1803.6	1473.3*	1250.6*	974.6*	794.5*
	Elow							1424.0	1168.4	880.1	693.5
	Eup							1522.5	1335.6	1075.6	906.2
65	OBS	10036.9	7882.5	6149.2	4971.5	3606.3	2888.6	-	-	-	-
	EXP	10230.9	7916.9	6113.1	4878.0	3588.7	2870.1	2278.5*	1861.2*	1579.8*	1231.2*
	Elow							2202.4	1738.8	1426.7	1074.6
	Eup							2354.7	1987.7	1743.6	1404.2
70	OBS	14908.1	12602.7	9826.8	8075.3	6022.8	4360.5	-	-	-	-
	EXP	14961.5	12514.0	9847.8	7937.5	5977.8	4540.7	3631.4*	2882.9*	2354.9*	1998.9*
	Elow							3510.0	2693.4	2126.5	1744.7
	Eup							3752.8	3078.8	2599.0	2279.8
75	OBS	22449.6	18853.7	16154.1	13351.3	9991.4	7418.3	-	-	-	-
	EXP	22449.6	18784.3	15977.9	13125.0	9984.5	7763.4	5897.0*	4716.2*	3744.0*	3058.3*
	Elow							5699.9	4406.2	3381.0	2669.4
	Eup							6094.1	5036.7	4132.1	3488.2
30-79	OBS	3899.5	3094.3	2448.1	1978.2	1508.3	1190.5	-	-	-	-
	EXP	3902.8	3093.8	2447.6	1979.4	1507.8	1191.4	950.1*	770.9*	630.0*	519.4*
	Elow							918.3	720.2	568.9	453.3
	Eup							981.8	823.3	695.3	592.4

Osmond and Gardner Modelling

**Canada IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

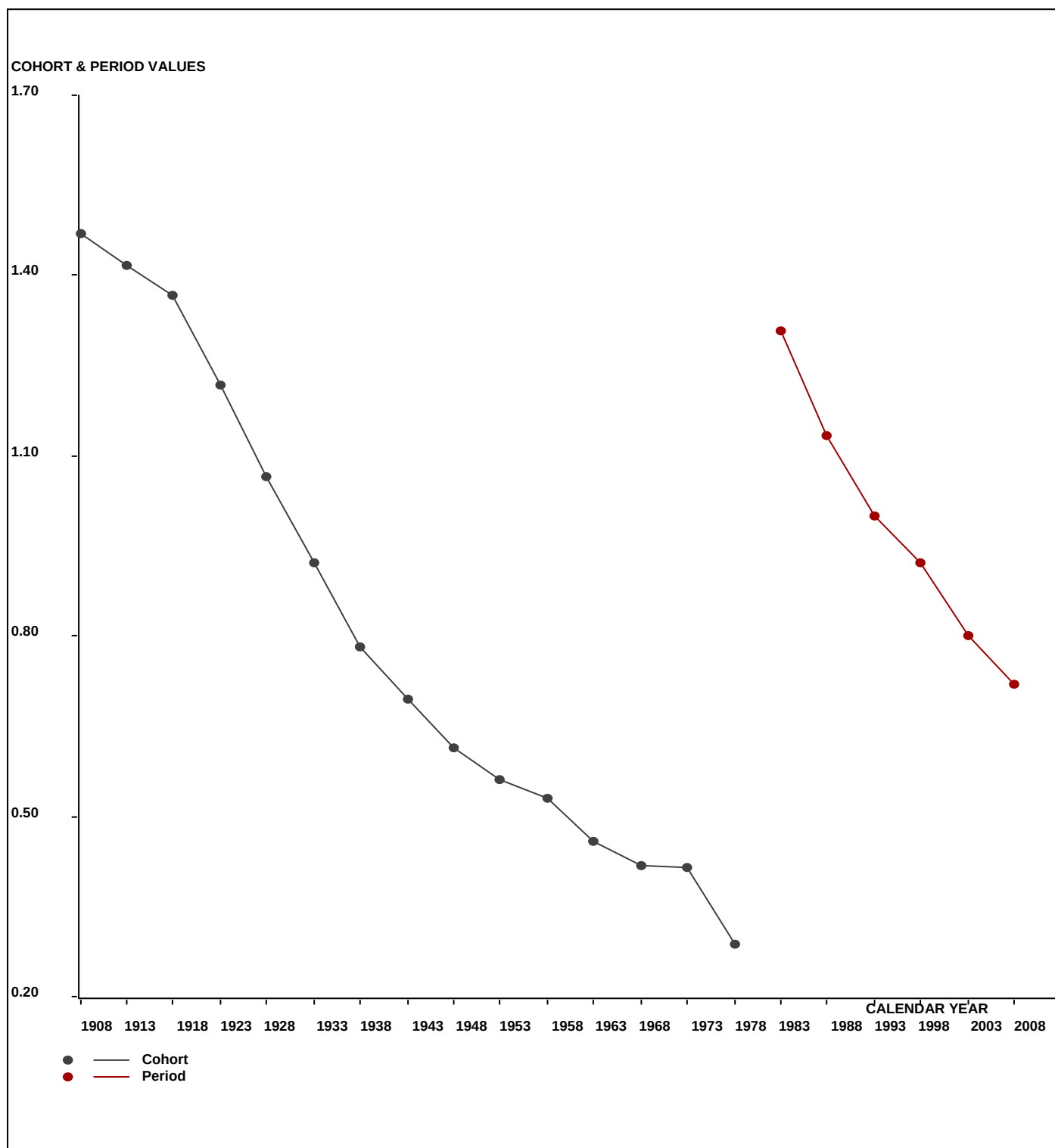
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	429.0	314.0	242.0	168.0	165.0	104.6	-	-	-	-
	EXP	354.9	326.7	273.5	211.1	165.9	136.1	122.2*	108.5*	91.0*	71.5*
	CHI	15.490	0.497	3.623	8.814	0.005	7.283	-	-	-	-
35 -	OBS	1055.0	779.0	744.0	623.0	483.0	414.4	-	-	-	-
	EXP	903.9	831.8	781.7	680.4	504.6	413.5	338.0*	300.9*	266.3*	223.0*
	CHI	25.250	3.353	1.821	4.844	0.926	0.002	-	-	-	-
40 -	OBS	2092.0	1880.0	1626.0	1522.0	1356.0	1141.7	-	-	-	-
	EXP	1894.8	1838.6	1730.6	1689.9	1404.8	1083.7	887.4*	723.7*	642.4*	567.2*
	CHI	20.532	0.934	6.327	16.681	1.695	3.106	-	-	-	-
45 -	OBS	3796.0	3037.0	2953.0	2823.0	2746.0	2554.6	-	-	-	-
	EXP	3511.3	3095.0	3076.2	3022.1	2804.5	2425.5	1870.2*	1531.7*	1248.5*	1106.5*
	CHI	23.089	1.087	4.932	13.117	1.221	6.868	-	-	-	-
50 -	OBS	7172.0	5252.0	4485.0	4433.0	4432.0	4591.0	-	-	-	-
	EXP	6909.7	5181.6	4648.1	4820.6	4505.3	4332.1	3752.3*	2893.9*	2374.2*	1935.5*
	CHI	9.954	0.957	5.725	31.170	1.192	15.469	-	-	-	-
55 -	OBS	10977.0	8771.0	6850.0	6244.0	6229.0	6331.3	-	-	-	-
	EXP	11304.4	8824.1	6780.9	6299.8	6203.6	6003.9	5783.3*	5013.7*	3872.5*	3183.7*
	CHI	9.481	0.320	0.703	0.493	0.104	17.858	-	-	-	-
60 -	OBS	15864.0	13618.0	11089.0	8765.0	7805.0	8207.9	-	-	-	-
	EXP	16098.7	13708.9	10991.5	8807.4	7799.1	7950.1	7691.1*	7421.5*	6444.4*	4987.6*
	CHI	3.420	0.603	0.866	0.204	0.005	8.358	-	-	-	-
65 -	OBS	19786.0	17888.0	15726.0	13404.0	10088.0	9366.2	-	-	-	-
	EXP	20168.3	17966.0	15633.6	13151.8	10039.0	9306.3	9504.6*	9211.9*	8921.0*	7770.4*
	CHI	7.247	0.338	0.546	4.836	0.239	0.385	-	-	-	-
70 -	OBS	22560.0	21099.0	19194.0	17899.0	14345.0	10944.1	-	-	-	-
	EXP	22640.7	20950.5	19235.1	17593.6	14237.7	11396.3	10698.9*	10988.8*	10701.2*	10421.8*
	CHI	0.288	1.052	0.088	5.301	0.808	17.943	-	-	-	-
75 -	OBS	21609.0	21831.0	20942.0	20578.0	18042.0	14832.9	-	-	-	-
	EXP	21609.0	21750.6	20713.6	20229.2	18029.5	15522.9	12593.0*	11956.4*	12379.8*	12135.3*
	CHI	0.000	0.297	2.518	6.013	0.009	30.673	-	-	-	-
30-79	OBS	105340.0	94469.0	83851.0	76459.0	65691.0	58488.7	-	-	-	-
	EXP	105395.6	94473.8	83864.8	76506.0	65694.1	58570.4	53241.1*	50151.1*	46941.2*	42402.5*
	O/E	0.999	1.000	1.000	0.999	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

Canada IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

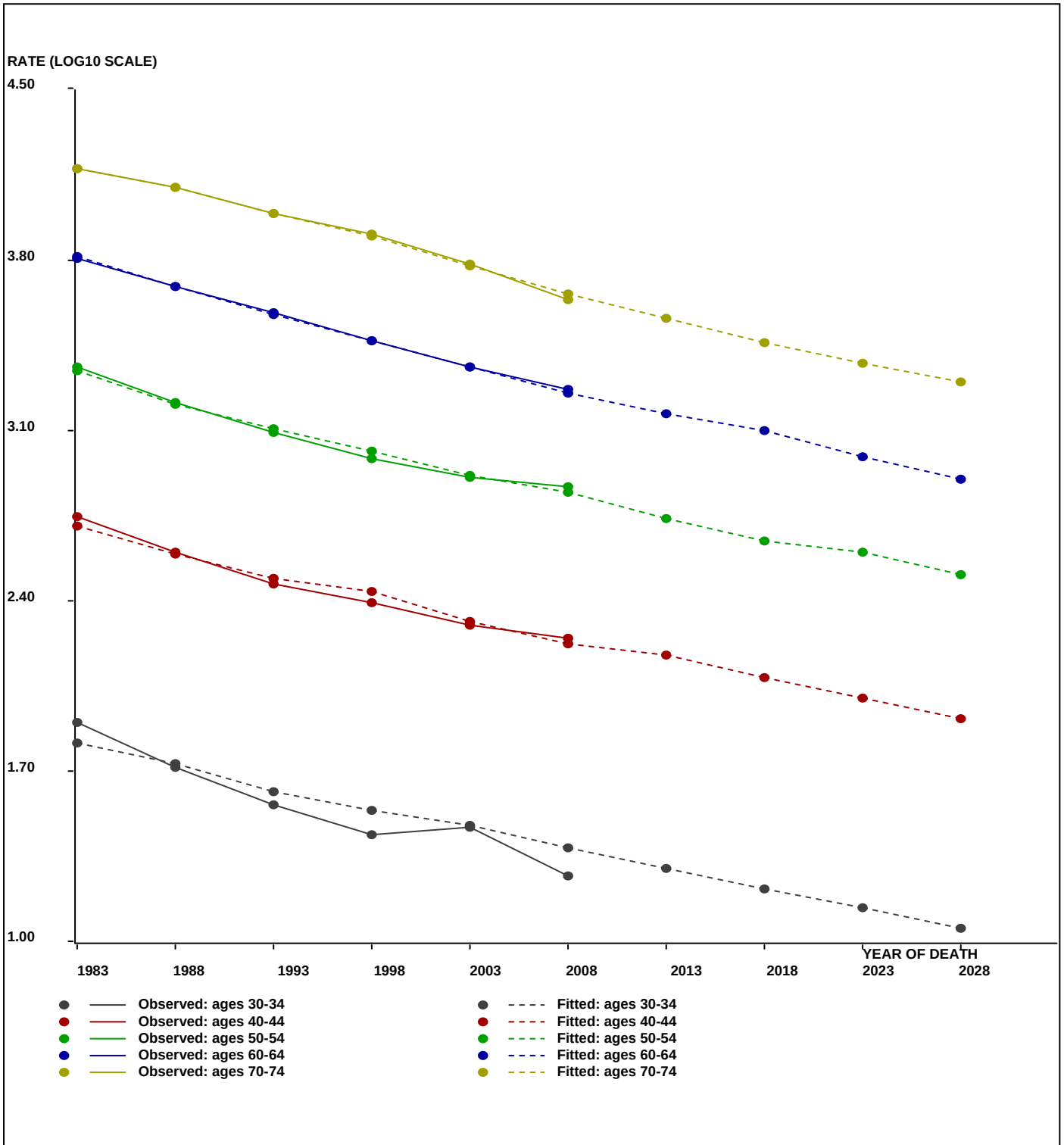


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Canada IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Canada IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	20.1	57.9	149.9	286.2	544.1	946.3	1473.3	2278.5	3631.4	5897.0
2016 PRE	16.6	48.0	121.1	255.7	443.5	737.5	1250.6	1861.2	2882.9	4716.2
2021 PRE	13.8	39.8	100.4	206.6	396.3	601.2	974.6	1579.8	2354.9	3744.0
2026 PRE	11.4	33.0	83.2	171.2	320.2	537.2	794.5	1231.2	1998.9	3058.3

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	122.2	338.0	887.4	1870.2	3752.3	5783.3	7691.1	9504.6	10698.9	12593.0
2016 PRE	108.5	300.9	723.7	1531.7	2893.9	5013.7	7421.5	9211.9	10988.8	11956.4
2021 PRE	91.0	266.3	642.4	1248.5	2374.2	3872.5	6444.4	8921.0	10701.2	12379.8
2026 PRE	71.5	223.0	567.2	1106.5	1935.5	3183.7	4987.6	7770.4	10421.8	12135.3

Osmond and Gardner Modelling

Canada Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	1807.79	35.45	51	P, C	99.27	9757.66	0.0000
AGE-PERIOD	24.37	0.54	45	Cohort	45.63	129.42	0.0000
AGE-COHORT	33.60	0.93	36	Period	60.56	178.22	0.0000
PERIOD-COHORT	20.48	0.51	40	Age	35.29	108.76	0.0000
FULL AGE-PERIOD-COHORT	13.25	0.41	32			70.35	0.0001

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.344519	22.106425
35	1.582325	38.223040
40	1.822334	66.425415
45	2.026011	106.172234
50	2.261754	182.706466
55	2.484964	305.466922
60	2.728808	535.559550
65	3.006419	1014.889007
70	3.289899	1949.389649
75	3.578424	3788.123841

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.146056	1.399769
1986	0.061522	1.152186
1991	0.026580	1.063113
1996	-0.017062	0.961474
2001	-0.104495	0.786148
2006	-0.187100	0.649981

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.050171	1.122461
1911	0.047567	1.115751
1916	0.047053	1.114430
1921	0.026419	1.062719
1926	0.006794	1.015768
1931	-0.011794	0.973208
1936	-0.046690	0.898070
1941	-0.068629	0.853829
1946	-0.099255	0.795691
1951	-0.092137	0.808840
1956	-0.097784	0.798391
1961	-0.114023	0.769090
1966	-0.217077	0.606628
1971	-0.178798	0.662525
1976	-0.199078	0.632299

Osmond and Gardner Modelling

Canada Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	143.0	130.0	122.0	66.0	56.0	51.0
EXP	134.7	122.8	119.3	78.5	63.7	51.0
CHI	0.5	0.4	0.1	2.0	0.9	0.0
35 - OBS	222.0	220.0	182.0	147.0	111.0	101.9
EXP	199.6	194.7	199.7	189.3	114.7	95.0
CHI	2.5	3.3	1.6	9.5	0.1	0.5
40 - OBS	320.0	277.0	334.0	284.0	255.0	183.6
EXP	296.1	287.2	315.7	315.9	274.1	169.1
CHI	1.9	0.4	1.1	3.2	1.3	1.2
45 - OBS	425.0	414.0	395.0	440.0	381.0	416.3
EXP	432.6	386.0	422.7	455.4	414.8	366.7
CHI	0.1	2.0	1.8	0.5	2.8	6.7
50 - OBS	770.0	585.0	604.0	618.0	620.0	656.7
EXP	778.2	603.6	604.1	648.2	636.4	588.3
CHI	0.1	0.6	0.0	1.4	0.4	7.9
55 - OBS	1257.0	1076.0	923.0	876.0	881.0	841.6
EXP	1274.4	1043.6	914.4	890.0	868.5	864.8
CHI	0.2	1.0	0.1	0.2	0.2	0.6
60 - OBS	1885.0	1756.0	1631.0	1411.0	1250.0	1250.6
EXP	1978.5	1745.8	1618.7	1388.7	1234.0	1220.9
CHI	4.4	0.1	0.1	0.4	0.2	0.7
65 - OBS	3170.0	2814.0	2798.0	2576.0	2006.0	1769.5
EXP	3120.9	2820.1	2802.8	2560.4	2004.4	1826.3
CHI	0.8	0.0	0.0	0.1	0.0	1.8
70 - OBS	4625.0	4136.0	4303.0	4223.0	3591.0	2849.1
EXP	4607.2	4190.6	4301.8	4219.9	3552.3	2856.0
CHI	0.1	0.7	0.0	0.0	0.4	0.0
75 - OBS	5729.0	5621.0	5823.0	6061.0	5471.0	4698.7
EXP	5729.0	5638.8	5818.2	5965.7	5462.4	4791.3
CHI	0.0	0.1	0.0	1.5	0.0	1.8

Osmond and Gardner Modelling

Canada Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	22.106425
35	38.223040
40	66.425415
45	106.172234
50	182.706466
55	305.466922
60	535.559550
65	1014.889007
70	1949.389649
75	3788.123841

PERIOD	EFFECT	LOWER	UPPER
% Period Change	82.6791	79.6791	85.6791

1981	1.399769		
1986	1.152186		
1991	1.063113		
1996	0.961474		
2001	0.786148		
2006	0.649981		
2011	0.537398	0.517899	0.556898
2016	0.444316	0.412657	0.477145
2021	0.367357	0.328802	0.408814
2026	0.303727	0.261986	0.350268

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.122461	1.000000	
1911	1.115751	2.000000	
1916	1.114430	4.000000	
1921	1.062719	8.000000	
1926	1.015768	16.000000	
1931	0.973208	32.000000	
1936	0.898070	64.000000	
1941	0.853829	128.000000	
1946	0.795691	256.000000	
1951	0.808840	512.000000	
1956	0.798391	1024.000000	
1961	0.769090	2048.000000	
1966	0.606628	4096.000000	
1971	0.662525	8192.000000	
1976	0.611208	EXTRAPOLATION	0.632299
1981	0.580579	EXTRAPOLATION	
1986	0.551485	EXTRAPOLATION	
1991	0.523849	EXTRAPOLATION	
1996	0.497598	EXTRAPOLATION	

Osmond and Gardner Modelling

**Canada Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	26.6	21.5	18.5	10.8	10.1	9.1	-	-	-	-
	EXP	25.0	20.3	18.1	12.9	11.5	8.8	6.9*	5.4*	4.3*	3.3*
	Elow							6.6	5.0	3.8	2.9
	Eup							7.1	5.8	4.7	3.9
35	OBS	47.3	40.3	29.6	21.9	17.6	17.7	-	-	-	-
	EXP	42.6	35.6	32.4	28.3	18.2	16.5	12.6*	9.9*	7.7*	6.1*
	Elow							12.1	9.2	6.9	5.2
	Eup							13.0	10.6	8.6	7.0
40	OBS	85.8	58.7	60.4	45.8	37.4	28.4	-	-	-	-
	EXP	79.4	60.9	57.1	51.0	40.2	26.2	23.7*	18.0*	14.2*	11.1*
	Elow							22.8	16.8	12.7	9.6
	Eup							24.5	19.4	15.8	12.8
45	OBS	131.1	112.0	83.9	79.8	61.2	60.3	-	-	-	-
	EXP	133.5	104.4	89.8	82.6	66.6	53.1	34.6*	31.3*	23.8*	18.7*
	Elow							33.4	29.0	21.3	16.1
	Eup							35.9	33.6	26.5	21.6
50	OBS	246.3	183.2	165.8	133.3	113.2	105.8	-	-	-	-
	EXP	248.9	189.1	165.8	139.8	116.2	94.8	75.5*	49.2*	44.5*	33.9*
	Elow							72.8	45.7	39.8	29.3
	Eup							78.3	52.9	49.5	39.1
55	OBS	428.4	353.1	294.4	246.8	193.8	156.3	-	-	-	-
	EXP	434.3	342.5	291.6	250.8	191.1	160.6	131.1*	104.4*	68.1*	61.5*
	Elow							126.3	96.9	60.9	53.0
	Eup							135.8	112.1	75.8	70.9
60	OBS	759.0	630.5	558.3	469.9	364.1	283.7	-	-	-	-
	EXP	796.7	626.8	554.1	462.4	359.5	277.0	232.8*	190.0*	151.3*	98.7*
	Elow							224.3	176.4	135.4	85.1
	Eup							241.2	204.0	168.4	113.8
65	OBS	1608.1	1240.0	1094.1	955.4	717.1	545.7	-	-	-	-
	EXP	1583.2	1242.7	1096.0	949.6	716.5	563.2	434.0*	364.7*	297.7*	237.1*
	Elow							418.2	338.7	266.4	204.5
	Eup							449.7	391.7	331.3	273.4
70	OBS	3056.3	2470.5	2203.0	1905.2	1507.7	1135.2	-	-	-	-
	EXP	3044.5	2503.1	2202.4	1903.8	1491.5	1137.9	894.5*	689.2*	579.2*	472.7*
	Elow							862.0	640.1	518.4	407.7
	Eup							926.9	740.1	644.6	545.1
75	OBS	5951.8	4854.4	4491.7	3932.5	3029.8	2350.0	-	-	-	-
	EXP	5951.8	4869.8	4488.0	3870.6	3025.0	2396.2	1828.2*	1437.1*	1107.3*	930.6*
	Elow							1761.9	1334.7	991.1	802.7
	Eup							1894.6	1543.3	1232.2	1073.2
30-79	OBS	684.2	550.2	491.5	423.2	329.3	258.1	-	-	-	-
	EXP	684.8	550.6	491.5	423.1	329.2	258.2	201.8*	159.5*	126.7*	101.9*
	Elow							194.5	148.2	113.4	87.9
	Eup							209.1	171.3	141.0	117.5

Osmond and Gardner Modelling

**Canada Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

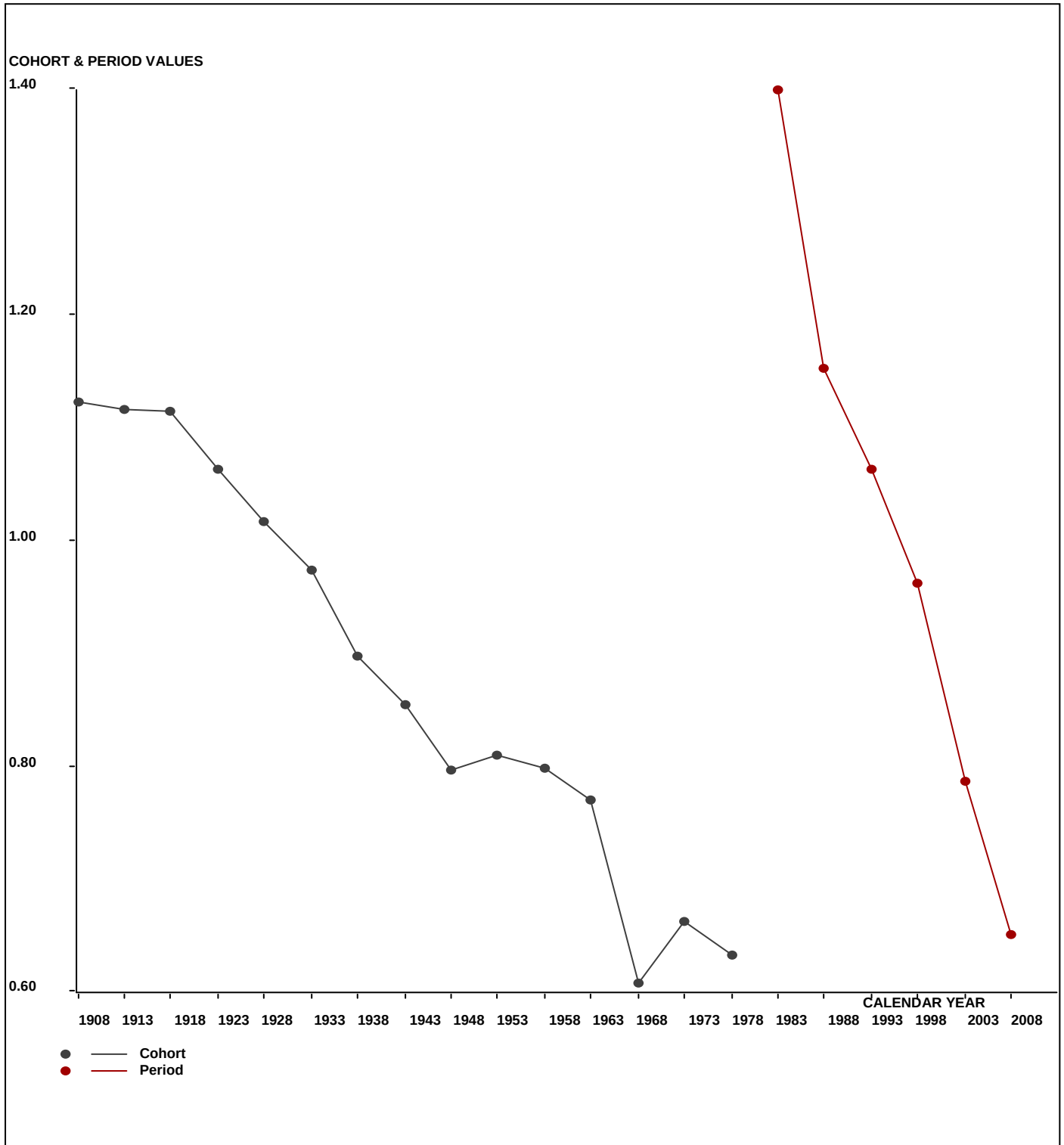
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	143.0	130.0	122.0	66.0	56.0	51.0	-	-	-	-
	EXP	134.7	122.8	119.3	78.5	63.7	49.3	41.9*	35.3*	28.0*	20.9*
	CHI	0.507	0.418	0.062	1.995	0.923	0.059	-	-	-	-
35 -	OBS	222.0	220.0	182.0	147.0	111.0	101.9	-	-	-	-
	EXP	199.6	194.7	199.7	189.3	114.7	95.0	73.3*	61.8*	51.9*	41.1*
	CHI	2.503	3.297	1.563	9.458	0.118	0.507	-	-	-	-
40 -	OBS	320.0	277.0	334.0	284.0	255.0	183.6	-	-	-	-
	EXP	296.1	287.2	315.7	315.9	274.1	169.1	140.0*	107.8*	90.7*	75.9*
	CHI	1.926	0.362	1.057	3.231	1.328	1.239	-	-	-	-
45 -	OBS	425.0	414.0	395.0	440.0	381.0	416.3	-	-	-	-
	EXP	432.6	386.0	422.7	455.4	414.8	366.7	226.2*	187.2*	144.1*	121.0*
	CHI	0.134	2.034	1.810	0.519	2.762	6.712	-	-	-	-
50 -	OBS	770.0	585.0	604.0	618.0	620.0	656.7	-	-	-	-
	EXP	778.2	603.6	604.1	648.2	636.4	588.3	520.8*	321.3*	266.4*	205.0*
	CHI	0.086	0.574	0.000	1.404	0.422	7.944	-	-	-	-
55 -	OBS	1257.0	1076.0	923.0	876.0	881.0	841.6	-	-	-	-
	EXP	1274.4	1043.6	914.4	890.0	868.5	864.8	801.0*	709.7*	438.5*	364.3*
	CHI	0.236	1.003	0.081	0.220	0.179	0.624	-	-	-	-
60 -	OBS	1885.0	1756.0	1631.0	1411.0	1250.0	1250.6	-	-	-	-
	EXP	1978.5	1745.8	1618.7	1388.7	1234.0	1220.9	1215.3*	1127.5*	1000.6*	619.5*
	CHI	4.418	0.060	0.094	0.359	0.206	0.722	-	-	-	-
65 -	OBS	3170.0	2814.0	2798.0	2576.0	2006.0	1769.5	-	-	-	-
	EXP	3120.9	2820.1	2802.8	2560.4	2004.4	1826.3	1810.3*	1805.2*	1680.8*	1496.3*
	CHI	0.771	0.013	0.008	0.095	0.001	1.765	-	-	-	-
70 -	OBS	4625.0	4136.0	4303.0	4223.0	3591.0	2849.1	-	-	-	-
	EXP	4607.2	4190.6	4301.8	4219.9	3552.3	2856.0	2635.3*	2627.0*	2632.2*	2464.6*
	CHI	0.069	0.711	0.000	0.002	0.422	0.017	-	-	-	-
75 -	OBS	5729.0	5621.0	5823.0	6061.0	5471.0	4698.7	-	-	-	-
	EXP	5729.0	5638.8	5818.2	5965.7	5462.4	4791.3	3904.2*	3643.3*	3661.3*	3692.7*
	CHI	0.000	0.056	0.004	1.523	0.014	1.788	-	-	-	-
30-79	OBS	18546.0	17029.0	17115.0	16702.0	14622.0	12819.0	-	-	-	-
	EXP	18551.3	17033.2	17117.4	16711.9	14625.3	12827.7	11368.2*	10626.1*	9994.3*	9101.3*
	O/E	1.000	1.000	1.000	0.999	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

Canada Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

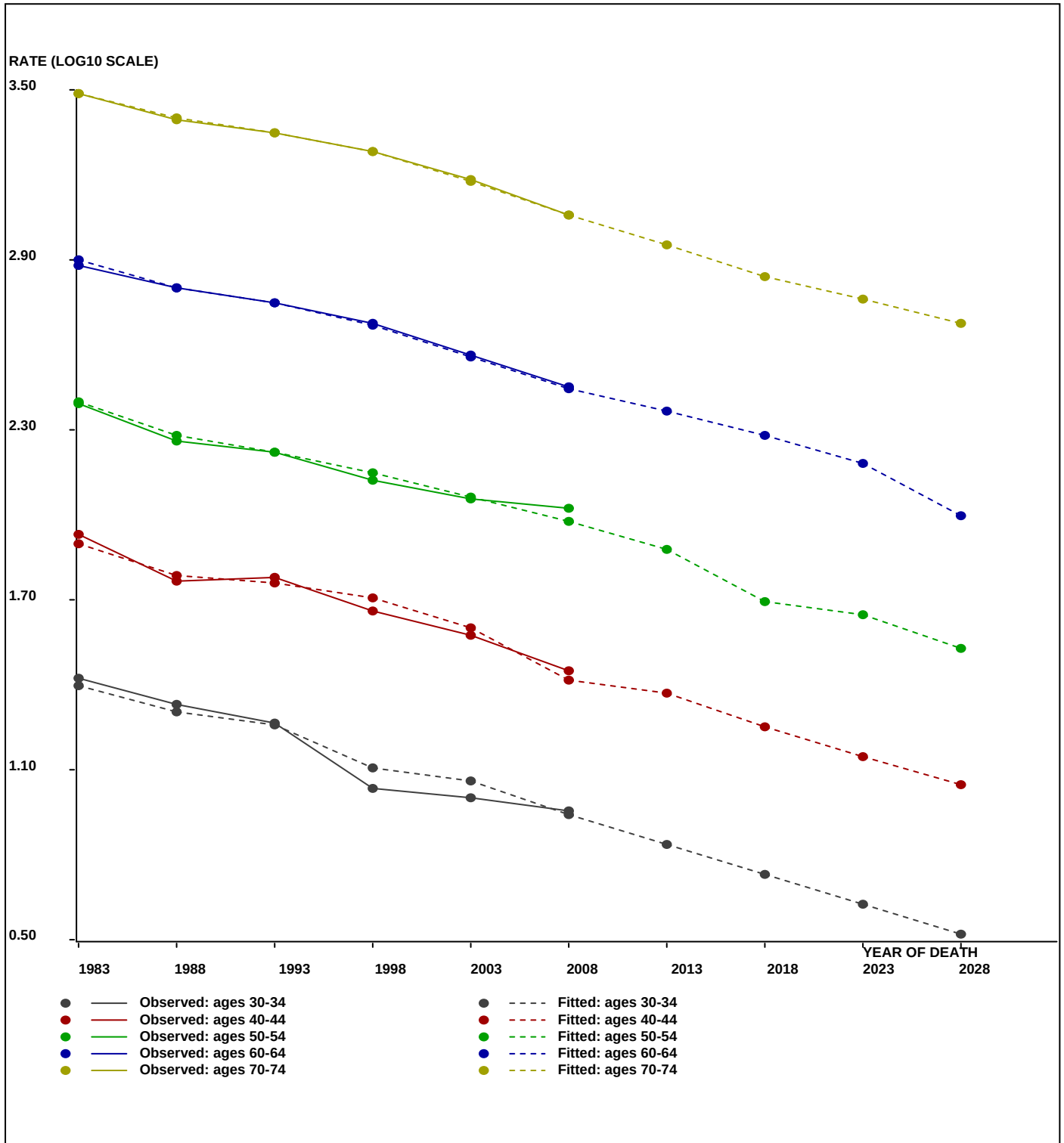


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Canada Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Canada Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	6.9	12.6	23.7	34.6	75.5	131.1	232.8	434.0	894.5	1828.2
2016	PRE	5.4	9.9	18.0	31.3	49.2	104.4	190.0	364.7	689.2	1437.1
2021	PRE	4.3	7.7	14.2	23.8	44.5	68.1	151.3	297.7	579.2	1107.3
2026	PRE	3.3	6.1	11.1	18.7	33.9	61.5	98.7	237.1	472.7	930.6

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	41.9	73.3	140.0	226.2	520.8	801.0	1215.3	1810.3	2635.3	3904.2
2016	PRE	35.3	61.8	107.8	187.2	321.3	709.7	1127.5	1805.2	2627.0	3643.3
2021	PRE	28.0	51.9	90.7	144.1	266.4	438.5	1000.6	1680.8	2632.2	3661.3
2026	PRE	20.9	41.1	75.9	121.0	205.0	364.3	619.5	1496.3	2464.6	3692.7

Osmond and Gardner Modelling

Canada Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	1595.63	31.29	51	P, C	99.64	8537.74	0.0000
AGE-PERIOD	303.17	6.74	45	Cohort	98.11	1611.31	0.0000
AGE-COHORT	21.74	0.60	36	Period	73.68	115.34	0.0000
PERIOD-COHORT	75.40	1.89	40	Age	92.41	400.20	0.0000
FULL AGE-PERIOD-COHORT	5.72	0.18	32			30.38	0.5486

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.229974	16.981432
35	1.704474	50.637686
40	2.157750	143.796905
45	2.534300	342.216071
50	2.853387	713.488541
55	3.116214	1306.814363
60	3.324647	2111.771150
65	3.481032	3027.136887
70	3.601991	3999.366981
75	3.683445	4824.416131

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.027081	1.064342
1986	0.033758	1.080832
1991	0.021712	1.051265
1996	-0.008360	0.980935
2001	-0.027700	0.938210
2006	-0.043357	0.904988

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.027198	1.064628
1911	0.041923	1.101343
1916	0.054242	1.133031
1921	0.059457	1.146720
1926	0.053819	1.131927
1931	0.030674	1.073184
1936	-0.018332	0.958667
1941	-0.063916	0.863146
1946	-0.133082	0.736068
1951	-0.200040	0.630899
1956	-0.240998	0.574119
1961	-0.319808	0.478842
1966	-0.446827	0.357415
1971	-0.568334	0.270188
1976	-0.849486	0.141421

Osmond and Gardner Modelling

Canada Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	63.0	47.0	57.0	45.0	26.0	12.2
EXP	61.4	63.6	56.4	36.3	23.8	12.2
CHI	0.0	4.4	0.0	2.1	0.2	0.0
35 - OBS	184.0	182.0	192.0	163.0	110.0	69.1
EXP	186.0	188.7	188.1	159.3	106.8	71.4
CHI	0.0	0.2	0.1	0.1	0.1	0.1
40 - OBS	496.0	520.0	553.0	507.0	438.0	287.1
EXP	492.7	539.5	527.2	501.8	440.9	300.3
CHI	0.0	0.7	1.3	0.1	0.0	0.6
45 - OBS	1054.0	1217.0	1299.0	1139.0	1161.0	1023.1
EXP	1131.8	1179.8	1246.2	1168.1	1147.5	1024.6
CHI	5.4	1.2	2.2	0.7	0.2	0.0
50 - OBS	2519.0	2431.0	2329.0	2398.0	2299.0	2291.8
EXP	2548.0	2360.4	2358.3	2388.9	2313.4	2300.3
CHI	0.3	2.1	0.4	0.0	0.1	0.0
55 - OBS	4690.0	4653.0	4124.0	3840.0	4066.0	4039.6
EXP	4619.4	4618.6	4129.4	3927.0	4102.0	4018.1
CHI	1.1	0.3	0.0	1.9	0.3	0.1
60 - OBS	6354.0	7158.0	6971.0	5977.0	5936.0	6194.6
EXP	6400.8	7195.9	6959.9	5963.4	5870.5	6200.7
CHI	0.3	0.2	0.0	0.0	0.7	0.0
65 - OBS	7259.0	8525.0	9141.0	8630.0	7567.0	7675.4
EXP	7196.3	8514.2	9212.1	8592.0	7616.4	7667.2
CHI	0.5	0.0	0.5	0.2	0.3	0.0
70 - OBS	7108.0	8136.0	9426.0	9851.0	9579.0	8752.9
EXP	7094.3	8199.6	9417.0	9842.8	9591.0	8708.6
CHI	0.0	0.5	0.0	0.0	0.0	0.2
75 - OBS	5262.0	6636.0	7450.0	8391.0	9281.0	9325.7
EXP	5262.0	6649.7	7449.6	8364.1	9251.7	9368.7
CHI	0.0	0.0	0.0	0.1	0.1	0.2

Osmond and Gardner Modelling

Canada Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	16.981432
35	50.637686
40	143.796905
45	342.216071
50	713.488541
55	1306.814363
60	2111.771150
65	3027.136887
70	3999.366981
75	4824.416131

PERIOD	EFFECT	LOWER	UPPER
% Period Change	96.4590	93.4590	99.4590
1981	1.064342		
1986	1.080832		
1991	1.051265		
1996	0.980935		
2001	0.938210		
2006	0.904988		
2011	0.872943	0.845793	0.900092
2016	0.842032	0.790470	0.895223
2021	0.812216	0.738765	0.890380
2026	0.783455	0.690443	0.885563

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.064628	1.000000	
1911	1.101343	2.000000	
1916	1.133031	4.000000	
1921	1.146720	8.000000	
1926	1.131927	16.000000	
1931	1.073184	32.000000	
1936	0.958667	64.000000	
1941	0.863146	128.000000	
1946	0.736068	256.000000	
1951	0.630899	512.000000	
1956	0.574119	1024.000000	
1961	0.478842	2048.000000	
1966	0.357415	4096.000000	
1971	0.270188	8192.000000	
1976	0.226094	EXTRAPOLATION	0.141421
1981	0.182488	EXTRAPOLATION	
1986	0.147292	EXTRAPOLATION	
1991	0.118884	EXTRAPOLATION	
1996	0.095955	EXTRAPOLATION	

Osmond and Gardner Modelling

**Canada Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	11.7	7.8	8.6	7.4	4.7	2.2	-	-	-	-
	EXP	11.4	10.5	8.5	6.0	4.3	3.5	2.7*	2.1*	1.6*	1.3*
	Elow							2.6	2.0	1.5	1.1
	Eup							2.8	2.2	1.8	1.4
35	OBS	39.2	33.3	31.2	24.3	17.5	12.0	-	-	-	-
	EXP	39.7	34.5	30.6	23.8	17.0	12.4	10.0*	7.8*	6.1*	4.7*
	Elow							9.7	7.3	5.5	4.2
	Eup							10.3	8.3	6.6	5.3
40	OBS	133.0	110.3	100.0	81.8	64.2	44.5	-	-	-	-
	EXP	132.1	114.4	95.4	81.0	64.6	46.5	33.9*	27.4*	21.3*	16.6*
	Elow							32.9	25.7	19.4	14.6
	Eup							35.0	29.1	23.4	18.8
45	OBS	325.2	329.3	276.0	206.5	186.5	148.1	-	-	-	-
	EXP	349.2	319.3	264.8	211.8	184.3	148.3	106.8*	77.9*	62.8*	48.9*
	Elow							103.5	73.1	57.2	43.1
	Eup							110.1	82.8	68.9	55.3
50	OBS	805.7	761.4	639.4	517.1	419.7	369.3	-	-	-	-
	EXP	815.0	739.3	647.4	515.2	422.3	370.7	298.2*	214.7*	156.6*	126.4*
	Elow							289.0	201.6	142.4	111.4
	Eup							307.5	228.3	171.6	142.9
55	OBS	1598.5	1527.1	1315.3	1082.0	894.5	750.1	-	-	-	-
	EXP	1574.4	1515.8	1317.0	1106.5	902.5	746.1	654.9*	526.9*	379.4*	276.6*
	Elow							634.6	494.6	345.1	243.8
	Eup							675.3	560.2	415.9	312.7
60	OBS	2558.6	2570.0	2386.3	1990.4	1729.2	1405.3	-	-	-	-
	EXP	2577.4	2583.6	2382.5	1985.9	1710.1	1406.7	1163.0*	1020.9*	821.3*	591.3*
	Elow							1126.9	958.4	747.0	521.1
	Eup							1199.2	1085.4	900.4	668.4
65	OBS	3682.3	3756.6	3574.4	3200.8	2705.0	2367.1	-	-	-	-
	EXP	3650.5	3751.9	3602.2	3186.7	2722.7	2364.6	1945.1*	1608.1*	1411.6*	1135.6*
	Elow							1884.6	1509.7	1283.9	1000.8
	Eup							2005.6	1709.7	1547.4	1283.6
70	OBS	4697.1	4859.7	4825.9	4444.4	4021.8	3487.4	-	-	-	-
	EXP	4688.1	4897.7	4821.3	4440.7	4026.9	3469.8	3013.4*	2478.8*	2049.4*	1798.9*
	Elow							2919.7	2327.0	1864.0	1585.3
	Eup							3107.2	2635.4	2246.6	2033.4
75	OBS	5466.7	5731.0	5746.7	5444.2	5139.7	4664.0	-	-	-	-
	EXP	5466.7	5742.8	5746.4	5426.8	5123.5	4685.6	4037.4*	3506.4*	2884.3*	2384.6*
	Elow							3911.8	3291.7	2623.4	2101.5
	Eup							4162.9	3727.9	3161.8	2695.4
30-79	OBS	1297.1	1305.0	1226.9	1078.7	945.9	814.9	-	-	-	-
	EXP	1297.5	1304.1	1227.4	1079.2	946.0	814.9	687.3*	571.9*	467.0*	376.5*
	Elow							665.9	536.9	424.8	331.8
	Eup							708.7	608.1	511.9	425.6

Osmond and Gardner Modelling

**Canada Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

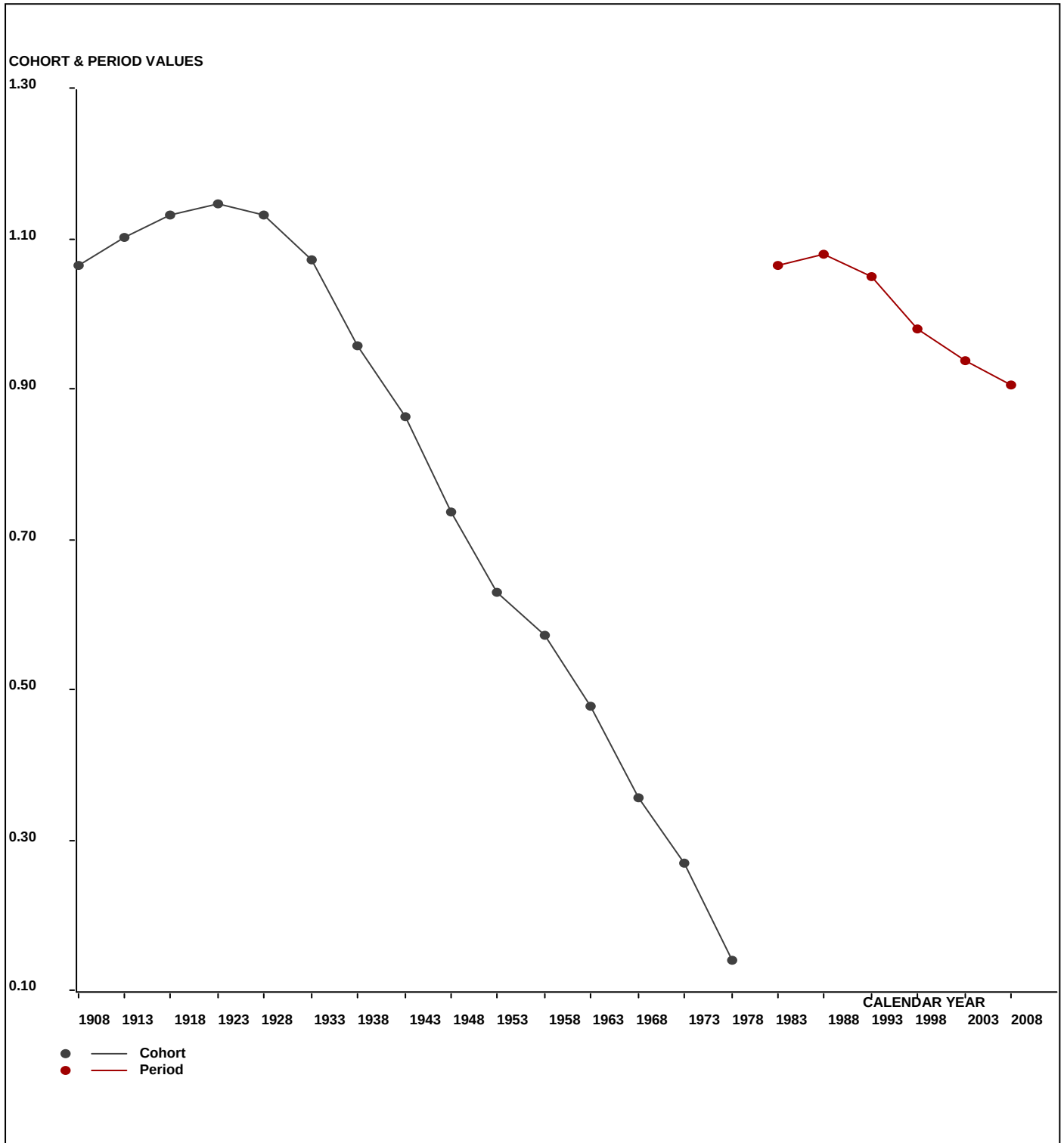
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	63.0	47.0	57.0	45.0	26.0	12.2	-	-	-	-
	EXP	61.4	63.6	56.4	36.3	23.8	19.5	16.5*	13.7*	10.8*	8.0*
	CHI	0.043	4.355	0.006	2.110	0.203	2.736	-	-	-	-
35 -	OBS	184.0	182.0	192.0	163.0	110.0	69.1	-	-	-	-
	EXP	186.0	188.7	188.1	159.3	106.8	71.4	58.3*	48.8*	40.6*	31.9*
	CHI	0.022	0.238	0.081	0.085	0.095	0.076	-	-	-	-
40 -	OBS	496.0	520.0	553.0	507.0	438.0	287.1	-	-	-	-
	EXP	492.7	539.5	527.2	501.8	440.9	300.3	200.7*	163.5*	136.4*	113.1*
	CHI	0.022	0.705	1.264	0.054	0.018	0.584	-	-	-	-
45 -	OBS	1054.0	1217.0	1299.0	1139.0	1161.0	1023.1	-	-	-	-
	EXP	1131.8	1179.8	1246.2	1168.1	1147.5	1024.6	697.7*	466.3*	379.8*	316.2*
	CHI	5.353	1.173	2.239	0.723	0.158	0.002	-	-	-	-
50 -	OBS	2519.0	2431.0	2329.0	2398.0	2299.0	2291.8	-	-	-	-
	EXP	2548.0	2360.4	2358.3	2388.9	2313.4	2300.3	2056.9*	1401.0*	938.0*	764.0*
	CHI	0.330	2.111	0.364	0.035	0.089	0.031	-	-	-	-
55 -	OBS	4690.0	4653.0	4124.0	3840.0	4066.0	4039.6	-	-	-	-
	EXP	4619.4	4618.6	4129.4	3927.0	4102.0	4018.1	4002.5*	3582.2*	2443.5*	1639.5*
	CHI	1.078	0.257	0.007	1.926	0.316	0.115	-	-	-	-
60 -	OBS	6354.0	7158.0	6971.0	5977.0	5936.0	6194.6	-	-	-	-
	EXP	6400.8	7195.9	6959.9	5963.4	5870.5	6200.7	6071.5*	6058.5*	5431.1*	3712.2*
	CHI	0.343	0.200	0.018	0.031	0.730	0.006	-	-	-	-
65 -	OBS	7259.0	8525.0	9141.0	8630.0	7567.0	7675.4	-	-	-	-
	EXP	7196.3	8514.2	9212.1	8592.0	7616.4	7667.2	8113.7*	7959.4*	7970.9*	7167.6*
	CHI	0.545	0.014	0.549	0.168	0.320	0.009	-	-	-	-
70 -	OBS	7108.0	8136.0	9426.0	9851.0	9579.0	8752.9	-	-	-	-
	EXP	7094.3	8199.6	9417.0	9842.8	9591.0	8708.6	8878.2*	9448.5*	9313.0*	9379.1*
	CHI	0.026	0.493	0.009	0.007	0.015	0.226	-	-	-	-
75 -	OBS	5262.0	6636.0	7450.0	8391.0	9281.0	9325.7	-	-	-	-
	EXP	5262.0	6649.7	7449.6	8364.1	9251.7	9368.7	8621.8*	8889.3*	9536.9*	9462.2*
	CHI	0.000	0.028	0.000	0.086	0.093	0.198	-	-	-	-
30-79	OBS	34989.0	39505.0	41542.0	40941.0	40463.0	39671.5	-	-	-	-
	EXP	34992.9	39510.0	41544.2	40943.5	40464.0	39679.4	38717.8*	38031.3*	36201.0*	32593.7*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Canada Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

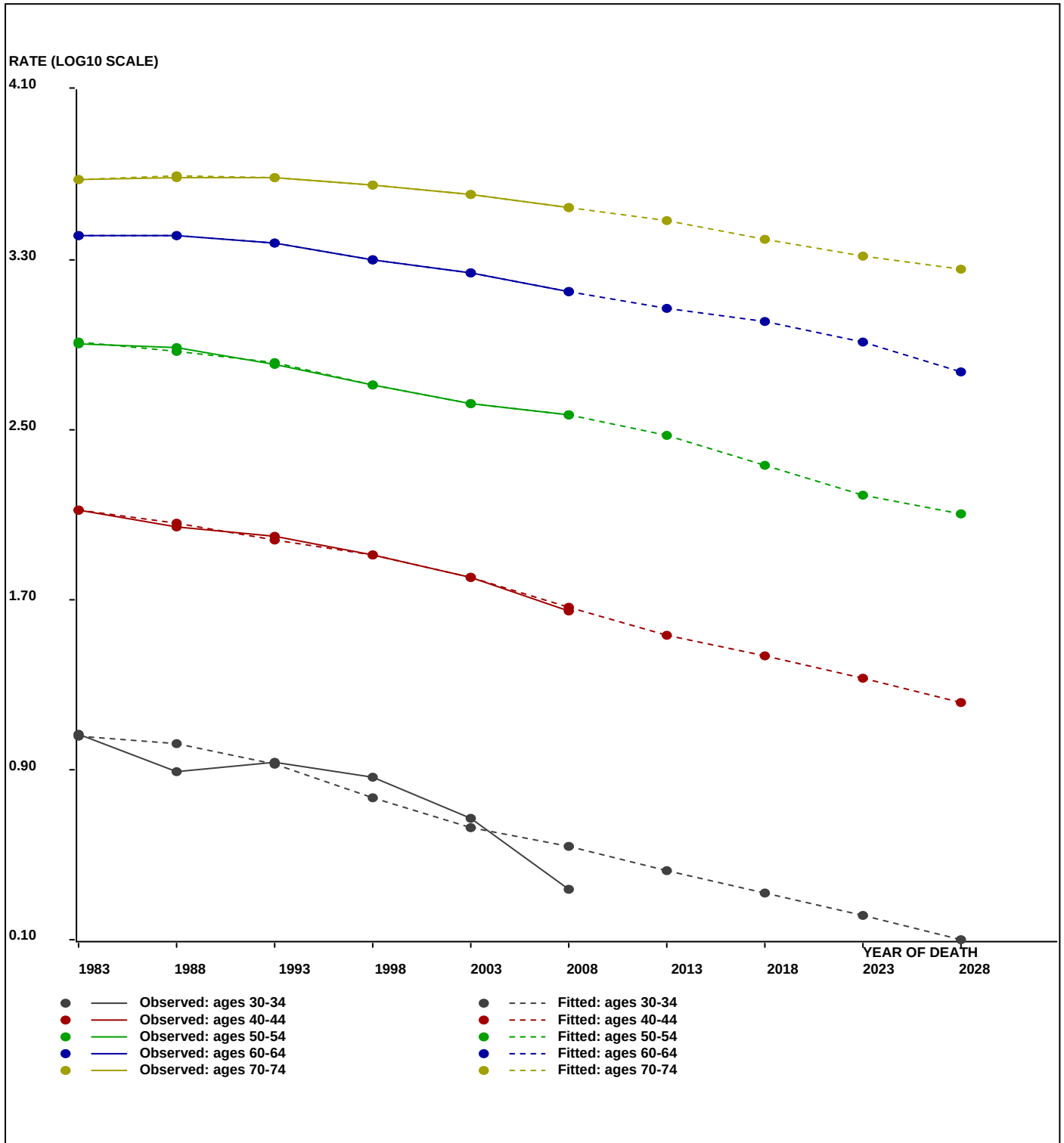


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Canada Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Canada Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	2.7	10.0	33.9	106.8	298.2	654.9	1163.0	1945.1	3013.4	4037.4
2016	PRE	2.1	7.8	27.4	77.9	214.7	526.9	1020.9	1608.1	2478.8	3506.4
2021	PRE	1.6	6.1	21.3	62.8	156.6	379.4	821.3	1411.6	2049.4	2884.3
2026	PRE	1.3	4.7	16.6	48.9	126.4	276.6	591.3	1135.6	1798.9	2384.6

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	16.5	58.3	200.7	697.7	2056.9	4002.5	6071.5	8113.7	8878.2	8621.8
2016	PRE	13.7	48.8	163.5	466.3	1401.0	3582.2	6058.5	7959.4	9448.5	8889.3
2021	PRE	10.8	40.6	136.4	379.8	938.0	2443.5	5431.1	7970.9	9313.0	9536.9
2026	PRE	8.0	31.9	113.1	316.2	764.0	1639.5	3712.2	7167.6	9379.1	9462.2

Osmond and Gardner Modelling

Canada COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	1121.56	21.99	51	P, C	98.09	6014.71	0.0000
AGE-PERIOD	67.58	1.50	45	Cohort	68.38	359.55	0.0000
AGE-COHORT	28.49	0.79	36	Period	24.98	151.41	0.0000
PERIOD-COHORT	30.52	0.76	40	Age	29.97	162.56	0.0000
FULL AGE-PERIOD-COHORT	21.37	0.67	32			113.78	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.846408	7.021141
35	0.999574	9.990190
40	1.197412	15.754751
45	1.575525	37.629241
50	1.934553	86.010719
55	2.299842	199.453701
60	2.669510	467.207992
65	3.005636	1013.061663
70	3.293420	1965.257724
75	3.554638	3586.226467

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.087825	1.224122
1986	0.065073	1.161645
1991	0.031132	1.074316
1996	-0.018498	0.958302
2001	-0.080388	0.831020
2006	-0.109793	0.776617

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.008386	1.019498
1911	0.046631	1.113349
1916	0.055447	1.136180
1921	0.043290	1.104816
1926	0.017171	1.040329
1931	-0.028275	0.936969
1936	-0.083899	0.824331
1941	-0.096646	0.800486
1946	-0.157804	0.695339
1951	-0.164839	0.684166
1956	-0.180175	0.660427
1961	-0.237331	0.578987
1966	-0.264516	0.543856
1971	-0.334303	0.463124
1976	-0.309752	0.490058

Osmond and Gardner Modelling

Canada COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	34.0	36.0	27.0	14.0	17.0	15.0
EXP	31.7	32.5	28.8	22.3	14.9	15.0
CHI	0.2	0.4	0.1	3.1	0.3	0.0
35 - OBS	38.0	46.0	43.0	34.0	33.0	18.4
EXP	39.9	43.4	43.6	37.1	28.4	20.7
CHI	0.1	0.2	0.0	0.3	0.7	0.3
40 - OBS	79.0	61.0	46.0	37.0	58.0	44.5
EXP	57.6	60.0	64.0	61.8	51.7	43.0
CHI	8.0	0.0	5.1	9.9	0.8	0.1
45 - OBS	148.0	137.0	121.0	123.0	118.0	115.0
EXP	123.1	129.3	132.3	136.1	128.6	116.9
CHI	5.0	0.5	1.0	1.3	0.9	0.0
50 - OBS	356.0	283.0	239.0	215.0	243.0	298.7
EXP	308.4	263.0	269.4	265.8	267.9	273.7
CHI	7.3	1.5	3.4	9.7	2.3	2.3
55 - OBS	757.0	685.0	543.0	474.0	517.0	615.2
EXP	745.3	661.5	553.8	543.0	523.9	570.7
CHI	0.2	0.8	0.2	8.8	0.1	3.5
60 - OBS	1547.0	1561.0	1409.0	1085.0	1023.0	1174.4
EXP	1569.2	1572.6	1373.8	1108.3	1066.9	1112.1
CHI	0.3	0.1	0.9	0.5	1.8	3.5
65 - OBS	2772.0	2876.0	2859.0	2475.0	1931.0	2142.8
EXP	2777.6	2950.5	2895.6	2452.5	1941.3	2042.1
CHI	0.0	1.9	0.5	0.2	0.1	5.0
70 - OBS	3964.0	4279.0	4556.0	4398.0	3743.0	3153.7
EXP	4053.1	4342.5	4556.1	4342.7	3644.6	3157.7
CHI	2.0	0.9	0.0	0.7	2.7	0.0
75 - OBS	4308.0	5458.0	5743.0	5947.0	5579.0	4979.4
EXP	4308.0	5370.6	5674.8	5852.1	5598.6	5217.8
CHI	0.0	1.4	0.8	1.5	0.1	10.9

Osmond and Gardner Modelling

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 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	7.021141
35	9.990190
40	15.754751
45	37.629241
50	86.010719
55	199.453701
60	467.207992
65	1013.061663
70	1965.257724
75	3586.226467

PERIOD	EFFECT	LOWER	UPPER
% Period Change	93.4534	90.4534	96.4534
1981	1.224122		
1986	1.161645		
1991	1.074316		
1996	0.958302		
2001	0.831020		
2006	0.776617		
2011	0.725776	0.702477	0.749074
2016	0.678262	0.635415	0.722508
2021	0.633859	0.574755	0.696884
2026	0.592364	0.519885	0.672168

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.019498	1.000000	
1911	1.113349	2.000000	
1916	1.136180	4.000000	
1921	1.104816	8.000000	
1926	1.040329	16.000000	
1931	0.936969	32.000000	
1936	0.824331	64.000000	
1941	0.800486	128.000000	
1946	0.695339	256.000000	
1951	0.684166	512.000000	
1956	0.660427	1024.000000	
1961	0.578987	2048.000000	
1966	0.543856	4096.000000	
1971	0.463124	8192.000000	
1976	0.429338	EXTRAPOLATION	0.490058
1981	0.389620	EXTRAPOLATION	
1986	0.353577	EXTRAPOLATION	
1991	0.320868	EXTRAPOLATION	
1996	0.291185	EXTRAPOLATION	

Osmond and Gardner Modelling

**Canada COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	6.3	6.0	4.1	2.3	3.1	2.7	-	-	-	-
	EXP	5.9	5.4	4.4	3.7	2.7	2.3	2.0*	1.7*	1.4*	1.2*
	Elow							1.9	1.6	1.3	1.1
	Eup							2.0	1.8	1.6	1.4
35	OBS	8.1	8.4	7.0	5.1	5.2	3.2	-	-	-	-
	EXP	8.5	7.9	7.1	5.5	4.5	3.6	3.1*	2.6*	2.2*	1.9*
	Elow							3.0	2.5	2.0	1.7
	Eup							3.2	2.8	2.5	2.2
40	OBS	21.2	12.9	8.3	6.0	8.5	6.9	-	-	-	-
	EXP	15.4	12.7	11.6	10.0	7.6	6.7	5.3*	4.6*	3.9*	3.3*
	Elow							5.1	4.3	3.5	2.9
	Eup							5.5	4.9	4.3	3.7
45	OBS	45.7	37.1	25.7	22.3	19.0	16.6	-	-	-	-
	EXP	38.0	35.0	28.1	24.7	20.7	16.9	14.9*	11.8*	10.2*	8.7*
	Elow							14.4	11.1	9.3	7.6
	Eup							15.3	12.6	11.3	9.9
50	OBS	113.9	88.6	65.6	46.4	44.4	48.1	-	-	-	-
	EXP	98.7	82.4	74.0	57.3	48.9	44.1	36.1*	31.7*	25.2*	21.9*
	Elow							35.0	29.7	22.9	19.2
	Eup							37.3	33.8	27.8	24.8
55	OBS	258.0	224.8	173.2	133.6	113.7	114.2	-	-	-	-
	EXP	254.0	217.1	176.6	153.0	115.3	106.0	95.6*	78.3*	68.8*	54.7*
	Elow							92.5	73.4	62.3	48.0
	Eup							98.7	83.4	75.6	62.1
60	OBS	622.9	560.5	482.3	361.3	298.0	266.4	-	-	-	-
	EXP	631.9	564.6	470.3	369.1	310.8	252.3	232.0*	209.3*	171.5*	150.5*
	Elow							224.5	196.1	155.5	132.1
	Eup							239.4	222.9	188.5	170.8
65	OBS	1406.2	1267.3	1117.9	918.0	690.3	660.9	-	-	-	-
	EXP	1409.0	1300.2	1132.2	909.6	694.0	629.8	511.3*	470.1*	424.1*	347.5*
	Elow							494.8	440.4	384.5	304.9
	Eup							527.7	500.8	466.3	394.3
70	OBS	2619.5	2555.9	2332.6	1984.2	1571.5	1256.5	-	-	-	-
	EXP	2678.4	2593.8	2332.6	1959.3	1530.2	1258.1	1141.8*	926.9*	852.3*	768.8*
	Elow							1105.1	868.3	772.8	674.8
	Eup							1178.4	987.3	937.0	872.4
75	OBS	4475.6	4713.6	4430.0	3858.5	3089.6	2490.3	-	-	-	-
	EXP	4475.6	4638.1	4377.4	3796.9	3100.4	2609.6	2145.6*	1947.1*	1580.6*	1453.4*
	Elow							2076.7	1824.1	1433.2	1275.6
	Eup							2214.4	2074.1	1737.8	1649.2
30-79	OBS	517.5	497.9	446.5	373.2	298.0	253.7	-	-	-	-
	EXP	517.7	498.0	446.7	374.2	298.2	253.2	216.8*	189.8*	163.4*	144.4*
	Elow							209.9	177.8	148.1	126.7
	Eup							223.8	202.2	179.6	163.9

Osmond and Gardner Modelling

**Canada COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

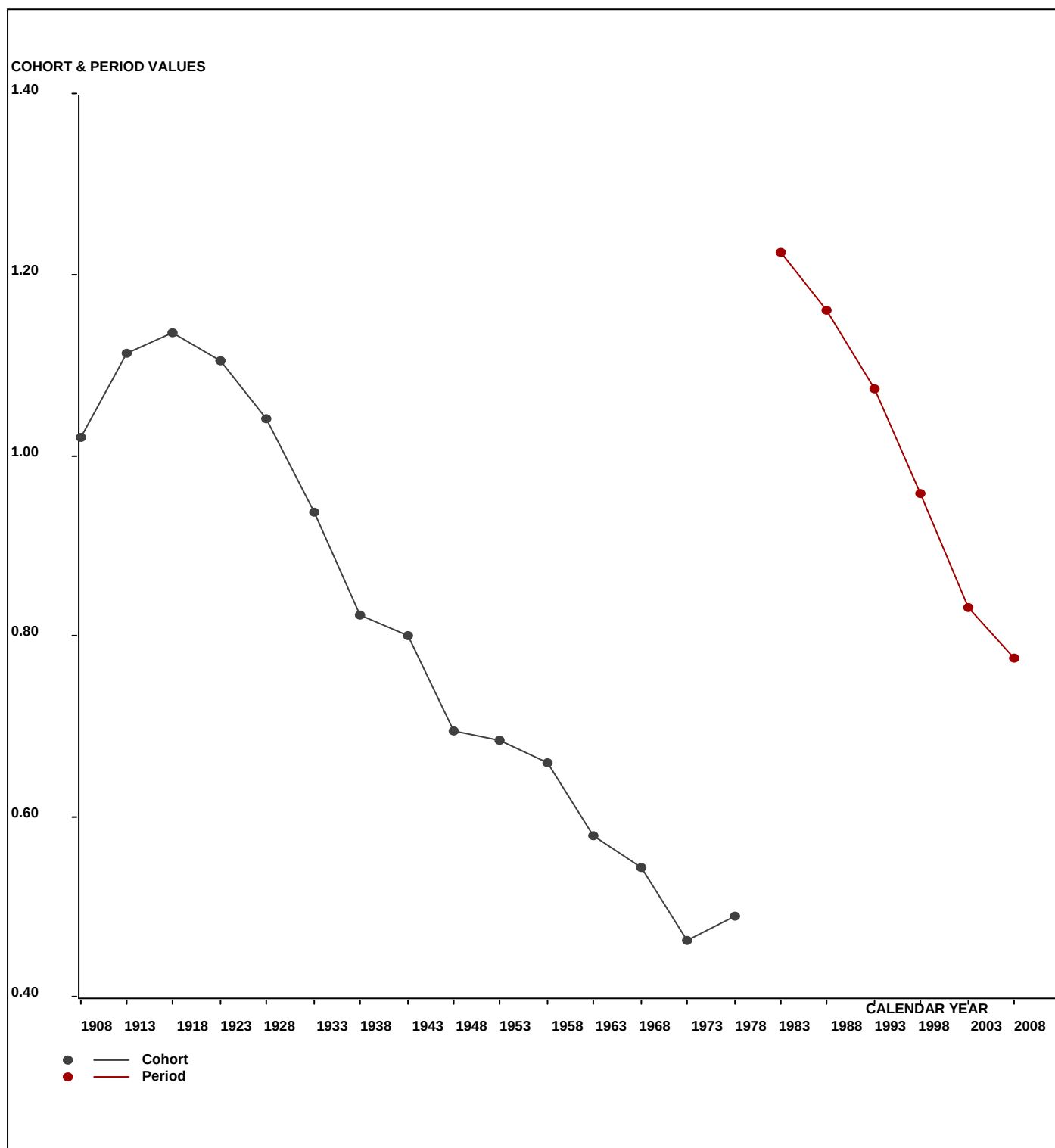
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	34.0	36.0	27.0	14.0	17.0	15.0	-	-	-	-
	EXP	31.7	32.5	28.8	22.3	14.9	13.1	12.1*	11.0*	9.4*	7.6*
	CHI	0.174	0.369	0.115	3.079	0.284	0.263	-	-	-	-
35 -	OBS	38.0	46.0	43.0	34.0	33.0	18.4	-	-	-	-
	EXP	39.9	43.4	43.6	37.1	28.4	20.7	18.2*	16.6*	15.0*	12.8*
	CHI	0.088	0.157	0.009	0.263	0.744	0.262	-	-	-	-
40 -	OBS	79.0	61.0	46.0	37.0	58.0	44.5	-	-	-	-
	EXP	57.6	60.0	64.0	61.8	51.7	43.0	31.3*	27.4*	24.9*	22.5*
	CHI	7.966	0.016	5.068	9.941	0.760	0.055	-	-	-	-
45 -	OBS	148.0	137.0	121.0	123.0	118.0	115.0	-	-	-	-
	EXP	123.1	129.3	132.3	136.1	128.6	116.9	97.1*	70.8*	61.9*	56.1*
	CHI	5.046	0.458	0.962	1.255	0.868	0.031	-	-	-	-
50 -	OBS	356.0	283.0	239.0	215.0	243.0	298.7	-	-	-	-
	EXP	308.4	263.0	269.4	265.8	267.9	273.7	249.3*	207.0*	151.3*	132.2*
	CHI	7.336	1.526	3.438	9.697	2.309	2.276	-	-	-	-
55 -	OBS	757.0	685.0	543.0	474.0	517.0	615.2	-	-	-	-
	EXP	745.3	661.5	553.8	543.0	523.9	570.7	584.3*	532.5*	442.9*	324.3*
	CHI	0.185	0.838	0.211	8.773	0.090	3.468	-	-	-	-
60 -	OBS	1547.0	1561.0	1409.0	1085.0	1023.0	1174.4	-	-	-	-
	EXP	1569.2	1572.6	1373.8	1108.3	1066.9	1112.1	1211.1*	1242.0*	1133.8*	944.9*
	CHI	0.314	0.085	0.899	0.489	1.806	3.490	-	-	-	-
65 -	OBS	2772.0	2876.0	2859.0	2475.0	1931.0	2142.8	-	-	-	-
	EXP	2777.6	2950.5	2895.6	2452.5	1941.3	2042.1	2132.6*	2326.8*	2394.7*	2192.9*
	CHI	0.011	1.882	0.462	0.206	0.055	4.968	-	-	-	-
70 -	OBS	3964.0	4279.0	4556.0	4398.0	3743.0	3153.7	-	-	-	-
	EXP	4053.1	4342.5	4556.1	4342.7	3644.6	3157.7	3363.9*	3533.0*	3872.9*	4008.5*
	CHI	1.961	0.928	0.000	0.704	2.654	0.005	-	-	-	-
75 -	OBS	4308.0	5458.0	5743.0	5947.0	5579.0	4979.4	-	-	-	-
	EXP	4308.0	5370.6	5674.8	5852.1	5598.6	5217.8	4581.9*	4936.3*	5226.4*	5767.1*
	CHI	0.000	1.424	0.819	1.540	0.069	10.894	-	-	-	-
30-79	OBS	14003.0	15422.0	15586.0	14802.0	13262.0	12557.1	-	-	-	-
	EXP	14013.8	15425.8	15592.4	14821.6	13266.8	12567.9	12281.6*	12903.2*	13333.2*	13469.1*
	O/E	0.999	1.000	1.000	0.999	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

Canada COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

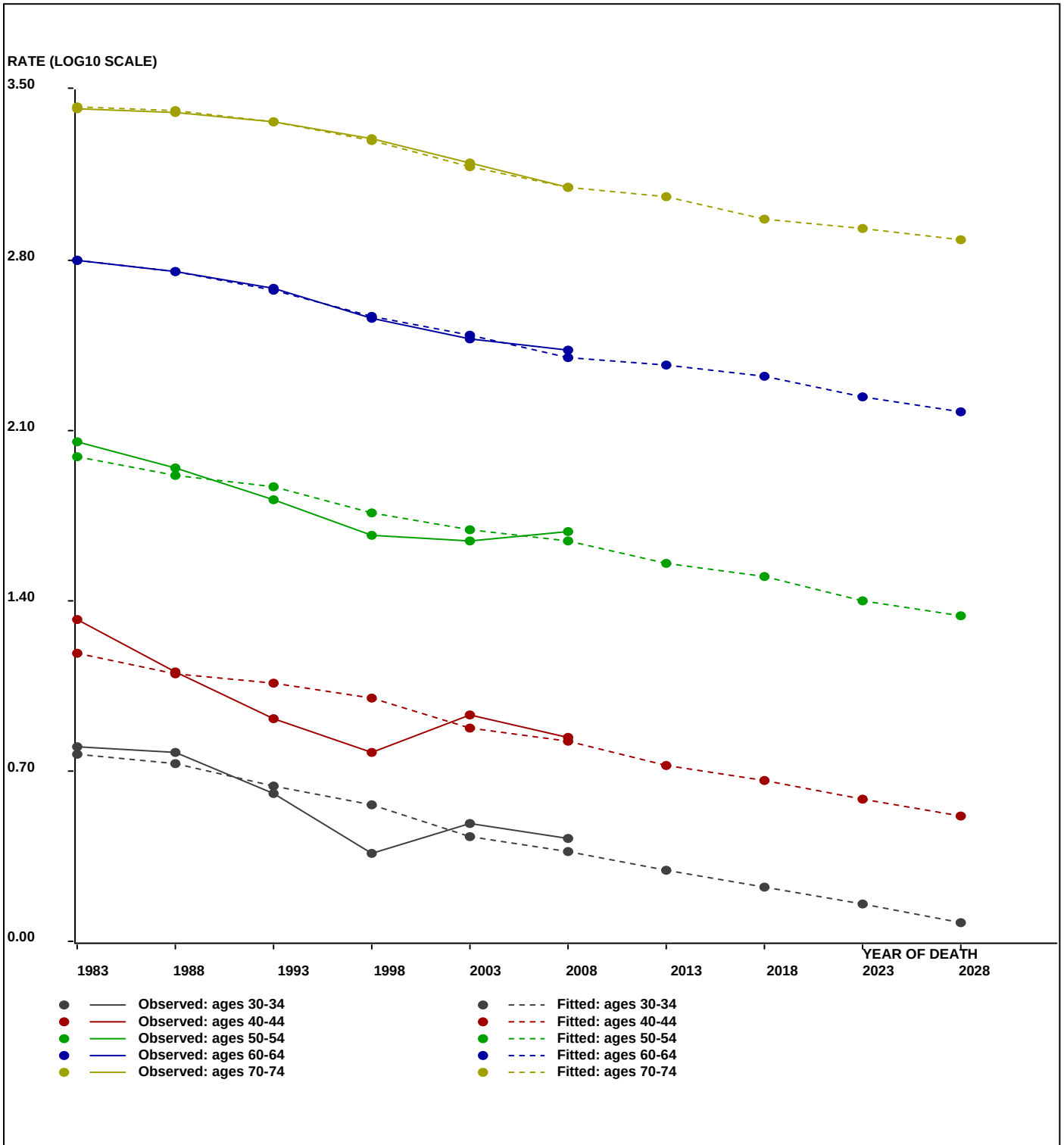


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Canada COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Canada COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	2.0	3.1	5.3	14.9	36.1	95.6	232.0	511.3	1141.8	2145.6
2016 PRE	1.7	2.6	4.6	11.8	31.7	78.3	209.3	470.1	926.9	1947.1
2021 PRE	1.4	2.2	3.9	10.2	25.2	68.8	171.5	424.1	852.3	1580.6
2026 PRE	1.2	1.9	3.3	8.7	21.9	54.7	150.5	347.5	768.8	1453.4

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	12.1	18.2	31.3	97.1	249.3	584.3	1211.1	2132.6	3363.9	4581.9
2016 PRE	11.0	16.6	27.4	70.8	207.0	532.5	1242.0	2326.8	3533.0	4936.3
2021 PRE	9.4	15.0	24.9	61.9	151.3	442.9	1133.8	2394.7	3872.9	5226.4
2026 PRE	7.6	12.8	22.5	56.1	132.2	324.3	944.9	2192.9	4008.5	5767.1

Osmond and Gardner Modelling

Canada IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	7058.13	138.39	51	P, C	99.80	38586.10	0.0000
AGE-PERIOD	82.48	1.83	45	Cohort	82.67	439.68	0.0000
AGE-COHORT	28.98	0.80	36	Period	50.68	153.69	0.0000
PERIOD-COHORT	48.22	1.21	40	Age	70.37	256.00	0.0000
FULL AGE-PERIOD-COHORT	14.29	0.45	32			75.81	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.333907	21.572837
35	1.702912	50.455901
40	2.074734	118.777564
45	2.371719	235.352790
50	2.663494	460.779975
55	2.915736	823.637580
60	3.151847	1418.558903
65	3.376543	2379.815902
70	3.593640	3923.192492
75	3.815482	6538.551652

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.100330	1.259883
1986	0.050814	1.124123
1991	0.005611	1.013003
1996	-0.028672	0.936113
2001	-0.094468	0.804511
2006	-0.162410	0.688002

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.178346	1.507809
1911	0.139460	1.378669
1916	0.100202	1.259511
1921	0.038122	1.091748
1926	-0.025893	0.942122
1931	-0.095226	0.803108
1936	-0.158320	0.694513
1941	-0.228726	0.590573
1946	-0.283373	0.520748
1951	-0.326718	0.471284
1956	-0.313587	0.485750
1961	-0.291745	0.510805
1966	-0.329054	0.468755
1971	-0.251393	0.560540
1976	-0.372657	0.423978

Osmond and Gardner Modelling

Canada IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	81.0	77.0	69.0	49.0	42.0	35.1
EXP	68.4	70.8	72.5	56.6	52.8	35.1
CHI	2.3	0.6	0.2	1.0	2.2	0.0
35 - OBS	170.0	141.0	148.0	146.0	110.0	119.9
EXP	151.3	145.4	152.7	159.9	117.5	110.6
CHI	2.3	0.1	0.1	1.2	0.5	0.8
40 - OBS	364.0	283.0	293.0	348.0	312.0	257.4
EXP	319.3	321.8	313.9	336.3	329.8	243.4
CHI	6.3	4.7	1.4	0.4	1.0	0.8
45 - OBS	680.0	587.0	566.0	531.0	550.0	600.0
EXP	651.1	565.6	580.7	577.9	576.5	566.9
CHI	1.3	0.8	0.4	3.8	1.2	1.9
50 - OBS	1494.0	1124.0	987.0	1045.0	942.0	978.1
EXP	1448.7	1136.1	1001.9	1047.1	971.7	966.0
CHI	1.4	0.1	0.2	0.0	0.9	0.2
55 - OBS	2937.0	2267.0	1882.0	1645.0	1587.0	1560.5
EXP	3026.6	2302.4	1836.5	1643.6	1596.2	1477.7
CHI	2.7	0.5	1.1	0.0	0.1	4.6
60 - OBS	5368.0	4623.0	3637.0	2805.0	2382.0	2366.0
EXP	5468.5	4582.0	3528.6	2879.8	2402.4	2324.0
CHI	1.8	0.4	3.3	1.9	0.2	0.8
65 - OBS	8797.0	7954.0	6706.0	5338.0	3923.0	3312.2
EXP	8796.4	7929.1	6679.9	5265.4	4012.9	3348.3
CHI	0.0	0.1	0.1	1.0	2.0	0.4
70 - OBS	13052.0	12017.0	10813.0	9289.0	7035.0	5413.0
EXP	13021.5	11993.1	10913.7	9409.9	6968.5	5314.9
CHI	0.1	0.0	0.9	1.6	0.6	1.8
75 - OBS	16882.0	16756.0	15596.0	14842.0	12072.0	8678.0
EXP	16882.0	16786.6	15620.5	14668.2	11931.9	8942.7
CHI	0.0	0.1	0.0	2.1	1.6	7.8

Osmond and Gardner Modelling

Canada IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	21.572837
35	50.455901
40	118.777564
45	235.352790
50	460.779975
55	823.637580
60	1418.558903
65	2379.815902
70	3923.192492
75	6538.551652

PERIOD	EFFECT	LOWER	UPPER
% Period Change	85.5180	82.5180	88.5180

1981	1.259883		
1986	1.124123		
1991	1.013003		
1996	0.936113		
2001	0.804511		
2006	0.688002		
2011	0.588366	0.567725	0.609006
2016	0.503158	0.468476	0.539080
2021	0.430291	0.386577	0.477182
2026	0.367976	0.318995	0.422392

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.507809	1.000000	
1911	1.378669	2.000000	
1916	1.259511	4.000000	
1921	1.091748	8.000000	
1926	0.942122	16.000000	
1931	0.803108	32.000000	
1936	0.694513	64.000000	
1941	0.590573	128.000000	
1946	0.520748	256.000000	
1951	0.471284	512.000000	
1956	0.485750	1024.000000	
1961	0.510805	2048.000000	
1966	0.468755	4096.000000	
1971	0.560540	8192.000000	
1976	0.538034	EXTRAPOLATION	0.423978
1981	0.545546	EXTRAPOLATION	
1986	0.553163	EXTRAPOLATION	
1991	0.560886	EXTRAPOLATION	
1996	0.568716	EXTRAPOLATION	

Osmond and Gardner Modelling

**Canada IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	15.2	12.8	10.6	8.2	7.7	6.3	-	-	-	-
	EXP	12.8	11.8	11.2	9.5	9.7	8.0	6.9*	6.0*	5.2*	4.5*
	Elow							6.7	5.6	4.7	3.9
	Eup							7.2	6.4	5.8	5.2
35	OBS	37.2	25.9	24.1	22.0	17.8	21.1	-	-	-	-
	EXP	33.1	26.7	24.8	24.1	19.0	19.5	16.0*	13.8*	12.0*	10.4*
	Elow							15.4	12.9	10.8	9.0
	Eup							16.5	14.8	13.3	12.0
40	OBS	100.8	61.1	52.9	55.9	46.2	40.5	-	-	-	-
	EXP	88.4	69.5	56.7	54.0	48.8	38.3	39.2*	32.2*	27.9*	24.2*
	Elow							37.8	29.9	25.0	21.0
	Eup							40.5	34.5	30.9	27.8
45	OBS	215.1	162.2	121.0	95.4	87.7	87.5	-	-	-	-
	EXP	205.9	156.2	124.2	103.8	92.0	82.7	64.9*	66.4*	54.5*	47.2*
	Elow							62.6	61.8	49.0	41.0
	Eup							67.2	71.1	60.4	54.2
50	OBS	480.8	355.9	271.6	224.2	169.4	155.9	-	-	-	-
	EXP	466.2	359.7	275.7	224.6	174.7	154.0	138.5*	108.7*	111.1*	91.2*
	Elow							133.6	101.2	99.8	79.1
	Eup							143.3	116.4	123.2	104.7
55	OBS	948.7	732.1	593.8	455.7	343.1	282.0	-	-	-	-
	EXP	977.6	743.6	579.5	455.3	345.1	267.1	235.4*	211.7*	166.1*	169.9*
	Elow							227.1	197.1	149.3	147.3
	Eup							243.7	226.8	184.2	195.0
60	OBS	1915.3	1515.8	1189.5	898.3	668.3	517.4	-	-	-	-
	EXP	1951.2	1502.3	1154.1	922.3	674.0	508.2	393.3*	346.7*	311.8*	244.7*
	Elow							379.5	322.8	280.1	212.1
	Eup							407.1	371.5	345.8	280.9
65	OBS	3776.6	2929.8	2280.1	1813.8	1299.9	956.5	-	-	-	-
	EXP	3776.4	2920.6	2271.2	1789.1	1329.7	967.0	729.2*	564.3*	497.4*	447.3*
	Elow							703.6	525.4	446.9	387.8
	Eup							754.7	604.6	551.6	513.5
70	OBS	6830.4	5565.7	4298.8	3415.5	2559.0	1909.2	-	-	-	-
	EXP	6814.4	5554.6	4338.8	3460.0	2534.8	1874.6	1363.2*	1027.9*	795.6*	701.2*
	Elow							1315.4	957.1	714.8	607.9
	Eup							1411.0	1101.3	882.3	804.9
75	OBS	12421.0	10114.9	8329.4	6761.6	5014.1	3505.9	-	-	-	-
	EXP	12421.0	10133.4	8342.5	6682.4	4955.9	3612.8	2671.8*	1942.9*	1465.1*	1133.9*
	Elow							2578.1	1809.0	1316.3	983.0
	Eup							2765.6	2081.7	1624.8	1301.6
30-79	OBS	1484.6	1180.8	937.2	747.1	556.5	418.6	-	-	-	-
	EXP	1484.7	1181.0	936.0	748.3	557.9	417.8	319.8*	251.3*	206.1*	175.4*
	Elow							308.6	234.0	185.2	152.0
	Eup							331.0	269.2	228.6	201.3

Osmond and Gardner Modelling

**Canada IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

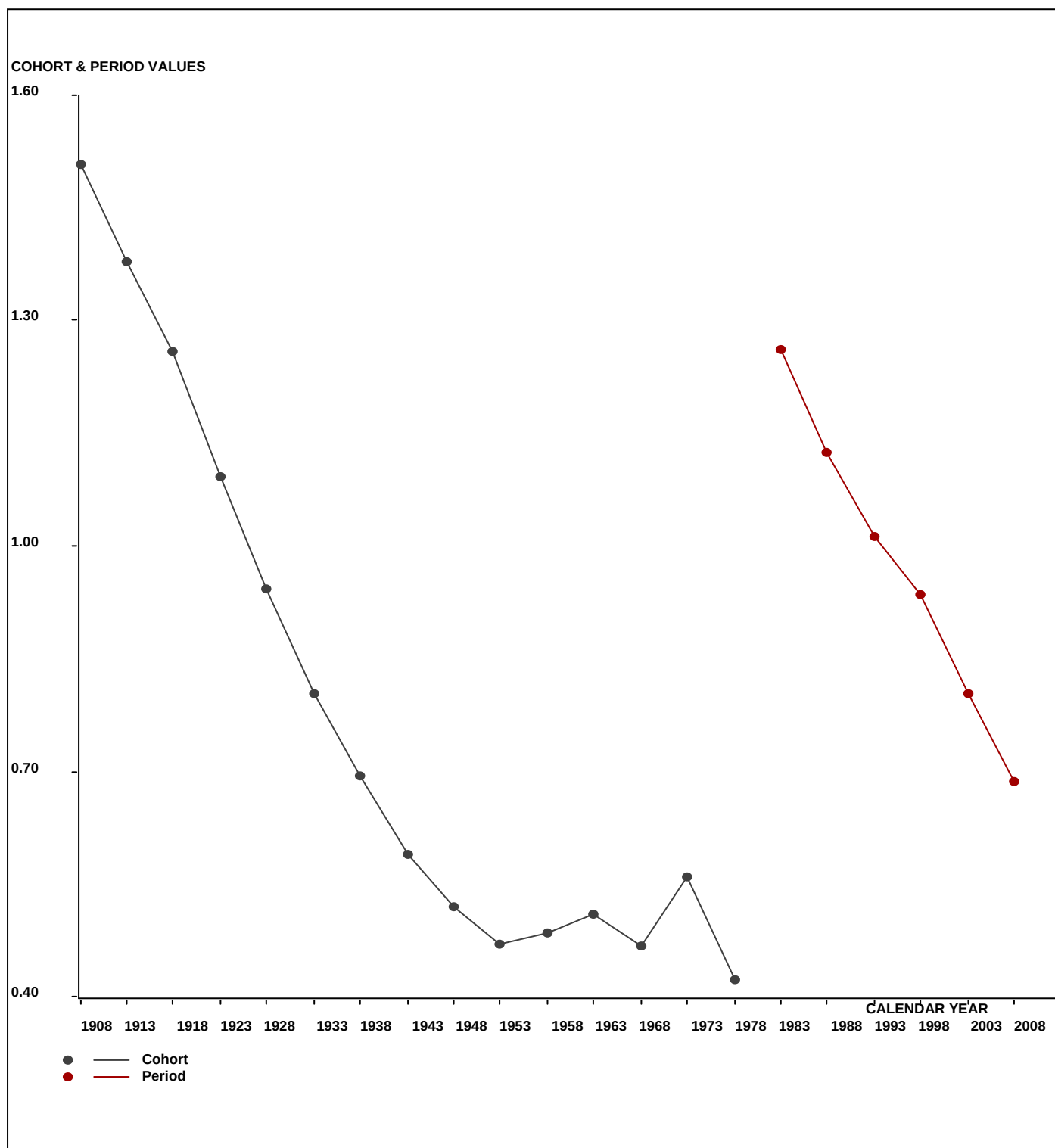
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	81.0	77.0	69.0	49.0	42.0	35.1	-	-	-	-
	EXP	68.4	70.8	72.5	56.6	52.8	44.5	41.7*	38.0*	33.4*	27.8*
	CHI	2.305	0.550	0.171	1.027	2.218	2.002	-	-	-	-
35 -	OBS	170.0	141.0	148.0	146.0	110.0	119.9	-	-	-	-
	EXP	151.3	145.4	152.7	159.9	117.5	110.6	93.1*	86.3*	78.3*	68.8*
	CHI	2.324	0.132	0.146	1.202	0.484	0.774	-	-	-	-
40 -	OBS	364.0	283.0	293.0	348.0	312.0	257.4	-	-	-	-
	EXP	319.3	321.8	313.9	336.3	329.8	243.4	229.1*	192.0*	177.5*	160.8*
	CHI	6.259	4.688	1.398	0.407	0.965	0.804	-	-	-	-
45 -	OBS	680.0	587.0	566.0	531.0	550.0	600.0	-	-	-	-
	EXP	651.1	565.6	580.7	577.9	576.5	566.9	418.8*	393.6*	329.6*	304.2*
	CHI	1.282	0.812	0.374	3.801	1.221	1.930	-	-	-	-
50 -	OBS	1494.0	1124.0	987.0	1045.0	942.0	978.1	-	-	-	-
	EXP	1448.7	1136.1	1001.9	1047.1	971.7	966.0	952.4*	703.7*	662.2*	554.4*
	CHI	1.414	0.128	0.221	0.004	0.909	0.151	-	-	-	-
55 -	OBS	2937.0	2267.0	1882.0	1645.0	1587.0	1560.5	-	-	-	-
	EXP	3026.6	2302.4	1836.5	1643.6	1596.2	1477.7	1468.0*	1448.0*	1070.9*	1009.2*
	CHI	2.651	0.545	1.130	0.001	0.053	4.639	-	-	-	-
60 -	OBS	5368.0	4623.0	3637.0	2805.0	2382.0	2366.0	-	-	-	-
	EXP	5468.5	4582.0	3528.6	2879.8	2402.4	2324.0	2143.9*	2129.0*	2101.3*	1556.3*
	CHI	1.847	0.367	3.331	1.942	0.173	0.759	-	-	-	-
65 -	OBS	8797.0	7954.0	6706.0	5338.0	3923.0	3312.2	-	-	-	-
	EXP	8796.4	7929.1	6679.9	5265.4	4012.9	3348.3	3232.7*	2980.7*	2965.8*	2932.8*
	CHI	0.000	0.078	0.102	1.000	2.012	0.389	-	-	-	-
70 -	OBS	13052.0	12017.0	10813.0	9289.0	7035.0	5413.0	-	-	-	-
	EXP	13021.5	11993.1	10913.7	9409.9	6968.5	5314.9	4451.8*	4310.8*	3986.7*	3982.0*
	CHI	0.072	0.048	0.929	1.553	0.635	1.811	-	-	-	-
75 -	OBS	16882.0	16756.0	15596.0	14842.0	12072.0	8678.0	-	-	-	-
	EXP	16882.0	16786.6	15620.5	14668.2	11931.9	8942.7	6839.5*	5768.9*	5619.0*	5222.6*
	CHI	0.000	0.056	0.038	2.060	1.646	7.836	-	-	-	-
30-79	OBS	49825.0	45829.0	40697.0	36038.0	28955.0	23320.2	-	-	-	-
	EXP	49833.8	45832.8	40700.9	36044.6	28960.3	23339.1	19870.9*	18051.1*	17024.6*	15818.9*
	O/E	1.000	1.000	1.000	1.000	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

Canada IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

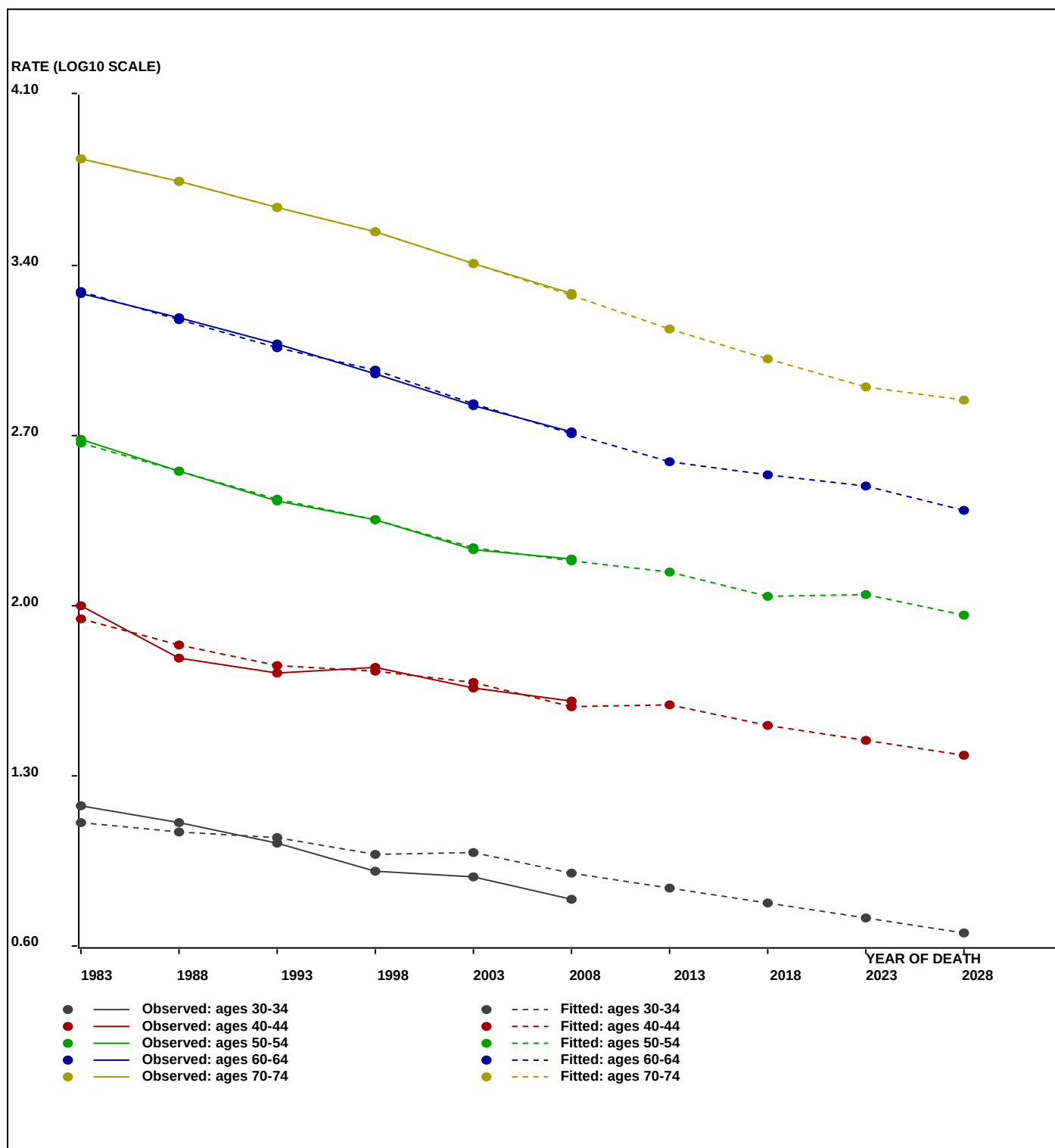


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Canada IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Canada IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	6.9	16.0	39.2	64.9	138.5	235.4	393.3	729.2	1363.2	2671.8
2016	PRE	6.0	13.8	32.2	66.4	108.7	211.7	346.7	564.3	1027.9	1942.9
2021	PRE	5.2	12.0	27.9	54.5	111.1	166.1	311.8	497.4	795.6	1465.1
2026	PRE	4.5	10.4	24.2	47.2	91.2	169.9	244.7	447.3	701.2	1133.9

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	41.7	93.1	229.1	418.8	952.4	1468.0	2143.9	3232.7	4451.8	6839.5
2016	PRE	38.0	86.3	192.0	393.6	703.7	1448.0	2129.0	2980.7	4310.8	5768.9
2021	PRE	33.4	78.3	177.5	329.6	662.2	1070.9	2101.3	2965.8	3986.7	5619.0
2026	PRE	27.8	68.8	160.8	304.2	554.4	1009.2	1556.3	2932.8	3982.0	5222.6

Osmond and Gardner Modelling

Canada Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	1487.30	29.16	51	P, C	99.50	8015.85	0.0000
AGE-PERIOD	12.91	0.29	45	Cohort	42.63	68.52	0.0135
AGE-COHORT	19.72	0.55	36	Period	62.46	104.61	0.0000
PERIOD-COHORT	12.54	0.31	40	Age	40.94	66.51	0.0053
FULL AGE-PERIOD-COHORT	7.40	0.23	32			39.28	0.1759

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.379512	23.961372
35	1.573525	37.456308
40	1.792036	61.949280
45	2.005013	101.160942
50	2.180200	151.425791
55	2.346068	221.854537
60	2.557755	361.205625
65	2.821659	663.222453
70	3.130888	1351.725224
75	3.459697	2882.021194

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.153174	1.422900
1986	0.061831	1.153004
1991	0.017766	1.041757
1996	-0.025299	0.943412
2001	-0.109920	0.776391
2006	-0.185951	0.651702

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.039762	1.095877
1911	0.035121	1.084229
1916	0.038049	1.091565
1921	0.018758	1.044138
1926	0.003105	1.007176
1931	-0.015155	0.965706
1936	-0.030810	0.931515
1941	-0.048332	0.894680
1946	-0.071114	0.848957
1951	-0.094245	0.804923
1956	-0.110806	0.774807
1961	-0.103918	0.787195
1966	-0.130110	0.741122
1971	-0.222774	0.598722
1976	-0.327244	0.470712

Osmond and Gardner Modelling

Canada Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	161.0	132.0	121.0	83.0	64.0	41.0
EXP	146.6	128.6	127.7	100.2	60.5	41.0
CHI	1.4	0.1	0.3	3.0	0.2	0.0
35 - OBS	212.0	209.0	184.0	171.0	125.0	79.4
EXP	206.7	189.1	186.0	184.3	133.1	83.1
CHI	0.1	2.1	0.0	1.0	0.5	0.2
40 - OBS	290.0	284.0	262.0	285.0	245.0	212.4
EXP	284.9	280.7	287.6	282.0	255.8	190.1
CHI	0.1	0.0	2.3	0.0	0.5	2.6
45 - OBS	435.0	369.0	439.0	384.0	369.0	384.5
EXP	423.9	377.7	418.5	427.5	381.5	355.7
CHI	0.3	0.2	1.0	4.4	0.4	2.3
50 - OBS	664.0	529.0	491.0	556.0	516.0	487.3
EXP	646.6	513.6	512.9	565.4	526.3	479.7
CHI	0.5	0.5	0.9	0.2	0.2	0.1
55 - OBS	969.0	785.0	675.0	657.0	657.0	682.7
EXP	984.3	764.9	682.3	675.9	676.5	643.9
CHI	0.2	0.5	0.1	0.5	0.6	2.3
60 - OBS	1504.0	1279.0	1113.0	982.0	903.0	912.6
EXP	1504.0	1279.3	1111.1	991.2	894.3	913.8
CHI	0.0	0.0	0.0	0.1	0.1	0.0
65 - OBS	2394.0	2092.0	2057.0	1809.0	1451.0	1373.5
EXP	2399.5	2167.7	2046.6	1778.3	1447.5	1339.0
CHI	0.0	2.6	0.1	0.5	0.0	0.9
70 - OBS	3951.0	3659.0	3707.0	3500.0	2832.0	2312.6
EXP	3984.9	3673.2	3698.4	3493.0	2786.2	2326.5
CHI	0.3	0.1	0.0	0.0	0.8	0.1
75 - OBS	6108.0	6002.0	6156.0	6297.0	5424.0	4370.9
EXP	6108.0	5968.4	6136.4	6231.6	5425.9	4489.7
CHI	0.0	0.2	0.1	0.7	0.0	3.1

Osmond and Gardner Modelling

Canada Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	23.961372
35	37.456308
40	61.949280
45	101.160942
50	151.425791
55	221.854537
60	361.205625
65	663.222453
70	1351.725224
75	2882.021194

PERIOD	EFFECT	LOWER	UPPER
% Period Change	83.9400	80.9400	86.9400
1981	1.422900		
1986	1.153004		
1991	1.041757		
1996	0.943412		
2001	0.776391		
2006	0.651702		
2011	0.547039	0.527488	0.566590
2016	0.459185	0.426949	0.492594
2021	0.385440	0.345572	0.428261
2026	0.323538	0.279706	0.372330

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.095877	1.000000	
1911	1.084229	2.000000	
1916	1.091565	4.000000	
1921	1.044138	8.000000	
1926	1.007176	16.000000	
1931	0.965706	32.000000	
1936	0.931515	64.000000	
1941	0.894680	128.000000	
1946	0.848957	256.000000	
1951	0.804923	512.000000	
1956	0.774807	1024.000000	
1961	0.787195	2048.000000	
1966	0.741122	4096.000000	
1971	0.598722	8192.000000	
1976	0.578942	EXTRAPOLATION	0.470712
1981	0.534732	EXTRAPOLATION	
1986	0.493898	EXTRAPOLATION	
1991	0.456182	EXTRAPOLATION	
1996	0.421346	EXTRAPOLATION	

Osmond and Gardner Modelling

**Canada Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	30.1	22.0	18.6	13.9	11.8	7.4	-	-	-	-
	EXP	27.4	21.4	19.6	16.8	11.1	9.0	7.0*	5.4*	4.2*	3.3*
	Elow							6.8	5.1	3.8	2.8
	Eup							7.3	5.8	4.7	3.8
35	OBS	46.4	38.4	29.9	25.8	20.2	14.0	-	-	-	-
	EXP	45.2	34.8	30.2	27.8	21.6	14.6	11.9*	9.2*	7.1*	5.5*
	Elow							11.4	8.6	6.4	4.8
	Eup							12.3	9.9	7.9	6.4
40	OBS	80.3	61.4	47.3	45.8	36.3	33.4	-	-	-	-
	EXP	78.9	60.6	51.9	45.3	37.9	29.9	20.3*	16.5*	12.8*	9.9*
	Elow							19.6	15.3	11.4	8.6
	Eup							21.0	17.7	14.2	11.4
45	OBS	137.6	101.9	93.9	69.0	58.9	56.1	-	-	-	-
	EXP	134.1	104.4	89.5	76.8	60.9	51.9	41.0*	27.8*	22.6*	17.5*
	Elow							39.5	25.9	20.2	15.1
	Eup							42.5	29.8	25.1	20.1
50	OBS	213.7	167.5	135.1	119.3	92.8	77.7	-	-	-	-
	EXP	208.1	162.6	141.1	121.3	94.6	76.5	65.2*	51.5*	34.9*	28.4*
	Elow							62.9	47.9	31.3	24.5
	Eup							67.5	55.3	38.8	32.6
55	OBS	313.0	253.5	213.0	182.0	142.0	123.4	-	-	-	-
	EXP	317.9	247.0	215.3	187.3	146.2	116.4	94.0*	80.2*	63.4*	43.0*
	Elow							90.7	74.6	56.8	37.2
	Eup							97.4	86.0	70.4	49.5
60	OBS	536.6	419.4	364.0	314.5	253.3	199.6	-	-	-	-
	EXP	536.6	419.5	363.4	317.4	250.9	199.8	159.0*	128.5*	109.6*	86.6*
	Elow							153.4	119.5	98.3	74.9
	Eup							164.7	137.9	121.8	99.7
65	OBS	1027.8	770.6	699.4	614.7	480.8	396.7	-	-	-	-
	EXP	1030.1	798.5	695.9	604.2	479.7	386.7	308.0*	245.1*	198.1*	168.9*
	Elow							297.0	227.9	177.6	146.0
	Eup							319.0	263.0	220.1	194.4
70	OBS	2067.6	1694.7	1473.8	1286.9	1030.1	815.7	-	-	-	-
	EXP	2085.4	1701.3	1470.3	1284.4	1013.5	820.6	661.6*	526.9*	419.4*	338.9*
	Elow							637.9	489.9	376.0	292.9
	Eup							685.2	565.3	466.0	390.0
75	OBS	4494.0	3623.2	3287.7	2868.7	2252.9	1765.8	-	-	-	-
	EXP	4494.0	3602.9	3277.3	2838.9	2253.6	1813.8	1468.6*	1184.0*	943.1*	750.5*
	Elow							1416.1	1100.9	845.5	648.9
	Eup							1521.1	1270.1	1047.8	863.7
30-79	OBS	498.5	395.8	348.5	302.5	239.6	193.1	-	-	-	-
	EXP	498.4	395.8	348.8	303.2	239.6	192.9	155.1*	124.1*	98.8*	78.8*
	Elow							149.6	115.4	88.6	68.2
	Eup							160.7	133.1	109.8	90.7

Osmond and Gardner Modelling

**Canada Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

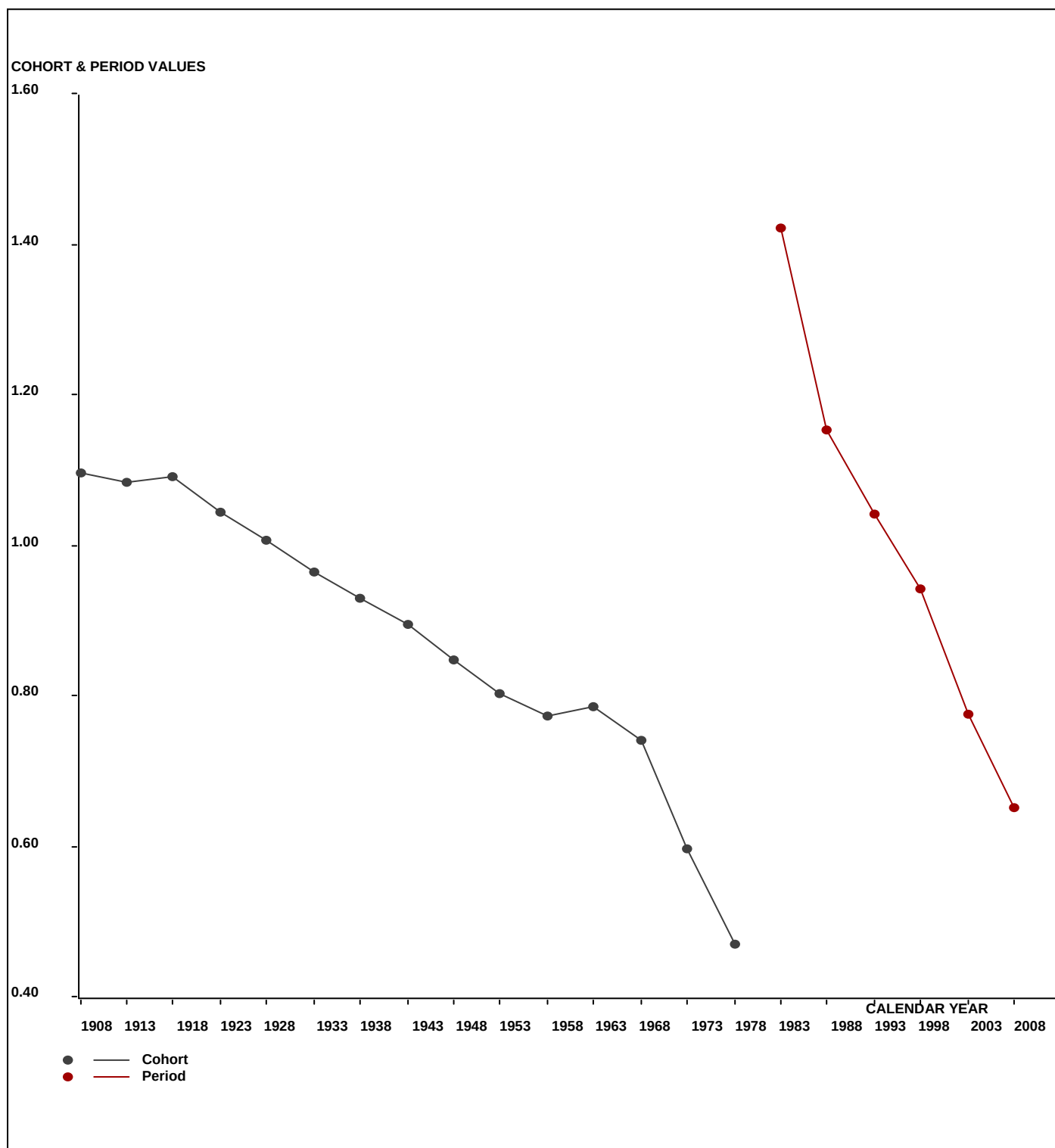
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	161.0	132.0	121.0	83.0	64.0	41.0	-	-	-	-
	EXP	146.6	128.6	127.7	100.2	60.5	50.4	42.2*	34.4*	27.0*	20.1*
	CHI	1.408	0.091	0.348	2.957	0.205	1.762	-	-	-	-
35 -	OBS	212.0	209.0	184.0	171.0	125.0	79.4	-	-	-	-
	EXP	206.7	189.1	186.0	184.3	133.1	83.1	69.2*	57.3*	46.5*	36.5*
	CHI	0.134	2.103	0.021	0.962	0.498	0.165	-	-	-	-
40 -	OBS	290.0	284.0	262.0	285.0	245.0	212.4	-	-	-	-
	EXP	284.9	280.7	287.6	282.0	255.8	190.1	118.6*	98.4*	81.3*	65.8*
	CHI	0.090	0.039	2.279	0.033	0.460	2.609	-	-	-	-
45 -	OBS	435.0	369.0	439.0	384.0	369.0	384.5	-	-	-	-
	EXP	423.9	377.7	418.5	427.5	381.5	355.7	264.6*	164.9*	136.6*	112.7*
	CHI	0.289	0.202	1.004	4.432	0.407	2.329	-	-	-	-
50 -	OBS	664.0	529.0	491.0	556.0	516.0	487.3	-	-	-	-
	EXP	646.6	513.6	512.9	565.4	526.3	479.7	448.5*	333.7*	208.2*	172.4*
	CHI	0.470	0.461	0.939	0.155	0.203	0.122	-	-	-	-
55 -	OBS	969.0	785.0	675.0	657.0	657.0	682.7	-	-	-	-
	EXP	984.3	764.9	682.3	675.9	676.5	643.9	586.4*	548.5*	408.5*	255.3*
	CHI	0.238	0.528	0.078	0.529	0.559	2.332	-	-	-	-
60 -	OBS	1504.0	1279.0	1113.0	982.0	903.0	912.6	-	-	-	-
	EXP	1504.0	1279.3	1111.1	991.2	894.3	913.8	866.9*	789.1*	738.6*	550.9*
	CHI	0.000	0.000	0.003	0.085	0.084	0.002	-	-	-	-
65 -	OBS	2394.0	2092.0	2057.0	1809.0	1451.0	1373.5	-	-	-	-
	EXP	2399.5	2167.7	2046.6	1778.3	1447.5	1339.0	1365.6*	1294.7*	1181.0*	1107.5*
	CHI	0.012	2.641	0.053	0.532	0.008	0.887	-	-	-	-
70 -	OBS	3951.0	3659.0	3707.0	3500.0	2832.0	2312.6	-	-	-	-
	EXP	3984.9	3673.2	3698.4	3493.0	2786.2	2326.5	2160.5*	2209.8*	2101.5*	1924.1*
	CHI	0.288	0.055	0.020	0.014	0.754	0.084	-	-	-	-
75 -	OBS	6108.0	6002.0	6156.0	6297.0	5424.0	4370.9	-	-	-	-
	EXP	6108.0	5968.4	6136.4	6231.6	5425.9	4489.7	3759.4*	3515.5*	3616.8*	3456.8*
	CHI	0.000	0.189	0.063	0.686	0.001	3.143	-	-	-	-
30-79	OBS	16688.0	15340.0	15205.0	14724.0	12586.0	10856.9	-	-	-	-
	EXP	16689.4	15343.1	15207.4	14729.4	12587.6	10872.1	9681.8*	9046.3*	8546.0*	7702.1*
	O/E	1.000	1.000	1.000	1.000	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

Canada Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

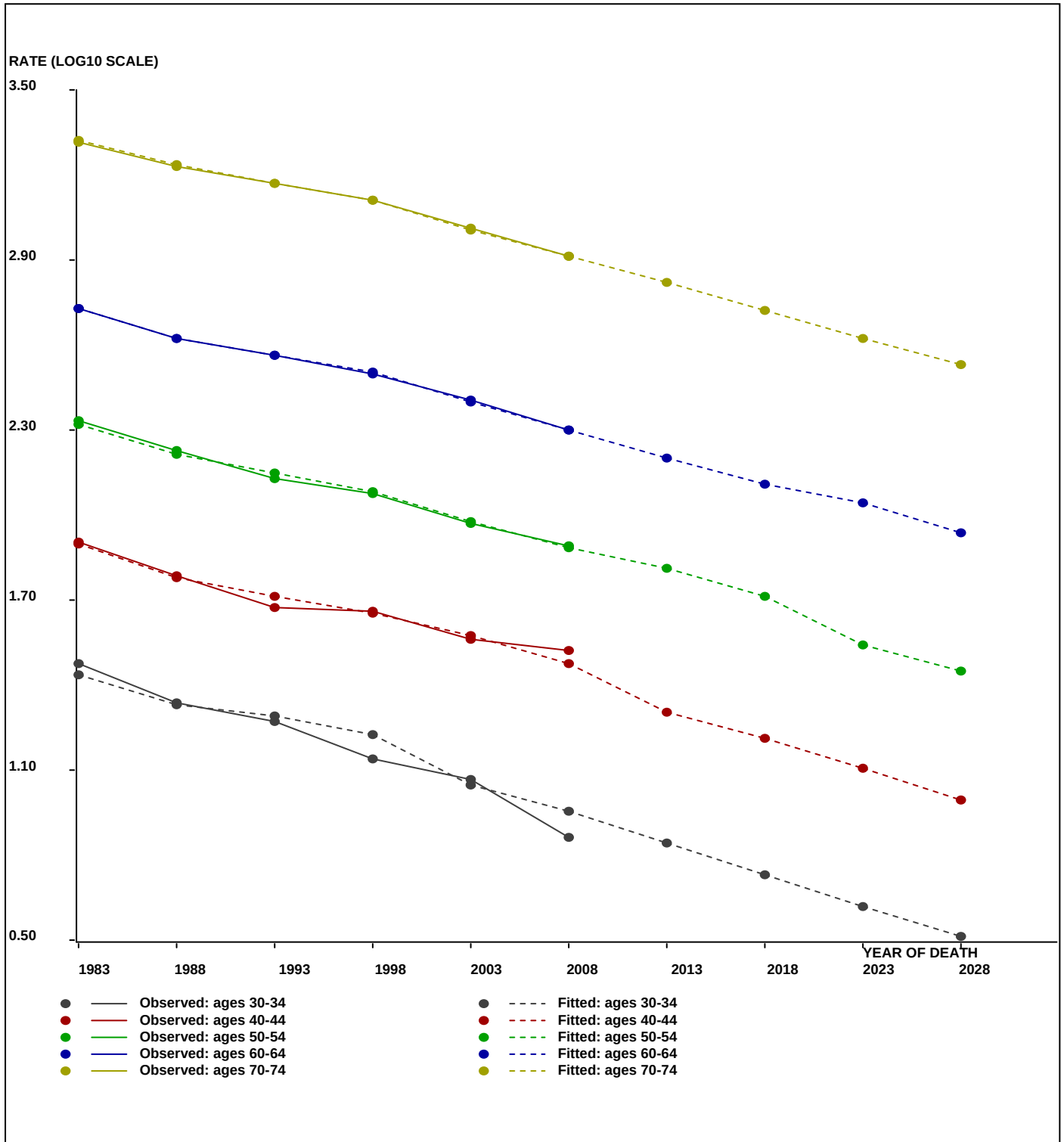


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Canada Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Canada Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	7.0	11.9	20.3	41.0	65.2	94.0	159.0	308.0	661.6	1468.6
2016 PRE	5.4	9.2	16.5	27.8	51.5	80.2	128.5	245.1	526.9	1184.0
2021 PRE	4.2	7.1	12.8	22.6	34.9	63.4	109.6	198.1	419.4	943.1
2026 PRE	3.3	5.5	9.9	17.5	28.4	43.0	86.6	168.9	338.9	750.5

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	42.2	69.2	118.6	264.6	448.5	586.4	866.9	1365.6	2160.5	3759.4
2016 PRE	34.4	57.3	98.4	164.9	333.7	548.5	789.1	1294.7	2209.8	3515.5
2021 PRE	27.0	46.5	81.3	136.6	208.2	408.5	738.6	1181.0	2101.5	3616.8
2026 PRE	20.1	36.5	65.8	112.7	172.4	255.3	550.9	1107.5	1924.1	3456.8

Osmond and Gardner Modelling

Canada Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	834.98	16.37	51	P, C	99.19	4513.21	0.0000
AGE-PERIOD	336.65	7.48	45	Cohort	98.00	1808.15	0.0000
AGE-COHORT	26.71	0.74	36	Period	74.75	141.66	0.0000
PERIOD-COHORT	61.22	1.53	40	Age	88.98	325.41	0.0000
FULL AGE-PERIOD-COHORT	6.74	0.21	32			35.77	0.2957

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.032829	10.785223
35	1.506992	32.136047
40	1.936152	86.327967
45	2.275492	188.578321
50	2.547719	352.954887
55	2.777827	599.552672
60	2.979407	953.689888
65	3.156125	1432.599979
70	3.296988	1981.470468
75	3.403967	2534.935044

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.039573	0.912909
1986	-0.005105	0.988313
1991	0.013436	1.031421
1996	0.011866	1.027699
2001	0.002911	1.006726
2006	-0.003833	0.991212

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.358096	0.438434
1911	-0.229897	0.588983
1916	-0.140808	0.723090
1921	-0.060865	0.869230
1926	-0.006631	0.984847
1931	0.034722	1.083233
1936	0.058277	1.143606
1941	0.071538	1.179067
1946	0.045573	1.110639
1951	0.019616	1.046204
1956	0.054262	1.133083
1961	0.007793	1.018107
1966	-0.188668	0.647637
1971	-0.408105	0.390746
1976	-0.545014	0.285093

Osmond and Gardner Modelling

Canada Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	55.0	66.0	82.0	38.0	25.0	17.0
EXP	55.0	72.6	73.6	42.9	23.0	17.0
CHI	0.0	0.6	1.0	0.6	0.2	0.0
35 - OBS	136.0	163.0	237.0	228.0	148.0	68.7
EXP	148.9	180.7	231.0	222.8	129.4	70.8
CHI	1.1	1.7	0.2	0.1	2.7	0.1
40 - OBS	334.0	414.0	519.0	668.0	592.0	336.6
EXP	335.7	438.6	515.7	626.0	597.9	352.1
CHI	0.0	1.4	0.0	2.8	0.1	0.7
45 - OBS	594.0	773.0	1020.0	1155.0	1370.0	1296.1
EXP	622.5	795.4	1010.5	1128.4	1348.4	1304.4
CHI	1.3	0.6	0.1	0.6	0.3	0.1
50 - OBS	1099.0	1344.0	1517.0	1846.0	2105.0	2420.9
EXP	1084.6	1259.8	1560.0	1878.0	2067.7	2486.8
CHI	0.2	5.6	1.2	0.5	0.7	1.7
55 - OBS	1715.0	1986.0	2249.0	2648.0	3073.0	3388.9
EXP	1668.8	1987.5	2241.3	2622.3	3101.1	3440.2
CHI	1.3	0.0	0.0	0.3	0.3	0.8
60 - OBS	2124.0	2742.0	3272.0	3480.0	4039.0	4886.4
EXP	2121.0	2831.1	3257.9	3499.9	4035.0	4800.9
CHI	0.0	2.8	0.1	0.1	0.0	1.5
65 - OBS	2204.0	3368.0	4290.0	4681.0	4915.0	5833.9
EXP	2202.8	3341.2	4279.9	4693.5	4977.5	5797.6
CHI	0.0	0.2	0.0	0.0	0.8	0.2
70 - OBS	2012.0	3078.0	4473.0	5456.0	5922.0	6383.2
EXP	2035.9	3057.4	4468.4	5454.2	5940.4	6368.2
CHI	0.3	0.1	0.0	0.0	0.1	0.0
75 - OBS	1379.0	2468.0	3518.0	4936.0	6080.0	6740.9
EXP	1379.0	2444.4	3539.9	4970.6	6051.1	6737.2
CHI	0.0	0.2	0.1	0.2	0.1	0.0

Osmond and Gardner Modelling

Canada Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	10.785223
35	32.136047
40	86.327967
45	188.578321
50	352.954887
55	599.552672
60	953.689888
65	1432.599979
70	1981.470468
75	2534.935044

PERIOD	EFFECT	LOWER	UPPER
% Period Change	98.4590	95.4590	101.4590

1981	0.912909		
1986	0.988313		
1991	1.031421		
1996	1.027699		
2001	1.006726		
2006	0.991212		
2011	0.975938	0.946201	1.005674
2016	0.960899	0.903234	1.020347
2021	0.946091	0.862219	1.035234
2026	0.931512	0.823065	1.050338

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.438434	1.000000	
1911	0.588983	2.000000	
1916	0.723090	4.000000	
1921	0.869230	8.000000	
1926	0.984847	16.000000	
1931	1.083233	32.000000	
1936	1.143606	64.000000	
1941	1.179067	128.000000	
1946	1.110639	256.000000	
1951	1.046204	512.000000	
1956	1.133083	1024.000000	
1961	1.018107	2048.000000	
1966	0.647637	4096.000000	
1971	0.390746	8192.000000	
1976	0.342184	EXTRAPOLATION	0.285093
1981	0.265307	EXTRAPOLATION	
1986	0.205701	EXTRAPOLATION	
1991	0.159487	EXTRAPOLATION	
1996	0.123655	EXTRAPOLATION	

Osmond and Gardner Modelling

**Canada Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	10.3	11.0	12.6	6.4	4.6	3.0	-	-	-	-
	EXP	10.3	12.1	11.3	7.2	4.2	3.7	2.8*	2.1*	1.6*	1.2*
	Elow							2.7	2.0	1.5	1.1
	Eup							2.9	2.3	1.8	1.4
35	OBS	29.8	30.0	38.5	34.4	24.0	12.1	-	-	-	-
	EXP	32.6	33.2	37.6	33.6	21.0	12.4	10.7*	8.2*	6.3*	4.8*
	Elow							10.4	7.7	5.7	4.2
	Eup							11.1	8.7	6.8	5.4
40	OBS	92.4	89.4	93.7	107.3	87.6	53.0	-	-	-	-
	EXP	92.9	94.8	93.2	100.5	88.5	55.4	32.9*	28.4*	21.7*	16.5*
	Elow							31.9	26.7	19.7	14.6
	Eup							33.9	30.1	23.7	18.7
45	OBS	187.9	213.6	218.1	207.5	218.6	189.1	-	-	-	-
	EXP	196.9	219.7	216.0	202.8	215.1	190.3	119.2*	70.8*	61.0*	46.6*
	Elow							115.6	66.6	55.6	41.2
	Eup							122.8	75.2	66.8	52.5
50	OBS	353.7	425.6	417.4	396.0	378.5	385.9	-	-	-	-
	EXP	349.0	398.9	429.2	402.9	371.7	396.4	350.7*	219.6*	130.5*	112.5*
	Elow							340.0	206.5	118.9	99.4
	Eup							361.4	233.2	142.8	126.9
55	OBS	554.0	641.4	709.6	733.6	664.3	612.5	-	-	-	-
	EXP	539.0	641.9	707.2	726.5	670.4	621.7	663.0*	586.5*	367.4*	218.2*
	Elow							642.8	551.3	334.8	192.8
	Eup							683.2	622.8	402.0	246.1
60	OBS	757.9	899.0	1070.1	1114.5	1133.2	1068.6	-	-	-	-
	EXP	756.8	928.3	1065.5	1120.9	1132.0	1049.9	973.7*	1038.4*	918.6*	575.3*
	Elow							944.1	976.0	837.2	508.4
	Eup							1003.4	1102.6	1005.2	648.7
65	OBS	946.2	1240.6	1458.6	1590.6	1628.6	1684.8	-	-	-	-
	EXP	945.7	1230.7	1455.2	1594.8	1649.3	1674.3	1552.8*	1440.2*	1535.7*	1358.6*
	Elow							1505.5	1353.8	1399.6	1200.5
	Eup							1600.1	1529.3	1680.4	1532.0
70	OBS	1052.9	1425.6	1778.3	2006.2	2154.1	2251.4	-	-	-	-
	EXP	1065.4	1416.0	1776.5	2005.5	2160.8	2246.1	2280.1*	2114.6*	1961.3*	2091.4*
	Elow							2210.6	1987.7	1787.4	1847.9
	Eup							2349.5	2245.5	2146.1	2358.2
75	OBS	1014.6	1489.8	1878.9	2248.7	2525.3	2723.3	-	-	-	-
	EXP	1014.6	1475.6	1890.6	2264.5	2513.3	2721.8	2829.2*	2872.0*	2663.6*	2470.4*
	Elow							2743.0	2699.6	2427.5	2182.8
	Eup							2915.4	3049.7	2914.6	2785.6
30-79	OBS	378.3	471.8	545.4	583.9	594.0	590.2	-	-	-	-
	EXP	378.2	471.4	545.7	583.9	594.4	590.3	566.7*	524.8*	467.3*	402.0*
	Elow							549.5	493.3	425.8	355.2
	Eup							584.0	557.3	511.3	453.2

Osmond and Gardner Modelling

**Canada Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

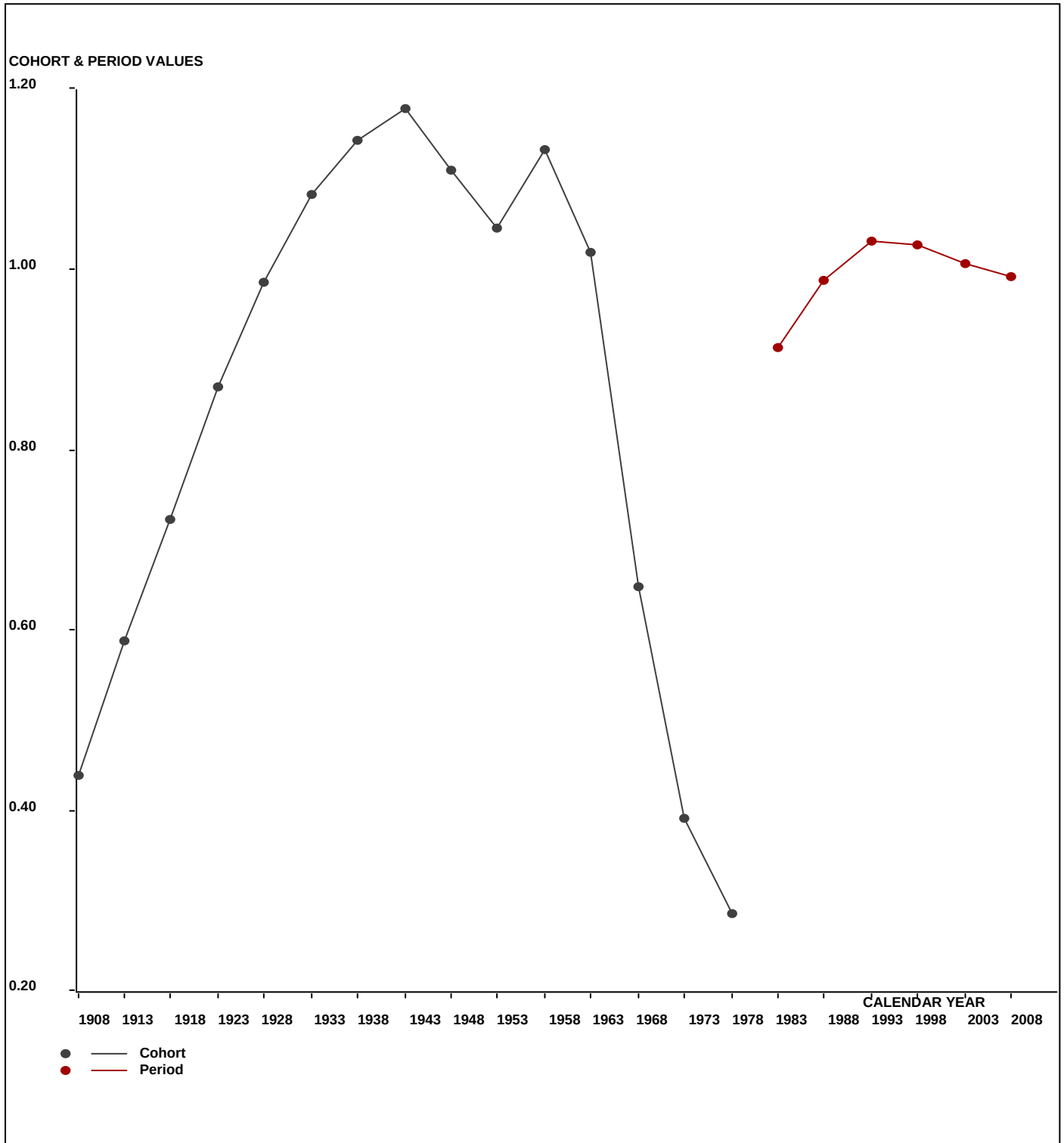
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	55.0	66.0	82.0	38.0	25.0	17.0	-	-	-	-
	EXP	55.0	72.6	73.6	42.9	23.0	20.4	16.8*	13.5*	10.4*	7.6*
	CHI	0.000	0.592	0.963	0.568	0.167	0.568	-	-	-	-
35 -	OBS	136.0	163.0	237.0	228.0	148.0	68.7	-	-	-	-
	EXP	148.9	180.7	231.0	222.8	129.4	70.8	62.6*	51.1*	40.8*	31.5*
	CHI	1.113	1.737	0.155	0.122	2.663	0.061	-	-	-	-
40 -	OBS	334.0	414.0	519.0	668.0	592.0	336.6	-	-	-	-
	EXP	335.7	438.6	515.7	626.0	597.9	352.1	192.5*	169.5*	137.9*	110.0*
	CHI	0.009	1.382	0.021	2.825	0.058	0.686	-	-	-	-
45 -	OBS	594.0	773.0	1020.0	1155.0	1370.0	1296.1	-	-	-	-
	EXP	622.5	795.4	1010.5	1128.4	1348.4	1304.4	768.9*	419.8*	369.3*	300.0*
	CHI	1.302	0.633	0.090	0.626	0.345	0.053	-	-	-	-
50 -	OBS	1099.0	1344.0	1517.0	1846.0	2105.0	2420.9	-	-	-	-
	EXP	1084.6	1259.8	1560.0	1878.0	2067.7	2486.8	2411.9*	1422.3*	777.4*	683.7*
	CHI	0.192	5.624	1.187	0.544	0.674	1.744	-	-	-	-
55 -	OBS	1715.0	1986.0	2249.0	2648.0	3073.0	3388.9	-	-	-	-
	EXP	1668.8	1987.5	2241.3	2622.3	3101.1	3440.2	4134.6*	4012.1*	2368.0*	1296.4*
	CHI	1.280	0.001	0.027	0.252	0.254	0.766	-	-	-	-
60 -	OBS	2124.0	2742.0	3272.0	3480.0	4039.0	4886.4	-	-	-	-
	EXP	2121.0	2831.1	3257.9	3499.9	4035.0	4800.9	5307.3*	6376.3*	6190.9*	3659.4*
	CHI	0.004	2.804	0.061	0.113	0.004	1.524	-	-	-	-
65 -	OBS	2204.0	3368.0	4290.0	4681.0	4915.0	5833.9	-	-	-	-
	EXP	2202.8	3341.2	4279.9	4693.5	4977.5	5797.6	6884.4*	7606.8*	9156.8*	8907.9*
	CHI	0.001	0.216	0.024	0.034	0.785	0.227	-	-	-	-
70 -	OBS	2012.0	3078.0	4473.0	5456.0	5922.0	6383.2	-	-	-	-
	EXP	2035.9	3057.4	4468.4	5454.2	5940.4	6368.2	7446.0*	8867.9*	9827.9*	11875.8*
	CHI	0.280	0.139	0.005	0.001	0.057	0.035	-	-	-	-
75 -	OBS	1379.0	2468.0	3518.0	4936.0	6080.0	6740.9	-	-	-	-
	EXP	1379.0	2444.4	3539.9	4970.6	6051.1	6737.2	7242.4*	8527.4*	10215.5*	11378.2*
	CHI	0.000	0.228	0.136	0.241	0.138	0.002	-	-	-	-
30-79	OBS	11652.0	16402.0	21177.0	25136.0	28269.0	31372.6	-	-	-	-
	EXP	11654.1	16408.7	21178.3	25138.6	28271.5	31378.6	34467.4*	37466.7*	39095.1*	38250.7*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Canada Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

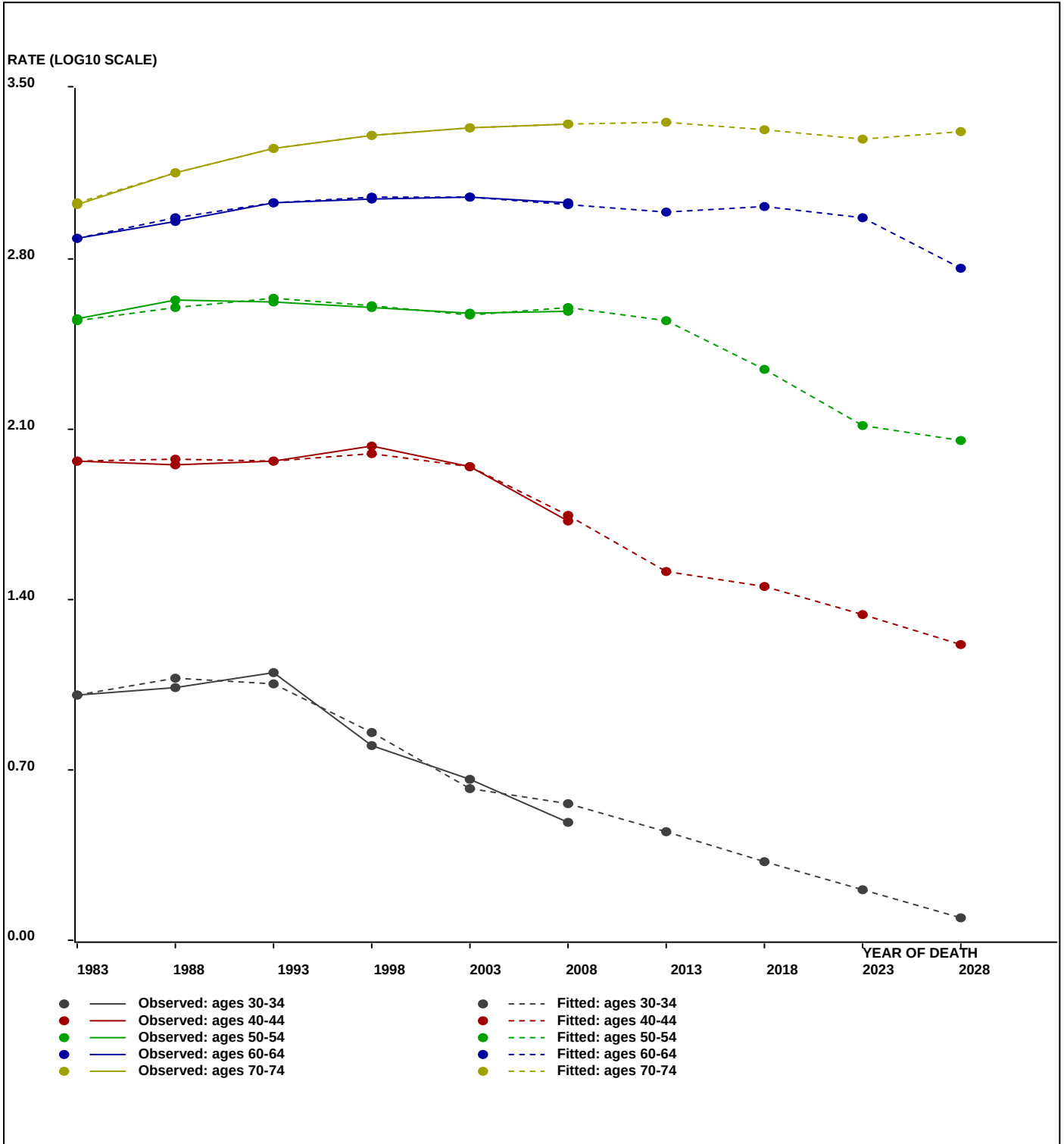


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Canada Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Canada Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	2.8	10.7	32.9	119.2	350.7	663.0	973.7	1552.8	2280.1	2829.2
2016	PRE	2.1	8.2	28.4	70.8	219.6	586.5	1038.4	1440.2	2114.6	2872.0
2021	PRE	1.6	6.3	21.7	61.0	130.5	367.4	918.6	1535.7	1961.3	2663.6
2026	PRE	1.2	4.8	16.5	46.6	112.5	218.2	575.3	1358.6	2091.4	2470.4

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	16.8	62.6	192.5	768.9	2411.9	4134.6	5307.3	6884.4	7446.0	7242.4
2016	PRE	13.5	51.1	169.5	419.8	1422.3	4012.1	6376.3	7606.8	8867.9	8527.4
2021	PRE	10.4	40.8	137.9	369.3	777.4	2368.0	6190.9	9156.8	9827.9	10215.5
2026	PRE	7.6	31.5	110.0	300.0	683.7	1296.4	3659.4	8907.9	11875.8	11378.2

Osmond and Gardner Modelling

Canada COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	168.45	3.30	51	P, C	87.82	902.65	0.0000
AGE-PERIOD	111.27	2.47	45	Cohort	81.56	596.86	0.0000
AGE-COHORT	27.16	0.75	36	Period	24.43	144.15	0.0000
PERIOD-COHORT	34.60	0.86	40	Age	40.69	185.00	0.0000
FULL AGE-PERIOD-COHORT	20.52	0.64	32			109.06	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.810540	6.464569
35	0.827424	6.720852
40	1.076270	11.919837
45	1.362816	23.057716
50	1.727949	53.450151
55	2.068984	117.215338
60	2.397490	249.740975
65	2.691301	491.248265
70	2.982378	960.235216
75	3.229700	1697.072596

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.004158	1.009620
1986	0.025861	1.061355
1991	0.016380	1.038437
1996	0.015886	1.037257
2001	-0.018913	0.957385
2006	-0.030959	0.931197

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.227560	0.592161
1911	-0.119196	0.759982
1916	-0.012919	0.970692
1921	0.002198	1.005074
1926	0.029222	1.069601
1931	0.041852	1.101163
1936	0.033203	1.079452
1941	0.020684	1.048779
1946	-0.001944	0.995534
1951	-0.063193	0.864585
1956	-0.069182	0.852743
1961	-0.102800	0.789224
1966	-0.259895	0.549673
1971	-0.317083	0.481856
1976	-0.268370	0.539052

Osmond and Gardner Modelling

Canada COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	38.0	32.0	24.0	24.0	17.0	18.1
EXP	30.2	35.1	34.4	22.0	16.2	18.1
CHI	2.0	0.3	3.2	0.2	0.0	0.0
35 - OBS	40.0	33.0	36.0	29.0	20.0	16.3
EXP	30.9	33.5	36.6	36.5	21.8	17.1
CHI	2.7	0.0	0.0	1.5	0.2	0.0
40 - OBS	60.0	67.0	56.0	48.0	53.0	38.5
EXP	45.6	58.3	59.3	65.7	60.9	38.8
CHI	4.5	1.3	0.2	4.7	1.0	0.0
45 - OBS	102.0	85.0	102.0	98.0	101.0	137.0
EXP	79.5	92.9	111.5	115.1	118.0	116.1
CHI	6.4	0.7	0.8	2.5	2.4	3.7
50 - OBS	226.0	189.0	187.0	239.0	208.0	298.7
EXP	184.7	193.4	211.6	257.3	246.1	266.3
CHI	9.3	0.1	2.9	1.3	5.9	4.0
55 - OBS	425.0	422.0	400.0	436.0	477.0	566.0
EXP	391.9	424.2	416.4	460.3	516.8	522.2
CHI	2.8	0.0	0.6	1.3	3.1	3.7
60 - OBS	684.0	871.0	894.0	815.0	903.0	1103.0
EXP	710.3	864.7	873.2	873.1	893.8	1058.7
CHI	1.0	0.0	0.5	3.9	0.1	1.9
65 - OBS	1070.0	1343.0	1618.0	1684.0	1584.0	1689.6
EXP	1121.4	1422.7	1604.8	1651.3	1532.1	1661.3
CHI	2.4	4.5	0.1	0.6	1.8	0.5
70 - OBS	1341.0	2150.0	2511.0	2884.0	2858.0	2734.9
EXP	1407.9	2136.0	2520.9	2897.3	2783.0	2736.6
CHI	3.2	0.1	0.0	0.1	2.0	0.0
75 - OBS	1379.0	2332.0	3239.0	3995.0	4143.0	4130.1
EXP	1379.0	2267.6	3203.0	3883.6	4184.0	4307.4
CHI	0.0	1.8	0.4	3.2	0.4	7.3

Osmond and Gardner Modelling

Canada COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	6.464569
35	6.720852
40	11.919837
45	23.057716
50	53.450151
55	117.215338
60	249.740975
65	491.248265
70	960.235216
75	1697.072596

PERIOD	EFFECT	LOWER	UPPER
% Period Change	97.2646	94.2646	100.2646
1981	1.009620		
1986	1.061355		
1991	1.038437		
1996	1.037257		
2001	0.957385		
2006	0.931197		
2011	0.905725	0.877789	0.933661
2016	0.880950	0.827444	0.936131
2021	0.856852	0.779987	0.938608
2026	0.833414	0.735252	0.941092

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.592161	1.000000	
1911	0.759982	2.000000	
1916	0.970692	4.000000	
1921	1.005074	8.000000	
1926	1.069601	16.000000	
1931	1.101163	32.000000	
1936	1.079452	64.000000	
1941	1.048779	128.000000	
1946	0.995534	256.000000	
1951	0.864585	512.000000	
1956	0.852743	1024.000000	
1961	0.789224	2048.000000	
1966	0.549673	4096.000000	
1971	0.481856	8192.000000	
1976	0.420807	EXTRAPOLATION	0.539052
1981	0.360798	EXTRAPOLATION	
1986	0.309347	EXTRAPOLATION	
1991	0.265233	EXTRAPOLATION	
1996	0.227410	EXTRAPOLATION	

Osmond and Gardner Modelling

**Canada COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	7.1	5.3	3.7	4.0	3.1	3.2	-	-	-	-
	EXP	5.6	5.9	5.3	3.7	3.0	2.5	2.1*	1.8*	1.5*	1.2*
	Elow							2.0	1.7	1.3	1.1
	Eup							2.2	1.9	1.6	1.4
35	OBS	8.8	6.1	5.9	4.4	3.2	2.9	-	-	-	-
	EXP	6.8	6.2	6.0	5.5	3.5	3.0	2.6*	2.1*	1.8*	1.5*
	Elow							2.5	2.0	1.6	1.3
	Eup							2.6	2.3	2.0	1.7
40	OBS	16.6	14.5	10.1	7.7	7.8	6.1	-	-	-	-
	EXP	12.6	12.6	10.7	10.5	9.0	6.1	5.2*	4.4*	3.7*	3.1*
	Elow							5.0	4.2	3.4	2.7
	Eup							5.4	4.7	4.0	3.5
45	OBS	32.3	23.5	21.8	17.6	16.1	20.0	-	-	-	-
	EXP	25.1	25.7	23.8	20.7	18.8	16.9	11.5*	9.8*	8.3*	6.9*
	Elow							11.1	9.2	7.6	6.1
	Eup							11.8	10.4	9.1	7.8
50	OBS	72.7	59.8	51.5	51.3	37.4	47.6	-	-	-	-
	EXP	59.4	61.2	58.2	55.2	44.2	42.4	38.2*	25.9*	22.1*	18.7*
	Elow							37.0	24.3	20.1	16.5
	Eup							39.4	27.5	24.2	21.2
55	OBS	137.3	136.3	126.2	120.8	103.1	102.3	-	-	-	-
	EXP	126.6	137.0	131.4	127.5	111.7	94.4	90.5*	81.5*	55.2*	47.1*
	Elow							87.7	76.5	50.3	41.5
	Eup							93.3	86.6	60.5	53.2
60	OBS	244.1	285.6	292.4	261.0	253.3	241.2	-	-	-	-
	EXP	253.4	283.5	285.6	279.6	250.8	231.5	195.6*	187.6*	168.9*	114.4*
	Elow							189.5	176.2	153.7	100.9
	Eup							201.6	199.4	185.0	129.2
65	OBS	459.4	494.7	550.1	572.2	524.9	487.9	-	-	-	-
	EXP	481.4	524.0	545.6	561.1	507.7	479.8	442.9*	374.2*	358.9*	323.1*
	Elow							429.3	351.4	326.7	285.1
	Eup							456.6	397.6	393.2	364.9
70	OBS	701.8	995.8	998.3	1060.4	1039.6	964.6	-	-	-	-
	EXP	736.8	989.3	1002.2	1065.3	1012.3	965.2	912.1*	842.1*	711.4*	682.4*
	Elow							884.0	791.0	647.5	602.0
	Eup							940.3	894.9	779.2	770.6
75	OBS	1014.6	1407.7	1729.9	1820.0	1720.8	1668.5	-	-	-	-
	EXP	1014.6	1368.9	1710.7	1769.2	1737.8	1740.2	1659.2*	1568.0*	1447.6*	1222.8*
	Elow							1608.0	1472.7	1317.8	1078.8
	Eup							1710.4	1666.2	1585.8	1380.8
30-79	OBS	163.2	196.2	209.5	213.4	200.4	192.0	-	-	-	-
	EXP	162.9	196.8	210.1	214.8	200.3	191.2	177.5*	161.7*	143.7*	124.7*
	Elow							172.1	151.9	130.8	110.0
	Eup							183.0	171.8	157.4	140.8

Osmond and Gardner Modelling

**Canada COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

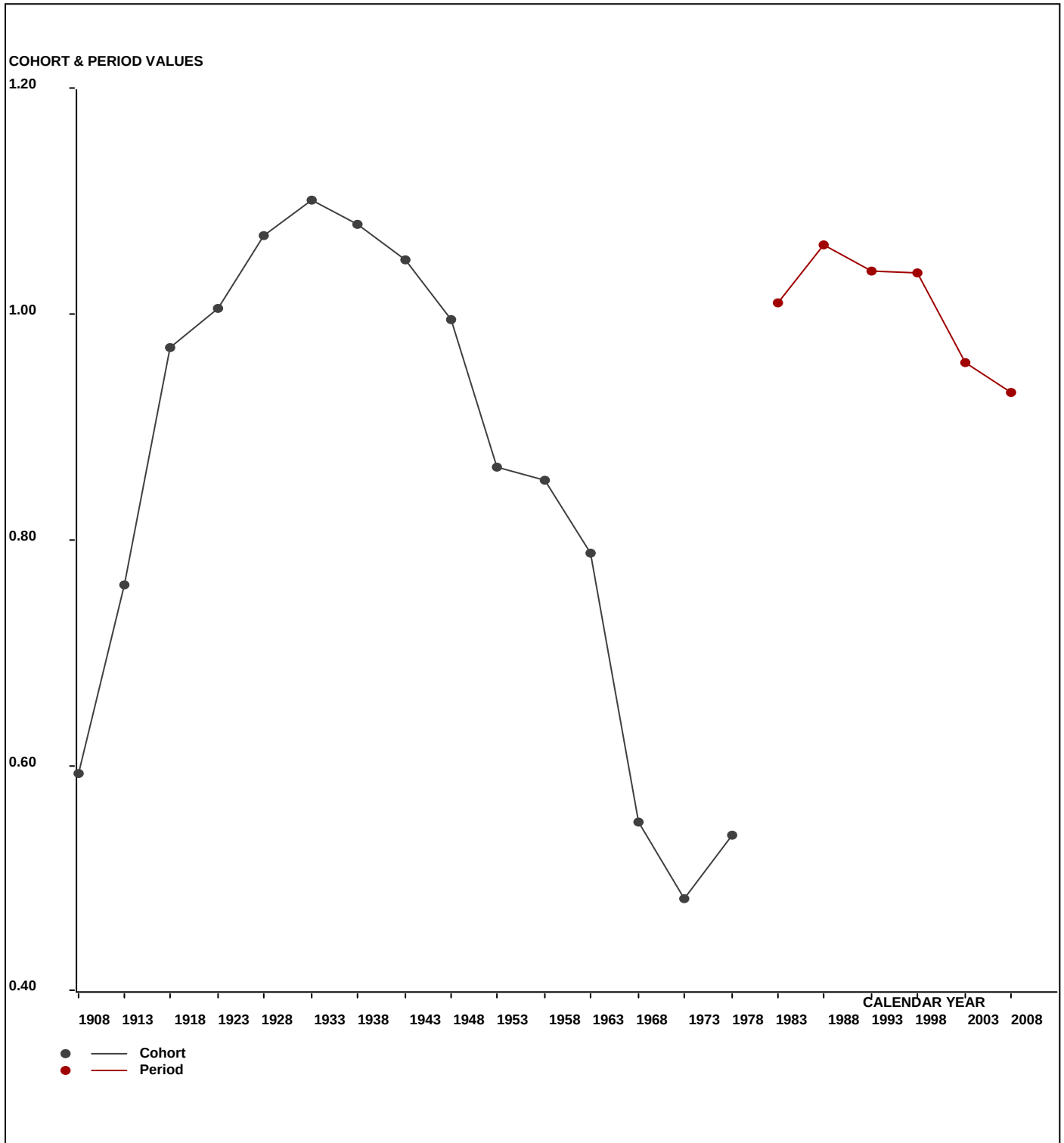
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	38.0	32.0	24.0	24.0	17.0	18.1	-	-	-	-
	EXP	30.2	35.1	34.4	22.0	16.2	14.1	12.7*	11.1*	9.4*	7.5*
	CHI	2.044	0.282	3.155	0.173	0.040	1.116	-	-	-	-
35 -	OBS	40.0	33.0	36.0	29.0	20.0	16.3	-	-	-	-
	EXP	30.9	33.5	36.6	36.5	21.8	17.1	14.9*	13.3*	11.6*	9.8*
	CHI	2.704	0.009	0.010	1.525	0.156	0.042	-	-	-	-
40 -	OBS	60.0	67.0	56.0	48.0	53.0	38.5	-	-	-	-
	EXP	45.6	58.3	59.3	65.7	60.9	38.8	30.4*	26.4*	23.5*	20.4*
	CHI	4.547	1.299	0.178	4.745	1.015	0.002	-	-	-	-
45 -	OBS	102.0	85.0	102.0	98.0	101.0	137.0	-	-	-	-
	EXP	79.5	92.9	111.5	115.1	118.0	116.1	74.1*	58.0*	50.3*	44.6*
	CHI	6.400	0.673	0.810	2.536	2.449	3.743	-	-	-	-
50 -	OBS	226.0	189.0	187.0	239.0	208.0	298.7	-	-	-	-
	EXP	184.7	193.4	211.6	257.3	246.1	266.3	262.8*	167.6*	131.5*	113.9*
	CHI	9.260	0.100	2.853	1.300	5.893	3.954	-	-	-	-
55 -	OBS	425.0	422.0	400.0	436.0	477.0	566.0	-	-	-	-
	EXP	391.9	424.2	416.4	460.3	516.8	522.2	564.6*	557.5*	355.9*	279.6*
	CHI	2.801	0.011	0.647	1.279	3.066	3.679	-	-	-	-
60 -	OBS	684.0	871.0	894.0	815.0	903.0	1103.0	-	-	-	-
	EXP	710.3	864.7	873.2	873.1	893.8	1058.7	1065.9*	1152.1*	1138.2*	727.7*
	CHI	0.971	0.046	0.498	3.871	0.094	1.857	-	-	-	-
65 -	OBS	1070.0	1343.0	1618.0	1684.0	1584.0	1689.6	-	-	-	-
	EXP	1121.4	1422.7	1604.8	1651.3	1532.1	1661.3	1963.8*	1976.2*	2140.2*	2118.5*
	CHI	2.359	4.461	0.109	0.647	1.758	0.482	-	-	-	-
70 -	OBS	1341.0	2150.0	2511.0	2884.0	2858.0	2734.9	-	-	-	-
	EXP	1407.9	2136.0	2520.9	2897.3	2783.0	2736.6	2978.8*	3531.6*	3564.6*	3875.1*
	CHI	3.178	0.092	0.039	0.061	2.023	0.001	-	-	-	-
75 -	OBS	1379.0	2332.0	3239.0	3995.0	4143.0	4130.1	-	-	-	-
	EXP	1379.0	2267.6	3203.0	3883.6	4184.0	4307.4	4247.3*	4655.5*	5552.0*	5632.1*
	CHI	0.000	1.827	0.404	3.198	0.403	7.300	-	-	-	-
30-79	OBS	5365.0	7524.0	9067.0	10252.0	10364.0	10732.2	-	-	-	-
	EXP	5381.2	7528.4	9071.6	10262.1	10372.7	10738.6	11215.3*	12149.4*	12977.2*	12829.4*
	O/E	0.997	0.999	0.999	0.999	0.999	0.999	-	-	-	-

Osmond and Gardner Modelling

Canada COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

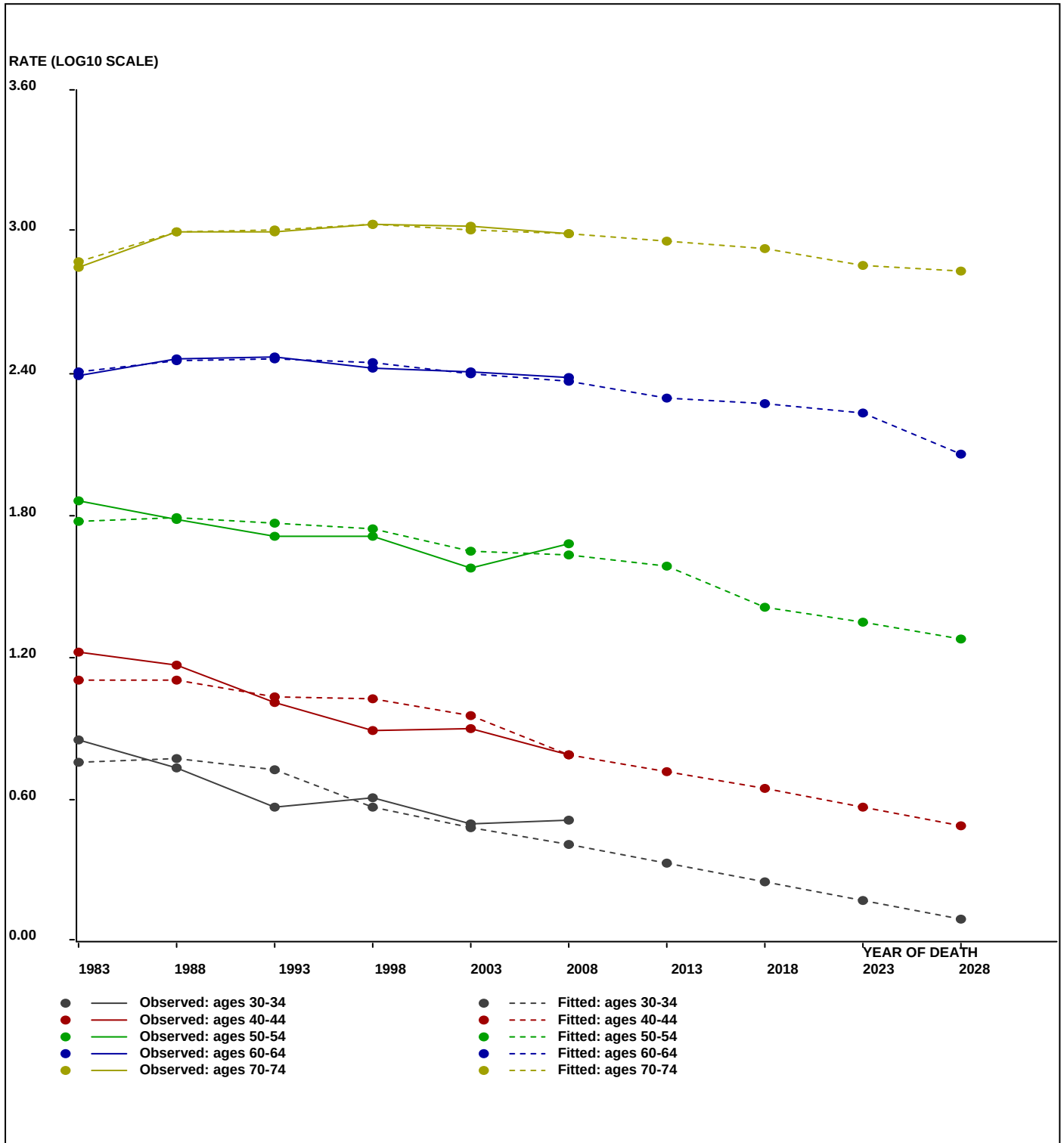


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Canada COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Canada COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	2.1	2.6	5.2	11.5	38.2	90.5	195.6	442.9	912.1	1659.2
2016	PRE	1.8	2.1	4.4	9.8	25.9	81.5	187.6	374.2	842.1	1568.0
2021	PRE	1.5	1.8	3.7	8.3	22.1	55.2	168.9	358.9	711.4	1447.6
2026	PRE	1.2	1.5	3.1	6.9	18.7	47.1	114.4	323.1	682.4	1222.8

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	12.7	14.9	30.4	74.1	262.8	564.6	1065.9	1963.8	2978.8	4247.3
2016	PRE	11.1	13.3	26.4	58.0	167.6	557.5	1152.1	1976.2	3531.6	4655.5
2021	PRE	9.4	11.6	23.5	50.3	131.5	355.9	1138.2	2140.2	3564.6	5552.0
2026	PRE	7.5	9.8	20.4	44.6	113.9	279.6	727.7	2118.5	3875.1	5632.1

Osmond and Gardner Modelling

France IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	9401.42	184.34	51	P, C	99.79	50831.41	0.0000
AGE-PERIOD	337.49	7.50	45	Cohort	94.23	1791.04	0.0000
AGE-COHORT	81.76	2.27	36	Period	76.17	433.63	0.0000
PERIOD-COHORT	47.24	1.18	40	Age	58.76	250.64	0.0000
FULL AGE-PERIOD-COHORT	19.48	0.61	32			103.33	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.638174	43.468450
35	2.091186	123.363407
40	2.431345	269.988161
45	2.673519	471.540406
50	2.876125	751.838721
55	3.050466	1123.223355
60	3.227774	1689.560149
65	3.397124	2495.307449
70	3.575749	3764.862491
75	3.757779	5725.051405

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.103696	1.269686
1986	0.065854	1.163735
1991	0.007304	1.016960
1996	-0.028983	0.935443
2001	-0.085271	0.821729
2006	-0.172742	0.671828

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.098566	1.254777
1911	0.082673	1.209686
1916	0.062050	1.153586
1921	0.072993	1.183023
1926	0.010357	1.024134
1931	-0.019898	0.955217
1936	-0.091705	0.809645
1941	-0.121384	0.756163
1946	-0.124862	0.750133
1951	-0.101486	0.791615
1956	-0.101999	0.790681
1961	-0.136697	0.729967
1966	-0.197299	0.634893
1971	-0.215654	0.608620
1976	-0.209633	0.617116

Osmond and Gardner Modelling

France IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	499.0	468.0	319.0	252.0	223.0	175.8
EXP	482.0	420.0	345.3	280.7	239.1	175.8
CHI	0.6	5.5	2.0	2.9	1.1	0.0
35 - OBS	1093.0	1287.0	1055.0	851.0	700.0	577.5
EXP	1117.3	1243.1	1040.6	897.0	705.8	562.2
CHI	0.5	1.5	0.2	2.4	0.0	0.4
40 - OBS	1787.0	2359.0	2295.0	2082.0	1661.0	1299.6
EXP	1885.2	2204.9	2352.6	2065.4	1718.5	1267.1
CHI	5.1	10.8	1.4	0.1	1.9	0.8
45 - OBS	3685.0	2952.0	3292.0	3665.0	3059.0	2558.6
EXP	3722.5	2933.6	3302.6	3696.3	3125.9	2435.1
CHI	0.4	0.1	0.0	0.3	1.4	6.3
50 - OBS	7081.0	5241.0	3952.0	4782.0	4929.0	3985.8
EXP	7016.1	5212.7	3967.7	4705.1	5070.9	4001.5
CHI	0.6	0.2	0.1	1.3	4.0	0.1
55 - OBS	10976.0	8952.0	6419.0	5338.0	5921.0	6186.6
EXP	10974.8	9064.5	6499.0	5233.7	6002.8	6022.9
CHI	0.0	1.4	1.0	2.1	1.1	4.5
60 - OBS	14543.0	13758.0	11002.0	8730.0	6551.0	6956.0
EXP	14457.0	13915.4	11105.2	8411.6	6581.4	7078.1
CHI	0.5	1.8	1.0	12.1	0.1	2.1
65 - OBS	14328.0	17542.0	16237.0	13598.0	10146.0	7425.8
EXP	14506.2	17495.2	16172.2	13635.2	10061.6	7408.1
CHI	2.2	0.1	0.3	0.1	0.7	0.0
70 - OBS	25460.0	16799.0	20046.0	19172.0	16012.0	10804.9
EXP	25296.5	16715.3	19928.5	19305.0	15924.6	11130.4
CHI	1.1	0.4	0.7	0.9	0.5	9.5
75 - OBS	28622.0	26788.0	17419.0	22264.0	21240.0	16709.9
EXP	28622.0	26952.5	17326.0	22516.4	21018.2	16611.4
CHI	0.0	1.0	0.5	2.8	2.3	0.6

Osmond and Gardner Modelling

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 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	43.468450
35	123.363407
40	269.988161
45	471.540406
50	751.838721
55	1123.223355
60	1689.560149
65	2495.307449
70	3764.862491
75	5725.051405

PERIOD	EFFECT	LOWER	UPPER
% Period Change	81.7579	78.7579	84.7579
1981	1.269686		
1986	1.163735		
1991	1.016960		
1996	0.935443		
2001	0.821729		
2006	0.671828		
2011	0.549273	0.529118	0.569427
2016	0.449074	0.416722	0.482635
2021	0.367153	0.328201	0.409071
2026	0.300177	0.258485	0.346720

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.254777	1.000000	
1911	1.209686	2.000000	
1916	1.153586	4.000000	
1921	1.183023	8.000000	
1926	1.024134	16.000000	
1931	0.955217	32.000000	
1936	0.809645	64.000000	
1941	0.756163	128.000000	
1946	0.750133	256.000000	
1951	0.791615	512.000000	
1956	0.790681	1024.000000	
1961	0.729967	2048.000000	
1966	0.634893	4096.000000	
1971	0.608620	8192.000000	
1976	0.573579	EXTRAPOLATION	0.617116
1981	0.538749	EXTRAPOLATION	
1986	0.506033	EXTRAPOLATION	
1991	0.475305	EXTRAPOLATION	
1996	0.446442	EXTRAPOLATION	

Osmond and Gardner Modelling

**France IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	45.2	44.6	29.8	23.2	20.3	18.0	-	-	-	-
	EXP	43.7	40.0	32.3	25.8	21.7	16.8	12.9*	9.9*	7.6*	5.8*
	Elow							12.4	9.2	6.8	5.0
	Eup							13.3	10.6	8.5	6.7
35	OBS	114.9	117.7	100.6	79.9	63.8	51.8	-	-	-	-
	EXP	117.5	113.6	99.2	84.2	64.4	50.4	38.9*	29.8*	22.9*	17.6*
	Elow							37.4	27.7	20.5	15.2
	Eup							40.3	32.1	25.5	20.3
40	OBS	245.7	252.2	212.0	201.3	156.5	118.1	-	-	-	-
	EXP	259.2	235.7	217.4	199.7	161.9	115.2	90.3*	69.5*	53.4*	41.0*
	Elow							86.9	64.5	47.7	35.3
	Eup							93.6	74.7	59.5	47.4
45	OBS	479.9	417.5	358.6	346.2	299.8	243.0	-	-	-	-
	EXP	484.7	414.9	359.7	349.2	306.4	231.2	164.4*	128.9*	99.3*	76.3*
	Elow							158.4	119.6	88.8	65.7
	Eup							170.5	138.5	110.6	88.1
50	OBS	920.3	712.2	575.9	536.2	475.4	397.8	-	-	-	-
	EXP	911.8	708.4	578.2	527.6	489.1	399.4	301.5*	214.4*	168.0*	129.4*
	Elow							290.4	198.9	150.2	111.5
	Eup							312.5	230.4	187.2	149.5
55	OBS	1460.7	1233.1	913.5	810.3	682.9	613.6	-	-	-	-
	EXP	1460.6	1248.6	924.8	794.5	692.4	597.4	487.8*	368.2*	261.8*	205.2*
	Elow							469.9	341.7	234.0	176.7
	Eup							505.7	395.7	291.7	237.0
60	OBS	2552.9	1990.9	1626.0	1328.1	1045.0	836.8	-	-	-	-
	EXP	2537.8	2013.7	1641.3	1279.6	1049.8	851.5	734.6*	599.9*	452.8*	322.0*
	Elow							707.7	556.7	404.8	277.3
	Eup							761.6	644.8	504.5	371.9
65	OBS	3610.0	3444.6	2609.3	2223.6	1674.1	1270.7	-	-	-	-
	EXP	3654.9	3435.4	2598.9	2229.7	1660.1	1267.6	1028.1*	887.1*	724.4*	546.8*
	Elow							990.4	823.2	647.5	470.8
	Eup							1065.9	953.4	807.1	631.5
70	OBS	5819.9	5079.5	4556.2	3582.0	2971.4	1988.0	-	-	-	-
	EXP	5782.5	5054.2	4529.5	3606.8	2955.2	2047.9	1563.7*	1268.2*	1094.2*	893.6*
	Elow							1506.3	1176.9	978.1	769.5
	Eup							1621.1	1363.0	1219.2	1032.1
75	OBS	9121.0	8010.3	6752.4	6264.6	4868.8	3695.8	-	-	-	-
	EXP	9121.0	8059.5	6716.3	6335.6	4818.0	3674.0	2546.0*	1944.1*	1576.8*	1360.4*
	Elow							2452.6	1804.0	1409.5	1171.5
	Eup							2639.4	2089.4	1756.8	1571.3
30-79	OBS	1533.0	1330.9	1093.8	945.1	759.7	583.7	-	-	-	-
	EXP	1534.2	1330.4	1094.2	943.3	760.9	583.5	450.0*	356.7*	284.1*	224.0*
	Elow							433.5	331.0	254.0	192.9
	Eup							466.5	383.3	316.6	258.7

Osmond and Gardner Modelling

**France IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

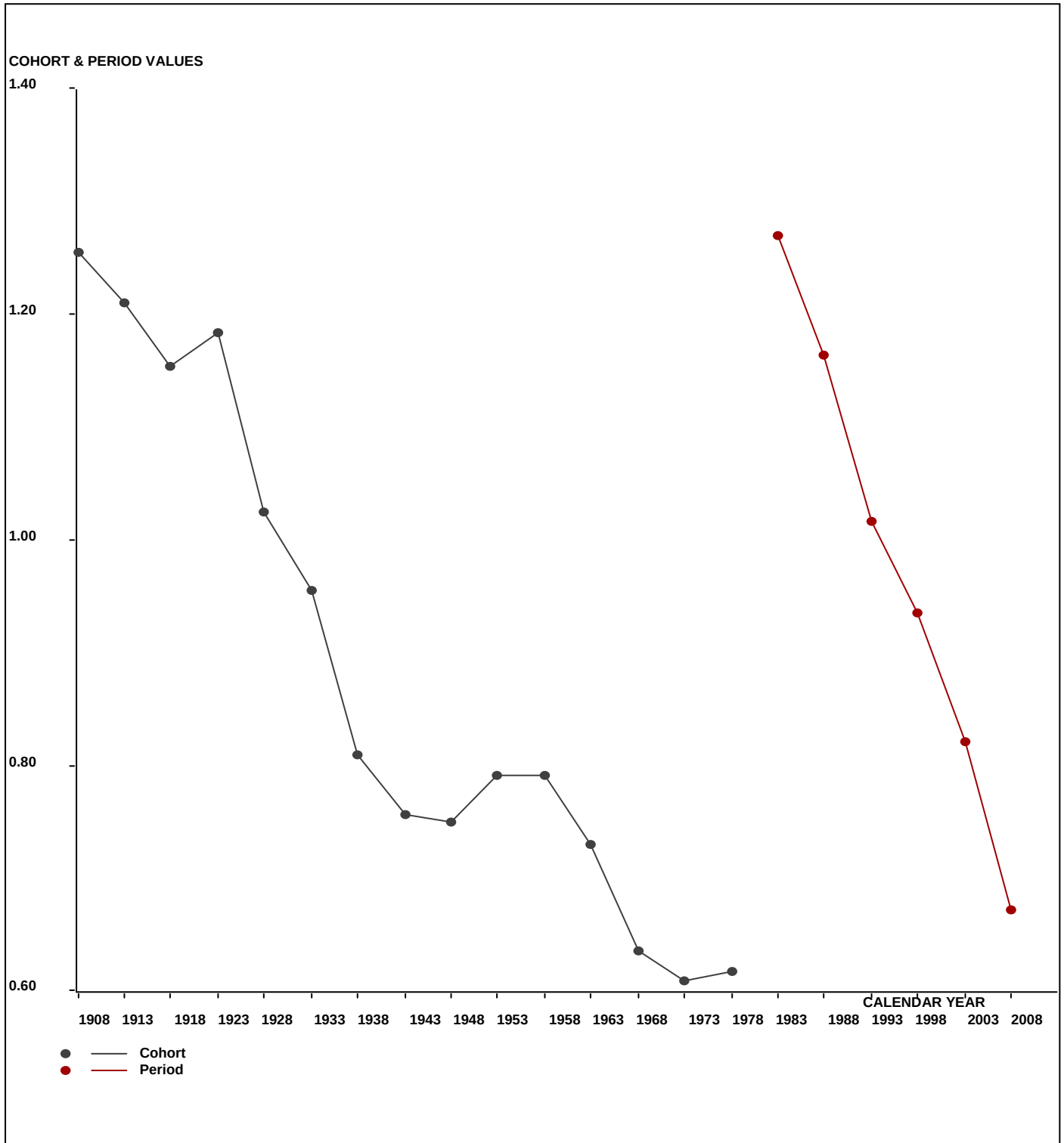
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	499.0	468.0	319.0	252.0	223.0	175.8	-	-	-	-
	EXP	482.0	420.0	345.3	280.7	239.1	163.4	123.8*	103.4*	79.8*	61.9*
	CHI	0.599	5.491	2.002	2.934	1.079	0.941	-	-	-	-
35 -	OBS	1093.0	1287.0	1055.0	851.0	700.0	577.5	-	-	-	-
	EXP	1117.3	1243.1	1040.6	897.0	705.8	562.2	384.1*	290.2*	241.6*	186.4*
	CHI	0.531	1.549	0.199	2.362	0.047	0.417	-	-	-	-
40 -	OBS	1787.0	2359.0	2295.0	2082.0	1661.0	1299.6	-	-	-	-
	EXP	1885.2	2204.9	2352.6	2065.4	1718.5	1267.1	1007.5*	689.4*	520.7*	433.0*
	CHI	5.111	10.769	1.409	0.133	1.923	0.834	-	-	-	-
45 -	OBS	3685.0	2952.0	3292.0	3665.0	3059.0	2558.6	-	-	-	-
	EXP	3722.5	2933.6	3302.6	3696.3	3125.9	2435.1	1795.3*	1429.9*	979.4*	740.3*
	CHI	0.377	0.116	0.034	0.264	1.430	6.266	-	-	-	-
50 -	OBS	7081.0	5241.0	3952.0	4782.0	4929.0	3985.8	-	-	-	-
	EXP	7016.1	5212.7	3967.7	4705.1	5070.9	4001.5	3117.0*	2302.5*	1836.4*	1259.5*
	CHI	0.601	0.154	0.062	1.257	3.971	0.062	-	-	-	-
55 -	OBS	10976.0	8952.0	6419.0	5338.0	5921.0	6186.6	-	-	-	-
	EXP	10974.8	9064.5	6499.0	5233.7	6002.8	6022.9	4738.0*	3699.4*	2738.3*	2188.9*
	CHI	0.000	1.396	0.984	2.078	1.114	4.452	-	-	-	-
60 -	OBS	14543.0	13758.0	11002.0	8730.0	6551.0	6956.0	-	-	-	-
	EXP	14457.0	13915.4	11105.2	8411.6	6581.4	7078.1	7074.1*	5578.0*	4370.2*	3244.0*
	CHI	0.512	1.781	0.959	12.052	0.140	2.107	-	-	-	-
65 -	OBS	14328.0	17542.0	16237.0	13598.0	10146.0	7425.8	-	-	-	-
	EXP	14506.2	17495.2	16172.2	13635.2	10061.6	7408.1	8007.7*	8019.0*	6356.4*	5000.9*
	CHI	2.189	0.125	0.260	0.102	0.708	0.042	-	-	-	-
70 -	OBS	25460.0	16799.0	20046.0	19172.0	16012.0	10804.9	-	-	-	-
	EXP	25296.5	16715.3	19928.5	19305.0	15924.6	11130.4	8249.4*	9006.2*	9046.7*	7220.8*
	CHI	1.057	0.419	0.692	0.917	0.479	9.521	-	-	-	-
75 -	OBS	28622.0	26788.0	17419.0	22264.0	21240.0	16709.9	-	-	-	-
	EXP	28622.0	26952.5	17326.0	22516.4	21018.2	16611.4	11755.3*	8792.6*	9725.4*	9802.7*
	CHI	0.000	1.004	0.499	2.830	2.341	0.584	-	-	-	-
30-79	OBS	108074.0	96146.0	82036.0	80734.0	70442.0	56680.5	-	-	-	-
	EXP	108079.5	96157.2	82039.6	80746.5	70448.7	56680.2	46252.2*	39910.5*	35894.9*	30138.4*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

France IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

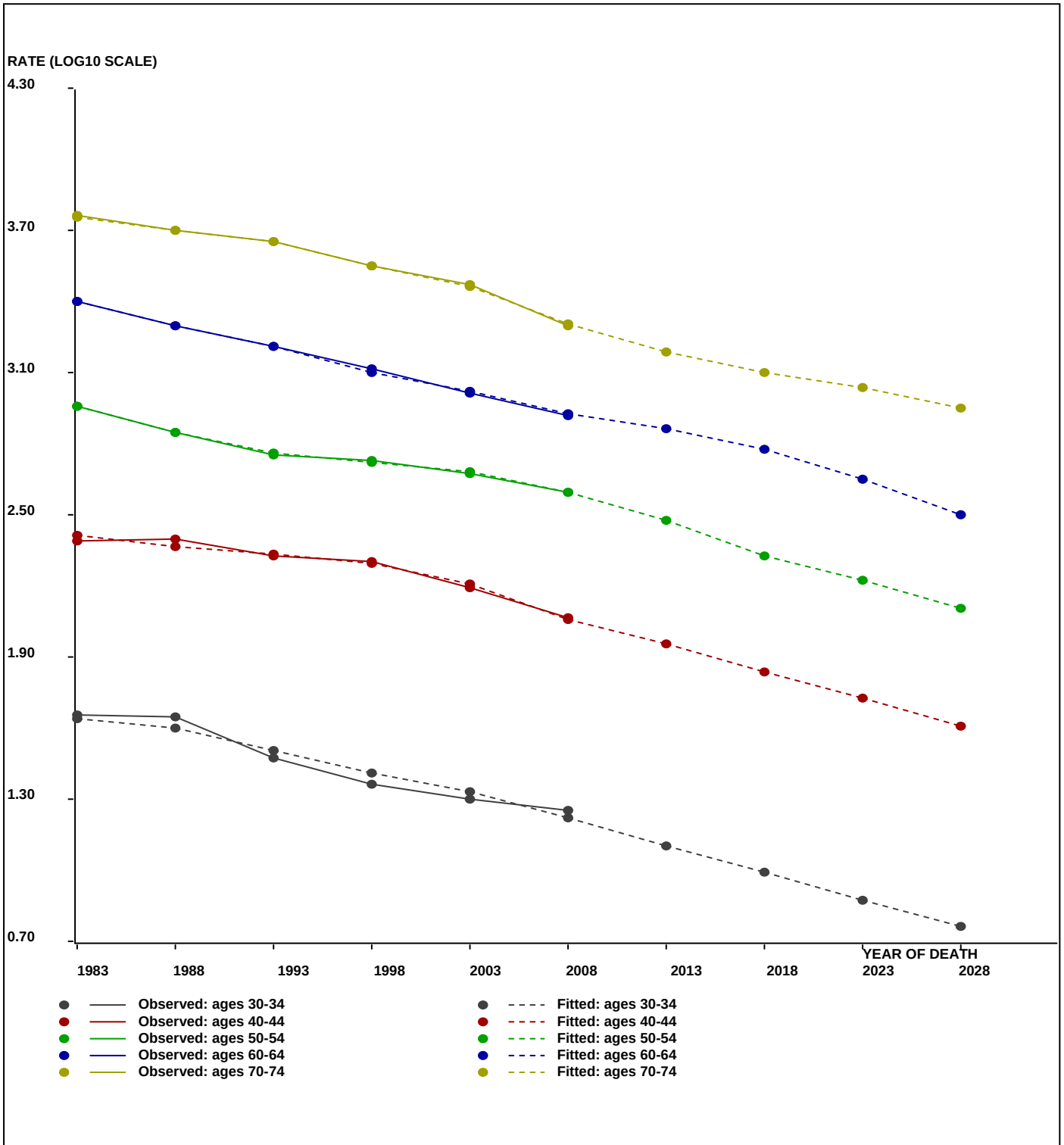


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

France IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

France IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	12.9	38.9	90.3	164.4	301.5	487.8	734.6	1028.1	1563.7	2546.0
2016	PRE	9.9	29.8	69.5	128.9	214.4	368.2	599.9	887.1	1268.2	1944.1
2021	PRE	7.6	22.9	53.4	99.3	168.0	261.8	452.8	724.4	1094.2	1576.8
2026	PRE	5.8	17.6	41.0	76.3	129.4	205.2	322.0	546.8	893.6	1360.4

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	123.8	384.1	1007.5	1795.3	3117.0	4738.0	7074.1	8007.7	8249.4	11755.3
2016	PRE	103.4	290.2	689.4	1429.9	2302.5	3699.4	5578.0	8019.0	9006.2	8792.6
2021	PRE	79.8	241.6	520.7	979.4	1836.4	2738.3	4370.2	6356.4	9046.7	9725.4
2026	PRE	61.9	186.4	433.0	740.3	1259.5	2188.9	3244.0	5000.9	7220.8	9802.7

Osmond and Gardner Modelling

France Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	9062.78	177.70	51	P, C	99.86	49378.89	0.0000
AGE-PERIOD	108.30	2.41	45	Cohort	88.50	574.97	0.0000
AGE-COHORT	44.26	1.23	36	Period	71.87	234.73	0.0000
PERIOD-COHORT	43.61	1.09	40	Age	71.45	231.43	0.0000
FULL AGE-PERIOD-COHORT	12.45	0.39	32			66.02	0.0004

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.692677	49.280706
35	1.924440	84.031173
40	2.158951	144.195228
45	2.344098	220.850075
50	2.541648	348.054958
55	2.723267	528.770576
60	2.928251	847.716591
65	3.141832	1386.220613
70	3.391928	2465.628164
75	3.638942	4354.538249

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.129292	1.346765
1986	0.052266	1.127888
1991	-0.019048	0.957089
1996	-0.048747	0.893826
2001	-0.108835	0.778332
2006	-0.186445	0.650962

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.187309	1.539249
1911	0.116324	1.307147
1916	0.059343	1.146417
1921	0.035686	1.085641
1926	-0.032168	0.928607
1931	-0.057129	0.876740
1936	-0.117636	0.762719
1941	-0.168357	0.678646
1946	-0.185187	0.652850
1951	-0.176853	0.665498
1956	-0.179729	0.661105
1961	-0.218968	0.603993
1966	-0.278712	0.526366
1971	-0.356200	0.440352
1976	-0.327544	0.470387

Osmond and Gardner Modelling

France Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	478.0	372.0	312.0	266.0	187.0	147.2
EXP	487.3	385.8	304.8	252.1	185.7	147.2
CHI	0.2	0.5	0.2	0.8	0.0	0.0
35 - OBS	702.0	711.0	591.0	457.0	348.0	267.2
EXP	702.6	689.9	557.8	483.1	377.5	268.5
CHI	0.0	0.6	2.0	1.4	2.3	0.0
40 - OBS	934.0	986.0	1039.0	890.0	681.0	557.5
EXP	958.5	993.3	994.1	881.3	719.3	543.6
CHI	0.6	0.1	2.0	0.1	2.0	0.4
45 - OBS	1647.0	1214.0	1357.0	1379.0	1094.0	968.2
EXP	1742.1	1195.1	1266.9	1390.6	1159.5	914.4
CHI	5.2	0.3	6.4	0.1	3.7	3.2
50 - OBS	3090.0	2261.0	1598.0	1801.0	1810.0	1534.6
EXP	3162.1	2203.3	1551.4	1811.3	1869.3	1500.8
CHI	1.6	1.5	1.4	0.1	1.9	0.8
55 - OBS	4981.0	3806.0	2709.0	2141.0	2270.0	2321.4
EXP	4969.0	3796.0	2712.5	2112.9	2329.5	2309.6
CHI	0.0	0.0	0.0	0.4	1.5	0.1
60 - OBS	7245.0	6127.0	4804.0	3744.0	2707.0	2978.5
EXP	7060.6	6135.7	4813.0	3798.9	2807.1	2994.8
CHI	4.8	0.0	0.0	0.8	3.6	0.1
65 - OBS	8503.0	8560.0	7470.0	6775.0	5095.0	3606.6
EXP	8494.7	8644.3	7666.6	6643.2	4987.5	3578.8
CHI	0.0	0.8	5.0	2.6	2.3	0.2
70 - OBS	18979.0	10539.0	11254.0	10956.0	9113.0	6636.9
EXP	18988.3	10543.8	11271.8	10953.7	9066.8	6653.6
CHI	0.0	0.0	0.0	0.0	0.2	0.0
75 - OBS	28327.0	21479.0	12322.0	14932.0	13917.0	11126.9
EXP	28327.0	21469.7	12325.5	15017.3	13729.9	11236.6
CHI	0.0	0.0	0.0	0.5	2.5	1.1

Osmond and Gardner Modelling

France Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	49.280706
35	84.031173
40	144.195228
45	220.850075
50	348.054958
55	528.770576
60	847.716591
65	1386.220613
70	2465.628164
75	4354.538249

PERIOD	EFFECT	LOWER	UPPER
% Period Change	83.6354	80.6354	86.6354

1981	1.346765		
1986	1.127888		
1991	0.957089		
1996	0.893826		
2001	0.778332		
2006	0.650962		
2011	0.544435	0.524906	0.563964
2016	0.455340	0.423260	0.488592
2021	0.380826	0.341298	0.423294
2026	0.318506	0.275207	0.366723

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.539249	1.000000	
1911	1.307147	2.000000	
1916	1.146417	4.000000	
1921	1.085641	8.000000	
1926	0.928607	16.000000	
1931	0.876740	32.000000	
1936	0.762719	64.000000	
1941	0.678646	128.000000	
1946	0.652850	256.000000	
1951	0.665498	512.000000	
1956	0.661105	1024.000000	
1961	0.603993	2048.000000	
1966	0.526366	4096.000000	
1971	0.440352	8192.000000	
1976	0.409945	EXTRAPOLATION	0.470387
1981	0.369326	EXTRAPOLATION	
1986	0.332731	EXTRAPOLATION	
1991	0.299763	EXTRAPOLATION	
1996	0.270061	EXTRAPOLATION	

Osmond and Gardner Modelling

**France Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	43.3	35.4	29.2	24.5	17.0	15.1	-	-	-	-
	EXP	44.2	36.7	28.5	23.2	16.9	13.2	9.9*	7.5*	5.6*	4.2*
	Elow							9.6	6.9	5.0	3.7
	Eup							10.3	8.0	6.3	4.9
35	OBS	73.8	65.0	56.3	42.9	31.7	24.0	-	-	-	-
	EXP	73.9	63.1	53.2	45.4	34.4	24.1	18.8*	14.1*	10.6*	8.0*
	Elow							18.1	13.1	9.5	6.9
	Eup							19.4	15.2	11.8	9.2
40	OBS	128.4	105.4	96.0	86.0	64.2	50.7	-	-	-	-
	EXP	131.8	106.2	91.8	85.2	67.8	49.4	34.6*	26.9*	20.3*	15.3*
	Elow							33.3	25.0	18.2	13.2
	Eup							35.8	28.9	22.5	17.6
45	OBS	214.5	171.7	147.8	130.3	107.2	91.9	-	-	-	-
	EXP	226.9	169.0	138.0	131.4	113.6	86.8	63.3*	44.3*	34.5*	26.0*
	Elow							61.0	41.2	30.9	22.4
	Eup							65.6	47.5	38.3	29.9
50	OBS	401.6	307.3	232.9	201.9	174.6	153.2	-	-	-	-
	EXP	411.0	299.4	226.1	203.1	180.3	149.8	114.5*	83.4*	58.4*	45.4*
	Elow							110.3	77.5	52.3	39.3
	Eup							118.6	89.5	64.9	52.3
55	OBS	662.9	524.3	385.5	325.0	261.8	230.2	-	-	-	-
	EXP	661.3	522.9	386.0	320.7	268.7	229.1	190.3*	145.4*	106.0*	74.2*
	Elow							183.5	135.2	95.0	64.1
	Eup							197.1	156.0	117.8	85.4
60	OBS	1271.8	886.6	710.0	569.6	431.8	358.3	-	-	-	-
	EXP	1239.4	887.9	711.3	577.9	447.8	360.3	307.1*	255.2*	195.0*	142.1*
	Elow							296.1	237.2	174.7	122.8
	Eup							318.2	273.8	216.7	163.6
65	OBS	2142.3	1680.8	1200.4	1107.9	840.7	617.1	-	-	-	-
	EXP	2140.3	1697.4	1232.0	1086.3	822.9	612.4	492.7*	420.1*	349.0*	266.7*
	Elow							475.0	390.5	312.8	230.4
	Eup							510.4	450.7	387.9	307.0
70	OBS	4338.4	3186.7	2557.9	2046.9	1691.1	1221.1	-	-	-	-
	EXP	4340.5	3188.1	2561.9	2046.5	1682.5	1224.2	911.0*	733.0*	624.9*	519.2*
	Elow							878.3	681.3	560.0	448.6
	Eup							943.7	786.5	694.6	597.8
75	OBS	9027.0	6422.7	4776.6	4201.5	3190.2	2461.0	-	-	-	-
	EXP	9027.0	6420.0	4777.9	4225.5	3147.3	2485.2	1808.2*	1345.6*	1082.6*	923.0*
	Elow							1743.4	1250.8	970.3	797.5
	Eup							1873.1	1443.9	1203.4	1062.7
30-79	OBS	1018.3	754.6	578.7	494.1	387.4	301.3	-	-	-	-
	EXP	1018.5	754.4	578.3	494.0	388.7	300.6	230.6*	181.0*	144.6*	114.9*
	Elow							222.4	168.2	129.6	99.3
	Eup							238.9	194.2	160.7	132.3

Osmond and Gardner Modelling

**France Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

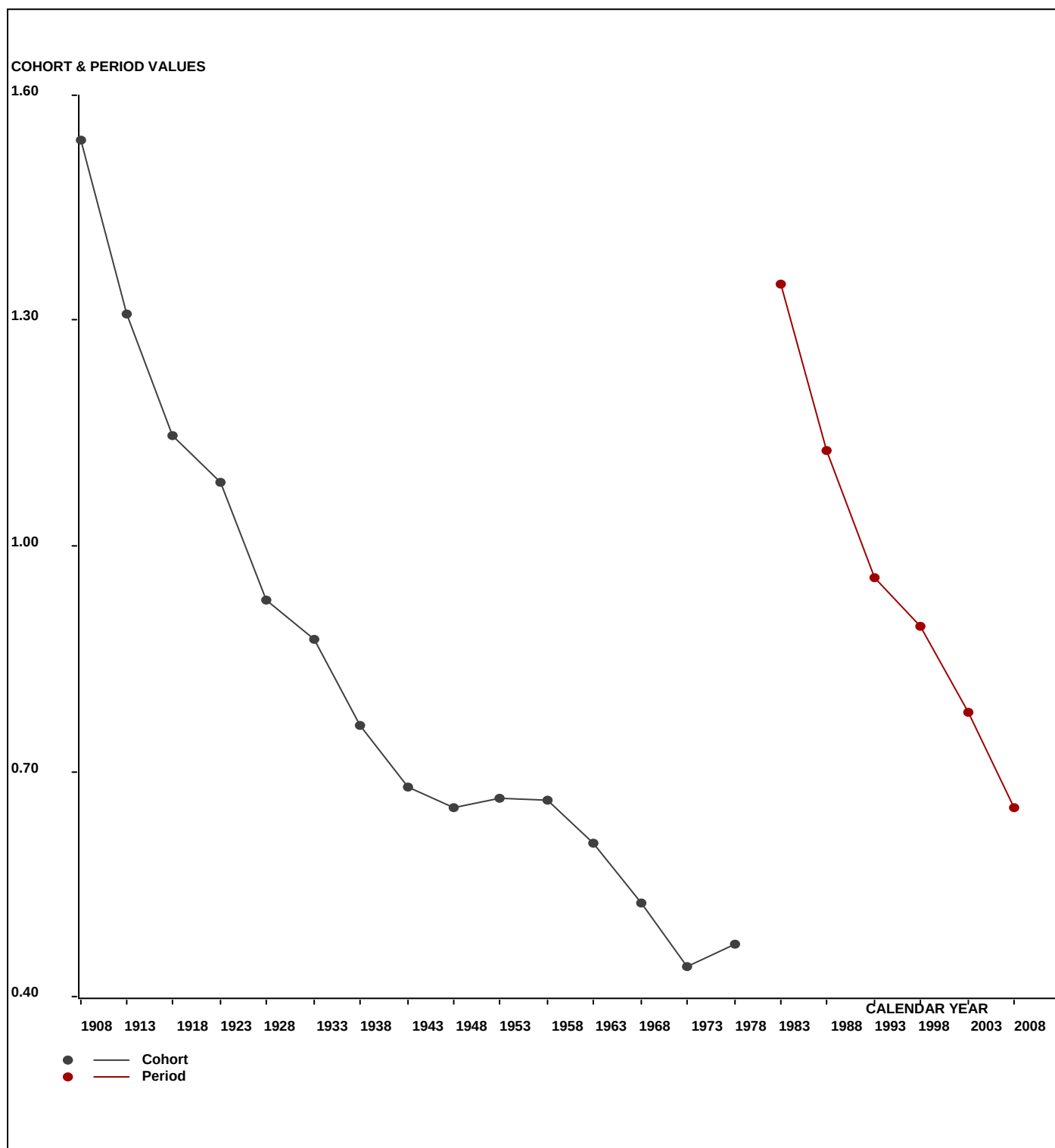
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	478.0	372.0	312.0	266.0	187.0	147.2	-	-	-	-
	EXP	487.3	385.8	304.8	252.1	185.7	128.3	95.4*	78.1*	59.2*	45.1*
	CHI	0.177	0.497	0.168	0.767	0.009	2.789	-	-	-	-
35 -	OBS	702.0	711.0	591.0	457.0	348.0	267.2	-	-	-	-
	EXP	702.6	689.9	557.8	483.1	377.5	268.5	185.3*	137.4*	112.2*	85.0*
	CHI	0.001	0.643	1.979	1.409	2.308	0.006	-	-	-	-
40 -	OBS	934.0	986.0	1039.0	890.0	681.0	557.5	-	-	-	-
	EXP	958.5	993.3	994.1	881.3	719.3	543.6	385.9*	266.8*	197.7*	161.3*
	CHI	0.625	0.054	2.028	0.086	2.041	0.354	-	-	-	-
45 -	OBS	1647.0	1214.0	1357.0	1379.0	1094.0	968.2	-	-	-	-
	EXP	1742.1	1195.1	1266.9	1390.6	1159.5	914.4	691.0*	491.3*	340.0*	252.2*
	CHI	5.192	0.298	6.404	0.097	3.695	3.170	-	-	-	-
50 -	OBS	3090.0	2261.0	1598.0	1801.0	1810.0	1534.6	-	-	-	-
	EXP	3162.1	2203.3	1551.4	1811.3	1869.3	1500.8	1183.4*	896.0*	638.0*	442.2*
	CHI	1.646	1.514	1.398	0.059	1.881	0.763	-	-	-	-
55 -	OBS	4981.0	3806.0	2709.0	2141.0	2270.0	2321.4	-	-	-	-
	EXP	4969.0	3796.0	2712.5	2112.9	2329.5	2309.6	1848.5*	1461.1*	1108.5*	791.1*
	CHI	0.029	0.026	0.004	0.374	1.520	0.060	-	-	-	-
60 -	OBS	7245.0	6127.0	4804.0	3744.0	2707.0	2978.5	-	-	-	-
	EXP	7060.6	6135.7	4813.0	3798.9	2807.1	2994.8	2957.6*	2372.7*	1881.9*	1431.8*
	CHI	4.815	0.012	0.017	0.794	3.570	0.089	-	-	-	-
65 -	OBS	8503.0	8560.0	7470.0	6775.0	5095.0	3606.6	-	-	-	-
	EXP	8494.7	8644.3	7666.6	6643.2	4987.5	3578.8	3837.5*	3797.4*	3062.4*	2439.1*
	CHI	0.008	0.822	5.040	2.617	2.317	0.215	-	-	-	-
70 -	OBS	18979.0	10539.0	11254.0	10956.0	9113.0	6636.9	-	-	-	-
	EXP	18988.3	10543.8	11271.8	10953.7	9066.8	6653.6	4806.0*	5204.9*	5166.3*	4195.4*
	CHI	0.005	0.002	0.028	0.000	0.235	0.042	-	-	-	-
75 -	OBS	28327.0	21479.0	12322.0	14932.0	13917.0	11126.9	-	-	-	-
	EXP	28327.0	21469.7	12325.5	15017.3	13729.9	11236.6	8348.8*	6085.9*	6677.7*	6650.9*
	CHI	0.000	0.004	0.001	0.484	2.548	1.071	-	-	-	-
30-79	OBS	74886.0	56055.0	43456.0	43341.0	37222.0	30145.0	-	-	-	-
	EXP	74892.3	56056.9	43464.4	43344.3	37232.2	30128.9	24339.5*	20791.7*	19244.0*	16494.0*
	O/E	1.000	1.000	1.000	1.000	1.000	1.001	-	-	-	-

Osmond and Gardner Modelling

France Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

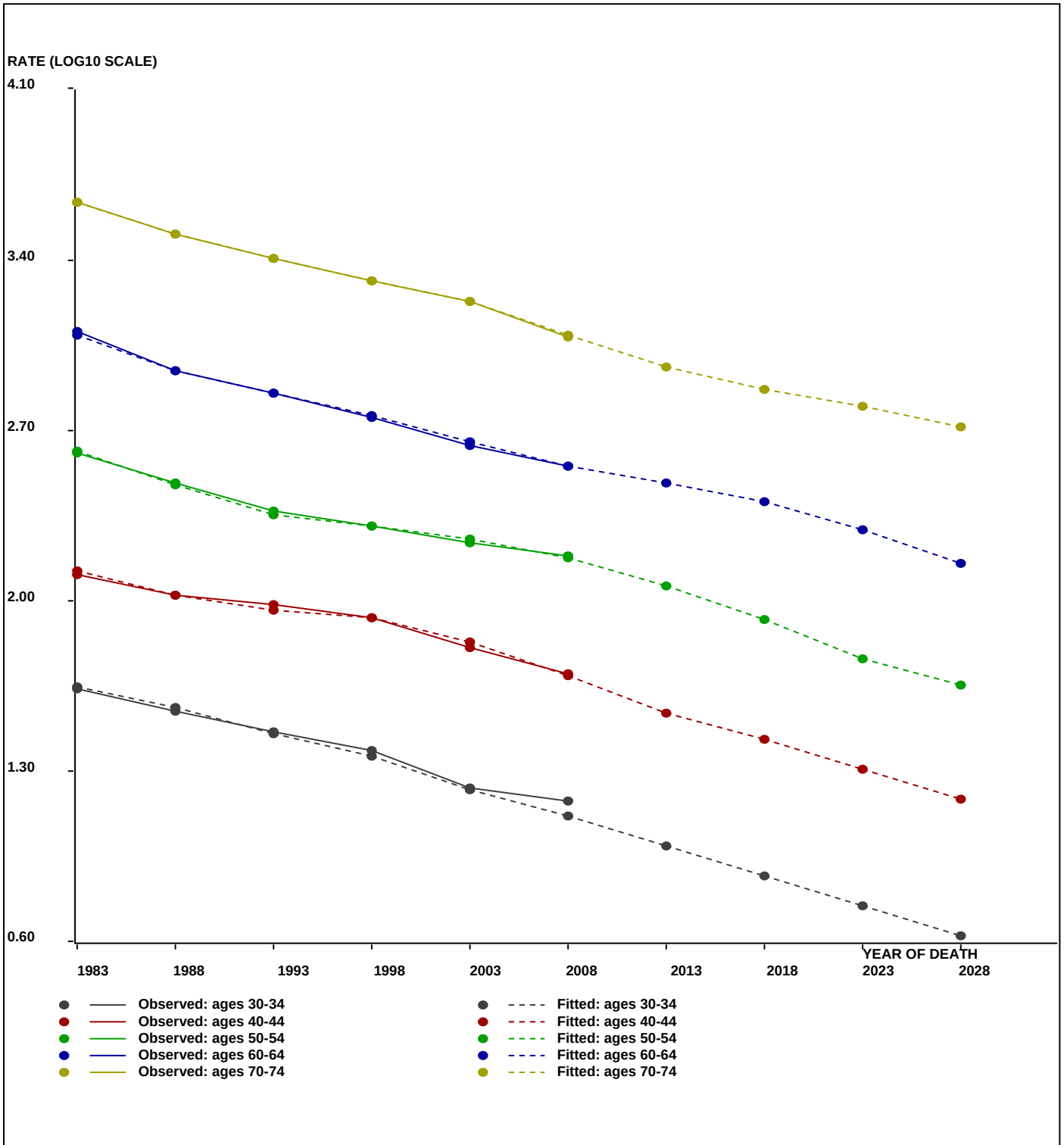


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

France Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

France Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	9.9	18.8	34.6	63.3	114.5	190.3	307.1	492.7	911.0	1808.2
2016	PRE	7.5	14.1	26.9	44.3	83.4	145.4	255.2	420.1	733.0	1345.6
2021	PRE	5.6	10.6	20.3	34.5	58.4	106.0	195.0	349.0	624.9	1082.6
2026	PRE	4.2	8.0	15.3	26.0	45.4	74.2	142.1	266.7	519.2	923.0

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	95.4	185.3	385.9	691.0	1183.4	1848.5	2957.6	3837.5	4806.0	8348.8
2016	PRE	78.1	137.4	266.8	491.3	896.0	1461.1	2372.7	3797.4	5204.9	6085.9
2021	PRE	59.2	112.2	197.7	340.0	638.0	1108.5	1881.9	3062.4	5166.3	6677.7
2026	PRE	45.1	85.0	161.3	252.2	442.2	791.1	1431.8	2439.1	4195.4	6650.9

Osmond and Gardner Modelling

France Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	506.17	9.92	51	P, C	97.27	2695.78	0.0000
AGE-PERIOD	244.40	5.43	45	Cohort	94.35	1300.41	0.0000
AGE-COHORT	155.56	4.32	36	Period	91.12	825.14	0.0000
PERIOD-COHORT	27.07	0.68	40	Age	48.99	143.62	0.0000
FULL AGE-PERIOD-COHORT	13.81	0.43	32			73.23	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.199143	15.817696
35	1.803313	63.578855
40	2.301176	200.067240
45	2.665202	462.596376
50	2.940212	871.388115
55	3.154472	1427.156251
60	3.318468	2081.936558
65	3.438407	2744.146145
70	3.525039	3349.955452
75	3.584609	3842.455698

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.004384	0.989956
1986	0.023661	1.055993
1991	0.028239	1.067183
1996	0.014114	1.033032
2001	-0.015115	0.965795
2006	-0.041740	0.908365

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.005975	1.013852
1911	-0.006612	0.984891
1916	-0.014310	0.967587
1921	0.006357	1.014745
1926	-0.007383	0.983144
1931	0.007905	1.018368
1936	-0.024140	0.945931
1941	-0.010132	0.976941
1946	0.009732	1.022662
1951	0.039292	1.094693
1956	0.062217	1.154029
1961	-0.042232	0.907336
1966	-0.148549	0.710315
1971	-0.203221	0.626295
1976	-0.194800	0.638557

Osmond and Gardner Modelling

France Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	160.0	217.0	165.0	122.0	119.0	89.5
EXP	189.1	202.4	163.9	126.2	105.2	89.5
CHI	4.5	1.1	0.0	0.1	1.8	0.0
35 - OBS	606.0	799.0	817.0	669.0	473.0	388.2
EXP	612.1	803.9	821.4	634.6	478.3	403.1
CHI	0.1	0.0	0.0	1.9	0.1	0.6
40 - OBS	1365.0	1988.0	2458.0	2526.0	1935.0	1429.7
EXP	1407.2	2021.3	2529.8	2466.9	1860.4	1420.3
CHI	1.3	0.5	2.0	1.4	3.0	0.1
45 - OBS	3254.0	3308.0	4821.0	5563.0	5295.0	3900.6
EXP	3326.6	3374.0	4635.1	5537.6	5260.5	4014.8
CHI	1.6	1.3	7.5	0.1	0.2	3.2
50 - OBS	6673.0	6465.0	6274.0	8291.0	9562.0	9046.5
EXP	6759.3	6405.0	6234.6	8210.0	9552.3	9152.3
CHI	1.1	0.6	0.2	0.8	0.0	1.2
55 - OBS	10544.0	11002.0	9944.0	9569.0	12282.0	14375.4
EXP	10437.1	11141.9	10124.0	9487.8	12221.0	14308.3
CHI	1.1	1.8	3.2	0.7	0.3	0.3
60 - OBS	11877.0	15067.0	15481.0	13331.0	12383.0	15781.4
EXP	11913.9	14936.8	15309.4	13373.2	12314.6	16077.1
CHI	0.1	1.1	1.9	0.1	0.4	5.4
65 - OBS	10481.0	15171.0	17775.0	17611.0	15215.0	14148.3
EXP	10432.7	14975.2	17916.3	17654.0	15194.0	14231.4
CHI	0.2	2.6	1.1	0.1	0.0	0.5
70 - OBS	14401.0	11272.0	15953.0	18168.0	17528.0	15854.3
EXP	14288.5	11320.1	15961.1	18210.3	17754.9	15644.8
CHI	0.9	0.2	0.0	0.1	2.9	2.8
75 - OBS	12102.0	13251.0	10235.0	14162.0	15861.0	16388.4
EXP	12102.0	13364.5	10235.4	14314.9	15916.2	16070.9
CHI	0.0	1.0	0.0	1.6	0.2	6.3

Osmond and Gardner Modelling

France Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	15.817696
35	63.578855
40	200.067240
45	462.596376
50	871.388115
55	1427.156251
60	2081.936558
65	2744.146145
70	3349.955452
75	3842.455698

PERIOD	EFFECT	LOWER	UPPER
% Period Change	94.0536	91.0536	97.0536

1981	0.989956		
1986	1.055993		
1991	1.067183		
1996	1.033032		
2001	0.965795		
2006	0.908365		
2011	0.854350	0.827099	0.881601
2016	0.803547	0.753104	0.855626
2021	0.755766	0.685729	0.830416
2026	0.710825	0.624381	0.805949

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.013852	1.000000	
1911	0.984891	2.000000	
1916	0.967587	4.000000	
1921	1.014745	8.000000	
1926	0.983144	16.000000	
1931	1.018368	32.000000	
1936	0.945931	64.000000	
1941	0.976941	128.000000	
1946	1.022662	256.000000	
1951	1.094693	512.000000	
1956	1.154029	1024.000000	
1961	0.907336	2048.000000	
1966	0.710315	4096.000000	
1971	0.626295	8192.000000	
1976	0.566371	EXTRAPOLATION	0.638557
1981	0.500144	EXTRAPOLATION	
1986	0.441661	EXTRAPOLATION	
1991	0.390017	EXTRAPOLATION	
1996	0.344411	EXTRAPOLATION	

Osmond and Gardner Modelling

**France Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	14.5	20.7	15.4	11.2	10.8	9.2	-	-	-	-
	EXP	17.1	19.3	15.3	11.6	9.6	8.1	6.8*	5.6*	4.7*	3.9*
	Elow							6.5	5.3	4.2	3.4
	Eup							7.0	6.0	5.1	4.4
35	OBS	63.7	73.0	77.9	62.8	43.1	34.8	-	-	-	-
	EXP	64.4	73.5	78.3	59.6	43.6	36.2	30.8*	25.6*	21.2*	17.6*
	Elow							29.8	23.9	19.3	15.5
	Eup							31.7	27.2	23.3	20.0
40	OBS	187.7	212.5	227.1	244.2	182.4	129.9	-	-	-	-
	EXP	193.5	216.1	233.7	238.5	175.3	129.1	107.1*	91.1*	75.6*	62.8*
	Elow							103.6	85.3	68.6	55.2
	Eup							110.5	97.0	83.1	71.2
45	OBS	423.7	467.9	525.1	525.5	519.0	370.4	-	-	-	-
	EXP	433.2	477.2	504.9	523.1	515.6	381.3	280.7*	232.8*	198.0*	164.5*
	Elow							271.8	218.2	179.7	144.5
	Eup							289.7	247.9	217.6	186.5
50	OBS	867.3	878.6	914.2	929.7	922.2	902.9	-	-	-	-
	EXP	878.5	870.4	908.5	920.6	921.3	913.5	675.5*	497.4*	412.5*	350.8*
	Elow							653.9	466.1	374.2	308.2
	Eup							697.0	529.6	453.2	397.8
55	OBS	1403.2	1515.5	1415.1	1452.6	1416.6	1425.8	-	-	-	-
	EXP	1389.0	1534.7	1440.7	1440.3	1409.6	1419.1	1407.1*	1040.5*	766.1*	635.3*
	Elow							1362.2	975.2	695.1	558.1
	Eup							1452.0	1108.0	841.8	720.4
60	OBS	2084.9	2180.3	2288.0	2028.0	1975.3	1898.4	-	-	-	-
	EXP	2091.4	2161.5	2262.6	2034.4	1964.4	1934.0	1947.1*	1930.6*	1427.7*	1051.2*
	Elow							1885.0	1809.4	1295.4	923.4
	Eup							2009.2	2055.7	1568.7	1191.9
65	OBS	2640.7	2979.0	2856.4	2879.8	2510.4	2421.0	-	-	-	-
	EXP	2628.5	2940.5	2879.1	2886.9	2507.0	2435.2	2397.6*	2413.9*	2393.4*	1769.9*
	Elow							2321.1	2262.3	2171.6	1554.6
	Eup							2474.1	2570.3	2629.8	2006.7
70	OBS	3291.9	3408.3	3625.9	3394.4	3252.7	2917.0	-	-	-	-
	EXP	3266.2	3422.9	3627.7	3402.3	3294.8	2878.5	2796.0*	2752.9*	2771.5*	2748.0*
	Elow							2706.9	2580.0	2514.7	2413.8
	Eup							2885.2	2931.3	3045.3	3115.8
75	OBS	3856.6	3962.4	3967.5	3984.9	3635.8	3624.7	-	-	-	-
	EXP	3856.6	3996.3	3967.7	4027.9	3648.5	3554.5	3105.3*	3016.4*	2969.8*	2989.9*
	Elow							3006.3	2827.0	2694.6	2626.3
	Eup							3204.4	3211.9	3263.1	3390.1
30-79	OBS	1052.6	1120.5	1136.1	1108.0	1039.8	979.3	-	-	-	-
	EXP	1053.2	1120.6	1135.9	1107.2	1039.0	980.9	910.4*	832.9*	737.2*	628.5*
	Elow							881.4	780.6	668.9	552.1
	Eup							939.5	886.9	810.0	712.6

Osmond and Gardner Modelling

France Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

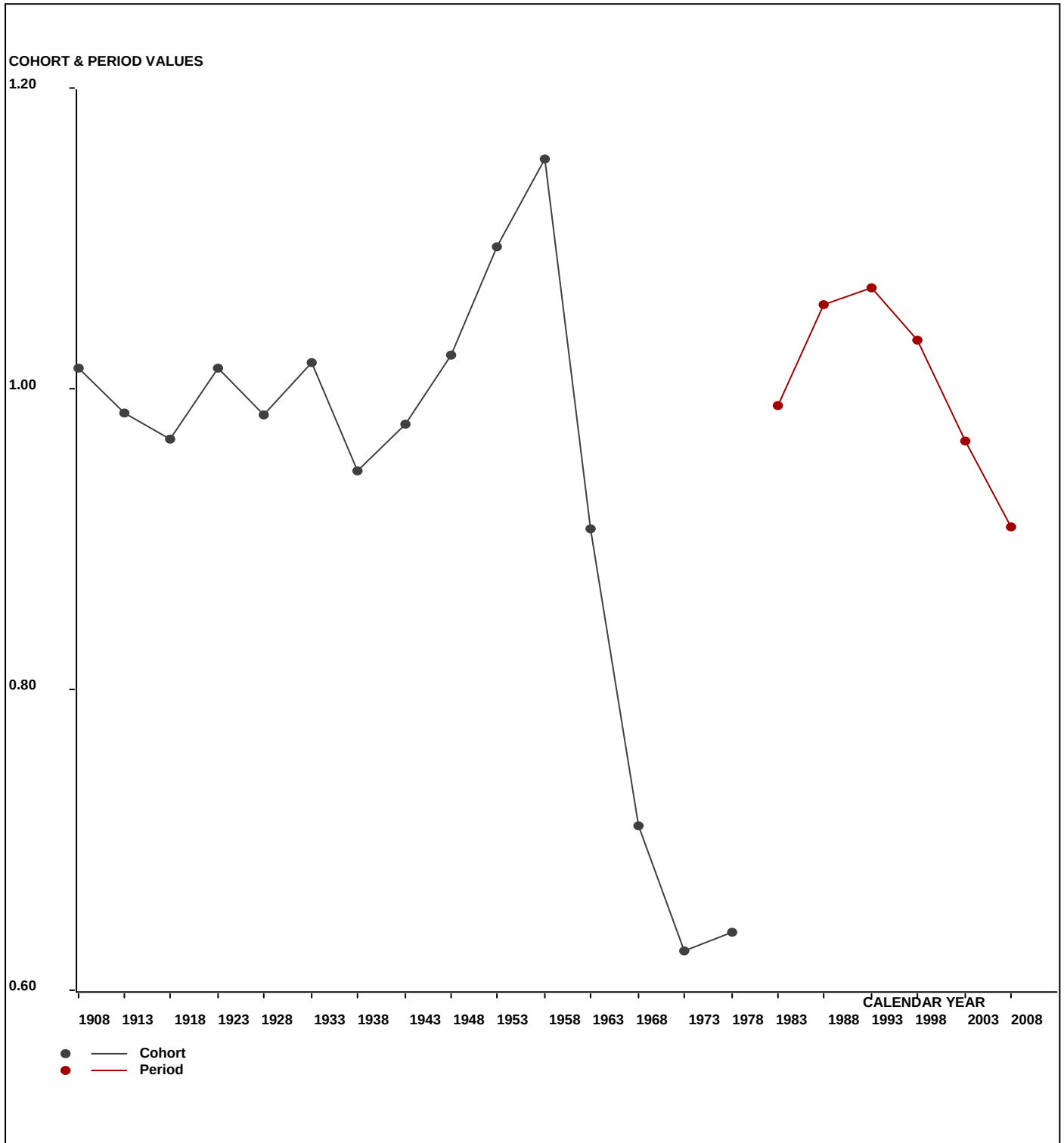
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	160.0	217.0	165.0	122.0	119.0	89.5	-	-	-	-
	EXP	189.1	202.4	163.9	126.2	105.2	79.4	65.1*	58.7*	49.1*	41.2*
	CHI	4.482	1.053	0.007	0.140	1.807	1.290	-	-	-	-
35 -	OBS	606.0	799.0	817.0	669.0	473.0	388.2	-	-	-	-
	EXP	612.1	803.9	821.4	634.6	478.3	403.1	304.0*	248.4*	223.7*	186.6*
	CHI	0.061	0.030	0.024	1.866	0.059	0.553	-	-	-	-
40 -	OBS	1365.0	1988.0	2458.0	2526.0	1935.0	1429.7	-	-	-	-
	EXP	1407.2	2021.3	2529.8	2466.9	1860.4	1420.3	1194.9*	902.6*	737.3*	663.2*
	CHI	1.265	0.547	2.039	1.417	2.994	0.062	-	-	-	-
45 -	OBS	3254.0	3308.0	4821.0	5563.0	5295.0	3900.6	-	-	-	-
	EXP	3326.6	3374.0	4635.1	5537.6	5260.5	4014.8	3064.9*	2583.0*	1952.9*	1596.5*
	CHI	1.584	1.290	7.453	0.117	0.227	3.248	-	-	-	-
50 -	OBS	6673.0	6465.0	6274.0	8291.0	9562.0	9046.5	-	-	-	-
	EXP	6759.3	6405.0	6234.6	8210.0	9552.3	9152.3	6984.5*	5342.3*	4508.3*	3413.5*
	CHI	1.102	0.562	0.249	0.799	0.010	1.223	-	-	-	-
55 -	OBS	10544.0	11002.0	9944.0	9569.0	12282.0	14375.4	-	-	-	-
	EXP	10437.1	11141.9	10124.0	9487.8	12221.0	14308.3	13666.7*	10454.3*	8012.8*	6777.2*
	CHI	1.094	1.756	3.199	0.696	0.304	0.314	-	-	-	-
60 -	OBS	11877.0	15067.0	15481.0	13331.0	12383.0	15781.4	-	-	-	-
	EXP	11913.9	14936.8	15309.4	13373.2	12314.6	16077.1	18749.6*	17950.6*	13778.5*	10590.4*
	CHI	0.114	1.135	1.924	0.133	0.380	5.439	-	-	-	-
65 -	OBS	10481.0	15171.0	17775.0	17611.0	15215.0	14148.3	-	-	-	-
	EXP	10432.7	14975.2	17916.3	17654.0	15194.0	14231.4	18673.8*	21821.1*	21001.4*	16187.6*
	CHI	0.224	2.561	1.114	0.105	0.029	0.485	-	-	-	-
70 -	OBS	14401.0	11272.0	15953.0	18168.0	17528.0	15854.3	-	-	-	-
	EXP	14288.5	11320.1	15961.1	18210.3	17754.9	15644.8	14750.7*	19548.7*	22914.0*	22206.5*
	CHI	0.886	0.205	0.004	0.098	2.900	2.806	-	-	-	-
75 -	OBS	12102.0	13251.0	10235.0	14162.0	15861.0	16388.4	-	-	-	-
	EXP	12102.0	13364.5	10235.4	14314.9	15916.2	16070.9	14337.6*	13642.5*	18317.7*	21544.6*
	CHI	0.000	0.963	0.000	1.634	0.192	6.272	-	-	-	-
30-79	OBS	71463.0	78540.0	83923.0	90012.0	90653.0	91402.3	-	-	-	-
	EXP	71468.5	78545.0	83931.0	90015.5	90657.4	91402.4	91791.9*	92552.3*	91495.7*	83207.0*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

France Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

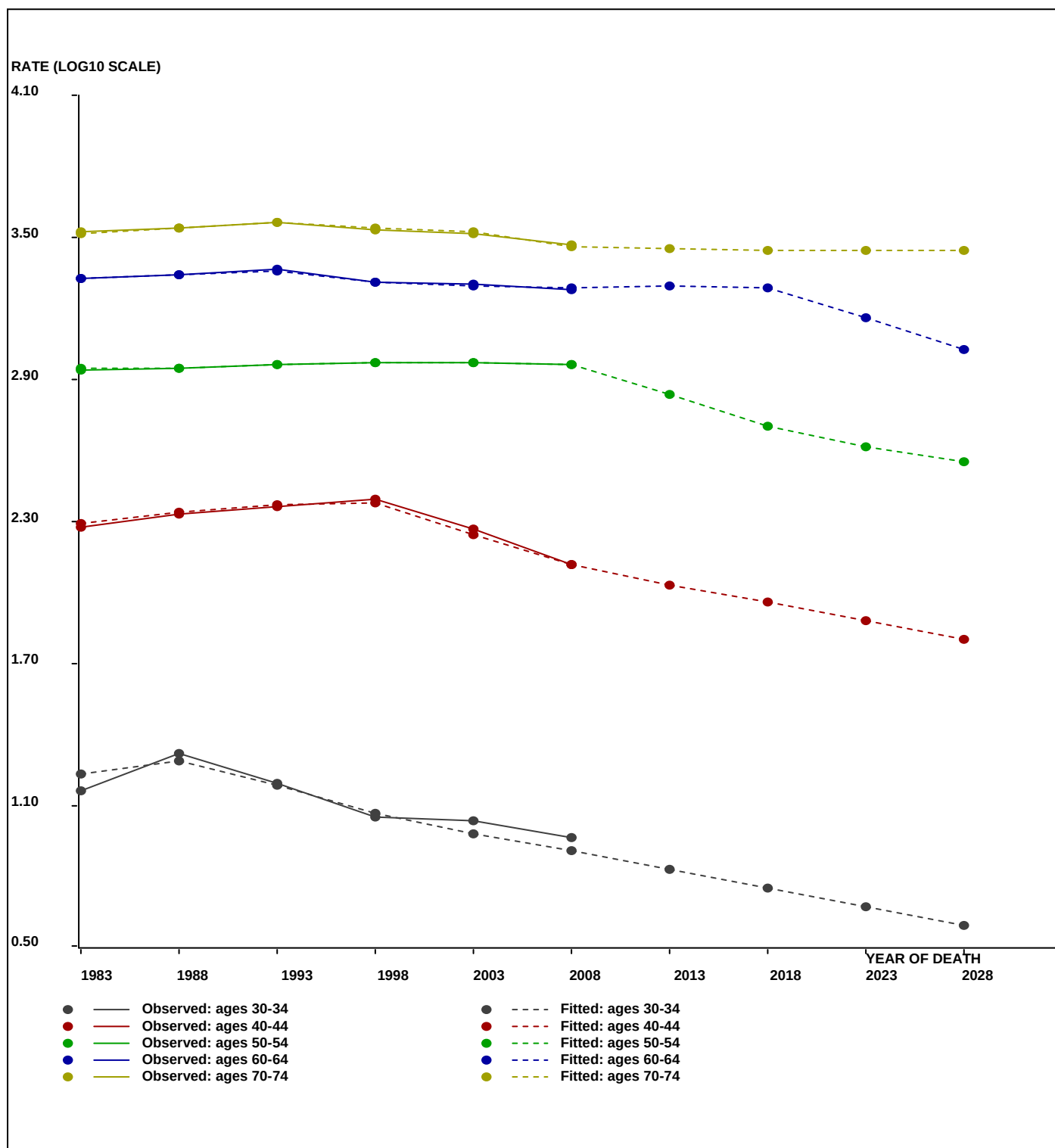


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

France Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

France Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	6.8	30.8	107.1	280.7	675.5	1407.1	1947.1	2397.6	2796.0	3105.3
2016	PRE	5.6	25.6	91.1	232.8	497.4	1040.5	1930.6	2413.9	2752.9	3016.4
2021	PRE	4.7	21.2	75.6	198.0	412.5	766.1	1427.7	2393.4	2771.5	2969.8
2026	PRE	3.9	17.6	62.8	164.5	350.8	635.3	1051.2	1769.9	2748.0	2989.9

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	65.1	304.0	1194.9	3064.9	6984.5	13666.7	18749.6	18673.8	14750.7	14337.6
2016	PRE	58.7	248.4	902.6	2583.0	5342.3	10454.3	17950.6	21821.1	19548.7	13642.5
2021	PRE	49.1	223.7	737.3	1952.9	4508.3	8012.8	13778.5	21001.4	22914.0	18317.7
2026	PRE	41.2	186.6	663.2	1596.5	3413.5	6777.2	10590.4	16187.6	22206.5	21544.6

Osmond and Gardner Modelling

France COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	2562.68	50.25	51	P, C	99.23	13947.35	0.0000
AGE-PERIOD	38.55	0.86	45	Cohort	49.03	204.68	0.0000
AGE-COHORT	350.01	9.72	36	Period	94.39	1861.39	0.0000
PERIOD-COHORT	21.27	0.53	40	Age	7.61	112.92	0.0000
FULL AGE-PERIOD-COHORT	19.65	0.61	32			104.32	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.891696	7.792849
35	1.098273	12.539299
40	1.340107	21.883006
45	1.644958	44.152735
50	1.947791	88.672883
55	2.242855	174.926147
60	2.524067	334.246783
65	2.789415	615.764497
70	3.054156	1132.807735
75	3.314014	2060.695192

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.118319	1.313166
1986	0.092529	1.237453
1991	0.053274	1.130510
1996	0.024186	1.057270
2001	-0.212428	0.613157
2006	-0.289050	0.513985

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.023365	1.055274
1911	-0.001393	0.996798
1916	-0.001697	0.996100
1921	0.011445	1.026703
1926	0.000157	1.000362
1931	0.009388	1.021851
1936	-0.028149	0.937241
1941	-0.034875	0.922836
1946	-0.030497	0.932186
1951	0.011461	1.026742
1956	0.003785	1.008753
1961	-0.016994	0.961626
1966	-0.046215	0.899053
1971	-0.047148	0.897124
1976	-0.157298	0.696149

Osmond and Gardner Modelling

France COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	105.0	101.0	103.0	81.0	45.0	27.2
EXP	115.9	102.1	90.7	80.5	47.1	27.2
CHI	1.0	0.0	1.7	0.0	0.1	0.0
35 - OBS	122.0	186.0	149.0	144.0	76.0	66.5
EXP	146.0	174.3	150.0	135.8	75.8	64.4
CHI	3.9	0.8	0.0	0.5	0.0	0.1
40 - OBS	228.0	246.0	274.0	191.0	135.0	110.6
EXP	192.9	236.2	274.9	241.4	136.9	111.3
CHI	6.4	0.4	0.0	10.5	0.0	0.0
45 - OBS	473.0	369.0	424.0	466.0	269.0	209.1
EXP	417.3	356.5	427.2	507.4	278.6	229.8
CHI	7.4	0.4	0.0	3.4	0.3	1.9
50 - OBS	940.0	789.0	540.0	750.0	581.0	514.0
EXP	915.5	756.8	634.9	779.4	578.8	460.6
CHI	0.7	1.4	14.2	1.1	0.0	6.2
55 - OBS	1755.0	1652.0	1254.0	1049.0	875.0	966.7
EXP	1726.7	1605.8	1302.4	1124.3	866.9	930.7
CHI	0.5	1.3	1.8	5.0	0.1	1.4
60 - OBS	2594.0	2852.0	2528.0	2144.0	1245.0	1366.5
EXP	2567.1	2859.3	2612.6	2177.2	1185.7	1331.3
CHI	0.3	0.0	2.7	0.5	3.0	0.9
65 - OBS	3087.0	3911.0	4315.0	4204.0	2157.0	1754.6
EXP	3196.8	3984.1	4333.4	4068.2	2144.7	1706.9
CHI	3.8	1.3	0.1	4.5	0.1	1.3
70 - OBS	6449.0	4546.0	5834.0	6488.0	3833.0	2941.8
EXP	6486.7	4617.9	5785.0	6412.8	3824.8	2966.0
CHI	0.2	1.1	0.4	0.9	0.0	0.2
75 - OBS	8961.0	8538.0	6163.0	7946.0	5435.0	4756.9
EXP	8961.0	8500.5	5986.3	7949.8	5514.1	4893.5
CHI	0.0	0.2	5.2	0.0	1.1	3.8

Osmond and Gardner Modelling

France COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	7.792849
35	12.539299
40	21.883006
45	44.152735
50	88.672883
55	174.926147
60	334.246783
65	615.764497
70	1132.807735
75	2060.695192

PERIOD	EFFECT	LOWER	UPPER
% Period Change	83.8260	80.8260	86.8260

1981	1.313166		
1986	1.237453		
1991	1.130510		
1996	1.057270		
2001	0.613157		
2006	0.513985		
2011	0.430853	0.415433	0.446272
2016	0.361167	0.335778	0.387480
2021	0.302751	0.271396	0.336434
2026	0.253784	0.219358	0.292112

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.055274	1.000000	
1911	0.996798	2.000000	
1916	0.996100	4.000000	
1921	1.026703	8.000000	
1926	1.000362	16.000000	
1931	1.021851	32.000000	
1936	0.937241	64.000000	
1941	0.922836	128.000000	
1946	0.932186	256.000000	
1951	1.026742	512.000000	
1956	1.008753	1024.000000	
1961	0.961626	2048.000000	
1966	0.899053	4096.000000	
1971	0.897124	8192.000000	
1976	0.877344	EXTRAPOLATION	0.696149
1981	0.858020	EXTRAPOLATION	
1986	0.839122	EXTRAPOLATION	
1991	0.820640	EXTRAPOLATION	
1996	0.802565	EXTRAPOLATION	

Osmond and Gardner Modelling

**France COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	9.5	9.6	9.6	7.4	4.1	2.8	-	-	-	-
	EXP	10.5	9.7	8.5	7.4	4.3	3.5	2.9*	2.4*	1.9*	1.6*
	Elow							2.8	2.2	1.7	1.4
	Eup							3.0	2.5	2.2	1.8
35	OBS	12.8	17.0	14.2	13.5	6.9	6.0	-	-	-	-
	EXP	15.3	15.9	14.3	12.7	6.9	5.8	4.7*	3.9*	3.2*	2.6*
	Elow							4.6	3.6	2.9	2.3
	Eup							4.9	4.2	3.5	3.0
40	OBS	31.4	26.3	25.3	18.5	12.7	10.1	-	-	-	-
	EXP	26.5	25.2	25.4	23.3	12.9	10.1	8.5*	6.9*	5.7*	4.7*
	Elow							8.2	6.4	5.1	4.0
	Eup							8.8	7.4	6.3	5.4
45	OBS	61.6	52.2	46.2	44.0	26.4	19.9	-	-	-	-
	EXP	54.3	50.4	46.5	47.9	27.3	21.8	17.1*	14.3*	11.7*	9.6*
	Elow							16.5	13.3	10.5	8.3
	Eup							17.7	15.3	13.0	11.1
50	OBS	122.2	107.2	78.7	84.1	56.0	51.3	-	-	-	-
	EXP	119.0	102.8	92.5	87.4	55.8	46.0	36.7*	28.8*	24.1*	19.7*
	Elow							35.4	26.8	21.6	17.1
	Eup							38.1	30.9	26.8	22.7
55	OBS	233.6	227.6	178.5	159.2	100.9	95.9	-	-	-	-
	EXP	229.8	221.2	185.3	170.7	100.0	92.3	76.0*	60.8*	47.6*	39.8*
	Elow							73.3	56.5	42.7	34.4
	Eup							78.7	65.2	52.9	45.8
60	OBS	455.4	412.7	373.6	326.2	198.6	164.4	-	-	-	-
	EXP	450.6	413.8	386.1	331.2	189.1	160.1	147.9*	121.8*	97.3*	76.3*
	Elow							142.6	113.2	87.2	65.9
	Eup							153.2	130.6	108.1	87.8
65	OBS	777.8	768.0	693.4	687.5	355.9	300.2	-	-	-	-
	EXP	805.4	782.3	696.4	665.3	353.9	292.1	247.3*	228.3*	188.1*	150.3*
	Elow							238.5	212.3	168.6	129.9
	Eup							256.2	245.0	209.0	173.0
70	OBS	1474.2	1374.6	1326.0	1212.2	711.3	541.3	-	-	-	-
	EXP	1482.8	1396.3	1314.8	1198.1	709.8	545.7	450.4*	381.4*	352.1*	290.0*
	Elow							434.3	354.6	315.7	250.7
	Eup							466.5	409.2	391.3	333.8
75	OBS	2855.6	2553.1	2389.1	2235.8	1245.9	1052.1	-	-	-	-
	EXP	2855.6	2541.8	2320.5	2236.9	1264.0	1082.3	832.1*	686.8*	581.6*	537.0*
	Elow							802.4	638.5	521.3	464.1
	Eup							861.9	736.9	646.3	618.1
30-79	OBS	337.9	313.0	285.2	265.8	152.6	126.5	-	-	-	-
	EXP	338.1	313.2	285.9	266.6	152.2	126.1	103.4*	87.2*	74.0*	62.4*
	Elow							99.7	81.1	66.3	53.9
	Eup							107.2	93.6	82.2	71.8

Osmond and Gardner Modelling

**France COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

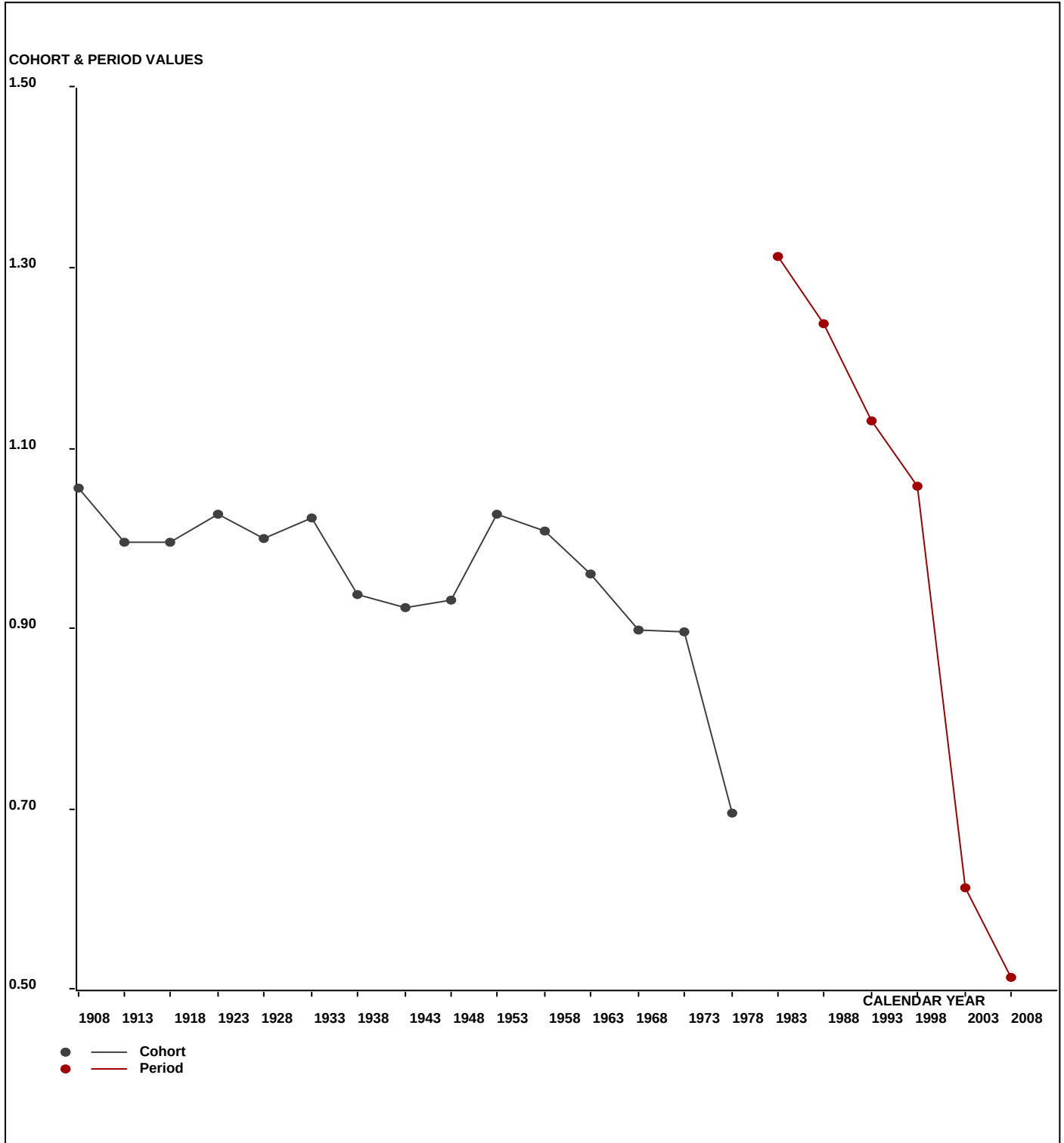
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	105.0	101.0	103.0	81.0	45.0	27.2	-	-	-	-
	EXP	115.9	102.1	90.7	80.5	47.1	34.3	27.7*	24.7*	20.4*	16.9*
	CHI	1.028	0.013	1.682	0.003	0.097	1.462	-	-	-	-
35 -	OBS	122.0	186.0	149.0	144.0	76.0	66.5	-	-	-	-
	EXP	146.0	174.3	150.0	135.8	75.8	64.4	46.8*	37.8*	33.6*	27.7*
	CHI	3.936	0.790	0.007	0.500	0.001	0.066	-	-	-	-
40 -	OBS	228.0	246.0	274.0	191.0	135.0	110.6	-	-	-	-
	EXP	192.9	236.2	274.9	241.4	136.9	111.3	94.4*	68.7*	55.4*	49.2*
	CHI	6.403	0.411	0.003	10.519	0.027	0.004	-	-	-	-
45 -	OBS	473.0	369.0	424.0	466.0	269.0	209.1	-	-	-	-
	EXP	417.3	356.5	427.2	507.4	278.6	229.8	186.7*	158.7*	115.7*	93.3*
	CHI	7.434	0.441	0.024	3.372	0.333	1.864	-	-	-	-
50 -	OBS	940.0	789.0	540.0	750.0	581.0	514.0	-	-	-	-
	EXP	915.5	756.8	634.9	779.4	578.8	460.6	379.9*	309.3*	263.3*	192.1*
	CHI	0.655	1.374	14.174	1.110	0.008	6.180	-	-	-	-
55 -	OBS	1755.0	1652.0	1254.0	1049.0	875.0	966.7	-	-	-	-
	EXP	1726.7	1605.8	1302.4	1124.3	866.9	930.7	738.4*	610.4*	498.0*	424.8*
	CHI	0.465	1.329	1.802	5.041	0.076	1.389	-	-	-	-
60 -	OBS	2594.0	2852.0	2528.0	2144.0	1245.0	1366.5	-	-	-	-
	EXP	2567.1	2859.3	2612.6	2177.2	1185.7	1331.3	1423.8*	1132.3*	939.2*	768.3*
	CHI	0.281	0.019	2.740	0.506	2.969	0.932	-	-	-	-
65 -	OBS	3087.0	3911.0	4315.0	4204.0	2157.0	1754.6	-	-	-	-
	EXP	3196.8	3984.1	4333.4	4068.2	2144.7	1706.9	1926.2*	2064.2*	1650.1*	1374.5*
	CHI	3.774	1.343	0.078	4.530	0.071	1.335	-	-	-	-
70 -	OBS	6449.0	4546.0	5834.0	6488.0	3833.0	2941.8	-	-	-	-
	EXP	6486.7	4617.9	5785.0	6412.8	3824.8	2966.0	2376.2*	2708.3*	2911.3*	2343.5*
	CHI	0.219	1.121	0.415	0.882	0.018	0.197	-	-	-	-
75 -	OBS	8961.0	8538.0	6163.0	7946.0	5435.0	4756.9	-	-	-	-
	EXP	8961.0	8500.5	5986.3	7949.8	5514.1	4893.5	3842.1*	3106.4*	3587.1*	3869.1*
	CHI	0.000	0.166	5.217	0.002	1.134	3.812	-	-	-	-
30-79	OBS	24714.0	23190.0	21584.0	23463.0	14651.0	12713.9	-	-	-	-
	EXP	24725.9	23193.5	21597.4	23476.7	14653.3	12728.8	11042.3*	10220.8*	10074.0*	9159.4*
	O/E	1.000	1.000	0.999	0.999	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

France COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

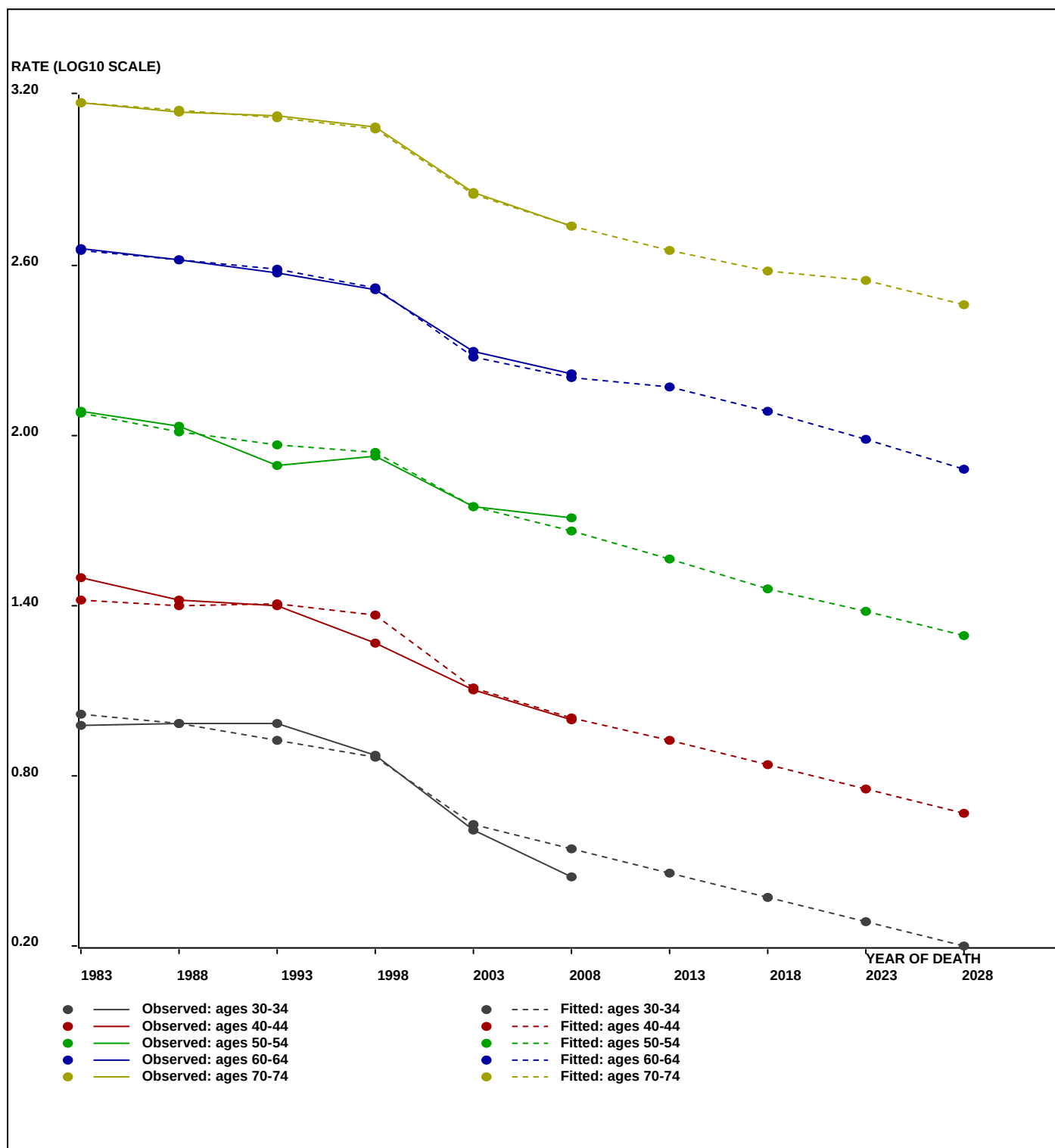


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

France COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

France COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	2.9	4.7	8.5	17.1	36.7	76.0	147.9	247.3	450.4	832.1
2016 PRE	2.4	3.9	6.9	14.3	28.8	60.8	121.8	228.3	381.4	686.8
2021 PRE	1.9	3.2	5.7	11.7	24.1	47.6	97.3	188.1	352.1	581.6
2026 PRE	1.6	2.6	4.7	9.6	19.7	39.8	76.3	150.3	290.0	537.0

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	27.7	46.8	94.4	186.7	379.9	738.4	1423.8	1926.2	2376.2	3842.1
2016 PRE	24.7	37.8	68.7	158.7	309.3	610.4	1132.3	2064.2	2708.3	3106.4
2021 PRE	20.4	33.6	55.4	115.7	263.3	498.0	939.2	1650.1	2911.3	3587.1
2026 PRE	16.9	27.7	49.2	93.3	192.1	424.8	768.3	1374.5	2343.5	3869.1

Osmond and Gardner Modelling

France IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	6545.23	128.34	51	P, C	99.84	35936.38	0.0000
AGE-PERIOD	253.62	5.64	45	Cohort	95.85	1363.85	0.0000
AGE-COHORT	48.88	1.36	36	Period	78.45	259.31	0.0000
PERIOD-COHORT	62.36	1.56	40	Age	83.11	333.92	0.0000
FULL AGE-PERIOD-COHORT	10.53	0.33	32			55.88	0.0056

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.906106	8.055744
35	1.315284	20.667328
40	1.657276	45.423036
45	1.957742	90.728226
50	2.184220	152.833994
55	2.405732	254.525881
60	2.668526	466.150247
65	2.924530	840.484969
70	3.171896	1485.580287
75	3.421252	2637.861788

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.062250	1.154116
1986	0.047655	1.115977
1991	0.005877	1.013625
1996	-0.023646	0.947009
2001	-0.076108	0.839252
2006	-0.159551	0.692546

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.198325	1.578793
1911	0.144438	1.394562
1916	0.074731	1.187767
1921	0.014655	1.034321
1926	-0.086195	0.819984
1931	-0.138492	0.726956
1936	-0.242189	0.572546
1941	-0.306702	0.493512
1946	-0.323465	0.474826
1951	-0.290352	0.512446
1956	-0.195936	0.636889
1961	-0.199642	0.631478
1966	-0.116861	0.764080
1971	-0.161949	0.688734
1976	-0.181186	0.658892

Osmond and Gardner Modelling

France IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	58.0	61.0	46.0	70.0	47.0	36.1
EXP	51.5	61.2	56.6	63.6	51.1	36.1
CHI	0.8	0.0	2.0	0.7	0.3	0.0
35 - OBS	107.0	124.0	166.0	121.0	135.0	114.0
EXP	105.6	128.1	143.5	136.1	146.8	110.1
CHI	0.0	0.1	3.5	1.7	1.0	0.1
40 - OBS	180.0	243.0	252.0	286.0	259.0	273.3
EXP	186.4	223.0	255.6	293.8	267.1	268.8
CHI	0.2	1.8	0.1	0.2	0.2	0.1
45 - OBS	436.0	366.0	391.0	486.0	498.0	471.3
EXP	459.8	355.2	401.8	472.7	520.8	440.7
CHI	1.2	0.3	0.3	0.4	1.0	2.1
50 - OBS	959.0	746.0	519.0	675.0	711.0	726.8
EXP	1016.2	736.7	537.7	624.7	704.7	720.9
CHI	3.2	0.1	0.6	4.0	0.1	0.0
55 - OBS	1889.0	1665.0	1121.0	838.0	925.0	942.6
EXP	1977.5	1604.4	1097.7	823.0	920.0	961.9
CHI	4.0	2.3	0.5	0.3	0.0	0.4
60 - OBS	3705.0	3384.0	2625.0	1821.0	1350.0	1302.2
EXP	3662.5	3392.7	2607.3	1831.0	1323.1	1373.0
CHI	0.5	0.0	0.1	0.1	0.5	3.7
65 - OBS	5745.0	6090.0	5343.0	4293.0	2891.0	1892.0
EXP	5793.8	6108.3	5343.7	4223.5	2865.0	1920.9
CHI	0.4	0.1	0.0	1.1	0.2	0.4
70 - OBS	14960.0	9195.0	9253.0	8189.0	6147.0	3980.6
EXP	14791.9	9098.3	9227.2	8264.9	6340.6	4006.6
CHI	1.9	1.0	0.1	0.7	5.9	0.2
75 - OBS	24848.0	21895.0	12924.0	13747.0	12051.0	8714.6
EXP	24848.0	22064.7	12972.7	13797.5	11880.8	8618.5
CHI	0.0	1.3	0.2	0.2	2.4	1.1

Osmond and Gardner Modelling

France IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	8.055744
35	20.667328
40	45.423036
45	90.728226
50	152.833994
55	254.525881
60	466.150247
65	840.484969
70	1485.580287
75	2637.861788

PERIOD	EFFECT	LOWER	UPPER
% Period Change	82.5195	79.5195	85.5195
1981	1.154116		
1986	1.115977		
1991	1.013625		
1996	0.947009		
2001	0.839252		
2006	0.692546		
2011	0.571486	0.550709	0.592262
2016	0.471587	0.437921	0.506499
2021	0.389151	0.348232	0.433155
2026	0.321125	0.276913	0.370432

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.578793	1.000000	
1911	1.394562	2.000000	
1916	1.187767	4.000000	
1921	1.034321	8.000000	
1926	0.819984	16.000000	
1931	0.726956	32.000000	
1936	0.572546	64.000000	
1941	0.493512	128.000000	
1946	0.474826	256.000000	
1951	0.512446	512.000000	
1956	0.636889	1024.000000	
1961	0.631478	2048.000000	
1966	0.764080	4096.000000	
1971	0.688734	8192.000000	
1976	0.742540	EXTRAPOLATION	0.658892
1981	0.773879	EXTRAPOLATION	
1986	0.806540	EXTRAPOLATION	
1991	0.840579	EXTRAPOLATION	
1996	0.876055	EXTRAPOLATION	

Osmond and Gardner Modelling

**France IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	5.4	5.7	4.2	6.4	4.3	3.7	-	-	-	-
	EXP	4.8	5.7	5.2	5.8	4.7	4.1	3.6*	3.1*	2.6*	2.3*
	Elow							3.4	2.8	2.4	2.0
	Eup							3.7	3.3	2.9	2.6
35	OBS	11.5	11.4	15.4	11.0	12.2	10.2	-	-	-	-
	EXP	11.3	11.8	13.3	12.4	13.3	9.9	8.8*	7.5*	6.5*	5.6*
	Elow							8.5	7.0	5.8	4.8
	Eup							9.1	8.1	7.2	6.4
40	OBS	25.0	26.2	23.3	26.7	23.3	24.4	-	-	-	-
	EXP	25.9	24.1	23.6	27.4	24.1	24.0	17.9*	15.9*	13.7*	11.8*
	Elow							17.2	14.8	12.2	10.1
	Eup							18.5	17.1	15.2	13.6
45	OBS	56.8	51.5	42.5	45.3	46.4	42.4	-	-	-	-
	EXP	60.0	50.0	43.7	44.0	48.5	39.7	39.6*	29.5*	26.2*	22.5*
	Elow							38.2	27.4	23.5	19.4
	Eup							41.1	31.6	29.2	26.0
50	OBS	121.0	98.9	73.8	74.3	66.3	68.0	-	-	-	-
	EXP	128.2	97.7	76.5	68.7	65.7	67.4	55.2*	55.1*	41.0*	36.4*
	Elow							53.1	51.1	36.7	31.4
	Eup							57.2	59.1	45.6	42.0
55	OBS	230.1	214.3	150.9	121.1	102.0	88.5	-	-	-	-
	EXP	240.9	206.5	147.7	119.0	101.4	90.3	92.6*	75.8*	75.7*	56.3*
	Elow							89.3	70.4	67.7	48.5
	Eup							96.0	81.4	84.2	64.9
60	OBS	562.9	425.5	345.8	251.4	197.0	145.4	-	-	-	-
	EXP	556.5	426.6	343.5	252.7	193.1	153.3	136.5*	140.0*	114.6*	114.4*
	Elow							131.6	130.0	102.5	98.6
	Eup							141.5	150.4	127.5	131.9
65	OBS	1142.4	967.2	698.5	588.1	407.5	282.9	-	-	-	-
	EXP	1152.2	970.2	698.6	578.6	403.9	287.3	228.1*	203.1*	208.3*	170.4*
	Elow							219.8	188.6	186.4	147.0
	Eup							236.4	218.2	231.9	196.6
70	OBS	2418.2	1990.1	1561.9	1143.0	878.7	585.2	-	-	-	-
	EXP	2391.0	1969.2	1557.5	1153.6	906.4	589.1	419.0*	332.7*	296.3*	303.8*
	Elow							403.8	308.9	265.1	262.0
	Eup							434.2	357.3	329.8	350.5
75	OBS	4806.5	4073.7	3163.9	2574.4	1841.3	1342.8	-	-	-	-
	EXP	4806.5	4105.3	3175.9	2583.8	1815.3	1328.0	863.1*	613.9*	487.4*	434.1*
	Elow							831.7	570.1	436.2	374.3
	Eup							894.5	659.4	542.5	500.7
30-79	OBS	494.0	413.7	319.2	255.6	193.0	143.1	-	-	-	-
	EXP	495.1	412.6	319.2	255.1	193.3	143.6	109.3*	90.4*	79.2*	71.3*
	Elow							105.3	83.9	70.8	61.5
	Eup							113.2	97.1	88.1	82.2

Osmond and Gardner Modelling

**France IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

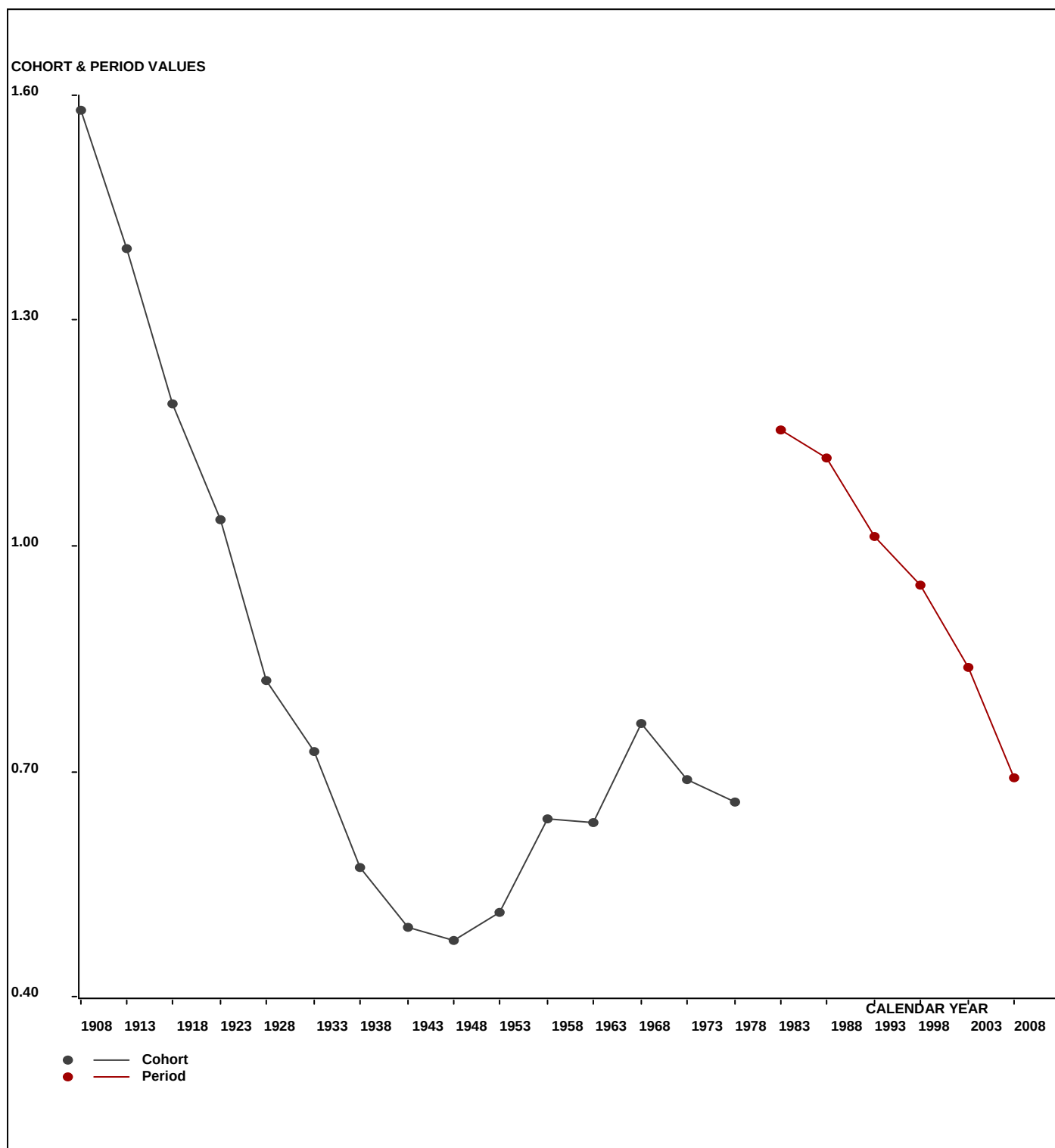
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	58.0	61.0	46.0	70.0	47.0	36.1	-	-	-	-
	EXP	51.5	61.2	56.6	63.6	51.1	40.7	34.6*	31.8*	26.7*	22.9*
	CHI	0.809	0.000	1.984	0.655	0.328	0.516	-	-	-	-
35 -	OBS	107.0	124.0	166.0	121.0	135.0	114.0	-	-	-	-
	EXP	105.6	128.1	143.5	136.1	146.8	110.1	87.3*	73.9*	67.8*	57.0*
	CHI	0.020	0.130	3.526	1.669	0.950	0.135	-	-	-	-
40 -	OBS	180.0	243.0	252.0	286.0	259.0	273.3	-	-	-	-
	EXP	186.4	223.0	255.6	293.8	267.1	268.8	200.8*	159.3*	134.8*	123.6*
	CHI	0.217	1.797	0.051	0.207	0.244	0.076	-	-	-	-
45 -	OBS	436.0	366.0	391.0	486.0	498.0	471.3	-	-	-	-
	EXP	459.8	355.2	401.8	472.7	520.8	440.7	442.3*	330.8*	262.5*	222.2*
	CHI	1.235	0.330	0.292	0.374	0.996	2.130	-	-	-	-
50 -	OBS	959.0	746.0	519.0	675.0	711.0	726.8	-	-	-	-
	EXP	1016.2	736.7	537.7	624.7	704.7	720.9	607.7*	610.9*	457.2*	363.0*
	CHI	3.222	0.118	0.648	4.050	0.056	0.049	-	-	-	-
55 -	OBS	1889.0	1665.0	1121.0	838.0	925.0	942.6	-	-	-	-
	EXP	1977.5	1604.4	1097.7	823.0	920.0	961.9	977.2*	825.2*	830.4*	622.1*
	CHI	3.960	2.289	0.497	0.274	0.028	0.386	-	-	-	-
60 -	OBS	3705.0	3384.0	2625.0	1821.0	1350.0	1302.2	-	-	-	-
	EXP	3662.5	3392.7	2607.3	1831.0	1323.1	1373.0	1425.2*	1450.1*	1226.6*	1236.0*
	CHI	0.494	0.022	0.120	0.055	0.545	3.655	-	-	-	-
65 -	OBS	5745.0	6090.0	5343.0	4293.0	2891.0	1892.0	-	-	-	-
	EXP	5793.8	6108.3	5343.7	4223.5	2865.0	1920.9	1985.4*	2064.6*	2106.8*	1785.5*
	CHI	0.411	0.055	0.000	1.145	0.237	0.435	-	-	-	-
70 -	OBS	14960.0	9195.0	9253.0	8189.0	6147.0	3980.6	-	-	-	-
	EXP	14791.9	9098.3	9227.2	8264.9	6340.6	4006.6	2673.9*	2782.5*	2899.9*	2970.4*
	CHI	1.910	1.028	0.072	0.697	5.912	0.169	-	-	-	-
75 -	OBS	24848.0	21895.0	12924.0	13747.0	12051.0	8714.6	-	-	-	-
	EXP	24848.0	22064.7	12972.7	13797.5	11880.8	8618.5	5424.5*	3648.6*	3827.8*	3999.0*
	CHI	0.000	1.305	0.183	0.185	2.438	1.071	-	-	-	-
30-79	OBS	52887.0	43769.0	32640.0	30526.0	25014.0	18453.5	-	-	-	-
	EXP	52893.2	43772.5	32643.7	30530.6	25019.9	18462.1	13859.0*	11977.8*	11840.6*	11401.6*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

France IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

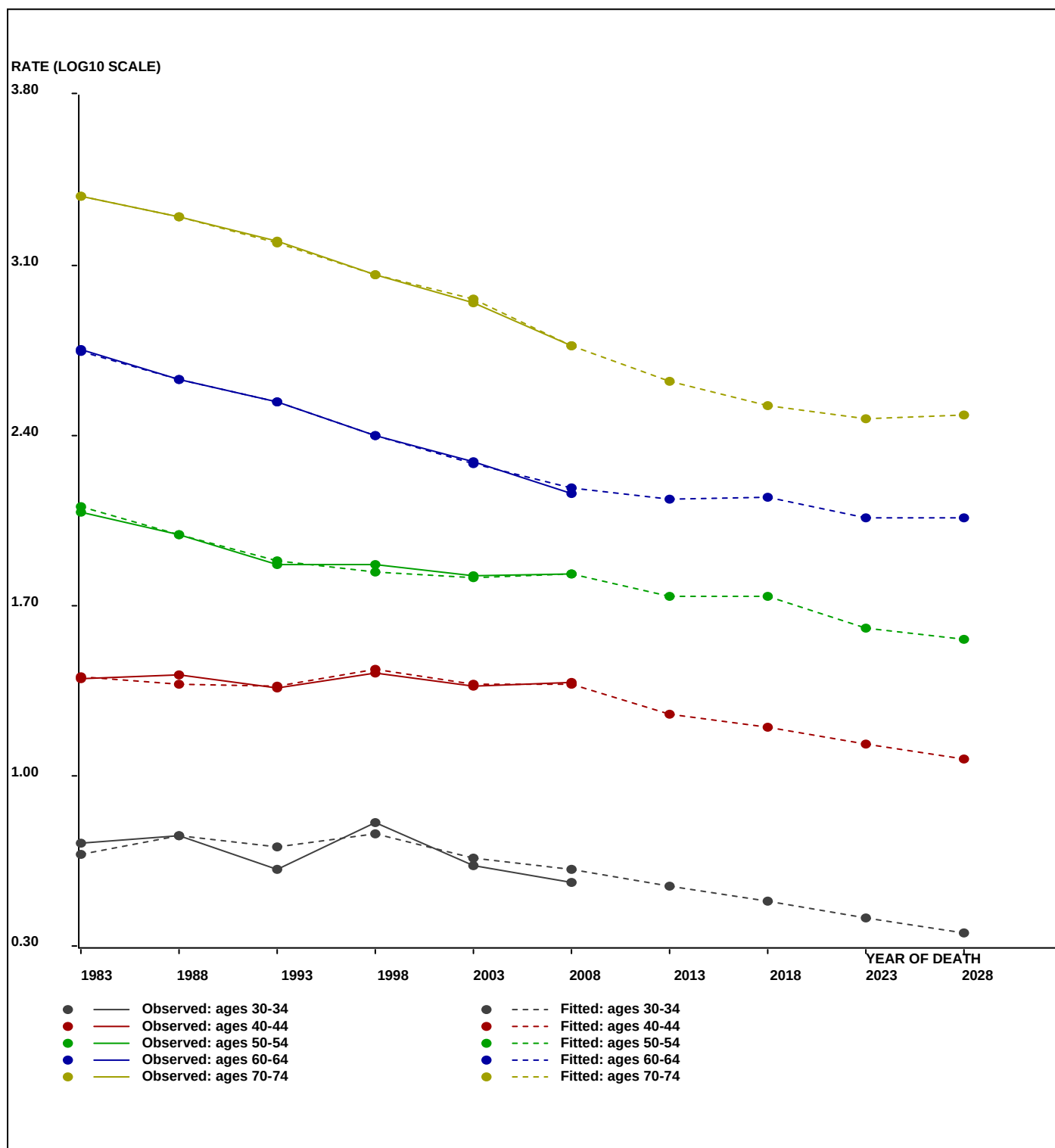


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

France IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

France IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	3.6	8.8	17.9	39.6	55.2	92.6	136.5	228.1	419.0	863.1
2016	PRE	3.1	7.5	15.9	29.5	55.1	75.8	140.0	203.1	332.7	613.9
2021	PRE	2.6	6.5	13.7	26.2	41.0	75.7	114.6	208.3	296.3	487.4
2026	PRE	2.3	5.6	11.8	22.5	36.4	56.3	114.4	170.4	303.8	434.1

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	34.6	87.3	200.8	442.3	607.7	977.2	1425.2	1985.4	2673.9	5424.5
2016	PRE	31.8	73.9	159.3	330.8	610.9	825.2	1450.1	2064.6	2782.5	3648.6
2021	PRE	26.7	67.8	134.8	262.5	457.2	830.4	1226.6	2106.8	2899.9	3827.8
2026	PRE	22.9	57.0	123.6	222.2	363.0	622.1	1236.0	1785.5	2970.4	3999.0

Osmond and Gardner Modelling

France Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	7683.48	150.66	51	P, C	99.91	41948.69	0.0000
AGE-PERIOD	155.77	3.46	45	Cohort	95.45	829.83	0.0000
AGE-COHORT	38.26	1.06	36	Period	81.47	202.94	0.0000
PERIOD-COHORT	58.97	1.47	40	Age	87.97	313.57	0.0000
FULL AGE-PERIOD-COHORT	7.09	0.22	32			37.61	0.2279

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.578429	37.881644
35	1.802041	63.392992
40	1.998808	99.725956
45	2.166486	146.718775
50	2.316200	207.109477
55	2.446514	279.585109
60	2.638071	434.581377
65	2.878674	756.265103
70	3.167916	1472.028640
75	3.472095	2965.482895

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.105642	1.275387
1986	0.028494	1.067809
1991	-0.026409	0.941004
1996	-0.047268	0.896875
2001	-0.085724	0.820873
2006	-0.143594	0.718466

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.209131	1.618567
1911	0.134088	1.361719
1916	0.054986	1.134974
1921	0.008456	1.019662
1926	-0.074101	0.843140
1931	-0.125937	0.748278
1936	-0.190803	0.644462
1941	-0.234839	0.582319
1946	-0.271913	0.534671
1951	-0.271338	0.535380
1956	-0.228518	0.590857
1961	-0.260719	0.548632
1966	-0.281287	0.523254
1971	-0.347457	0.449307
1976	-0.371214	0.425389

Osmond and Gardner Modelling

France Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	281.0	259.0	195.0	212.0	148.0	113.7
EXP	279.8	255.3	214.7	193.8	153.3	113.7
CHI	0.0	0.1	1.8	1.7	0.2	0.0
35 - OBS	408.0	390.0	395.0	345.0	275.0	233.8
EXP	402.9	392.7	379.1	343.4	301.6	228.6
CHI	0.1	0.0	0.7	0.0	2.4	0.1
40 - OBS	489.0	516.0	560.0	576.0	520.0	425.6
EXP	533.5	527.5	544.3	566.7	498.3	419.2
CHI	3.7	0.2	0.5	0.2	0.9	0.1
45 - OBS	946.0	657.0	690.0	757.0	727.0	637.2
EXP	925.0	648.5	679.3	756.3	764.2	642.3
CHI	0.5	0.1	0.2	0.0	1.8	0.0
50 - OBS	1531.0	1039.0	845.0	905.0	989.0	947.1
EXP	1566.4	1075.2	798.1	902.8	975.8	940.2
CHI	0.8	1.2	2.8	0.0	0.2	0.1
55 - OBS	2454.0	1765.0	1256.0	1014.0	1126.0	1116.5
EXP	2468.2	1735.7	1259.9	1010.2	1113.0	1145.2
CHI	0.1	0.5	0.0	0.0	0.2	0.7
60 - OBS	3826.0	2999.0	2358.0	1847.0	1383.0	1475.3
EXP	3719.7	3111.9	2322.8	1819.7	1423.6	1495.3
CHI	3.0	4.1	0.5	0.4	1.2	0.3
65 - OBS	5511.0	5239.0	4513.0	3714.0	2822.0	2137.7
EXP	5505.0	5184.5	4589.8	3704.6	2838.1	2115.8
CHI	0.0	0.6	1.3	0.0	0.1	0.2
70 - OBS	15766.0	8257.0	8360.0	8056.0	6280.0	4642.8
EXP	15815.6	8242.8	8367.6	7975.0	6325.4	4636.0
CHI	0.2	0.0	0.0	0.8	0.3	0.0
75 - OBS	31647.0	23225.0	12917.0	14326.0	13552.0	10352.3
EXP	31647.0	23175.5	12937.3	14481.8	13432.8	10346.4
CHI	0.0	0.1	0.0	1.7	1.1	0.0

Osmond and Gardner Modelling

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Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	37.881644
35	63.392992
40	99.725956
45	146.718775
50	207.109477
55	279.585109
60	434.581377
65	756.265103
70	1472.028640
75	2965.482895

PERIOD	EFFECT	LOWER	UPPER
% Period Change	87.5247	84.5247	90.5247
1981	1.275387		
1986	1.067809		
1991	0.941004		
1996	0.896875		
2001	0.820873		
2006	0.718466		
2011	0.628836	0.607282	0.650390
2016	0.550387	0.513303	0.588763
2021	0.481724	0.433868	0.532976
2026	0.421628	0.366726	0.482475

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.618567	1.000000	
1911	1.361719	2.000000	
1916	1.134974	4.000000	
1921	1.019662	8.000000	
1926	0.843140	16.000000	
1931	0.748278	32.000000	
1936	0.644462	64.000000	
1941	0.582319	128.000000	
1946	0.534671	256.000000	
1951	0.535380	512.000000	
1956	0.590857	1024.000000	
1961	0.548632	2048.000000	
1966	0.523254	4096.000000	
1971	0.449307	8192.000000	
1976	0.435245	EXTRAPOLATION	0.425389
1981	0.408648	EXTRAPOLATION	
1986	0.383676	EXTRAPOLATION	
1991	0.360230	EXTRAPOLATION	
1996	0.338217	EXTRAPOLATION	

Osmond and Gardner Modelling

**France Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	26.0	24.2	17.8	19.4	13.5	11.6	-	-	-	-
	EXP	25.9	23.9	19.6	17.8	14.0	11.8	9.7*	8.0*	6.6*	5.4*
	Elow							9.4	7.5	5.9	4.7
	Eup							10.1	8.6	7.3	6.2
35	OBS	43.8	36.0	36.7	31.3	24.8	20.9	-	-	-	-
	EXP	43.2	36.2	35.2	31.2	27.2	20.5	17.4*	14.3*	11.7*	9.6*
	Elow							16.8	13.3	10.6	8.4
	Eup							17.9	15.3	13.0	11.0
40	OBS	67.9	55.7	51.7	53.7	46.9	38.1	-	-	-	-
	EXP	74.1	56.9	50.2	52.8	44.9	37.5	28.2*	23.9*	19.6*	16.1*
	Elow							27.2	22.3	17.7	14.0
	Eup							29.1	25.6	21.7	18.5
45	OBS	123.3	92.4	75.0	70.5	67.7	57.4	-	-	-	-
	EXP	120.6	91.2	73.8	70.4	71.2	57.8	48.3*	36.3*	30.8*	25.3*
	Elow							46.6	33.8	27.7	22.0
	Eup							49.9	38.8	34.0	28.9
50	OBS	193.2	137.7	120.2	99.6	92.2	88.6	-	-	-	-
	EXP	197.7	142.5	113.5	99.3	91.0	87.9	71.5*	59.6*	44.8*	38.0*
	Elow							69.0	55.6	40.4	33.1
	Eup							73.9	63.8	49.6	43.5
55	OBS	298.9	227.2	169.0	146.6	124.1	104.9	-	-	-	-
	EXP	300.6	223.4	169.6	146.0	122.7	107.5	103.9*	84.4*	70.5*	53.0*
	Elow							100.3	78.7	63.5	46.1
	Eup							107.4	90.3	78.0	60.6
60	OBS	581.3	377.1	310.6	255.0	201.8	164.7	-	-	-	-
	EXP	565.2	391.3	306.0	251.2	207.7	166.9	146.3*	141.3*	114.9*	95.9*
	Elow							141.3	131.8	103.4	83.4
	Eup							151.3	151.2	127.1	109.7
65	OBS	1095.9	832.1	590.0	508.8	397.8	319.7	-	-	-	-
	EXP	1094.7	823.4	600.0	507.5	400.1	316.4	254.3*	222.8*	215.3*	174.9*
	Elow							245.6	207.8	193.9	152.2
	Eup							263.0	238.4	238.2	200.2
70	OBS	2548.5	1787.1	1411.1	1124.4	897.7	682.6	-	-	-	-
	EXP	2556.5	1784.0	1412.4	1113.1	904.2	681.6	539.0*	433.2*	379.6*	366.7*
	Elow							520.6	404.0	341.9	319.0
	Eup							557.5	463.4	420.0	419.6
75	OBS	6121.6	4321.2	3162.2	2682.8	2070.7	1595.2	-	-	-	-
	EXP	6121.6	4312.0	3167.2	2712.0	2052.4	1594.3	1201.8*	950.4*	763.8*	669.4*
	Elow							1160.6	886.4	687.9	582.2
	Eup							1243.0	1016.7	845.1	766.0
30-79	OBS	584.6	418.2	319.9	270.0	216.3	172.5	-	-	-	-
	EXP	584.6	418.6	319.4	269.6	216.9	172.5	138.5*	114.5*	96.7*	83.6*
	Elow							133.8	106.8	87.1	72.7
	Eup							143.2	122.5	107.0	95.6

Osmond and Gardner Modelling

**France Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

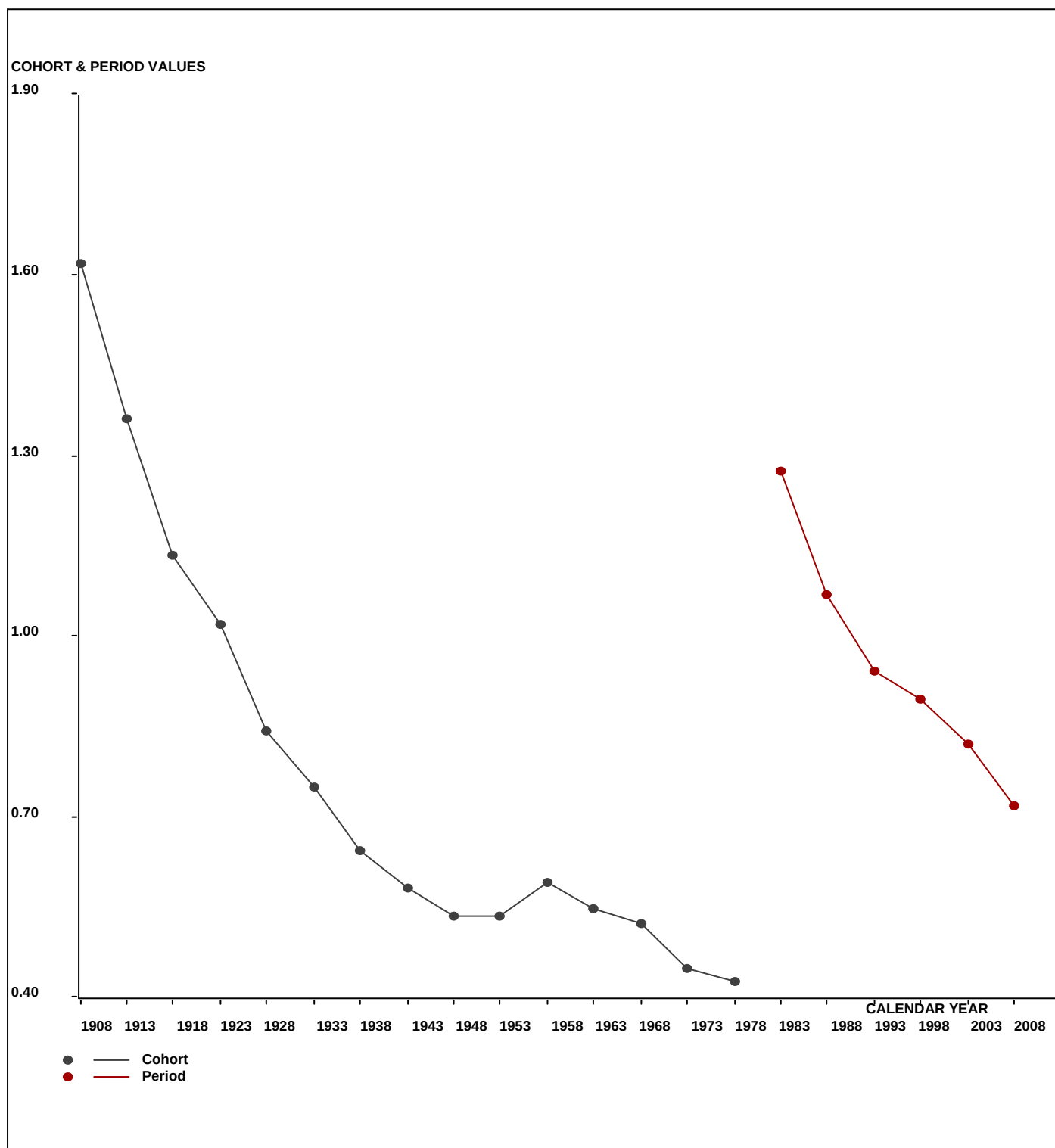
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	281.0	259.0	195.0	212.0	148.0	113.7	-	-	-	-
	EXP	279.8	255.3	214.7	193.8	153.3	116.3	94.5*	83.0*	66.6*	54.5*
	CHI	0.005	0.055	1.800	1.706	0.184	0.060	-	-	-	-
35 -	OBS	408.0	390.0	395.0	345.0	275.0	233.8	-	-	-	-
	EXP	402.9	392.7	379.1	343.4	301.6	228.6	172.7*	139.8*	122.5*	98.3*
	CHI	0.064	0.019	0.666	0.007	2.351	0.116	-	-	-	-
40 -	OBS	489.0	516.0	560.0	576.0	520.0	425.6	-	-	-	-
	EXP	533.5	527.5	544.3	566.7	498.3	419.2	316.5*	239.2*	193.5*	169.4*
	CHI	3.713	0.249	0.455	0.152	0.949	0.096	-	-	-	-
45 -	OBS	946.0	657.0	690.0	757.0	727.0	637.2	-	-	-	-
	EXP	925.0	648.5	679.3	756.3	764.2	642.3	538.9*	407.3*	308.0*	249.1*
	CHI	0.479	0.113	0.169	0.001	1.809	0.040	-	-	-	-
50 -	OBS	1531.0	1039.0	845.0	905.0	989.0	947.1	-	-	-	-
	EXP	1566.4	1075.2	798.1	902.8	975.8	940.2	787.3*	661.7*	500.4*	378.6*
	CHI	0.802	1.218	2.753	0.005	0.177	0.051	-	-	-	-
55 -	OBS	2454.0	1765.0	1256.0	1014.0	1126.0	1116.5	-	-	-	-
	EXP	2468.2	1735.7	1259.9	1010.2	1113.0	1145.2	1095.8*	919.1*	773.3*	585.3*
	CHI	0.082	0.493	0.012	0.014	0.152	0.718	-	-	-	-
60 -	OBS	3826.0	2999.0	2358.0	1847.0	1383.0	1475.3	-	-	-	-
	EXP	3719.7	3111.9	2322.8	1819.7	1423.6	1495.3	1527.4*	1463.8*	1229.9*	1036.1*
	CHI	3.036	4.096	0.534	0.410	1.160	0.268	-	-	-	-
65 -	OBS	5511.0	5239.0	4513.0	3714.0	2822.0	2137.7	-	-	-	-
	EXP	5505.0	5184.5	4589.8	3704.6	2838.1	2115.8	2213.5*	2265.2*	2177.1*	1832.7*
	CHI	0.007	0.573	1.284	0.024	0.092	0.227	-	-	-	-
70 -	OBS	15766.0	8257.0	8360.0	8056.0	6280.0	4642.8	-	-	-	-
	EXP	15815.6	8242.8	8367.6	7975.0	6325.4	4636.0	3440.1*	3623.3*	3716.1*	3585.2*
	CHI	0.156	0.025	0.007	0.823	0.326	0.010	-	-	-	-
75 -	OBS	31647.0	23225.0	12917.0	14326.0	13552.0	10352.3	-	-	-	-
	EXP	31647.0	23175.5	12937.3	14481.8	13432.8	10346.4	7553.0*	5648.7*	5998.2*	6166.8*
	CHI	0.000	0.106	0.032	1.676	1.058	0.003	-	-	-	-
30-79	OBS	62859.0	44346.0	32089.0	31752.0	27822.0	22082.0	-	-	-	-
	EXP	62863.2	44349.5	32092.9	31754.4	27826.2	22085.4	17739.8*	15451.0*	15085.6*	14156.1*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

France Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

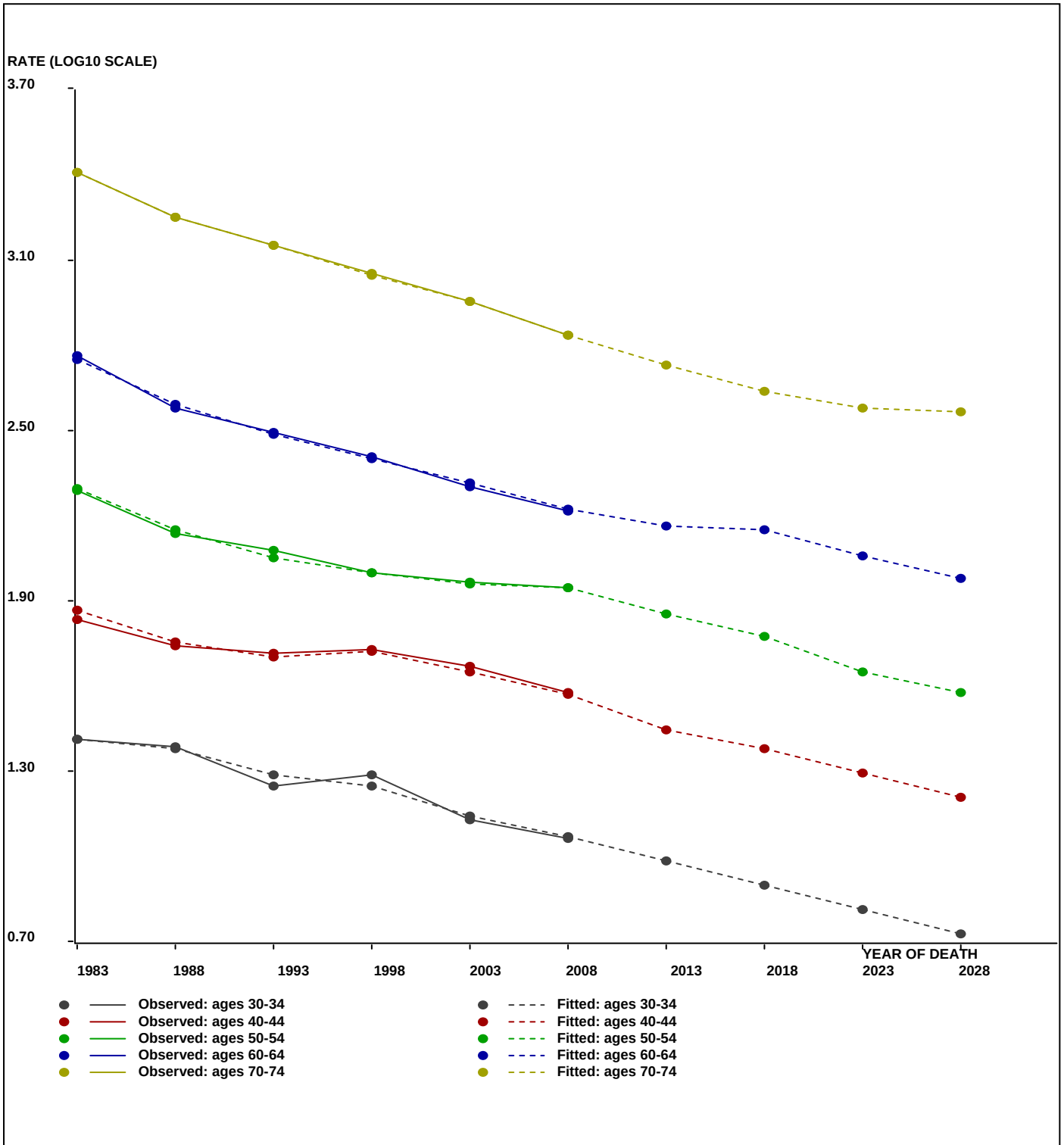


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

France Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

France Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	9.7	17.4	28.2	48.3	71.5	103.9	146.3	254.3	539.0	1201.8
2016	PRE	8.0	14.3	23.9	36.3	59.6	84.4	141.3	222.8	433.2	950.4
2021	PRE	6.6	11.7	19.6	30.8	44.8	70.5	114.9	215.3	379.6	763.8
2026	PRE	5.4	9.6	16.1	25.3	38.0	53.0	95.9	174.9	366.7	669.4

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	94.5	172.7	316.5	538.9	787.3	1095.8	1527.4	2213.5	3440.1	7553.0
2016	PRE	83.0	139.8	239.2	407.3	661.7	919.1	1463.8	2265.2	3623.3	5648.7
2021	PRE	66.6	122.5	193.5	308.0	500.4	773.3	1229.9	2177.1	3716.1	5998.2
2026	PRE	54.5	98.3	169.4	249.1	378.6	585.3	1036.1	1832.7	3585.2	6166.8

Osmond and Gardner Modelling

France Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	1829.55	35.87	51	P, C	99.41	10004.39	0.0000
AGE-PERIOD	306.67	6.81	45	Cohort	96.45	1638.61	0.0000
AGE-COHORT	13.53	0.38	36	Period	19.63	71.89	0.0004
PERIOD-COHORT	133.49	3.34	40	Age	91.86	709.72	0.0000
FULL AGE-PERIOD-COHORT	10.87	0.34	32			57.77	0.0035

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.318684	2.082973
35	0.922465	8.364979
40	1.409376	25.667057
45	1.760571	57.619658
50	2.046441	111.286025
55	2.287059	193.668461
60	2.480217	302.145835
65	2.660298	457.402417
70	2.803874	636.611294
75	2.925844	843.032806

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.057070	0.876859
1986	-0.022009	0.950585
1991	-0.015354	0.965264
1996	0.001456	1.003357
2001	0.015360	1.035999
2006	0.020237	1.047700

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.290426	0.512358
1911	-0.290115	0.512725
1916	-0.260237	0.549241
1921	-0.175381	0.667758
1926	-0.161894	0.688821
1931	-0.096292	0.801140
1936	-0.087459	0.817600
1941	-0.002309	0.994697
1946	0.111941	1.294020
1951	0.278213	1.897635
1956	0.452459	2.834385
1961	0.490448	3.093487
1966	0.482045	3.034203
1971	0.473542	2.975378
1976	0.488484	3.079530

Osmond and Gardner Modelling

France Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	38.0	55.0	70.0	72.0	70.0	66.0
EXP	37.5	59.9	68.3	69.1	70.5	66.0
CHI	0.0	0.4	0.0	0.1	0.0	0.0
35 - OBS	91.0	122.0	251.0	289.0	315.0	291.8
EXP	88.5	163.5	246.2	285.9	291.3	291.3
CHI	0.1	10.5	0.1	0.0	1.9	0.0
40 - OBS	126.0	298.0	510.0	807.0	940.0	884.4
EXP	161.3	292.5	509.3	782.8	912.6	912.4
CHI	7.7	0.1	0.0	0.7	0.8	0.9
45 - OBS	299.0	362.0	685.0	1147.0	1897.0	2041.0
EXP	316.8	387.3	662.3	1177.8	1816.9	2074.0
CHI	1.0	1.6	0.8	0.8	3.5	0.5
50 - OBS	631.0	675.0	766.0	1333.0	2383.0	3425.8
EXP	619.6	652.5	751.4	1313.4	2345.6	3534.0
CHI	0.2	0.8	0.3	0.3	0.6	3.3
55 - OBS	950.0	1127.0	1077.0	1393.0	2357.0	4127.3
EXP	960.3	1146.0	1135.8	1337.2	2354.9	4100.1
CHI	0.1	0.3	3.0	2.3	0.0	0.2
60 - OBS	1210.0	1621.0	1738.0	1806.0	2117.0	3615.7
EXP	1164.4	1573.5	1773.6	1795.6	2133.8	3669.2
CHI	1.8	1.4	0.7	0.1	0.1	0.8
65 - OBS	1110.0	1846.0	2363.0	2655.0	2719.0	3188.2
EXP	1107.8	1828.1	2326.4	2683.7	2748.4	3187.6
CHI	0.0	0.2	0.6	0.3	0.3	0.0
70 - OBS	1766.0	1520.0	2428.0	3155.0	3646.0	3779.0
EXP	1770.6	1535.7	2431.0	3152.2	3696.4	3709.2
CHI	0.0	0.2	0.0	0.0	0.7	1.3
75 - OBS	1958.0	2213.0	1839.0	2954.0	3859.0	4711.7
EXP	1958.0	2208.4	1825.7	3016.2	3937.4	4592.1
CHI	0.0	0.0	0.1	1.3	1.6	3.1

Osmond and Gardner Modelling

France Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	2.082973
35	8.364979
40	25.667057
45	57.619658
50	111.286025
55	193.668461
60	302.145835
65	457.402417
70	636.611294
75	843.032806

PERIOD	EFFECT	LOWER	UPPER
% Period Change	101.1294	98.1294	104.1294
1981	0.876859		
1986	0.950585		
1991	0.965264		
1996	1.003357		
2001	1.035999		
2006	1.047700		
2011	1.059533	1.028102	1.090964
2016	1.071500	1.008871	1.136015
2021	1.083602	0.989999	1.182926
2026	1.095840	0.971481	1.231774

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.512358	1.000000	
1911	0.512725	2.000000	
1916	0.549241	4.000000	
1921	0.667758	8.000000	
1926	0.688821	16.000000	
1931	0.801140	32.000000	
1936	0.817600	64.000000	
1941	0.994697	128.000000	
1946	1.294020	256.000000	
1951	1.897635	512.000000	
1956	2.834385	1024.000000	
1961	3.093487	2048.000000	
1966	3.034203	4096.000000	
1971	2.975378	8192.000000	
1976	3.540945	EXTRAPOLATION	3.079530
1981	3.939885	EXTRAPOLATION	
1986	4.383773	EXTRAPOLATION	
1991	4.877671	EXTRAPOLATION	
1996	5.427214	EXTRAPOLATION	

Osmond and Gardner Modelling

**France Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	3.5	5.1	6.4	6.6	6.4	6.7	-	-	-	-
	EXP	3.5	5.6	6.2	6.3	6.4	7.7	8.7*	9.8*	11.0*	12.4*
	Elow							8.4	9.2	10.1	11.0
	Eup							9.0	10.4	12.0	13.9
35	OBS	9.8	11.3	23.3	26.2	28.4	26.1	-	-	-	-
	EXP	9.5	15.1	22.9	26.0	26.3	26.1	31.4*	35.3*	39.7*	44.7*
	Elow							30.5	33.2	36.3	39.6
	Eup							32.3	37.4	43.4	50.3
40	OBS	17.5	32.2	47.1	75.3	84.7	79.1	-	-	-	-
	EXP	22.4	31.6	47.0	73.0	82.3	81.6	80.9*	97.4*	109.6*	123.3*
	Elow							78.5	91.7	100.1	109.3
	Eup							83.3	103.2	119.6	138.6
45	OBS	39.0	50.9	74.4	106.8	176.7	183.8	-	-	-	-
	EXP	41.3	54.5	72.0	109.7	169.2	186.7	185.2*	183.7*	221.1*	248.8*
	Elow							179.7	173.0	202.0	220.5
	Eup							190.7	194.8	241.4	279.6
50	OBS	79.6	89.5	108.9	146.6	222.3	320.4	-	-	-	-
	EXP	78.2	86.5	106.9	144.5	218.8	330.5	364.8*	361.8*	358.8*	431.8*
	Elow							353.9	340.7	327.8	382.8
	Eup							375.6	383.6	391.7	485.4
55	OBS	115.7	145.0	144.9	201.3	259.9	387.6	-	-	-	-
	EXP	117.0	147.5	152.8	193.3	259.6	385.0	581.6*	641.9*	636.8*	631.5*
	Elow							564.4	604.4	581.8	559.8
	Eup							598.9	680.6	695.1	709.8
60	OBS	183.8	203.8	229.0	249.3	308.9	403.7	-	-	-	-
	EXP	176.9	197.8	233.7	247.9	311.4	409.6	607.5*	917.6*	1012.8*	1004.6*
	Elow							589.5	864.0	925.3	890.6
	Eup							625.5	972.9	1105.7	1129.3
65	OBS	220.7	293.2	308.9	363.7	383.3	476.8	-	-	-	-
	EXP	220.3	290.3	304.1	367.7	387.4	476.7	627.1*	930.0*	1404.8*	1550.6*
	Elow							608.5	875.7	1283.5	1374.6
	Eup							645.7	986.0	1533.6	1742.9
70	OBS	285.5	329.0	409.8	440.4	521.2	555.6	-	-	-	-
	EXP	286.2	332.4	410.3	440.0	528.4	545.3	670.9*	882.7*	1309.1*	1977.3*
	Elow							651.0	831.1	1196.0	1752.9
	Eup							690.8	935.8	1429.0	2222.6
75	OBS	378.7	411.7	450.2	553.2	589.6	726.0	-	-	-	-
	EXP	378.7	410.9	446.9	564.8	601.6	707.6	730.3*	898.5*	1182.1*	1753.1*
	Elow							708.6	846.0	1080.0	1554.1
	Eup							752.0	952.6	1290.5	1970.6
30-79	OBS	93.7	112.6	130.9	161.2	200.2	248.8	-	-	-	-
	EXP	94.0	112.9	131.1	160.7	199.5	249.9	312.8*	389.5*	472.3*	554.2*
	Elow							303.6	366.7	431.5	491.3
	Eup							322.1	412.9	515.6	622.9

Osmond and Gardner Modelling

**France Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

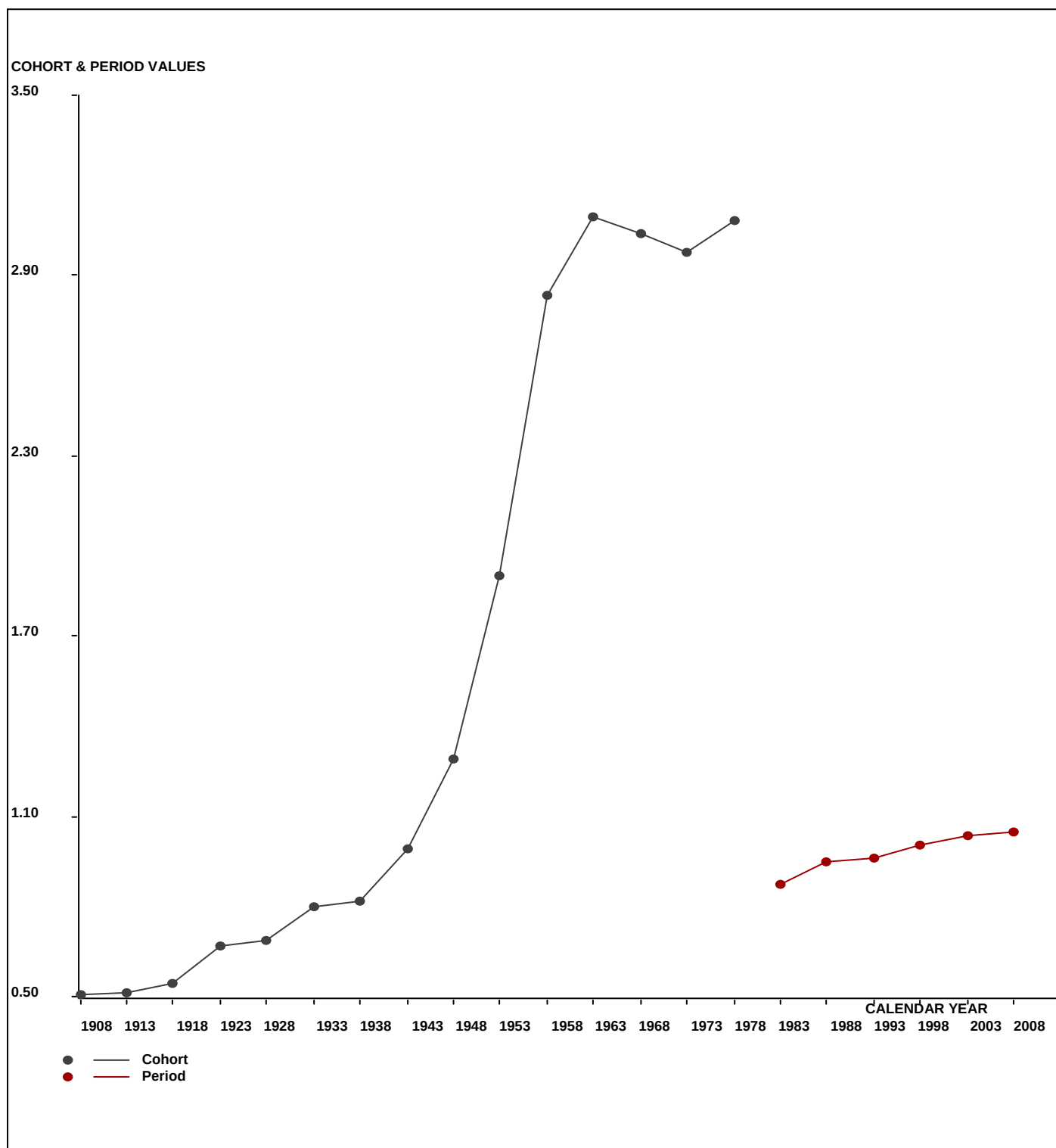
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	38.0	55.0	70.0	72.0	70.0	66.0	-	-	-	-
	EXP	37.5	59.9	68.3	69.1	70.5	75.9	84.4*	101.5*	111.6*	125.0*
	CHI	0.007	0.407	0.044	0.119	0.003	1.289	-	-	-	-
35 -	OBS	91.0	122.0	251.0	289.0	315.0	291.8	-	-	-	-
	EXP	88.5	163.5	246.2	285.9	291.3	291.3	312.4*	346.1*	415.6*	456.6*
	CHI	0.073	10.541	0.095	0.035	1.931	0.001	-	-	-	-
40 -	OBS	126.0	298.0	510.0	807.0	940.0	884.4	-	-	-	-
	EXP	161.3	292.5	509.3	782.8	912.6	912.4	908.9*	975.1*	1079.9*	1295.1*
	CHI	7.709	0.104	0.001	0.750	0.824	0.860	-	-	-	-
45 -	OBS	299.0	362.0	685.0	1147.0	1897.0	2041.0	-	-	-	-
	EXP	316.8	387.3	662.3	1177.8	1816.9	2074.0	2067.9*	2062.1*	2213.5*	2451.6*
	CHI	1.004	1.647	0.779	0.807	3.528	0.525	-	-	-	-
50 -	OBS	631.0	675.0	766.0	1333.0	2383.0	3425.8	-	-	-	-
	EXP	619.6	652.5	751.4	1313.4	2345.6	3534.0	4019.1*	4013.7*	4005.0*	4301.7*
	CHI	0.211	0.778	0.282	0.292	0.596	3.315	-	-	-	-
55 -	OBS	950.0	1127.0	1077.0	1393.0	2357.0	4127.3	-	-	-	-
	EXP	960.3	1146.0	1135.8	1337.2	2354.9	4100.1	6135.3*	6988.9*	6987.1*	6978.1*
	CHI	0.111	0.314	3.041	2.326	0.002	0.180	-	-	-	-
60 -	OBS	1210.0	1621.0	1738.0	1806.0	2117.0	3615.7	-	-	-	-
	EXP	1164.4	1573.5	1773.6	1795.6	2133.8	3669.2	6342.1*	9504.3*	10845.3*	10856.3*
	CHI	1.785	1.432	0.714	0.060	0.133	0.779	-	-	-	-
65 -	OBS	1110.0	1846.0	2363.0	2655.0	2719.0	3188.2	-	-	-	-
	EXP	1107.8	1828.1	2326.4	2683.7	2748.4	3187.6	5459.4*	9453.7*	14208.4*	16244.0*
	CHI	0.005	0.176	0.577	0.308	0.315	0.000	-	-	-	-
70 -	OBS	1766.0	1520.0	2428.0	3155.0	3646.0	3779.0	-	-	-	-
	EXP	1770.6	1535.7	2431.0	3152.2	3696.4	3709.2	4281.8*	7383.2*	12813.6*	19331.4*
	CHI	0.012	0.160	0.004	0.002	0.687	1.315	-	-	-	-
75 -	OBS	1958.0	2213.0	1839.0	2954.0	3859.0	4711.7	-	-	-	-
	EXP	1958.0	2208.4	1825.7	3016.2	3937.4	4592.1	4589.8*	5340.1*	9283.2*	16150.3*
	CHI	0.000	0.010	0.097	1.282	1.560	3.113	-	-	-	-
30-79	OBS	8179.0	9839.0	11727.0	15611.0	20303.0	26130.9	-	-	-	-
	EXP	8184.8	9847.3	11729.8	15614.0	20307.7	26145.8	34201.1*	46168.9*	61963.2*	78190.2*
	O/E	0.999	0.999	1.000	1.000	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

France Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

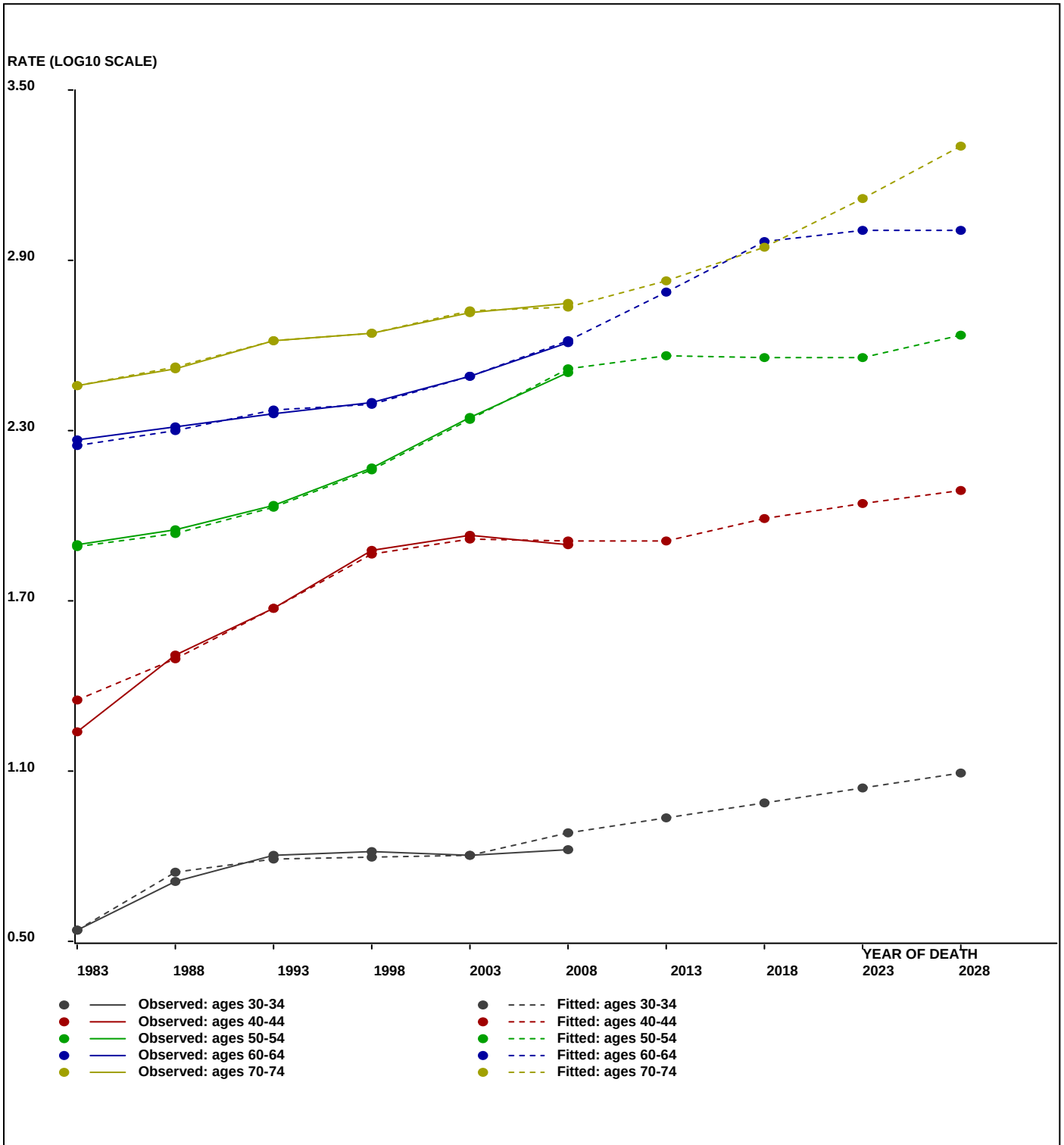


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

France Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

France Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	8.7	31.4	80.9	185.2	364.8	581.6	607.5	627.1	670.9	730.3
2016	PRE	9.8	35.3	97.4	183.7	361.8	641.9	917.6	930.0	882.7	898.5
2021	PRE	11.0	39.7	109.6	221.1	358.8	636.8	1012.8	1404.8	1309.1	1182.1
2026	PRE	12.4	44.7	123.3	248.8	431.8	631.5	1004.6	1550.6	1977.3	1753.1

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	84.4	312.4	908.9	2067.9	4019.1	6135.3	6342.1	5459.4	4281.8	4589.8
2016	PRE	101.5	346.1	975.1	2062.1	4013.7	6988.9	9504.3	9453.7	7383.2	5340.1
2021	PRE	111.6	415.6	1079.9	2213.5	4005.0	6987.1	10845.3	14208.4	12813.6	9283.2
2026	PRE	125.0	456.6	1295.1	2451.6	4301.7	6978.1	10856.3	16244.0	19331.4	16150.3

Osmond and Gardner Modelling

France COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	932.40	18.28	51	P, C	98.37	5063.04	0.0000
AGE-PERIOD	39.11	0.87	45	Cohort	61.18	208.02	0.0000
AGE-COHORT	232.96	6.47	36	Period	93.48	1241.34	0.0000
PERIOD-COHORT	18.48	0.46	40	Age	17.85	98.12	0.0000
FULL AGE-PERIOD-COHORT	15.18	0.47	32			80.57	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.781281	6.043388
35	0.969674	9.325544
40	1.131613	13.539812
45	1.360112	22.914574
50	1.593086	39.181907
55	1.773061	59.300817
60	2.003722	100.860656
65	2.255092	179.925202
70	2.521216	332.059447
75	2.806762	640.858137

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.082412	1.208960
1986	0.088766	1.226778
1991	0.062307	1.154268
1996	0.052722	1.129072
2001	-0.221095	0.601043
2006	-0.271878	0.534714

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.035494	0.921522
1911	-0.017692	0.960081
1916	-0.000223	0.999486
1921	0.027817	1.066147
1926	-0.004905	0.988769
1931	0.027146	1.064500
1936	-0.006528	0.985082
1941	-0.030887	0.931350
1946	-0.041869	0.908095
1951	0.010455	1.024365
1956	0.014332	1.033551
1961	0.004761	1.011024
1966	-0.113176	0.770592
1971	-0.156729	0.697062
1976	-0.328355	0.469511

Osmond and Gardner Modelling

France COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	74.0	94.0	73.0	56.0	27.0	14.9
EXP	81.0	81.8	77.4	57.3	27.8	14.9
CHI	0.6	1.8	0.3	0.0	0.0	0.0
35 - OBS	101.0	149.0	93.0	111.0	47.0	39.6
EXP	95.4	127.0	119.7	117.2	47.8	38.8
CHI	0.3	3.8	5.9	0.3	0.0	0.0
40 - OBS	101.0	144.0	179.0	166.0	91.0	64.5
EXP	109.8	139.7	173.4	169.4	91.3	62.4
CHI	0.7	0.1	0.2	0.1	0.0	0.1
45 - OBS	236.0	178.0	196.0	266.0	163.0	147.8
EXP	209.3	186.1	221.0	284.5	152.9	137.6
CHI	3.4	0.4	2.8	1.2	0.7	0.8
50 - OBS	412.0	399.0	271.0	329.0	257.0	234.9
EXP	399.6	357.2	296.2	365.2	258.6	231.6
CHI	0.4	4.9	2.1	3.6	0.0	0.0
55 - OBS	601.0	594.0	496.0	405.0	315.0	342.6
EXP	582.0	601.7	501.1	431.4	293.6	345.9
CHI	0.6	0.1	0.1	1.6	1.6	0.0
60 - OBS	912.0	974.0	876.0	773.0	403.0	463.6
EXP	855.6	973.1	940.7	812.7	386.9	438.7
CHI	3.7	0.0	4.5	1.9	0.7	1.4
65 - OBS	1007.0	1409.0	1582.0	1675.0	749.0	647.0
EXP	1093.3	1481.7	1570.8	1578.5	755.7	599.2
CHI	6.8	3.6	0.1	5.9	0.1	3.8
70 - OBS	2358.0	1855.0	2438.0	2688.0	1511.0	1167.4
EXP	2384.4	1881.2	2420.9	2655.9	1486.3	1189.7
CHI	0.3	0.4	0.1	0.4	0.4	0.4
75 - OBS	3691.0	4083.0	3127.0	4115.0	2428.0	2299.5
EXP	3691.0	4056.8	3020.1	4119.4	2492.6	2367.3
CHI	0.0	0.2	3.8	0.0	1.7	1.9

Osmond and Gardner Modelling

France COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	6.043388
35	9.325544
40	13.539812
45	22.914574
50	39.181907
55	59.300817
60	100.860656
65	179.925202
70	332.059447
75	640.858137

PERIOD	EFFECT	LOWER	UPPER
% Period Change	88.9644	85.9644	91.9644
1981	1.208960		
1986	1.226778		
1991	1.154268		
1996	1.129072		
2001	0.601043		
2006	0.534714		
2011	0.475705	0.459663	0.491746
2016	0.423208	0.395147	0.452231
2021	0.376504	0.339685	0.415892
2026	0.334955	0.292008	0.382472

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.921522	1.000000	
1911	0.960081	2.000000	
1916	0.999486	4.000000	
1921	1.066147	8.000000	
1926	0.988769	16.000000	
1931	1.064500	32.000000	
1936	0.985082	64.000000	
1941	0.931350	128.000000	
1946	0.908095	256.000000	
1951	1.024365	512.000000	
1956	1.033551	1024.000000	
1961	1.011024	2048.000000	
1966	0.770592	4096.000000	
1971	0.697062	8192.000000	
1976	0.654303	EXTRAPOLATION	0.469511
1981	0.597733	EXTRAPOLATION	
1986	0.546054	EXTRAPOLATION	
1991	0.498843	EXTRAPOLATION	
1996	0.455713	EXTRAPOLATION	

Osmond and Gardner Modelling

**France COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	6.8	8.8	6.7	5.1	2.5	1.5	-	-	-	-
	EXP	7.5	7.7	7.1	5.3	2.5	2.1	1.7*	1.4*	1.1*	0.9*
	Elow							1.7	1.3	1.0	0.8
	Eup							1.8	1.5	1.3	1.1
35	OBS	10.8	13.7	8.6	10.1	4.2	3.5	-	-	-	-
	EXP	10.2	11.7	11.1	10.6	4.3	3.5	2.9*	2.4*	1.9*	1.6*
	Elow							2.8	2.2	1.7	1.4
	Eup							3.0	2.5	2.1	1.8
40	OBS	14.0	15.5	16.5	15.5	8.2	5.8	-	-	-	-
	EXP	15.2	15.1	16.0	15.8	8.2	5.6	4.5*	3.7*	3.0*	2.5*
	Elow							4.3	3.5	2.7	2.2
	Eup							4.6	4.0	3.4	2.8
45	OBS	30.8	25.0	21.3	24.8	15.2	13.3	-	-	-	-
	EXP	27.3	26.2	24.0	26.5	14.2	12.4	8.4*	6.8*	5.6*	4.6*
	Elow							8.1	6.3	5.1	4.0
	Eup							8.7	7.2	6.2	5.2
50	OBS	52.0	52.9	38.5	36.2	24.0	22.0	-	-	-	-
	EXP	50.4	47.4	42.1	40.2	24.1	21.7	18.8*	12.8*	10.3*	8.6*
	Elow							18.2	11.9	9.3	7.5
	Eup							19.5	13.7	11.4	9.8
55	OBS	73.2	76.4	66.7	58.5	34.7	32.2	-	-	-	-
	EXP	70.9	77.4	67.4	62.4	32.4	32.5	29.2*	25.4*	17.2*	13.8*
	Elow							28.2	23.7	15.5	12.1
	Eup							30.1	27.1	19.0	15.8
60	OBS	138.6	122.5	115.4	106.7	58.8	51.8	-	-	-	-
	EXP	130.0	122.3	123.9	112.2	56.5	49.0	49.1*	44.1*	38.4*	26.0*
	Elow							47.5	41.2	34.6	22.7
	Eup							50.8	47.1	42.4	29.7
65	OBS	200.3	223.8	206.8	229.5	105.6	96.8	-	-	-	-
	EXP	217.4	235.3	205.3	216.3	106.5	89.6	77.7*	78.0*	70.0*	60.9*
	Elow							75.1	72.8	63.2	53.1
	Eup							80.3	83.4	77.3	69.6
70	OBS	381.2	401.5	411.5	375.2	216.0	171.6	-	-	-	-
	EXP	385.4	407.2	408.6	370.7	212.5	174.9	147.1*	127.6*	128.1*	115.0*
	Elow							142.2	119.2	115.5	100.2
	Eup							152.1	136.4	141.5	131.3
75	OBS	714.0	759.7	765.5	770.6	371.0	354.3	-	-	-	-
	EXP	714.0	754.8	739.3	771.4	380.9	364.8	300.3*	252.6*	219.1*	219.9*
	Elow							290.2	235.8	197.7	191.7
	Eup							310.4	269.9	242.0	251.1
30-79	OBS	96.5	100.0	94.8	92.9	49.0	43.4	-	-	-	-
	EXP	96.4	100.1	95.5	93.5	48.7	43.1	36.9*	32.0*	28.2*	24.9*
	Elow							35.6	29.9	25.5	21.7
	Eup							38.1	34.2	31.2	28.4

Osmond and Gardner Modelling

**France COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

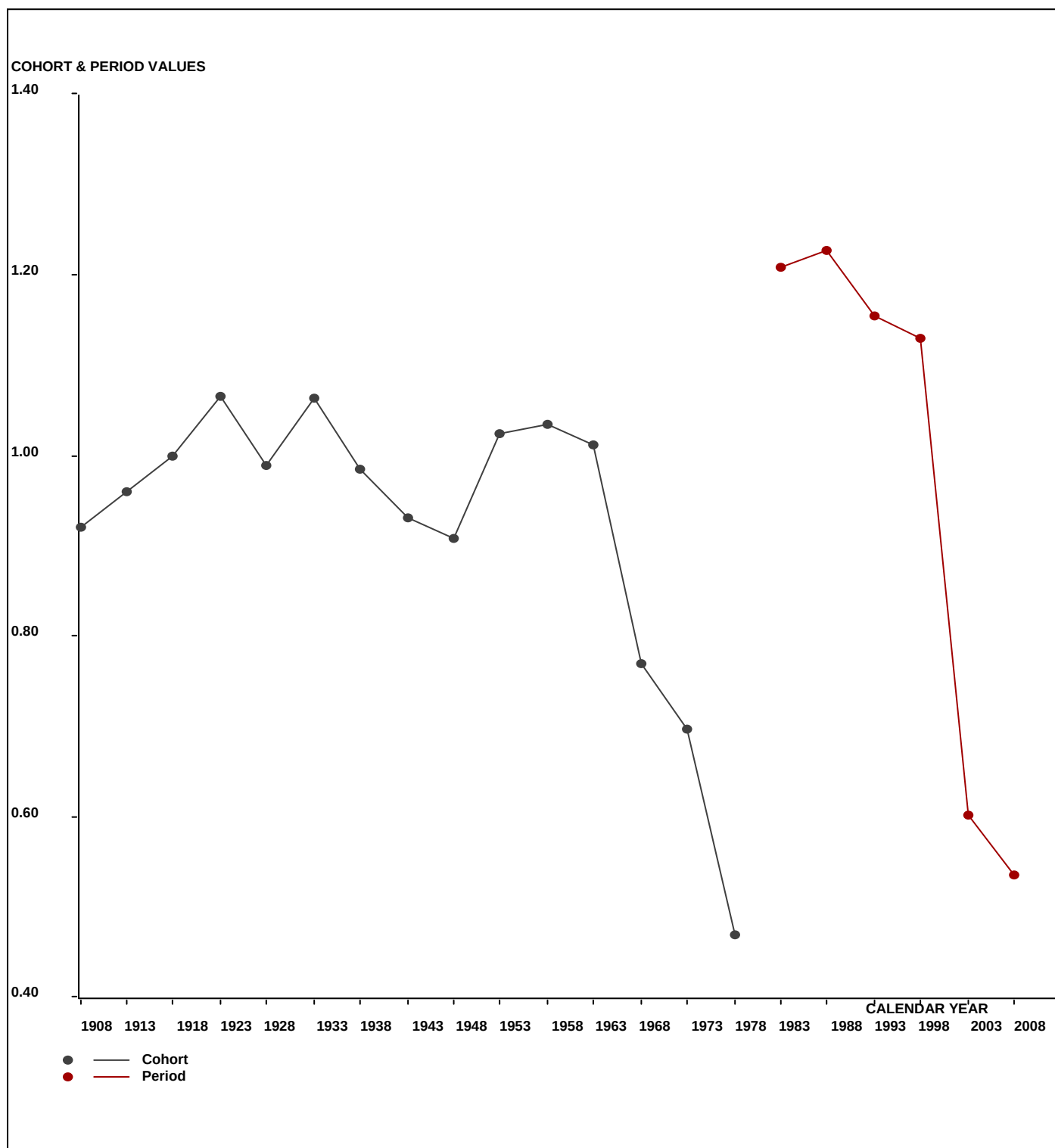
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	74.0	94.0	73.0	56.0	27.0	14.9	-	-	-	-
	EXP	81.0	81.8	77.4	57.3	27.8	20.8	16.7*	14.5*	11.5*	9.3*
	CHI	0.599	1.806	0.251	0.031	0.022	1.656	-	-	-	-
35 -	OBS	101.0	149.0	93.0	111.0	47.0	39.6	-	-	-	-
	EXP	95.4	127.0	119.7	117.2	47.8	38.8	28.9*	23.1*	20.1*	15.9*
	CHI	0.326	3.813	5.941	0.328	0.015	0.015	-	-	-	-
40 -	OBS	101.0	144.0	179.0	166.0	91.0	64.5	-	-	-	-
	EXP	109.8	139.7	173.4	169.4	91.3	62.4	50.4*	37.5*	30.0*	26.0*
	CHI	0.708	0.130	0.179	0.070	0.001	0.072	-	-	-	-
45 -	OBS	236.0	178.0	196.0	266.0	163.0	147.8	-	-	-	-
	EXP	209.3	186.1	221.0	284.5	152.9	137.6	93.8*	75.9*	56.5*	45.2*
	CHI	3.403	0.352	2.833	1.207	0.672	0.760	-	-	-	-
50 -	OBS	412.0	399.0	271.0	329.0	257.0	234.9	-	-	-	-
	EXP	399.6	357.2	296.2	365.2	258.6	231.6	207.6*	141.8*	114.8*	85.5*
	CHI	0.383	4.891	2.148	3.584	0.010	0.048	-	-	-	-
55 -	OBS	601.0	594.0	496.0	405.0	315.0	342.6	-	-	-	-
	EXP	582.0	601.7	501.1	431.4	293.6	345.9	307.6*	276.2*	188.8*	153.0*
	CHI	0.623	0.099	0.051	1.617	1.565	0.031	-	-	-	-
60 -	OBS	912.0	974.0	876.0	773.0	403.0	463.6	-	-	-	-
	EXP	855.6	973.1	940.7	812.7	386.9	438.7	513.1*	456.9*	411.1*	281.3*
	CHI	3.712	0.001	4.452	1.936	0.667	1.416	-	-	-	-
65 -	OBS	1007.0	1409.0	1582.0	1675.0	749.0	647.0	-	-	-	-
	EXP	1093.3	1481.7	1570.8	1578.5	755.7	599.2	676.6*	792.9*	708.1*	638.3*
	CHI	6.811	3.566	0.080	5.904	0.060	3.816	-	-	-	-
70 -	OBS	2358.0	1855.0	2438.0	2688.0	1511.0	1167.4	-	-	-	-
	EXP	2384.4	1881.2	2420.9	2655.9	1486.3	1189.7	938.9*	1067.4*	1253.6*	1123.9*
	CHI	0.292	0.365	0.121	0.387	0.411	0.418	-	-	-	-
75 -	OBS	3691.0	4083.0	3127.0	4115.0	2428.0	2299.5	-	-	-	-
	EXP	3691.0	4056.8	3020.1	4119.4	2492.6	2367.3	1887.4*	1501.2*	1720.7*	2025.7*
	CHI	0.000	0.169	3.787	0.005	1.676	1.942	-	-	-	-
30-79	OBS	9493.0	9879.0	9331.0	10584.0	5991.0	5421.8	-	-	-	-
	EXP	9501.4	9886.4	9341.3	10591.6	5993.5	5431.9	4721.0*	4387.5*	4515.2*	4404.2*
	O/E	0.999	0.999	0.999	0.999	1.000	0.998	-	-	-	-

Osmond and Gardner Modelling

France COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

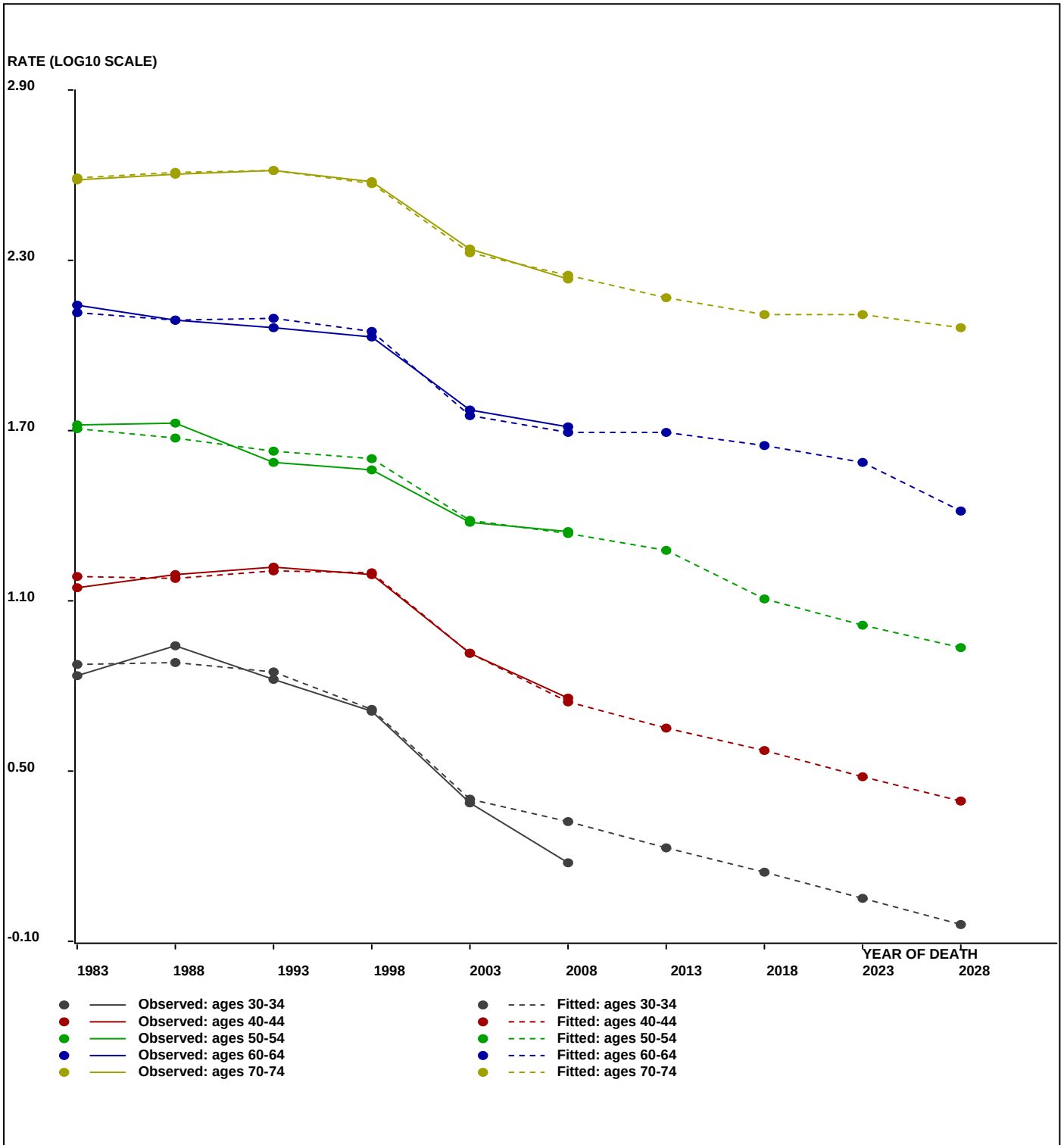


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

France COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

France COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	1.7	2.9	4.5	8.4	18.8	29.2	49.1	77.7	147.1	300.3
2016	PRE	1.4	2.4	3.7	6.8	12.8	25.4	44.1	78.0	127.6	252.6
2021	PRE	1.1	1.9	3.0	5.6	10.3	17.2	38.4	70.0	128.1	219.1
2026	PRE	0.9	1.6	2.5	4.6	8.6	13.8	26.0	60.9	115.0	219.9

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	16.7	28.9	50.4	93.8	207.6	307.6	513.1	676.6	938.9	1887.4
2016	PRE	14.5	23.1	37.5	75.9	141.8	276.2	456.9	792.9	1067.4	1501.2
2021	PRE	11.5	20.1	30.0	56.5	114.8	188.8	411.1	708.1	1253.6	1720.7
2026	PRE	9.3	15.9	26.0	45.2	85.5	153.0	281.3	638.3	1123.9	2025.7

Osmond and Gardner Modelling

Germany IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	33284.95	652.65	51	P, C	99.93	180224.93	0.0000
AGE-PERIOD	1998.64	44.41	45	Cohort	98.90	10606.05	0.0000
AGE-COHORT	666.78	18.52	36	Period	96.70	3536.39	0.0000
PERIOD-COHORT	60.62	1.52	40	Age	63.72	321.48	0.0000
FULL AGE-PERIOD-COHORT	21.99	0.69	32			116.63	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.648927	44.558150
35	2.112077	129.442562
40	2.503744	318.965821
45	2.820826	661.951094
50	3.088824	1226.942110
55	3.330358	2139.726690
60	3.557697	3611.578097
65	3.766686	5843.676143
70	3.972476	9385.890785
75	4.183294	15250.860188

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.144768	1.395624
1986	0.081593	1.206683
1991	0.046659	1.113421
1996	-0.031693	0.929623
2001	-0.129620	0.741959
2006	-0.234666	0.582551

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.038430	0.915313
1911	-0.000864	0.998012
1916	0.047968	1.116780
1921	0.054530	1.133783
1926	0.004388	1.010155
1931	0.029212	1.069577
1936	-0.046828	0.897784
1941	-0.070225	0.850697
1946	-0.087604	0.817326
1951	-0.019865	0.955288
1956	-0.017085	0.961424
1961	-0.039517	0.913026
1966	-0.078517	0.834608
1971	-0.072651	0.845958
1976	-0.029566	0.934188

Osmond and Gardner Modelling

Germany IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	793.0	785.0	758.0	651.0	444.0	299.0
EXP	779.7	768.2	803.5	655.5	426.1	299.0
CHI	0.2	0.4	2.6	0.0	0.8	0.0
35 - OBS	2008.0	1983.0	2117.0	1852.0	1482.0	945.0
EXP	1882.8	1951.6	2124.8	1967.9	1504.6	963.4
CHI	8.3	0.5	0.0	6.8	0.3	0.4
40 - OBS	6043.0	4055.0	4495.0	4140.0	3802.0	2902.0
EXP	5839.0	3987.9	4531.5	4390.7	3824.4	2875.3
CHI	7.1	1.1	0.3	14.3	0.1	0.2
45 - OBS	12186.0	10417.0	7647.0	7568.0	7172.0	6306.0
EXP	12180.6	10361.1	7687.6	7791.5	7151.7	6129.6
CHI	0.0	0.3	0.2	6.4	0.1	5.1
50 - OBS	21450.0	18993.0	17506.0	11439.0	11171.0	10365.0
EXP	21331.7	19057.9	17541.7	11607.0	11236.5	10153.3
CHI	0.7	0.2	0.1	2.4	0.4	4.4
55 - OBS	31469.0	30540.0	29743.0	24519.0	15383.0	15106.0
EXP	31420.6	30726.7	29759.8	24520.6	15504.4	14831.6
CHI	0.1	1.1	0.0	0.0	1.0	5.1
60 - OBS	40441.0	42186.0	45019.0	39468.0	30989.0	19531.0
EXP	40560.9	42487.9	44879.3	39282.9	31025.2	19400.2
CHI	0.4	2.1	0.4	0.9	0.0	0.9
65 - OBS	49958.0	50430.0	56879.0	54897.0	46445.0	35994.0
EXP	50709.2	50320.1	56961.4	54295.8	46142.4	36184.7
CHI	11.1	0.2	0.1	6.7	2.0	1.0
70 - OBS	86250.0	57680.0	62782.0	64456.0	59125.0	50824.0
EXP	85908.0	57071.3	62792.0	64516.9	59597.6	51238.7
CHI	1.4	6.5	0.0	0.1	3.7	3.4
75 - OBS	91509.0	86851.0	62998.0	65606.0	66286.0	61179.0
EXP	91509.0	87194.3	62864.5	65586.2	65891.6	61385.7
CHI	0.0	1.4	0.3	0.0	2.4	0.7

Osmond and Gardner Modelling

Germany IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
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 Projections using parameters Log Transformed

AGE	EFFECT
30	44.558150
35	129.442562
40	318.965821
45	661.951094
50	1226.942110
55	2139.726690
60	3611.578097
65	5843.676143
70	9385.890785
75	15250.860188

PERIOD	EFFECT	LOWER	UPPER
% Period Change	78.5153	75.5153	81.5153
1981	1.395624		
1986	1.206683		
1991	1.113421		
1996	0.929623		
2001	0.741959		
2006	0.582551		
2011	0.457392	0.439915	0.474868
2016	0.359122	0.332203	0.387090
2021	0.281966	0.250864	0.315538
2026	0.221386	0.189441	0.257211

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.915313	1.000000	
1911	0.998012	2.000000	
1916	1.116780	4.000000	
1921	1.133783	8.000000	
1926	1.010155	16.000000	
1931	1.069577	32.000000	
1936	0.897784	64.000000	
1941	0.850697	128.000000	
1946	0.817326	256.000000	
1951	0.955288	512.000000	
1956	0.961424	1024.000000	
1961	0.913026	2048.000000	
1966	0.834608	4096.000000	
1971	0.845958	8192.000000	
1976	0.825136	EXTRAPOLATION	0.934188
1981	0.807383	EXTRAPOLATION	
1986	0.790012	EXTRAPOLATION	
1991	0.773014	EXTRAPOLATION	
1996	0.756382	EXTRAPOLATION	

Osmond and Gardner Modelling

**Germany IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	60.4	52.8	42.7	34.3	29.1	24.2	-	-	-	-
	EXP	59.4	51.7	45.3	34.6	28.0	21.4	16.5*	12.6*	9.7*	7.5*
	Elow							15.8	11.7	8.6	6.4
	Eup							17.1	13.6	10.9	8.7
35	OBS	157.5	151.6	138.1	103.4	79.0	62.6	-	-	-	-
	EXP	147.7	149.2	138.6	109.9	80.2	63.8	48.9*	37.5*	28.8*	22.2*
	Elow							47.0	34.7	25.7	19.0
	Eup							50.7	40.5	32.3	25.7
40	OBS	391.9	319.9	336.5	268.8	214.8	156.5	-	-	-	-
	EXP	378.7	314.6	339.3	285.1	216.1	155.1	123.4*	94.5*	72.6*	55.8*
	Elow							118.7	87.4	64.6	47.7
	Eup							128.1	101.9	81.3	64.8
45	OBS	829.8	683.2	599.2	571.0	473.5	362.2	-	-	-	-
	EXP	829.4	679.5	602.4	587.9	472.2	352.1	252.7*	201.1*	154.0*	118.3*
	Elow							243.0	186.0	137.0	101.2
	Eup							262.4	216.8	172.3	137.5
50	OBS	1841.7	1324.7	1159.8	918.7	864.6	701.5	-	-	-	-
	EXP	1831.5	1329.2	1162.1	932.2	869.6	687.2	512.4*	367.7*	292.7*	224.1*
	Elow							492.8	340.2	260.4	191.8
	Eup							532.0	396.4	327.5	260.4
55	OBS	3021.2	2744.8	2137.7	1692.0	1287.4	1212.8	-	-	-	-
	EXP	3016.6	2761.6	2138.9	1692.2	1297.6	1190.8	940.9*	701.6*	503.5*	400.7*
	Elow							905.0	649.0	448.0	342.9
	Eup							976.9	756.2	563.5	465.6
60	OBS	5697.8	4371.0	4314.4	3028.4	2276.9	1731.2	-	-	-	-
	EXP	5714.7	4402.3	4301.0	3014.2	2279.6	1719.6	1578.0*	1247.0*	929.8*	667.3*
	Elow							1517.8	1153.5	827.2	571.0
	Eup							1638.3	1344.1	1040.5	775.3
65	OBS	8973.1	8012.3	6563.0	5874.7	3918.1	2880.7	-	-	-	-
	EXP	9108.0	7994.8	6572.5	5810.4	3892.6	2896.0	2184.6*	2004.8*	1584.2*	1181.2*
	Elow							2101.1	1854.5	1409.4	1010.7
	Eup							2268.1	2160.9	1772.8	1372.3
70	OBS	13125.2	12783.3	11846.6	8805.6	7389.4	4869.1	-	-	-	-
	EXP	13073.1	12648.4	11848.5	8813.9	7448.5	4908.9	3652.1*	2754.9*	2528.2*	1997.8*
	Elow							3512.5	2548.4	2249.3	1709.5
	Eup							3791.6	2969.5	2829.2	2321.0
75	OBS	19482.0	18294.0	19003.9	16079.1	11498.8	9470.6	-	-	-	-
	EXP	19482.0	18366.4	18963.6	16074.3	11430.4	9502.6	6262.6*	4659.2*	3514.7*	3225.4*
	Elow							6023.3	4310.0	3127.0	2760.0
	Eup							6501.9	5022.1	3933.2	3747.3
30-79	OBS	3342.1	2964.3	2729.7	2193.5	1665.0	1275.5	-	-	-	-
	EXP	3345.7	2962.0	2729.4	2194.6	1665.9	1273.0	953.3*	746.2*	591.4*	471.0*
	Elow							916.9	690.3	526.1	403.0
	Eup							989.7	804.3	661.8	547.2

Osmond and Gardner Modelling

**Germany IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

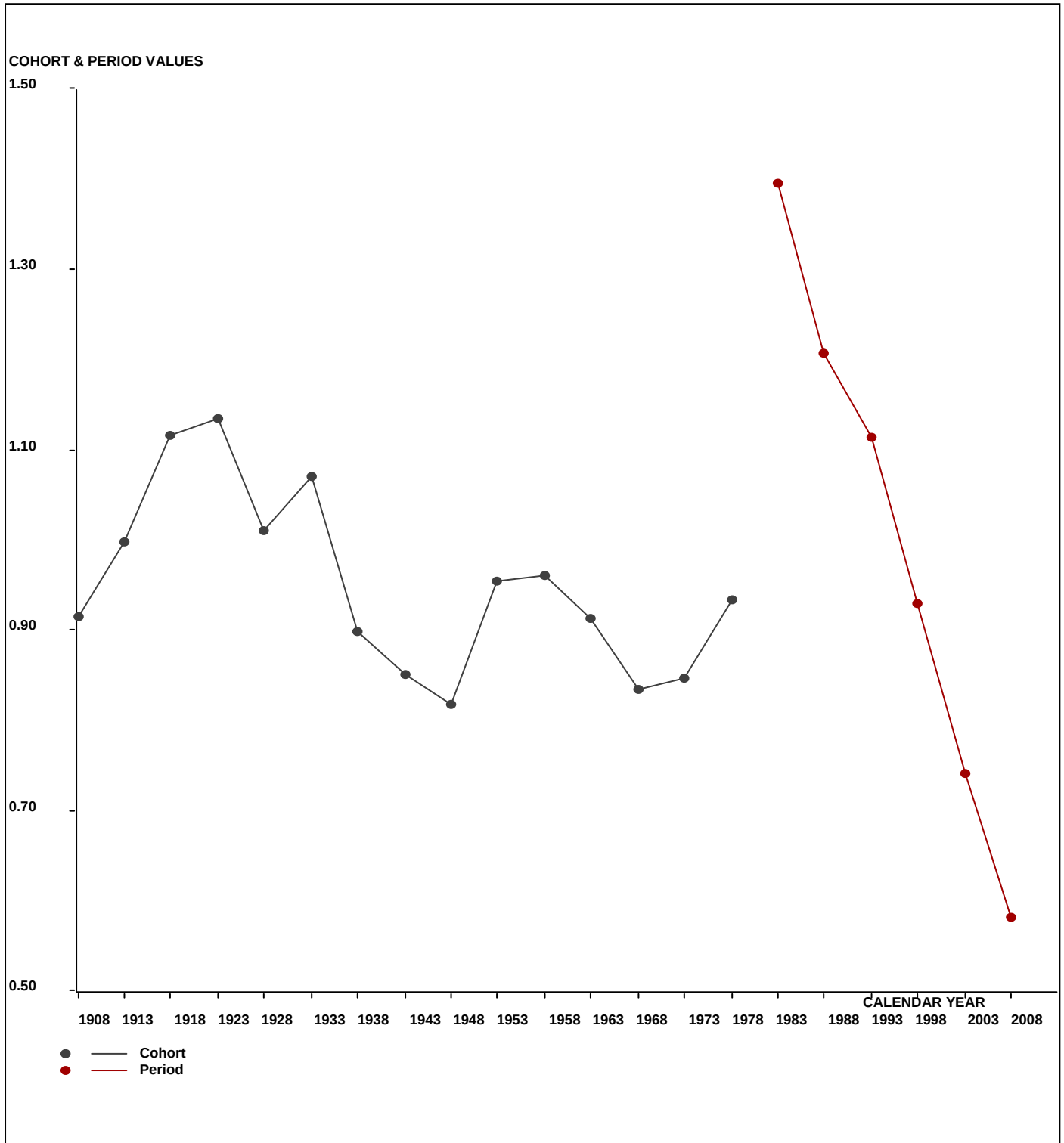
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	793.0	785.0	758.0	651.0	444.0	299.0	-	-	-	-
	EXP	779.7	768.2	803.5	655.5	426.1	264.1	209.2*	167.5*	119.1*	83.3*
	CHI	0.226	0.366	2.572	0.031	0.752	4.613	-	-	-	-
35 -	OBS	2008.0	1983.0	2117.0	1852.0	1482.0	945.0	-	-	-	-
	EXP	1882.8	1951.6	2124.8	1967.9	1504.6	963.4	600.9*	480.3*	384.1*	273.2*
	CHI	8.325	0.505	0.029	6.828	0.338	0.353	-	-	-	-
40 -	OBS	6043.0	4055.0	4495.0	4140.0	3802.0	2902.0	-	-	-	-
	EXP	5839.0	3987.9	4531.5	4390.7	3824.4	2875.3	1849.7*	1164.4*	930.0*	743.6*
	CHI	7.124	1.130	0.294	14.309	0.131	0.249	-	-	-	-
45 -	OBS	12186.0	10417.0	7647.0	7568.0	7172.0	6306.0	-	-	-	-
	EXP	12180.6	10361.1	7687.6	7791.5	7151.7	6129.6	4623.1*	2994.9*	1887.7*	1508.1*
	CHI	0.002	0.302	0.214	6.411	0.058	5.074	-	-	-	-
50 -	OBS	21450.0	18993.0	17506.0	11439.0	11171.0	10365.0	-	-	-	-
	EXP	21331.7	19057.9	17541.7	11607.0	11236.5	10153.3	8733.6*	6624.9*	4297.7*	2714.3*
	CHI	0.657	0.221	0.073	2.433	0.382	4.413	-	-	-	-
55 -	OBS	31469.0	30540.0	29743.0	24519.0	15383.0	15106.0	-	-	-	-
	EXP	31420.6	30726.7	29759.8	24520.6	15504.4	14831.6	13449.8*	11647.6*	8851.8*	5754.1*
	CHI	0.075	1.134	0.009	0.000	0.951	5.076	-	-	-	-
60 -	OBS	40441.0	42186.0	45019.0	39468.0	30989.0	19531.0	-	-	-	-
	EXP	40560.9	42487.9	44879.3	39282.9	31025.2	19400.2	18717.3*	17093.2*	14858.7*	11322.7*
	CHI	0.355	2.146	0.435	0.872	0.042	0.882	-	-	-	-
65 -	OBS	49958.0	50430.0	56879.0	54897.0	46445.0	35994.0	-	-	-	-
	EXP	50709.2	50320.1	56961.4	54295.8	46142.4	36184.7	22841.8*	22320.6*	20458.0*	17876.0*
	CHI	11.127	0.240	0.119	6.656	1.985	1.005	-	-	-	-
70 -	OBS	86250.0	57680.0	62782.0	64456.0	59125.0	50824.0	-	-	-	-
	EXP	85908.0	57071.3	62792.0	64516.9	59597.6	51238.7	40573.6*	25978.1*	25627.4*	23594.8*
	CHI	1.361	6.493	0.002	0.057	3.747	3.357	-	-	-	-
75 -	OBS	91509.0	86851.0	62998.0	65606.0	66286.0	61179.0	-	-	-	-
	EXP	91509.0	87194.3	62864.5	65586.2	65891.6	61385.7	54248.5*	43433.9*	28161.5*	28168.1*
	CHI	0.000	1.352	0.283	0.006	2.361	0.696	-	-	-	-
30-79	OBS	342107.0	303920.0	289944.0	274596.0	242299.0	203451.0	-	-	-	-
	EXP	342121.5	303926.9	289946.0	274615.0	242304.4	203426.6	165847.6*	131905.4*	105576.1*	92038.1*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Germany IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

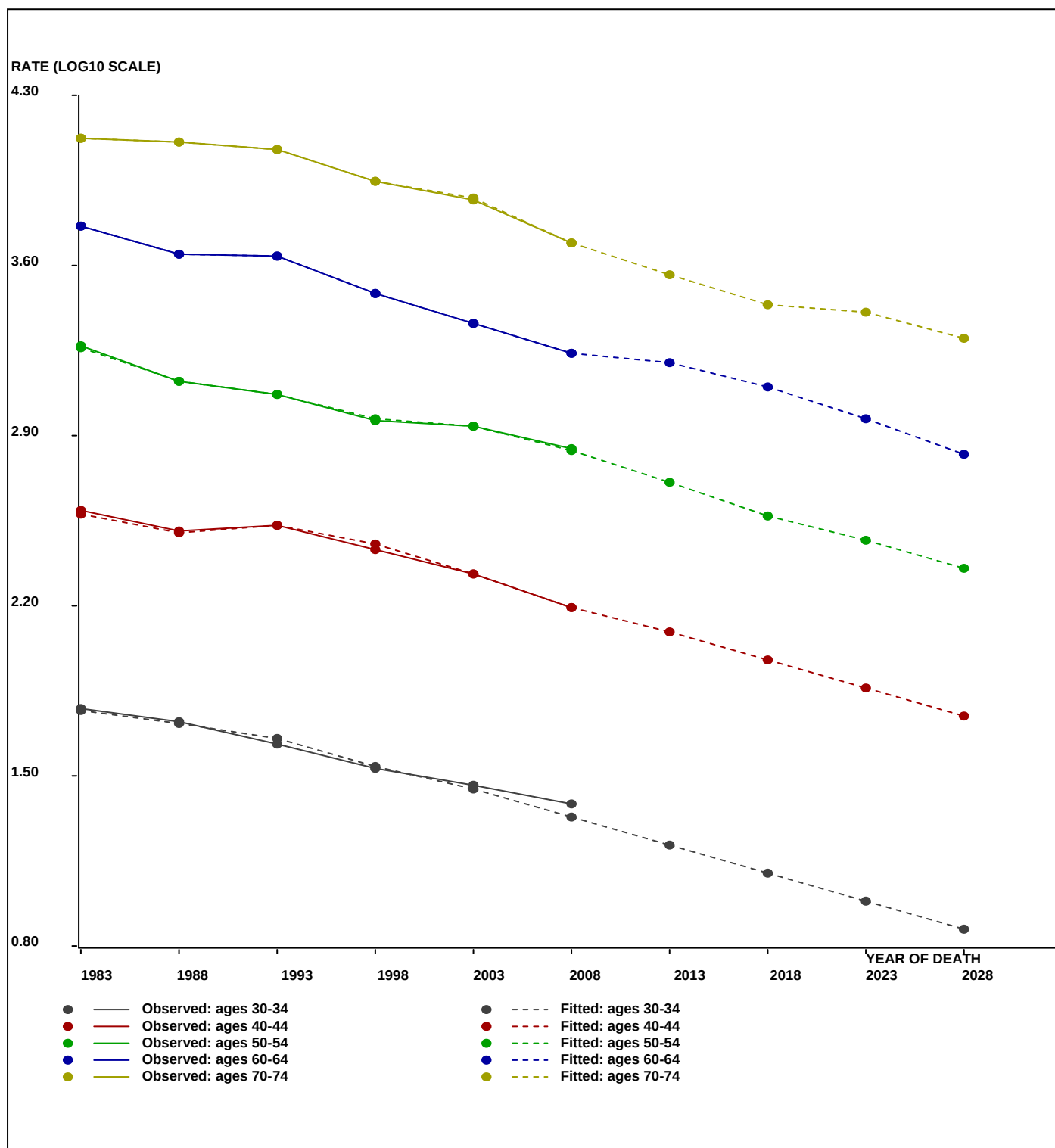


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Germany IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Germany IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	16.5	48.9	123.4	252.7	512.4	940.9	1578.0	2184.6	3652.1	6262.6
2016	PRE	12.6	37.5	94.5	201.1	367.7	701.6	1247.0	2004.8	2754.9	4659.2
2021	PRE	9.7	28.8	72.6	154.0	292.7	503.5	929.8	1584.2	2528.2	3514.7
2026	PRE	7.5	22.2	55.8	118.3	224.1	400.7	667.3	1181.2	1997.8	3225.4

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	209.2	600.9	1849.7	4623.1	8733.6	13449.8	18717.3	22841.8	40573.6	54248.5
2016	PRE	167.5	480.3	1164.4	2994.9	6624.9	11647.6	17093.2	22320.6	25978.1	43433.9
2021	PRE	119.1	384.1	930.0	1887.7	4297.7	8851.8	14858.7	20458.0	25627.4	28161.5
2026	PRE	83.3	273.2	743.6	1508.1	2714.3	5754.1	11322.7	17876.0	23594.8	28168.1

Osmond and Gardner Modelling

Germany Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	16739.68	328.23	51	P, C	99.93	91492.06	0.0000
AGE-PERIOD	414.33	9.21	45	Cohort	97.15	2201.31	0.0000
AGE-COHORT	428.87	11.91	36	Period	97.24	2275.50	0.0000
PERIOD-COHORT	181.10	4.53	40	Age	93.47	961.02	0.0000
FULL AGE-PERIOD-COHORT	11.83	0.37	32			62.71	0.0009

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.418223	26.195304
35	1.702444	50.401529
40	1.978122	95.087148
45	2.249116	177.466422
50	2.482949	304.052636
55	2.734787	542.984524
60	3.004180	1009.672275
65	3.277202	1893.225313
70	3.557133	3606.887488
75	3.826843	6711.861010

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.122339	1.325375
1986	0.056192	1.138130
1991	0.051956	1.127083
1996	-0.024118	0.945981
2001	-0.135392	0.732163
2006	-0.243836	0.570380

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.126173	1.337129
1911	0.087166	1.222268
1916	0.067221	1.167403
1921	0.022423	1.052987
1926	-0.060229	0.870504
1931	-0.038520	0.915125
1936	-0.102161	0.790386
1941	-0.117131	0.763605
1946	-0.132868	0.736430
1951	-0.066448	0.858127
1956	-0.075492	0.840443
1961	-0.070552	0.850057
1966	-0.102265	0.790196
1971	-0.109072	0.777908
1976	-0.141511	0.721919

Osmond and Gardner Modelling

Germany Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	415.0	377.0	438.0	372.0	203.0	133.0
EXP	391.0	372.4	445.2	371.3	227.3	133.0
CHI	1.5	0.1	0.1	0.0	2.6	0.0
35 - OBS	657.0	645.0	719.0	695.0	536.0	360.0
EXP	627.3	643.8	732.1	726.0	547.3	337.8
CHI	1.4	0.0	0.2	1.3	0.2	1.5
40 - OBS	1509.0	1002.0	1243.0	1134.0	1035.0	805.0
EXP	1483.8	1010.3	1228.4	1164.3	1047.4	794.6
CHI	0.4	0.1	0.2	0.8	0.1	0.1
45 - OBS	2782.0	2368.0	1869.0	1839.0	1615.0	1547.0
EXP	2730.2	2351.7	1879.8	1909.4	1653.9	1498.0
CHI	1.0	0.1	0.1	2.6	0.9	1.6
50 - OBS	4231.0	3898.0	3991.0	2577.0	2497.0	2229.0
EXP	4295.2	3921.6	3949.9	2637.3	2468.3	2153.6
CHI	1.0	0.1	0.4	1.4	0.3	2.6
55 - OBS	6373.0	6269.0	6976.0	5601.0	3504.0	3310.0
EXP	6525.2	6292.3	6730.1	5683.7	3498.2	3310.3
CHI	3.6	0.1	9.0	1.2	0.0	0.0
60 - OBS	9972.0	9668.0	10909.0	9928.0	7522.0	4827.0
EXP	10001.3	9654.5	10866.6	9838.5	7682.8	4784.7
CHI	0.1	0.0	0.2	0.8	3.4	0.4
65 - OBS	16182.0	14388.0	15911.0	15370.0	12979.0	10460.0
EXP	16309.0	14280.7	16098.1	15315.3	12987.1	10303.0
CHI	1.0	0.8	2.2	0.2	0.0	2.4
70 - OBS	38633.0	21772.0	22576.0	21836.0	19326.0	16608.0
EXP	38396.5	21623.5	22685.7	21741.5	19336.7	16972.8
CHI	1.5	1.0	0.5	0.4	0.0	7.8
75 - OBS	55871.0	44089.0	29253.0	27310.0	24887.0	22632.0
EXP	55871.0	44326.8	29275.5	27279.1	24659.8	22631.5
CHI	0.0	1.3	0.0	0.0	2.1	0.0

Osmond and Gardner Modelling

Germany Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	26.195304
35	50.401529
40	95.087148
45	177.466422
50	304.052636
55	542.984524
60	1009.672275
65	1893.225313
70	3606.887488
75	6711.861010

PERIOD	EFFECT	LOWER	UPPER
% Period Change	77.9033	74.9033	80.9033
1981	1.325375		
1986	1.138130		
1991	1.127083		
1996	0.945981		
2001	0.732163		
2006	0.570380		
2011	0.444345	0.427233	0.461456
2016	0.346159	0.320012	0.373333
2021	0.269670	0.239700	0.302039
2026	0.210082	0.179543	0.244360

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.337129	1.000000	
1911	1.222268	2.000000	
1916	1.167403	4.000000	
1921	1.052987	8.000000	
1926	0.870504	16.000000	
1931	0.915125	32.000000	
1936	0.790386	64.000000	
1941	0.763605	128.000000	
1946	0.736430	256.000000	
1951	0.858127	512.000000	
1956	0.840443	1024.000000	
1961	0.850057	2048.000000	
1966	0.790196	4096.000000	
1971	0.777908	8192.000000	
1976	0.770110	EXTRAPOLATION	0.721919
1981	0.757576	EXTRAPOLATION	
1986	0.745246	EXTRAPOLATION	
1991	0.733117	EXTRAPOLATION	
1996	0.721185	EXTRAPOLATION	

Osmond and Gardner Modelling

**Germany Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	31.6	25.4	24.7	19.6	13.3	10.8	-	-	-	-
	EXP	29.8	25.1	25.1	19.6	14.9	11.5	8.8*	6.8*	5.2*	4.0*
	Elow							8.5	6.2	4.6	3.4
	Eup							9.2	7.3	5.8	4.6
35	OBS	51.5	49.3	46.9	38.8	28.6	23.8	-	-	-	-
	EXP	49.2	49.2	47.7	40.5	29.2	22.4	17.2*	13.2*	10.1*	7.8*
	Elow							16.6	12.2	9.0	6.6
	Eup							17.9	14.3	11.3	9.0
40	OBS	97.9	79.0	93.1	73.6	58.5	43.4	-	-	-	-
	EXP	96.2	79.7	92.0	75.6	59.2	42.9	32.9*	25.3*	19.4*	14.9*
	Elow							31.6	23.4	17.3	12.7
	Eup							34.1	27.3	21.8	17.3
45	OBS	189.4	155.3	146.5	138.7	106.6	88.9	-	-	-	-
	EXP	185.9	154.2	147.3	144.1	109.2	86.0	62.3*	47.8*	36.9*	28.2*
	Elow							59.9	44.2	32.8	24.1
	Eup							64.7	51.5	41.3	32.9
50	OBS	363.3	271.9	264.4	207.0	193.3	150.9	-	-	-	-
	EXP	368.8	273.5	261.7	211.8	191.0	145.8	114.8*	83.2*	63.8*	49.2*
	Elow							110.4	76.9	56.7	42.0
	Eup							119.3	89.7	71.4	57.2
55	OBS	611.8	563.4	501.4	386.5	293.3	265.7	-	-	-	-
	EXP	626.5	565.5	483.7	392.2	292.8	265.8	202.8*	159.8*	115.7*	88.7*
	Elow							195.0	147.7	102.8	75.8
	Eup							210.6	172.3	129.6	103.2
60	OBS	1405.0	1001.7	1045.5	761.8	552.7	427.9	-	-	-	-
	EXP	1409.1	1000.3	1041.4	754.9	564.5	424.1	385.0*	293.7*	231.5*	167.6*
	Elow							370.2	271.6	205.7	143.2
	Eup							399.8	316.8	259.2	195.0
65	OBS	2906.5	2286.0	1835.9	1644.8	1094.9	837.1	-	-	-	-
	EXP	2929.3	2268.9	1857.5	1638.9	1095.6	824.6	619.5*	562.4*	429.1*	338.1*
	Elow							595.7	519.9	381.4	288.9
	Eup							643.4	606.5	480.6	393.3
70	OBS	5879.0	4825.2	4260.0	2983.1	2415.4	1591.1	-	-	-	-
	EXP	5843.0	4792.3	4280.7	2970.2	2416.7	1626.1	1223.8*	919.5*	834.7*	636.8*
	Elow							1176.7	850.0	741.9	544.3
	Eup							1271.0	991.7	934.9	740.7
75	OBS	11894.7	9286.8	8824.4	6693.3	4317.2	3503.5	-	-	-	-
	EXP	11894.7	9336.9	8831.2	6685.7	4277.8	3503.4	2357.2*	1774.1*	1332.9*	1210.0*
	Elow							2266.5	1640.1	1184.8	1034.1
	Eup							2448.0	1913.4	1492.9	1407.4
30-79	OBS	1252.4	993.6	909.8	698.0	501.5	383.4	-	-	-	-
	EXP	1253.6	992.6	910.2	698.3	501.7	382.9	284.7*	222.1*	176.1*	141.5*
	Elow							273.7	205.4	156.5	120.9
	Eup							295.7	239.6	197.2	164.6

Osmond and Gardner Modelling

**Germany Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

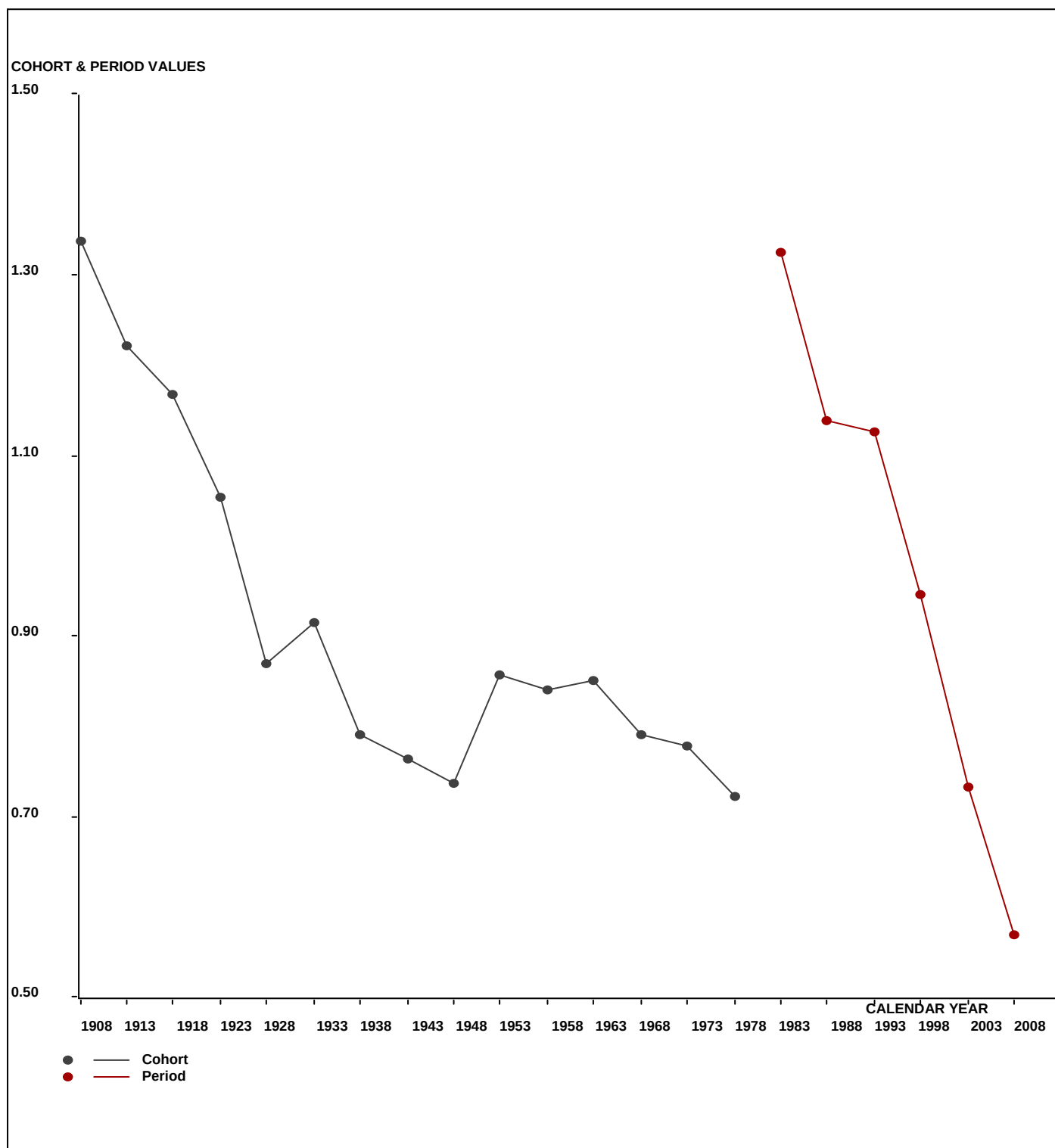
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	415.0	377.0	438.0	372.0	203.0	133.0	-	-	-	-
	EXP	391.0	372.4	445.2	371.3	227.3	141.9	112.1*	89.5*	63.5*	44.3*
	CHI	1.468	0.057	0.115	0.001	2.600	0.556	-	-	-	-
35 -	OBS	657.0	645.0	719.0	695.0	536.0	360.0	-	-	-	-
	EXP	627.3	643.8	732.1	726.0	547.3	337.8	212.2*	169.1*	134.9*	95.7*
	CHI	1.406	0.002	0.235	1.321	0.235	1.465	-	-	-	-
40 -	OBS	1509.0	1002.0	1243.0	1134.0	1035.0	805.0	-	-	-	-
	EXP	1483.8	1010.3	1228.4	1164.3	1047.4	794.6	492.6*	312.3*	248.8*	198.4*
	CHI	0.427	0.068	0.174	0.790	0.148	0.137	-	-	-	-
45 -	OBS	2782.0	2368.0	1869.0	1839.0	1615.0	1547.0	-	-	-	-
	EXP	2730.2	2351.7	1879.8	1909.4	1653.9	1498.0	1140.0*	711.7*	451.7*	360.0*
	CHI	0.982	0.113	0.062	2.598	0.917	1.601	-	-	-	-
50 -	OBS	4231.0	3898.0	3991.0	2577.0	2497.0	2229.0	-	-	-	-
	EXP	4295.2	3921.6	3949.9	2637.3	2468.3	2153.6	1957.6*	1498.3*	936.6*	595.7*
	CHI	0.961	0.142	0.428	1.378	0.333	2.643	-	-	-	-
55 -	OBS	6373.0	6269.0	6976.0	5601.0	3504.0	3310.0	-	-	-	-
	EXP	6525.2	6292.3	6730.1	5683.7	3498.2	3310.3	2898.5*	2652.6*	2034.0*	1274.2*
	CHI	3.552	0.087	8.983	1.203	0.010	0.000	-	-	-	-
60 -	OBS	9972.0	9668.0	10909.0	9928.0	7522.0	4827.0	-	-	-	-
	EXP	10001.3	9654.5	10866.6	9838.5	7682.8	4784.7	4566.4*	4026.6*	3698.8*	2844.0*
	CHI	0.086	0.019	0.165	0.814	3.366	0.374	-	-	-	-
65 -	OBS	16182.0	14388.0	15911.0	15370.0	12979.0	10460.0	-	-	-	-
	EXP	16309.0	14280.7	16098.1	15315.3	12987.1	10303.0	6477.6*	6261.4*	5541.3*	5116.7*
	CHI	0.989	0.806	2.176	0.195	0.005	2.392	-	-	-	-
70 -	OBS	38633.0	21772.0	22576.0	21836.0	19326.0	16608.0	-	-	-	-
	EXP	38396.5	21623.5	22685.7	21741.5	19336.7	16972.8	13596.5*	8670.3*	8460.9*	7521.5*
	CHI	1.456	1.019	0.530	0.411	0.006	7.840	-	-	-	-
75 -	OBS	55871.0	44089.0	29253.0	27310.0	24887.0	22632.0	-	-	-	-
	EXP	55871.0	44326.8	29275.5	27279.1	24659.8	22631.5	20419.1*	16538.9*	10680.1*	10567.2*
	CHI	0.000	1.276	0.017	0.035	2.094	0.000	-	-	-	-
30-79	OBS	136625.0	104476.0	93885.0	86662.0	74104.0	62911.0	-	-	-	-
	EXP	136630.6	104477.8	93891.4	86666.4	74108.9	62928.1	51872.5*	40930.6*	32250.7*	28617.7*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Germany Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

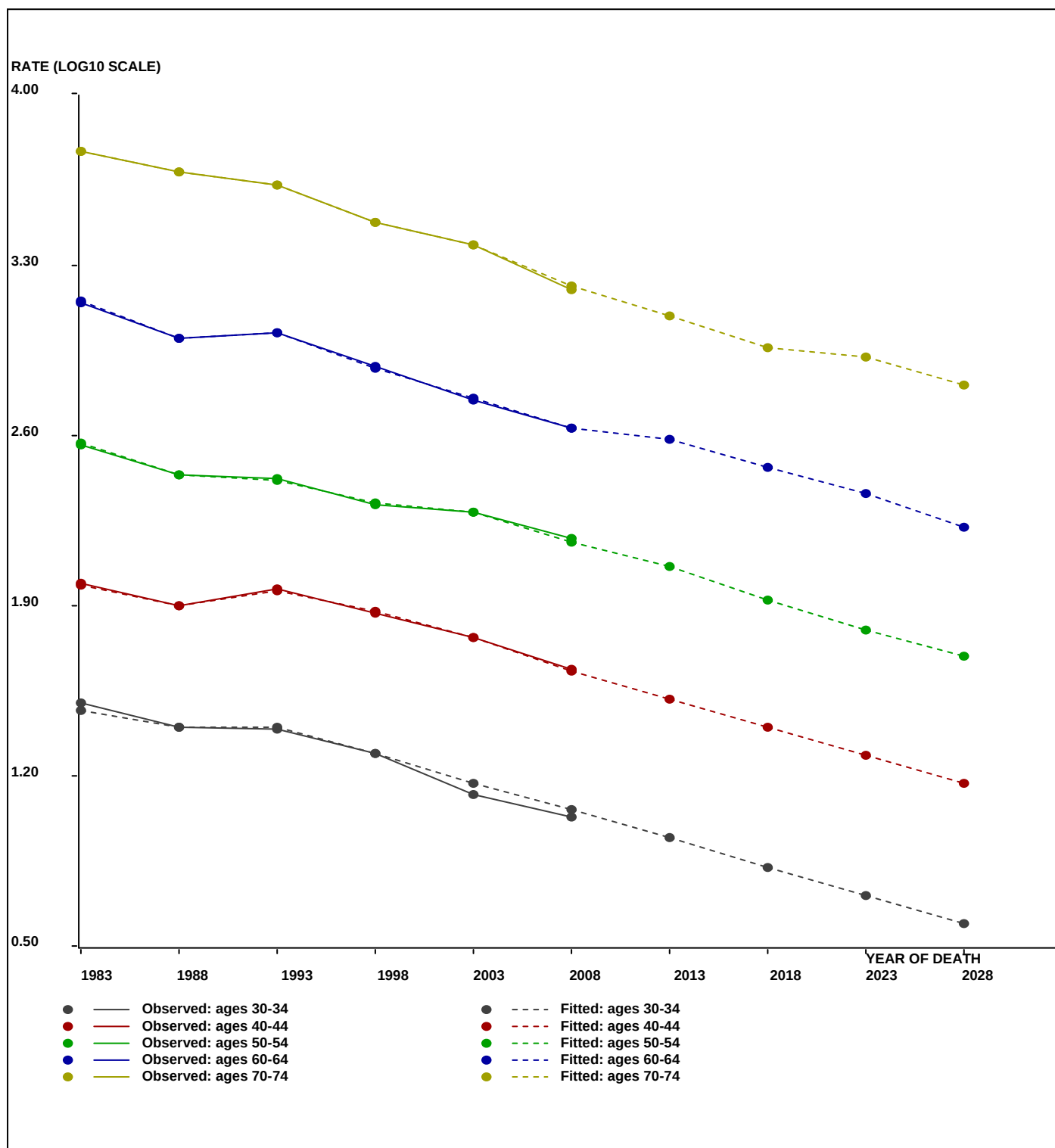


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Germany Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Germany Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	8.8	17.2	32.9	62.3	114.8	202.8	385.0	619.5	1223.8	2357.2
2016	PRE	6.8	13.2	25.3	47.8	83.2	159.8	293.7	562.4	919.5	1774.1
2021	PRE	5.2	10.1	19.4	36.9	63.8	115.7	231.5	429.1	834.7	1332.9
2026	PRE	4.0	7.8	14.9	28.2	49.2	88.7	167.6	338.1	636.8	1210.0

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	112.1	212.2	492.6	1140.0	1957.6	2898.5	4566.4	6477.6	13596.5	20419.1
2016	PRE	89.5	169.1	312.3	711.7	1498.3	2652.6	4026.6	6261.4	8670.3	16538.9
2021	PRE	63.5	134.9	248.8	451.7	936.6	2034.0	3698.8	5541.3	8460.9	10680.1
2026	PRE	44.3	95.7	198.4	360.0	595.7	1274.2	2844.0	5116.7	7521.5	10567.2

Osmond and Gardner Modelling

Germany Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	3217.93	63.10	51	P, C	99.03	17140.11	0.0000
AGE-PERIOD	448.44	9.97	45	Cohort	93.01	2380.51	0.0000
AGE-COHORT	131.49	3.65	36	Period	76.17	697.37	0.0000
PERIOD-COHORT	57.90	1.45	40	Age	45.89	307.08	0.0000
FULL AGE-PERIOD-COHORT	31.33	0.98	32			166.12	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.087093	12.220619
35	1.604805	40.253578
40	2.101476	126.321102
45	2.494316	312.115958
50	2.816349	655.162264
55	3.076558	1192.772709
60	3.278727	1899.882673
65	3.440420	2756.896662
70	3.556674	3603.080410
75	3.627317	4239.523529

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.054986	1.134973
1986	0.046871	1.113963
1991	0.035357	1.084818
1996	-0.002140	0.995085
2001	-0.045827	0.899856
2006	-0.082802	0.826415

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.035014	1.083963
1911	0.002833	1.006545
1916	0.009818	1.022865
1921	0.029915	1.071311
1926	-0.004771	0.989075
1931	0.038064	1.091602
1936	-0.032888	0.927069
1941	-0.018966	0.957269
1946	-0.034511	0.923610
1951	-0.002712	0.993775
1956	-0.031624	0.929772
1961	-0.107967	0.779889
1966	-0.215766	0.608463
1971	-0.224018	0.597011
1976	-0.256418	0.554093

Osmond and Gardner Modelling

Germany Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	171.0	184.0	180.0	139.0	117.0	69.0
EXP	180.9	188.1	183.4	140.3	100.0	69.0
CHI	0.5	0.1	0.1	0.0	2.9	0.0
35 - OBS	556.0	603.0	574.0	565.0	434.0	281.0
EXP	538.1	582.8	622.6	559.5	413.7	300.0
CHI	0.6	0.7	3.8	0.1	1.0	1.2
40 - OBS	2229.0	1709.0	1757.0	1715.0	1554.0	1158.0
EXP	2116.2	1647.6	1819.0	1800.0	1569.0	1177.7
CHI	6.0	2.3	2.1	4.0	0.1	0.3
45 - OBS	4714.0	5268.0	3877.0	4056.0	4000.0	3515.0
EXP	4823.0	5074.9	3990.9	4090.9	3955.1	3502.2
CHI	2.5	7.3	3.3	0.3	0.5	0.0
50 - OBS	9389.0	9877.0	10189.0	7511.0	7434.0	7526.0
EXP	9454.1	9701.0	10269.6	7497.1	7570.1	7438.0
CHI	0.4	3.2	0.6	0.0	2.4	1.0
55 - OBS	13381.0	16345.0	16843.0	16454.0	11828.0	12419.0
EXP	13946.7	16137.8	16690.4	16464.3	11845.2	12201.3
CHI	22.9	2.7	1.4	0.0	0.0	3.9
60 - OBS	16130.0	20227.0	23634.0	23083.0	22077.0	16395.0
EXP	16396.1	20202.9	23476.1	22841.6	22273.9	16360.3
CHI	4.3	0.0	1.1	2.6	1.7	0.1
65 - OBS	17899.0	20876.0	25654.0	27757.0	27248.0	27225.0
EXP	17819.2	20708.0	25636.2	27983.8	27262.6	27251.0
CHI	0.4	1.4	0.0	1.8	0.0	0.0
70 - OBS	27824.0	18456.0	22177.0	25941.0	28082.0	28359.0
EXP	27048.7	18524.4	22191.5	25957.7	28318.6	28813.8
CHI	22.2	0.3	0.0	0.0	2.0	7.2
75 - OBS	24499.0	21767.0	15583.0	18550.0	22274.0	24865.0
EXP	24499.0	22567.6	15594.7	18440.6	21751.4	24706.2
CHI	0.0	28.4	0.0	0.6	12.6	1.0

Osmond and Gardner Modelling

Germany Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	12.220619
35	40.253578
40	126.321102
45	312.115958
50	655.162264
55	1192.772709
60	1899.882673
65	2756.896662
70	3603.080410
75	4239.523529

PERIOD	EFFECT	LOWER	UPPER
% Period Change	91.8386	88.8386	94.8386

1981	1.134973		
1986	1.113963		
1991	1.084818		
1996	0.995085		
2001	0.899856		
2006	0.826415		
2011	0.758968	0.734176	0.783760
2016	0.697026	0.652231	0.743308
2021	0.640139	0.579433	0.704943
2026	0.587895	0.514761	0.668558

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.083963	1.000000	
1911	1.006545	2.000000	
1916	1.022865	4.000000	
1921	1.071311	8.000000	
1926	0.989075	16.000000	
1931	1.091602	32.000000	
1936	0.927069	64.000000	
1941	0.957269	128.000000	
1946	0.923610	256.000000	
1951	0.993775	512.000000	
1956	0.929772	1024.000000	
1961	0.779889	2048.000000	
1966	0.608463	4096.000000	
1971	0.597011	8192.000000	
1976	0.532219	EXTRAPOLATION	0.554093
1981	0.478893	EXTRAPOLATION	
1986	0.430910	EXTRAPOLATION	
1991	0.387735	EXTRAPOLATION	
1996	0.348886	EXTRAPOLATION	

Osmond and Gardner Modelling

**Germany Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	13.0	12.4	10.1	7.3	7.7	5.6	-	-	-	-
	EXP	13.8	12.7	10.3	7.4	6.6	5.4	4.4*	3.7*	3.0*	2.5*
	Elow							4.3	3.4	2.7	2.2
	Eup							4.6	3.9	3.3	2.9
35	OBS	43.6	46.1	37.4	31.5	23.1	18.6	-	-	-	-
	EXP	42.2	44.6	40.6	31.2	22.0	19.9	16.3*	13.4*	11.1*	9.2*
	Elow							15.7	12.6	10.1	8.0
	Eup							16.8	14.3	12.2	10.4
40	OBS	144.6	134.8	131.5	111.4	87.8	62.5	-	-	-	-
	EXP	137.2	130.0	136.2	116.9	88.7	63.5	57.2*	46.9*	38.7*	32.0*
	Elow							55.4	43.8	35.1	28.0
	Eup							59.1	50.0	42.6	36.4
45	OBS	321.0	345.5	303.8	306.0	264.1	201.9	-	-	-	-
	EXP	328.4	332.8	312.7	308.6	261.1	201.2	144.1*	129.9*	106.3*	87.9*
	Elow							139.4	121.5	96.3	76.9
	Eup							148.8	138.5	117.1	99.9
50	OBS	806.1	688.9	675.0	603.3	575.3	509.4	-	-	-	-
	EXP	811.7	676.6	680.4	602.1	585.9	503.4	387.8*	277.9*	250.4*	205.0*
	Elow							375.1	260.0	226.6	179.5
	Eup							400.5	296.3	275.7	233.1
55	OBS	1284.7	1469.0	1210.5	1135.5	989.9	997.1	-	-	-	-
	EXP	1339.0	1450.4	1199.6	1136.2	991.3	979.6	841.7*	648.4*	464.6*	418.6*
	Elow							814.2	606.7	420.5	366.6
	Eup							869.2	691.4	511.6	476.1
60	OBS	2272.6	2095.8	2265.0	1771.2	1622.1	1453.2	-	-	-	-
	EXP	2310.1	2093.3	2249.8	1752.7	1636.6	1450.2	1433.0*	1231.3*	948.5*	679.6*
	Elow							1386.2	1152.1	858.5	595.1
	Eup							1479.8	1313.0	1044.5	772.9
65	OBS	3214.9	3316.8	2960.1	2970.4	2298.6	2178.9	-	-	-	-
	EXP	3200.5	3290.1	2958.1	2994.6	2299.9	2181.0	1932.6*	1909.7*	1640.9*	1264.0*
	Elow							1869.4	1786.9	1485.3	1106.8
	Eup							1995.7	2036.5	1807.0	1437.4
70	OBS	4234.1	4090.3	4184.7	3543.9	3509.7	2716.9	-	-	-	-
	EXP	4116.2	4105.5	4187.4	3546.2	3539.2	2760.5	2617.8*	2319.6*	2292.1*	1969.5*
	Elow							2532.3	2170.5	2074.7	1724.5
	Eup							2703.3	2473.6	2524.2	2239.7
75	OBS	5215.8	4584.9	4700.7	4546.3	3863.9	3849.1	-	-	-	-
	EXP	5215.8	4753.6	4704.3	4519.5	3773.3	3824.5	2983.0*	2828.8*	2506.6*	2476.9*
	Elow							2885.6	2647.0	2268.9	2168.8
	Eup							3080.4	3016.6	2760.3	2816.7
30-79	OBS	1170.2	1138.1	1099.8	994.4	876.5	789.1	-	-	-	-
	EXP	1172.7	1136.9	1100.2	994.6	877.2	787.9	691.5*	611.0*	524.5*	439.7*
	Elow							668.9	571.7	474.8	385.0
	Eup							714.1	651.5	577.6	500.0

Osmond and Gardner Modelling

**Germany Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

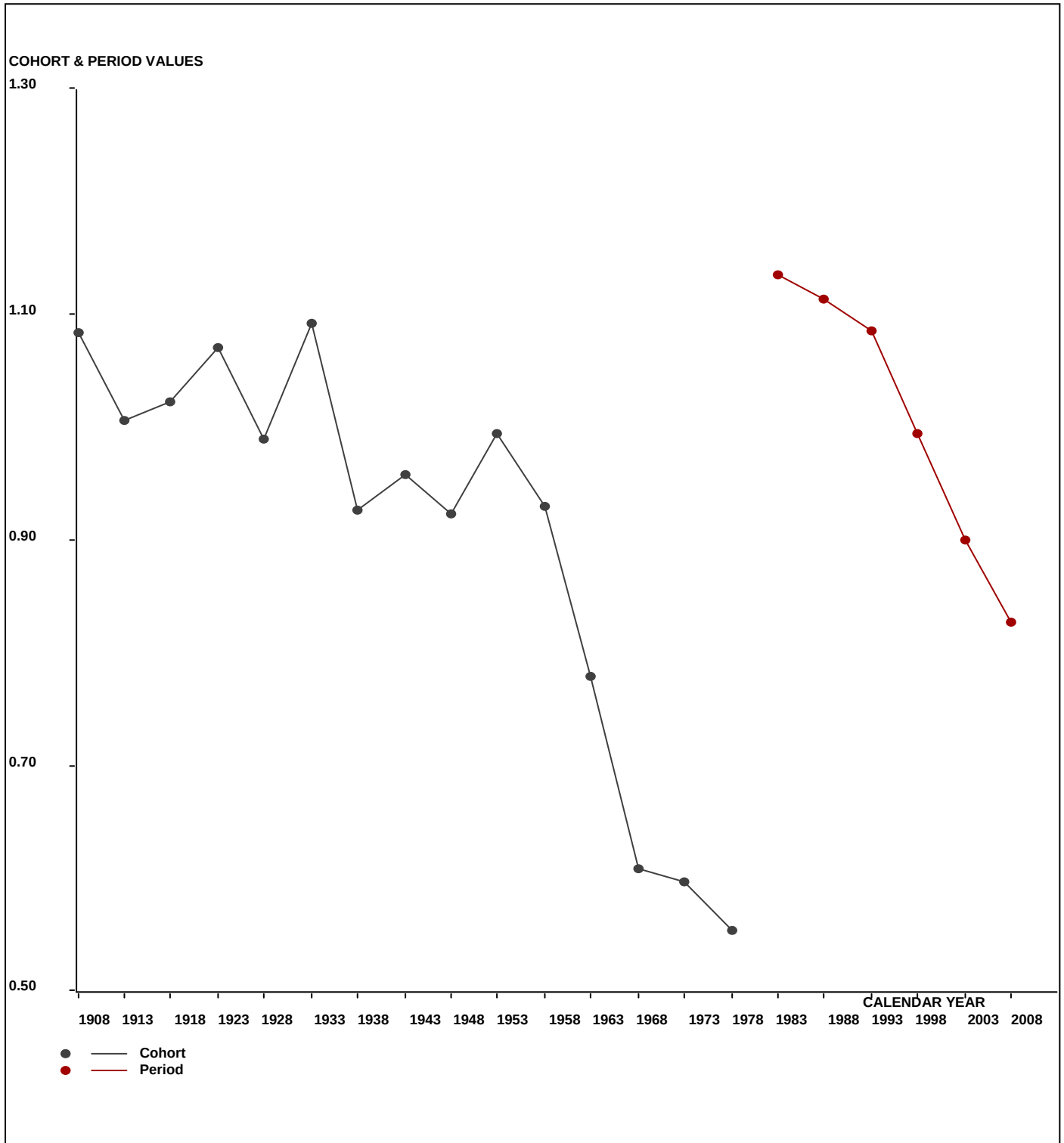
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	171.0	184.0	180.0	139.0	117.0	69.0	-	-	-	-
	EXP	180.9	188.1	183.4	140.3	100.0	66.3	56.5*	48.6*	37.2*	28.0*
	CHI	0.543	0.089	0.063	0.012	2.881	0.112	-	-	-	-
35 -	OBS	556.0	603.0	574.0	565.0	434.0	281.0	-	-	-	-
	EXP	538.1	582.8	622.6	559.5	413.7	300.0	200.0*	172.0*	147.9*	113.1*
	CHI	0.597	0.697	3.794	0.053	0.996	1.198	-	-	-	-
40 -	OBS	2229.0	1709.0	1757.0	1715.0	1554.0	1158.0	-	-	-	-
	EXP	2116.2	1647.6	1819.0	1800.0	1569.0	1177.7	857.8*	577.3*	496.0*	426.5*
	CHI	6.016	2.291	2.112	4.015	0.144	0.329	-	-	-	-
45 -	OBS	4714.0	5268.0	3877.0	4056.0	4000.0	3515.0	-	-	-	-
	EXP	4823.0	5074.9	3990.9	4090.9	3955.1	3502.2	2637.0*	1934.2*	1303.4*	1120.0*
	CHI	2.463	7.345	3.251	0.298	0.511	0.047	-	-	-	-
50 -	OBS	9389.0	9877.0	10189.0	7511.0	7434.0	7526.0	-	-	-	-
	EXP	9454.1	9701.0	10269.6	7497.1	7570.1	7438.0	6610.1*	5005.7*	3676.8*	2482.6*
	CHI	0.448	3.193	0.632	0.026	2.447	1.040	-	-	-	-
55 -	OBS	13381.0	16345.0	16843.0	16454.0	11828.0	12419.0	-	-	-	-
	EXP	13946.7	16137.8	16690.4	16464.3	11845.2	12201.3	12031.3*	10764.5*	8167.0*	6011.2*
	CHI	22.947	2.660	1.395	0.006	0.025	3.885	-	-	-	-
60 -	OBS	16130.0	20227.0	23634.0	23083.0	22077.0	16395.0	-	-	-	-
	EXP	16396.1	20202.9	23476.1	22841.6	22273.9	16360.3	16996.5*	16878.0*	15157.9*	11531.3*
	CHI	4.318	0.029	1.063	2.551	1.740	0.073	-	-	-	-
65 -	OBS	17899.0	20876.0	25654.0	27757.0	27248.0	27225.0	-	-	-	-
	EXP	17819.2	20708.0	25636.2	27983.8	27262.6	27251.0	20206.6*	21261.8*	21190.3*	19129.5*
	CHI	0.357	1.362	0.012	1.838	0.008	0.025	-	-	-	-
70 -	OBS	27824.0	18456.0	22177.0	25941.0	28082.0	28359.0	-	-	-	-
	EXP	27048.7	18524.4	22191.5	25957.7	28318.6	28813.8	29082.8*	21872.8*	23234.6*	23260.8*
	CHI	22.220	0.253	0.009	0.011	1.977	7.179	-	-	-	-
75 -	OBS	24499.0	21767.0	15583.0	18550.0	22274.0	24865.0	-	-	-	-
	EXP	24499.0	22567.6	15594.7	18440.6	21751.4	24706.2	25839.6*	26370.4*	20084.0*	21631.3*
	CHI	0.000	28.404	0.009	0.649	12.558	1.021	-	-	-	-
30-79	OBS	116792.0	115312.0	120468.0	125771.0	125048.0	121812.0	-	-	-	-
	EXP	116822.0	115335.3	120474.2	125775.8	125059.5	121816.7	114518.2*	104885.2*	93494.9*	85734.3*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Germany Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

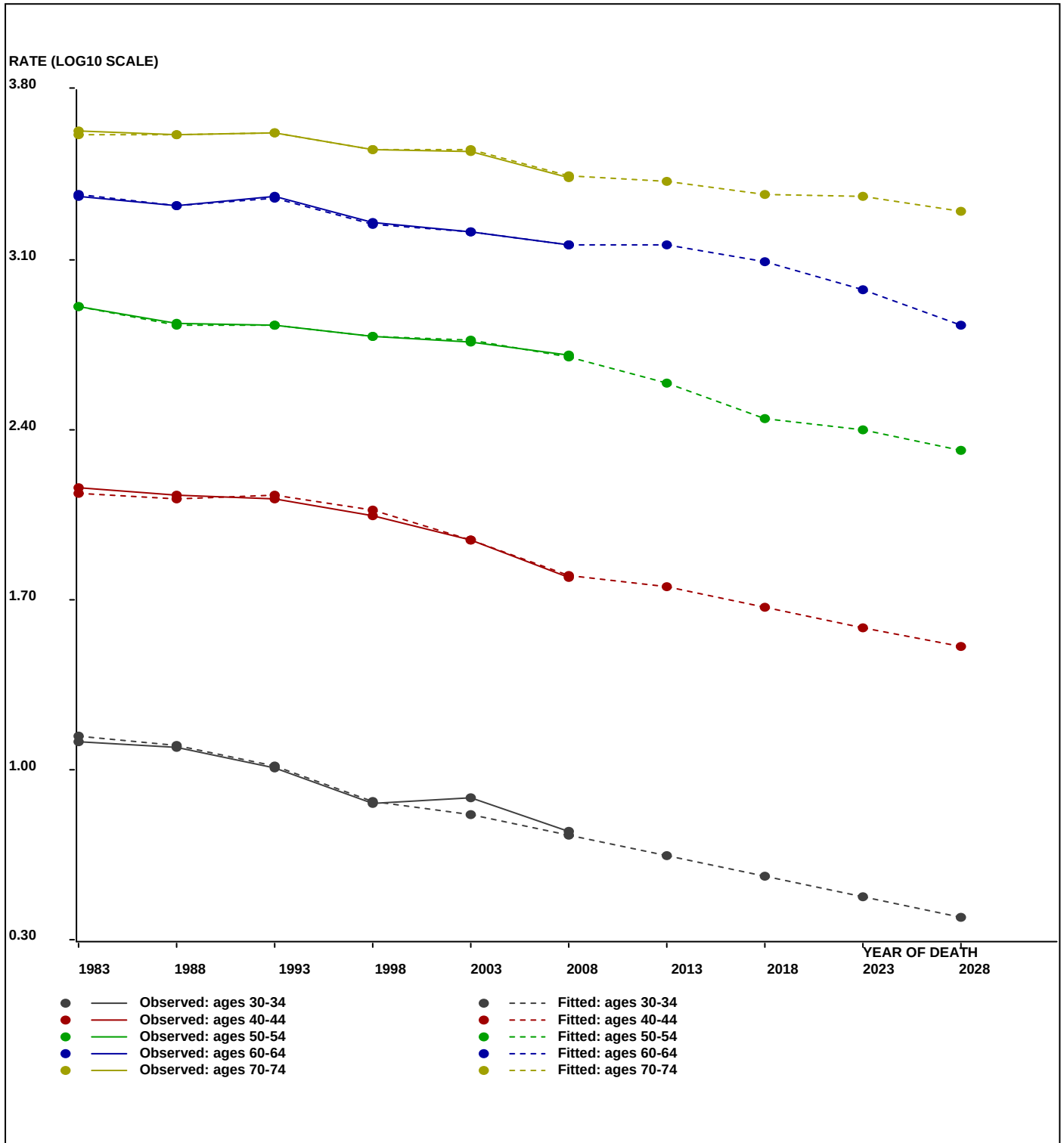


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Germany Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Germany Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	4.4	16.3	57.2	144.1	387.8	841.7	1433.0	1932.6	2617.8	2983.0
2016	PRE	3.7	13.4	46.9	129.9	277.9	648.4	1231.3	1909.7	2319.6	2828.8
2021	PRE	3.0	11.1	38.7	106.3	250.4	464.6	948.5	1640.9	2292.1	2506.6
2026	PRE	2.5	9.2	32.0	87.9	205.0	418.6	679.6	1264.0	1969.5	2476.9

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	56.5	200.0	857.8	2637.0	6610.1	12031.3	16996.5	20206.6	29082.8	25839.6
2016	PRE	48.6	172.0	577.3	1934.2	5005.7	10764.5	16878.0	21261.8	21872.8	26370.4
2021	PRE	37.2	147.9	496.0	1303.4	3676.8	8167.0	15157.9	21190.3	23234.6	20084.0
2026	PRE	28.0	113.1	426.5	1120.0	2482.6	6011.2	11531.3	19129.5	23260.8	21631.3

Osmond and Gardner Modelling

Germany COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	6273.54	123.01	51	P, C	99.56	33756.82	0.0000
AGE-PERIOD	237.80	5.28	45	Cohort	88.50	1262.08	0.0000
AGE-COHORT	87.94	2.44	36	Period	68.91	466.46	0.0000
PERIOD-COHORT	49.16	1.23	40	Age	44.39	260.82	0.0000
FULL AGE-PERIOD-COHORT	27.34	0.85	32			145.11	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.024119	10.571079
35	1.180868	15.165885
40	1.481822	30.326471
45	1.829638	67.552034
50	2.179864	151.308735
55	2.509066	322.898287
60	2.818642	658.630873
65	3.094885	1244.184296
70	3.339391	2184.695420
75	3.550506	3552.267999

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.106048	1.276579
1986	0.063464	1.157348
1991	0.042604	1.103073
1996	-0.034272	0.924119
2001	-0.108154	0.779553
2006	-0.144755	0.716547

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.093252	1.239516
1911	0.047242	1.114916
1916	0.057922	1.142673
1921	0.045097	1.109422
1926	-0.011318	0.974276
1931	-0.004072	0.990667
1936	-0.103467	0.788012
1941	-0.112610	0.771596
1946	-0.106347	0.782804
1951	-0.073239	0.844813
1956	-0.105663	0.784037
1961	-0.143315	0.718927
1966	-0.170175	0.675810
1971	-0.282932	0.521277
1976	-0.271370	0.535341

Osmond and Gardner Modelling

Germany COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	149.0	141.0	135.0	140.0	65.0	50.0
EXP	149.6	142.6	148.7	125.2	65.4	50.0
CHI	0.0	0.0	1.3	1.8	0.0	0.0
35 - OBS	196.0	182.0	182.0	197.0	159.0	86.0
EXP	193.3	193.9	201.1	180.5	150.0	85.6
CHI	0.0	0.7	1.8	1.5	0.5	0.0
40 - OBS	514.0	293.0	347.0	363.0	323.0	246.0
EXP	460.6	348.3	377.5	338.4	300.8	272.3
CHI	6.2	8.8	2.5	1.8	1.6	2.5
45 - OBS	1198.0	883.0	697.0	622.0	587.0	578.0
EXP	998.0	919.8	744.4	699.0	625.3	605.8
CHI	40.1	1.5	3.0	8.5	2.3	1.3
50 - OBS	2319.0	2024.0	1806.0	1317.0	1296.0	1287.0
EXP	2228.7	1978.5	1943.9	1362.8	1287.5	1256.0
CHI	3.7	1.0	9.8	1.5	0.1	0.8
55 - OBS	4078.0	4200.0	3873.0	3282.0	2357.0	2538.0
EXP	4183.1	4119.2	3905.2	3336.4	2354.4	2434.6
CHI	2.6	1.6	0.3	0.9	0.0	4.4
60 - OBS	6527.0	7147.0	7612.0	6116.0	5400.0	4302.0
EXP	6620.6	7167.6	7510.2	6250.7	5391.9	4167.9
CHI	1.3	0.1	1.4	2.9	0.0	4.3
65 - OBS	9906.0	10033.0	11492.0	10780.0	9079.0	8752.0
EXP	10104.6	10054.9	11588.3	10643.9	9059.9	8595.1
CHI	3.9	0.0	0.8	1.7	0.0	2.9
70 - OBS	20457.0	13075.0	14275.0	14499.0	13347.0	12757.0
EXP	20433.1	13036.4	14168.8	14398.1	13499.7	12876.1
CHI	0.0	0.1	0.8	0.7	1.7	1.1
75 - OBS	26402.0	21737.0	15000.0	14868.0	15671.0	16026.0
EXP	26402.0	21760.9	14842.8	14859.8	15552.5	16289.4
CHI	0.0	0.0	1.7	0.0	0.9	4.3

Osmond and Gardner Modelling

Germany COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	10.571079
35	15.165885
40	30.326471
45	67.552034
50	151.308735
55	322.898287
60	658.630873
65	1244.184296
70	2184.695420
75	3552.267999

PERIOD	EFFECT	LOWER	UPPER
% Period Change	91.9177	88.9177	94.9177
1981	1.276579		
1986	1.157348		
1991	1.103073		
1996	0.924119		
2001	0.779553		
2006	0.716547		
2011	0.658634	0.637137	0.680130
2016	0.605401	0.566528	0.645564
2021	0.556471	0.503743	0.612754
2026	0.511495	0.447917	0.581612

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.239516	1.000000	
1911	1.114916	2.000000	
1916	1.142673	4.000000	
1921	1.109422	8.000000	
1926	0.974276	16.000000	
1931	0.990667	32.000000	
1936	0.788012	64.000000	
1941	0.771596	128.000000	
1946	0.782804	256.000000	
1951	0.844813	512.000000	
1956	0.784037	1024.000000	
1961	0.718927	2048.000000	
1966	0.675810	4096.000000	
1971	0.521277	8192.000000	
1976	0.496126	EXTRAPOLATION	0.535341
1981	0.446933	EXTRAPOLATION	
1986	0.402618	EXTRAPOLATION	
1991	0.362696	EXTRAPOLATION	
1996	0.326733	EXTRAPOLATION	

Osmond and Gardner Modelling

**Germany COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	11.4	9.5	7.6	7.4	4.3	4.1	-	-	-	-
	EXP	11.4	9.6	8.4	6.6	4.3	3.8	3.1*	2.6*	2.1*	1.8*
	Elow							3.0	2.4	1.9	1.5
	Eup							3.2	2.7	2.3	2.0
35	OBS	15.4	13.9	11.9	11.0	8.5	5.7	-	-	-	-
	EXP	15.2	14.8	13.1	10.1	8.0	5.7	5.0*	4.1*	3.4*	2.8*
	Elow							4.8	3.8	3.1	2.5
	Eup							5.1	4.4	3.7	3.2
40	OBS	33.3	23.1	26.0	23.6	18.2	13.3	-	-	-	-
	EXP	29.9	27.5	28.3	22.0	17.0	14.7	10.4*	9.1*	7.5*	6.2*
	Elow							10.1	8.5	6.8	5.5
	Eup							10.8	9.7	8.3	7.1
45	OBS	81.6	57.9	54.6	46.9	38.8	33.2	-	-	-	-
	EXP	68.0	60.3	58.3	52.7	41.3	34.8	30.1*	21.3*	18.6*	15.4*
	Elow							29.1	19.9	16.9	13.5
	Eup							31.0	22.7	20.5	17.6
50	OBS	199.1	141.2	119.6	105.8	100.3	87.1	-	-	-	-
	EXP	191.4	138.0	128.8	109.5	99.6	85.0	71.6*	61.9*	43.9*	38.4*
	Elow							69.3	57.9	39.7	33.6
	Eup							74.0	66.0	48.3	43.7
55	OBS	391.5	377.5	278.4	226.5	197.3	203.8	-	-	-	-
	EXP	401.6	370.2	280.7	230.2	197.0	195.5	166.7*	140.5*	121.4*	86.1*
	Elow							161.3	131.5	109.9	75.4
	Eup							172.2	149.9	133.7	97.9
60	OBS	919.6	740.5	729.5	469.3	396.8	381.3	-	-	-	-
	EXP	932.8	742.7	719.7	479.6	396.2	369.4	366.5*	312.6*	263.5*	227.7*
	Elow							354.5	292.5	238.5	199.4
	Eup							378.4	333.4	290.1	258.9
65	OBS	1779.2	1594.0	1326.0	1153.6	765.9	700.5	-	-	-	-
	EXP	1814.9	1597.5	1337.1	1139.0	764.3	687.9	641.5*	636.3*	542.8*	457.5*
	Elow							620.5	595.5	491.4	400.7
	Eup							662.4	678.6	597.7	520.2
70	OBS	3113.1	2897.7	2693.6	1980.8	1668.1	1222.2	-	-	-	-
	EXP	3109.4	2889.2	2673.6	1967.0	1687.2	1233.6	1110.3*	1035.3*	1027.1*	876.1*
	Elow							1074.0	968.9	929.7	767.2
	Eup							1146.5	1104.0	1130.9	996.2
75	OBS	5620.9	4578.6	4524.9	3643.9	2718.5	2480.8	-	-	-	-
	EXP	5620.9	4583.7	4477.5	3641.9	2697.9	2521.6	1843.7*	1659.4*	1547.4*	1535.0*
	Elow							1783.5	1552.8	1400.8	1344.2
	Eup							1903.8	1769.4	1703.9	1745.4
30-79	OBS	673.3	580.2	532.6	416.6	324.8	283.0	-	-	-	-
	EXP	674.8	580.2	532.1	416.8	324.9	282.2	241.1*	219.4*	198.6*	175.2*
	Elow							233.2	205.4	179.8	153.4
	Eup							248.9	234.0	218.7	199.2

Osmond and Gardner Modelling

**Germany COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

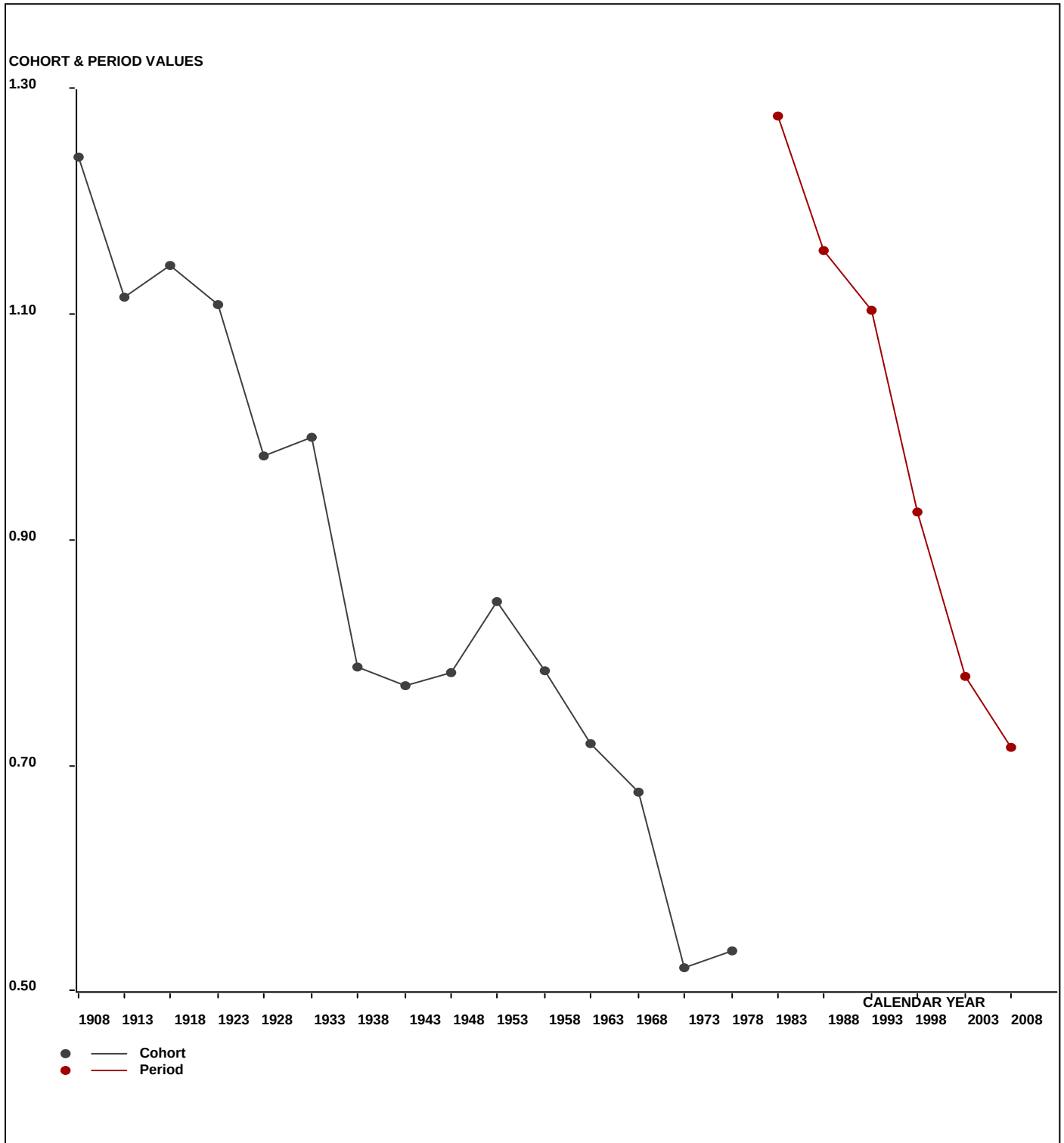
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	149.0	141.0	135.0	140.0	65.0	50.0	-	-	-	-
	EXP	149.6	142.6	148.7	125.2	65.4	46.3	39.6*	34.1*	26.2*	19.7*
	CHI	0.003	0.017	1.262	1.756	0.003	0.289	-	-	-	-
35 -	OBS	196.0	182.0	182.0	197.0	159.0	86.0	-	-	-	-
	EXP	193.3	193.9	201.1	180.5	150.0	85.6	61.0*	52.5*	45.3*	34.7*
	CHI	0.039	0.736	1.820	1.513	0.544	0.002	-	-	-	-
40 -	OBS	514.0	293.0	347.0	363.0	323.0	246.0	-	-	-	-
	EXP	460.6	348.3	377.5	338.4	300.8	272.3	156.0*	112.2*	96.6*	83.2*
	CHI	6.194	8.779	2.461	1.786	1.636	2.536	-	-	-	-
45 -	OBS	1198.0	883.0	697.0	622.0	587.0	578.0	-	-	-	-
	EXP	998.0	919.8	744.4	699.0	625.3	605.8	550.1*	317.5*	228.6*	196.8*
	CHI	40.090	1.474	3.018	8.483	2.349	1.280	-	-	-	-
50 -	OBS	2319.0	2024.0	1806.0	1317.0	1296.0	1287.0	-	-	-	-
	EXP	2228.7	1978.5	1943.9	1362.8	1287.5	1256.0	1221.2*	1115.2*	644.5*	465.0*
	CHI	3.655	1.044	9.781	1.541	0.056	0.766	-	-	-	-
55 -	OBS	4078.0	4200.0	3873.0	3282.0	2357.0	2538.0	-	-	-	-
	EXP	4183.1	4119.2	3905.2	3336.4	2354.4	2434.6	2383.4*	2333.2*	2134.7*	1236.2*
	CHI	2.639	1.586	0.265	0.886	0.003	4.389	-	-	-	-
60 -	OBS	6527.0	7147.0	7612.0	6116.0	5400.0	4302.0	-	-	-	-
	EXP	6620.6	7167.6	7510.2	6250.7	5391.9	4167.9	4346.8*	4285.4*	4210.9*	3863.0*
	CHI	1.324	0.059	1.380	2.904	0.012	4.314	-	-	-	-
65 -	OBS	9906.0	10033.0	11492.0	10780.0	9079.0	8752.0	-	-	-	-
	EXP	10104.6	10054.9	11588.3	10643.9	9059.9	8595.1	6707.2*	7084.8*	7010.2*	6924.1*
	CHI	3.903	0.048	0.800	1.740	0.040	2.866	-	-	-	-
70 -	OBS	20457.0	13075.0	14275.0	14499.0	13347.0	12757.0	-	-	-	-
	EXP	20433.1	13036.4	14168.8	14398.1	13499.7	12876.1	12334.7*	9762.9*	10411.0*	10347.7*
	CHI	0.028	0.114	0.796	0.708	1.728	1.102	-	-	-	-
75 -	OBS	26402.0	21737.0	15000.0	14868.0	15671.0	16026.0	-	-	-	-
	EXP	26402.0	21760.9	14842.8	14859.8	15552.5	16289.4	15970.4*	15468.8*	12398.5*	13405.6*
	CHI	0.000	0.026	1.664	0.005	0.902	4.259	-	-	-	-
30-79	OBS	71746.0	59715.0	55419.0	52184.0	48284.0	46622.0	-	-	-	-
	EXP	71773.6	59722.2	55430.9	52194.8	48287.6	46629.1	43770.5*	40566.7*	37206.4*	36576.1*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Germany COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

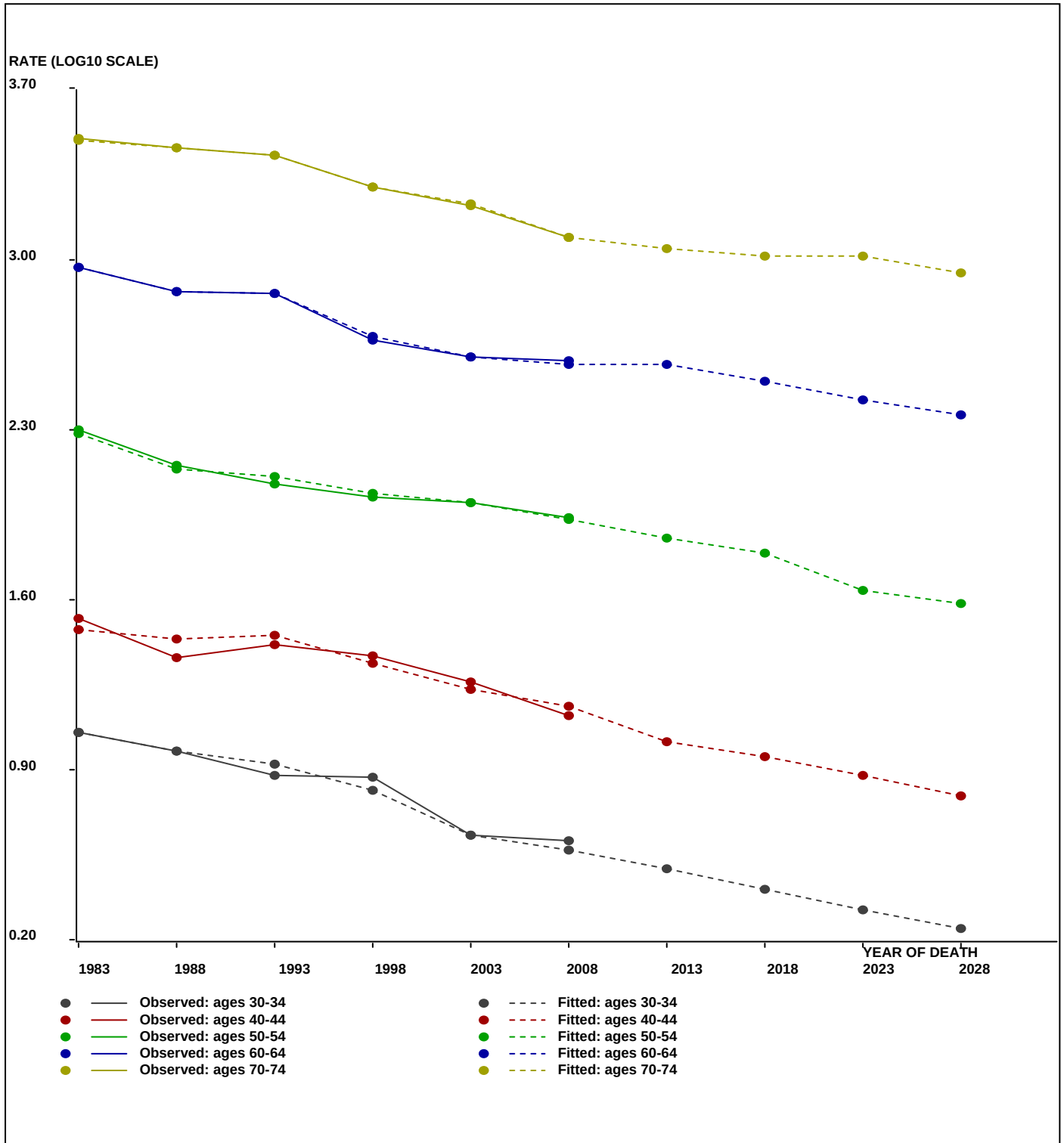


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Germany COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Germany COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	3.1	5.0	10.4	30.1	71.6	166.7	366.5	641.5	1110.3	1843.7
2016	PRE	2.6	4.1	9.1	21.3	61.9	140.5	312.6	636.3	1035.3	1659.4
2021	PRE	2.1	3.4	7.5	18.6	43.9	121.4	263.5	542.8	1027.1	1547.4
2026	PRE	1.8	2.8	6.2	15.4	38.4	86.1	227.7	457.5	876.1	1535.0

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	39.6	61.0	156.0	550.1	1221.2	2383.4	4346.8	6707.2	12334.7	15970.4
2016	PRE	34.1	52.5	112.2	317.5	1115.2	2333.2	4285.4	7084.8	9762.9	15468.8
2021	PRE	26.2	45.3	96.6	228.6	644.5	2134.7	4210.9	7010.2	10411.0	12398.5
2026	PRE	19.7	34.7	83.2	196.8	465.0	1236.2	3863.0	6924.1	10347.7	13405.6

Osmond and Gardner Modelling

Germany IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	16548.50	324.48	51	P, C	99.83	90329.06	0.0000
AGE-PERIOD	910.75	20.24	45	Cohort	96.97	4837.06	0.0000
AGE-COHORT	856.86	23.80	36	Period	96.78	4548.67	0.0000
PERIOD-COHORT	93.88	2.35	40	Age	70.58	498.43	0.0000
FULL AGE-PERIOD-COHORT	27.62	0.86	32			146.45	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.957851	9.075092
35	1.394343	24.793786
40	1.802550	63.467364
45	2.121599	132.311975
50	2.419682	262.834015
55	2.718785	523.341760
60	3.037011	1088.956582
65	3.330809	2141.949770
70	3.622685	4194.545990
75	3.911176	8150.352961

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.098011	1.253172
1986	0.059275	1.146238
1991	0.046191	1.112222
1996	-0.017138	0.961307
2001	-0.126940	0.746552
2006	-0.253014	0.558452

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.002710	0.993780
1911	0.014119	1.033044
1916	0.048646	1.118527
1921	0.030334	1.072344
1926	-0.011957	0.972844
1931	-0.002407	0.994472
1936	-0.090199	0.812458
1941	-0.130639	0.740220
1946	-0.127058	0.746349
1951	-0.048697	0.893928
1956	-0.006124	0.985998
1961	0.017962	1.042225
1966	0.030128	1.071836
1971	0.086771	1.221156
1976	0.188656	1.544030

Osmond and Gardner Modelling

Germany IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	141.0	143.0	164.0	168.0	123.0	94.0
EXP	131.9	149.1	174.8	164.8	119.2	94.0
CHI	0.6	0.2	0.7	0.1	0.1	0.0
35 - OBS	312.0	341.0	370.0	417.0	347.0	240.0
EXP	279.2	330.8	407.0	419.6	350.4	243.9
CHI	3.9	0.3	3.4	0.0	0.0	0.1
40 - OBS	915.0	677.0	800.0	921.0	789.0	669.0
EXP	865.3	654.8	838.8	912.0	835.4	668.8
CHI	2.9	0.8	1.8	0.1	2.6	0.0
45 - OBS	1830.0	1679.0	1319.0	1508.0	1471.0	1353.0
EXP	1894.6	1643.4	1336.4	1518.0	1474.4	1296.1
CHI	2.2	0.8	0.2	0.1	0.0	2.5
50 - OBS	3781.0	3296.0	3209.0	2323.0	2337.0	2206.0
EXP	3802.3	3411.0	3165.4	2280.7	2324.9	2170.8
CHI	0.1	3.9	0.6	0.8	0.1	0.6
55 - OBS	8100.0	6737.0	6808.0	5392.0	3473.0	3422.0
EXP	8359.0	6795.7	6541.7	5375.1	3464.1	3406.1
CHI	8.0	0.5	10.8	0.1	0.0	0.1
60 - OBS	16184.0	15110.0	13680.0	11942.0	8336.0	5149.0
EXP	16434.9	15374.0	13420.8	11496.7	8450.0	5241.3
CHI	3.8	4.5	5.0	17.2	1.5	1.6
65 - OBS	27821.0	28389.0	27880.0	21735.0	16747.0	11901.0
EXP	27925.5	27957.7	27980.2	21830.8	16847.4	11935.7
CHI	0.4	6.7	0.4	0.4	0.6	0.1
70 - OBS	63988.0	45247.0	48854.0	43369.0	30259.0	22717.0
EXP	63393.0	44716.8	48801.4	43548.6	30819.8	23170.4
CHI	5.6	6.3	0.1	0.7	10.2	8.9
75 - OBS	90564.0	92785.0	70203.0	70845.0	58020.0	40282.0
EXP	90564.0	93384.7	70633.4	71083.7	57229.6	39815.5
CHI	0.0	3.9	2.6	0.8	10.9	5.5

Osmond and Gardner Modelling

Germany IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	9.075092
35	24.793786
40	63.467364
45	132.311975
50	262.834015
55	523.341760
60	1088.956582
65	2141.949770
70	4194.545990
75	8150.352961

PERIOD	EFFECT	LOWER	UPPER
% Period Change	74.8041	71.8041	77.8041

1981	1.253172		
1986	1.146238		
1991	1.112222		
1996	0.961307		
2001	0.746552		
2006	0.558452		
2011	0.417745	0.400991	0.434498
2016	0.312490	0.287928	0.338057
2021	0.233755	0.206744	0.263023
2026	0.174859	0.148451	0.204642

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.993780	1.000000	
1911	1.033044	2.000000	
1916	1.118527	4.000000	
1921	1.072344	8.000000	
1926	0.972844	16.000000	
1931	0.994472	32.000000	
1936	0.812458	64.000000	
1941	0.740220	128.000000	
1946	0.746349	256.000000	
1951	0.893928	512.000000	
1956	0.985998	1024.000000	
1961	1.042225	2048.000000	
1966	1.071836	4096.000000	
1971	1.221156	8192.000000	
1976	1.287383	EXTRAPOLATION	1.544030
1981	1.382349	EXTRAPOLATION	
1986	1.484319	EXTRAPOLATION	
1991	1.593812	EXTRAPOLATION	
1996	1.711381	EXTRAPOLATION	

Osmond and Gardner Modelling

**Germany IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	10.9	9.8	9.9	9.5	8.5	7.8	-	-	-	-
	EXP	10.2	10.3	10.5	9.4	8.3	6.5	5.2*	4.2*	3.4*	2.7*
	Elow							5.0	3.9	3.0	2.3
	Eup							5.5	4.6	3.8	3.2
35	OBS	25.9	26.2	24.7	24.7	19.6	16.6	-	-	-	-
	EXP	23.2	25.4	27.2	24.8	19.8	16.9	13.3*	10.7*	8.6*	6.9*
	Elow							12.8	9.9	7.6	5.9
	Eup							13.9	11.6	9.7	8.1
40	OBS	62.3	56.1	60.2	60.8	46.6	38.0	-	-	-	-
	EXP	58.9	54.3	63.1	60.2	49.4	38.0	32.4*	25.5*	20.5*	16.5*
	Elow							31.1	23.5	18.1	14.0
	Eup							33.7	27.6	23.1	19.3
45	OBS	130.1	114.7	108.4	113.0	97.2	80.4	-	-	-	-
	EXP	134.7	112.3	109.8	113.7	97.4	77.0	59.2*	50.5*	39.8*	32.0*
	Elow							56.9	46.5	35.2	27.2
	Eup							61.6	54.6	44.8	37.4
50	OBS	325.7	236.5	219.4	192.1	176.3	147.1	-	-	-	-
	EXP	327.6	244.8	216.4	188.6	175.4	144.7	114.4*	88.0*	75.0*	59.2*
	Elow							109.8	81.1	66.4	50.2
	Eup							119.0	95.2	84.4	69.2
55	OBS	618.3	591.4	492.2	373.6	292.3	262.5	-	-	-	-
	EXP	638.0	596.6	472.9	372.4	291.6	261.3	215.6*	170.4*	131.1*	111.7*
	Elow							206.9	157.0	116.0	94.9
	Eup							224.2	184.4	147.5	130.8
60	OBS	1441.0	1193.5	1227.7	883.4	593.7	445.9	-	-	-	-
	EXP	1463.4	1214.3	1204.5	850.5	601.8	453.9	406.7*	335.5*	265.3*	204.1*
	Elow							390.3	309.2	234.6	173.3
	Eup							423.0	363.0	298.5	238.9
65	OBS	2991.2	2673.4	2309.3	2038.7	1291.4	882.9	-	-	-	-
	EXP	3002.4	2632.8	2317.6	2047.7	1299.2	885.4	667.8*	598.3*	493.7*	390.4*
	Elow							641.0	551.3	436.6	331.4
	Eup							694.6	647.3	555.5	456.8
70	OBS	5481.1	5441.6	5008.2	3906.6	3057.5	1865.9	-	-	-	-
	EXP	5430.2	5377.8	5002.8	3922.7	3114.1	1903.1	1297.1*	978.3*	876.5*	723.2*
	Elow							1245.0	901.4	775.2	614.0
	Eup							1349.1	1058.3	986.2	846.4
75	OBS	10150.3	9589.0	10077.7	8373.6	6001.2	4579.5	-	-	-	-
	EXP	10150.3	9651.0	10139.4	8401.8	5919.4	4526.4	2766.2*	1885.3*	1421.9*	1274.0*
	Elow							2655.3	1737.1	1257.6	1081.6
	Eup							2877.2	2039.5	1600.0	1491.0
30-79	OBS	1154.7	1069.4	1026.7	837.8	609.1	438.6	-	-	-	-
	EXP	1156.9	1068.1	1025.6	836.8	610.7	438.6	309.0*	237.3*	192.6*	159.8*
	Elow							296.6	218.7	170.3	135.7
	Eup							321.4	256.7	216.7	187.1

Osmond and Gardner Modelling

**Germany IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

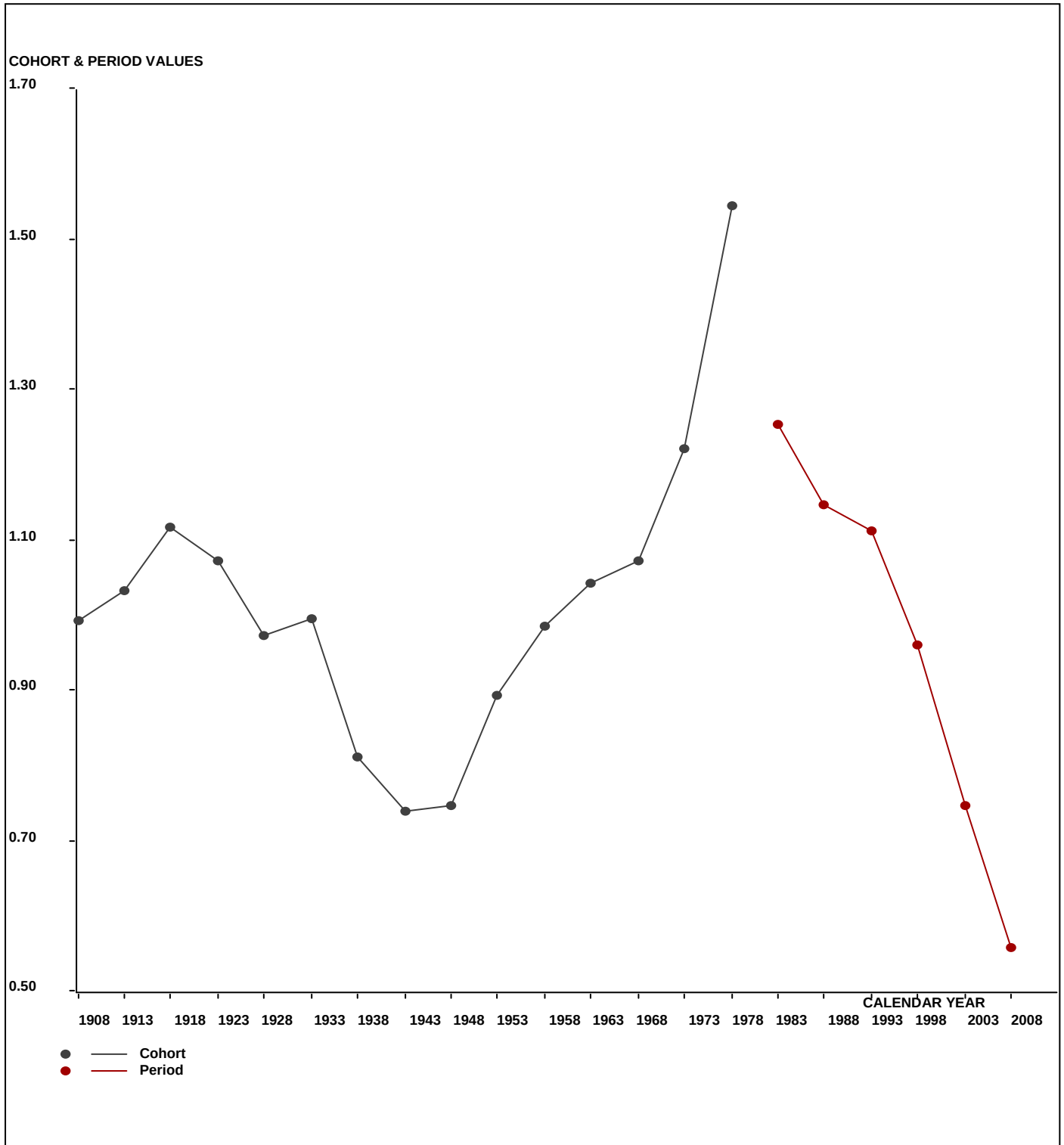
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	141.0	143.0	164.0	168.0	123.0	94.0	-	-	-	-
	EXP	131.9	149.1	174.8	164.8	119.2	78.4	65.3*	54.1*	39.8*	29.1*
	CHI	0.622	0.247	0.672	0.063	0.119	3.115	-	-	-	-
35 -	OBS	312.0	341.0	370.0	417.0	347.0	240.0	-	-	-	-
	EXP	279.2	330.8	407.0	419.6	350.4	243.9	160.5*	134.5*	111.3*	81.9*
	CHI	3.857	0.316	3.356	0.016	0.033	0.061	-	-	-	-
40 -	OBS	915.0	677.0	800.0	921.0	789.0	669.0	-	-	-	-
	EXP	865.3	654.8	838.8	912.0	835.4	668.8	465.8*	308.4*	258.3*	213.6*
	CHI	2.860	0.752	1.795	0.089	2.574	0.000	-	-	-	-
45 -	OBS	1830.0	1679.0	1319.0	1508.0	1471.0	1353.0	-	-	-	-
	EXP	1894.6	1643.4	1336.4	1518.0	1474.4	1296.1	1036.3*	724.6*	480.2*	402.2*
	CHI	2.203	0.771	0.226	0.066	0.008	2.498	-	-	-	-
50 -	OBS	3781.0	3296.0	3209.0	2323.0	2337.0	2206.0	-	-	-	-
	EXP	3802.3	3411.0	3165.4	2280.7	2324.9	2170.8	1905.8*	1527.5*	1069.0*	709.1*
	CHI	0.119	3.875	0.601	0.783	0.063	0.570	-	-	-	-
55 -	OBS	8100.0	6737.0	6808.0	5392.0	3473.0	3422.0	-	-	-	-
	EXP	8359.0	6795.7	6541.7	5375.1	3464.1	3406.1	3179.4*	2799.3*	2245.6*	1573.3*
	CHI	8.027	0.507	10.842	0.053	0.023	0.074	-	-	-	-
60 -	OBS	16184.0	15110.0	13680.0	11942.0	8336.0	5149.0	-	-	-	-
	EXP	16434.9	15374.0	13420.8	11496.7	8450.0	5241.3	5169.2*	4840.6*	4271.0*	3430.8*
	CHI	3.831	4.533	5.007	17.245	1.539	1.627	-	-	-	-
65 -	OBS	27821.0	28389.0	27880.0	21735.0	16747.0	11901.0	-	-	-	-
	EXP	27925.5	27957.7	27980.2	21830.8	16847.4	11935.7	7419.1*	7363.4*	6906.7*	6112.2*
	CHI	0.391	6.654	0.359	0.421	0.598	0.101	-	-	-	-
70 -	OBS	63988.0	45247.0	48854.0	43369.0	30259.0	22717.0	-	-	-	-
	EXP	63393.0	44716.8	48801.4	43548.6	30819.8	23170.4	16443.1*	10297.0*	10275.2*	9656.8*
	CHI	5.584	6.287	0.057	0.740	10.204	8.870	-	-	-	-
75 -	OBS	90564.0	92785.0	70203.0	70845.0	58020.0	40282.0	-	-	-	-
	EXP	90564.0	93384.7	70633.4	71083.7	57229.6	39815.5	30308.8*	21606.6*	13656.2*	13757.4*
	CHI	0.000	3.851	2.623	0.801	10.917	5.466	-	-	-	-
30-79	OBS	213636.0	194404.0	173287.0	158620.0	121902.0	88033.0	-	-	-	-
	EXP	213649.7	194417.9	173299.8	158630.0	121915.1	88027.0	66153.4*	49656.1*	39313.4*	35966.4*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Germany IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

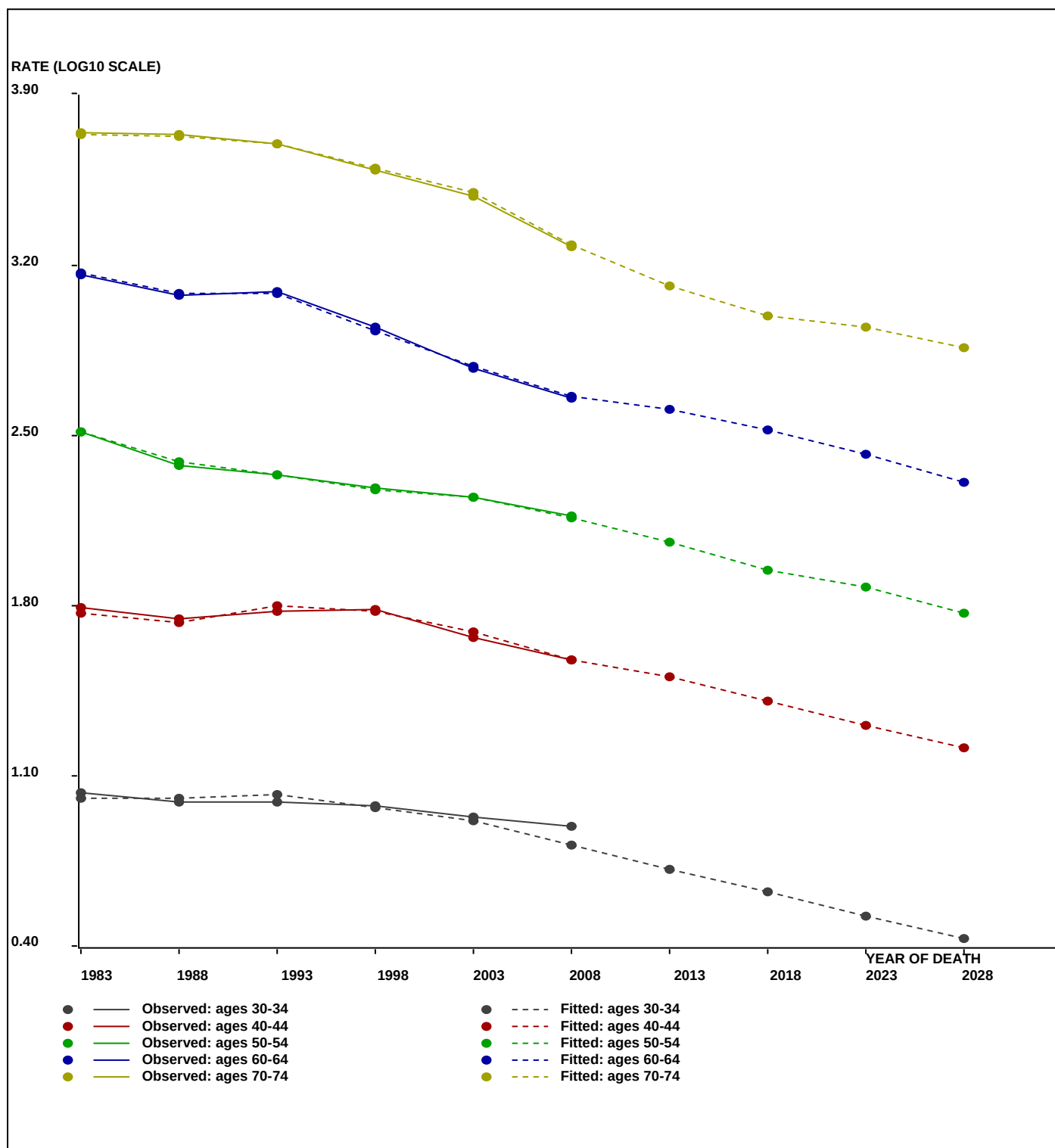


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Germany IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Germany IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	5.2	13.3	32.4	59.2	114.4	215.6	406.7	667.8	1297.1	2766.2
2016	PRE	4.2	10.7	25.5	50.5	88.0	170.4	335.5	598.3	978.3	1885.3
2021	PRE	3.4	8.6	20.5	39.8	75.0	131.1	265.3	493.7	876.5	1421.9
2026	PRE	2.7	6.9	16.5	32.0	59.2	111.7	204.1	390.4	723.2	1274.0

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	65.3	160.5	465.8	1036.3	1905.8	3179.4	5169.2	7419.1	16443.1	30308.8
2016	PRE	54.1	134.5	308.4	724.6	1527.5	2799.3	4840.6	7363.4	10297.0	21606.6
2021	PRE	39.8	111.3	258.3	480.2	1069.0	2245.6	4271.0	6906.7	10275.2	13656.2
2026	PRE	29.1	81.9	213.6	402.2	709.1	1573.3	3430.8	6112.2	9656.8	13757.4

Osmond and Gardner Modelling

Germany Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	18236.13	357.57	51	P, C	99.84	100382.66	0.0000
AGE-PERIOD	510.17	11.34	45	Cohort	94.27	2722.10	0.0000
AGE-COHORT	313.48	8.71	36	Period	90.68	1663.32	0.0000
PERIOD-COHORT	174.09	4.35	40	Age	83.22	925.97	0.0000
FULL AGE-PERIOD-COHORT	29.22	0.91	32			154.99	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.453188	28.391509
35	1.727421	53.385270
40	1.956818	90.535290
45	2.162845	145.493823
50	2.345136	221.378804
55	2.522227	332.833097
60	2.787126	612.528512
65	3.086599	1220.672941
70	3.419511	2627.308494
75	3.738331	5474.334831

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.100093	1.259194
1986	0.037685	1.090649
1991	0.034545	1.082792
1996	-0.045149	0.901262
2001	-0.143775	0.718166
2006	-0.240947	0.574186

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.130401	1.350208
1911	0.080930	1.204842
1916	0.056631	1.139281
1921	-0.010152	0.976894
1926	-0.081089	0.829680
1931	-0.094529	0.804398
1936	-0.175392	0.667741
1941	-0.203651	0.625675
1946	-0.187147	0.649910
1951	-0.111962	0.772749
1956	-0.100989	0.792522
1961	-0.095088	0.803363
1966	-0.123289	0.752855
1971	-0.134266	0.734064
1976	-0.139589	0.725122

Osmond and Gardner Modelling

Germany Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	373.0	368.0	403.0	328.0	208.0	142.0
EXP	358.5	356.7	410.5	339.5	215.7	142.0
CHI	0.6	0.4	0.1	0.4	0.3	0.0
35 - OBS	595.0	610.0	678.0	549.0	507.0	332.0
EXP	526.0	585.8	685.7	652.9	509.8	324.5
CHI	9.1	1.0	0.1	16.5	0.0	0.2
40 - OBS	1043.0	782.0	979.0	963.0	911.0	703.0
EXP	1048.3	773.9	1007.0	980.3	883.6	689.0
CHI	0.0	0.1	0.8	0.3	0.8	0.3
45 - OBS	1731.0	1482.0	1213.0	1328.0	1195.0	1202.0
EXP	1720.5	1453.4	1245.8	1352.8	1253.6	1129.5
CHI	0.1	0.6	0.9	0.5	2.7	4.6
50 - OBS	2430.0	2275.0	2196.0	1601.0	1661.0	1580.0
EXP	2602.9	2246.7	2193.9	1568.3	1628.4	1511.1
CHI	11.5	0.4	0.0	0.7	0.7	3.1
55 - OBS	4378.0	3261.0	3540.0	2767.0	1828.0	1905.0
EXP	4555.6	3326.3	3328.8	2709.0	1845.5	1925.3
CHI	6.9	1.3	13.4	1.2	0.2	0.2
60 - OBS	8437.0	6839.0	6055.0	5085.0	3916.0	2574.0
EXP	8462.1	7017.5	5944.6	4982.9	3864.8	2639.6
CHI	0.1	4.5	2.0	2.1	0.7	1.6
65 - OBS	16098.0	14005.0	13253.0	9482.0	7658.0	5774.0
EXP	16287.6	13810.7	13239.2	9434.7	7590.9	5911.5
CHI	2.2	2.7	0.0	0.2	0.6	3.2
70 - OBS	46992.0	27547.0	27056.0	21833.0	14607.0	11829.0
EXP	46533.0	27145.1	27109.7	21810.0	15021.0	12264.0
CHI	4.5	6.0	0.1	0.0	11.4	15.4
75 - OBS	83043.0	69144.0	46827.0	40661.0	31848.0	22717.0
EXP	83043.0	69606.8	47043.9	40778.1	31536.1	22240.9
CHI	0.0	3.1	1.0	0.3	3.1	10.2

Osmond and Gardner Modelling

Germany Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	28.391509
35	53.385270
40	90.535290
45	145.493823
50	221.378804
55	332.833097
60	612.528512
65	1220.672941
70	2627.308494
75	5474.334831

PERIOD	EFFECT	LOWER	UPPER
% Period Change	79.9518	76.9518	82.9518

1981	1.259194		
1986	1.090649		
1991	1.082792		
1996	0.901262		
2001	0.718166		
2006	0.574186		
2011	0.459072	0.441846	0.476298
2016	0.367036	0.340009	0.395097
2021	0.293452	0.261643	0.327740
2026	0.234620	0.201339	0.271866

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.350208	1.000000	
1911	1.204842	2.000000	
1916	1.139281	4.000000	
1921	0.976894	8.000000	
1926	0.829680	16.000000	
1931	0.804398	32.000000	
1936	0.667741	64.000000	
1941	0.625675	128.000000	
1946	0.649910	256.000000	
1951	0.772749	512.000000	
1956	0.792522	1024.000000	
1961	0.803363	2048.000000	
1966	0.752855	4096.000000	
1971	0.734064	8192.000000	
1976	0.738306	EXTRAPOLATION	0.725122
1981	0.732658	EXTRAPOLATION	
1986	0.727054	EXTRAPOLATION	
1991	0.721493	EXTRAPOLATION	
1996	0.715974	EXTRAPOLATION	

Osmond and Gardner Modelling

**Germany Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	28.7	25.3	24.2	18.6	14.4	11.8	-	-	-	-
	EXP	27.6	24.5	24.7	19.3	15.0	12.0	9.5*	7.6*	6.0*	4.8*
	Elow							9.2	7.0	5.4	4.1
	Eup							9.9	8.2	6.7	5.5
35	OBS	49.4	46.8	45.3	32.5	28.7	23.0	-	-	-	-
	EXP	43.7	45.0	45.8	38.7	28.9	22.5	18.1*	14.4*	11.4*	9.0*
	Elow							17.4	13.3	10.2	7.8
	Eup							18.8	15.5	12.7	10.5
40	OBS	71.0	64.8	73.6	63.5	53.9	39.9	-	-	-	-
	EXP	71.3	64.2	75.8	64.7	52.2	39.1	30.5*	24.5*	19.5*	15.4*
	Elow							29.4	22.7	17.4	13.3
	Eup							31.7	26.4	21.7	17.9
45	OBS	123.1	101.2	99.7	99.5	78.9	71.4	-	-	-	-
	EXP	122.3	99.3	102.4	101.3	82.8	67.1	50.3*	39.2*	31.5*	25.0*
	Elow							48.4	36.3	28.1	21.5
	Eup							52.2	42.2	35.2	29.0
50	OBS	209.3	163.3	150.1	132.4	125.3	105.3	-	-	-	-
	EXP	224.2	161.2	150.0	129.7	122.9	100.7	81.6*	61.2*	47.7*	38.3*
	Elow							78.6	56.7	42.5	32.9
	Eup							84.7	65.8	53.3	44.4
55	OBS	334.2	286.3	255.9	191.7	153.9	146.1	-	-	-	-
	EXP	347.7	292.0	240.6	187.7	155.3	147.7	121.1*	98.1*	73.5*	57.3*
	Elow							116.5	90.9	65.6	49.2
	Eup							125.6	105.6	82.1	66.4
60	OBS	751.2	540.2	543.4	376.2	278.9	222.9	-	-	-	-
	EXP	753.5	554.3	533.5	368.6	275.2	228.6	217.3*	178.2*	144.4*	108.2*
	Elow							209.1	165.1	128.7	92.8
	Eup							225.4	191.8	161.3	125.4
65	OBS	1730.8	1318.9	1097.8	889.4	590.5	428.3	-	-	-	-
	EXP	1751.1	1300.6	1096.6	885.0	585.4	438.5	364.2*	346.2*	283.9*	230.1*
	Elow							350.5	320.7	253.1	197.4
	Eup							377.9	372.7	317.1	266.6
70	OBS	4025.3	3312.9	2773.6	1966.7	1475.9	971.6	-	-	-	-
	EXP	3986.0	3264.6	2779.1	1964.6	1517.8	1007.3	754.6*	626.7*	595.8*	488.5*
	Elow							726.3	580.6	531.2	419.2
	Eup							783.0	674.6	665.4	566.1
75	OBS	9307.3	7145.8	6722.0	4806.0	3294.1	2582.6	-	-	-	-
	EXP	9307.3	7193.6	6753.2	4819.8	3261.9	2528.5	1678.1*	1257.2*	1044.1*	992.5*
	Elow							1615.1	1164.6	930.9	851.7
	Eup							1741.1	1353.3	1166.0	1150.1
30-79	OBS	849.9	667.9	602.9	445.9	323.7	246.3	-	-	-	-
	EXP	851.9	666.7	602.4	445.8	324.3	246.4	185.8*	150.7*	127.0*	107.3*
	Elow							178.9	139.6	113.3	92.1
	Eup							192.8	162.2	141.9	124.4

Osmond and Gardner Modelling

**Germany Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

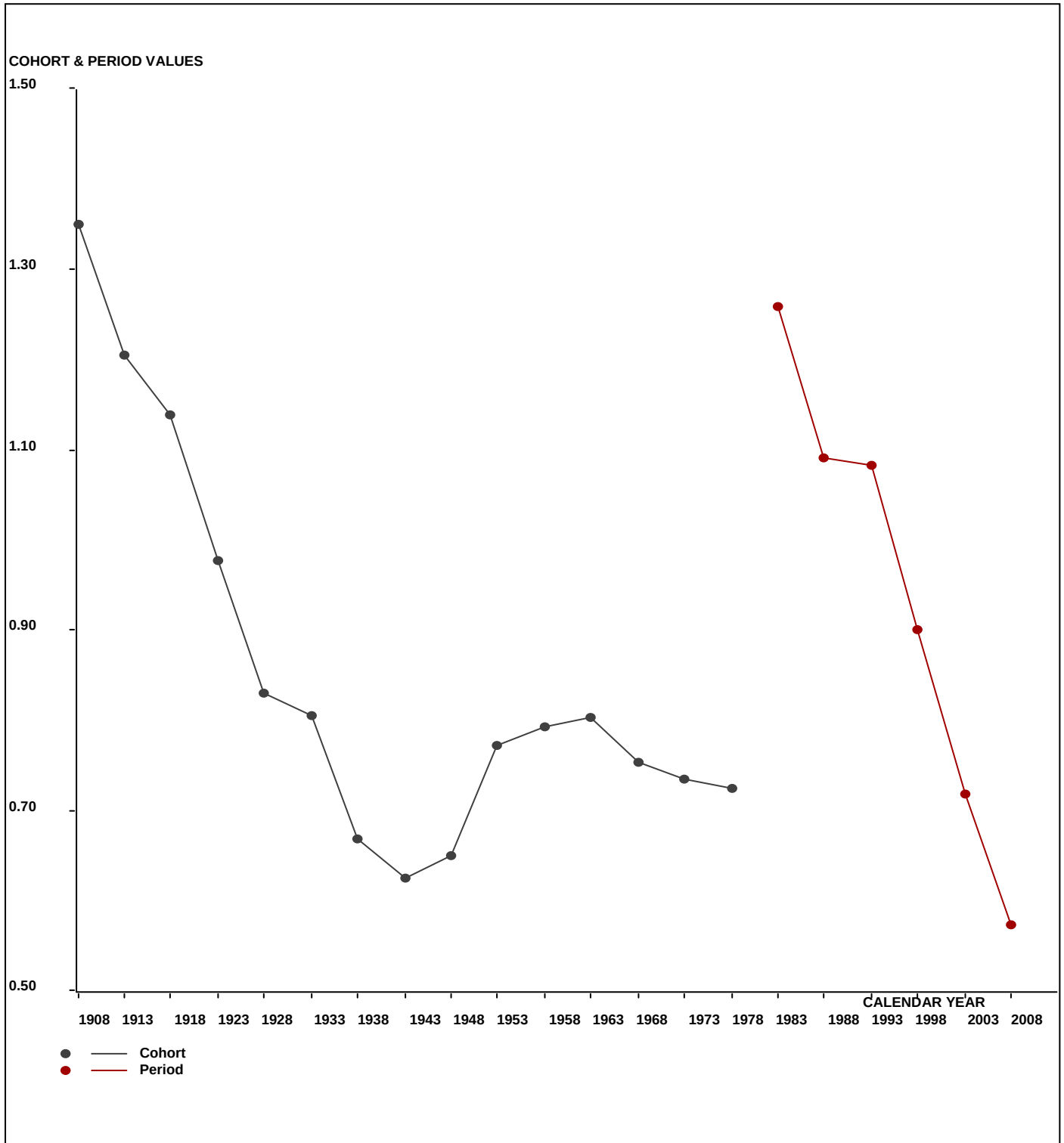
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	373.0	368.0	403.0	328.0	208.0	142.0	-	-	-	-
	EXP	358.5	356.7	410.5	339.5	215.7	144.6	119.0*	97.4*	70.7*	51.0*
	CHI	0.583	0.359	0.136	0.389	0.274	0.046	-	-	-	-
35 -	OBS	595.0	610.0	678.0	549.0	507.0	332.0	-	-	-	-
	EXP	526.0	585.8	685.7	652.9	509.8	324.5	217.8*	180.3*	147.4*	107.1*
	CHI	9.059	0.997	0.086	16.531	0.016	0.172	-	-	-	-
40 -	OBS	1043.0	782.0	979.0	963.0	911.0	703.0	-	-	-	-
	EXP	1048.3	773.9	1007.0	980.3	883.6	689.0	438.9*	296.3*	245.2*	200.3*
	CHI	0.027	0.084	0.777	0.307	0.849	0.283	-	-	-	-
45 -	OBS	1731.0	1482.0	1213.0	1328.0	1195.0	1202.0	-	-	-	-
	EXP	1720.5	1453.4	1245.8	1352.8	1253.6	1129.5	879.6*	562.6*	380.1*	314.5*
	CHI	0.064	0.562	0.863	0.456	2.737	4.648	-	-	-	-
50 -	OBS	2430.0	2275.0	2196.0	1601.0	1661.0	1580.0	-	-	-	-
	EXP	2602.9	2246.7	2193.9	1568.3	1628.4	1511.1	1359.8*	1061.4*	679.4*	459.6*
	CHI	11.484	0.356	0.002	0.682	0.654	3.145	-	-	-	-
55 -	OBS	4378.0	3261.0	3540.0	2767.0	1828.0	1905.0	-	-	-	-
	EXP	4555.6	3326.3	3328.8	2709.0	1845.5	1925.3	1786.0*	1611.8*	1259.3*	807.0*
	CHI	6.925	1.283	13.396	1.243	0.165	0.214	-	-	-	-
60 -	OBS	8437.0	6839.0	6055.0	5085.0	3916.0	2574.0	-	-	-	-
	EXP	8462.1	7017.5	5944.6	4982.9	3864.8	2639.6	2762.2*	2570.5*	2324.7*	1818.8*
	CHI	0.074	4.539	2.049	2.090	0.678	1.630	-	-	-	-
65 -	OBS	16098.0	14005.0	13253.0	9482.0	7658.0	5774.0	-	-	-	-
	EXP	16287.6	13810.7	13239.2	9434.7	7590.9	5911.5	4046.0*	4260.7*	3971.7*	3602.6*
	CHI	2.207	2.734	0.014	0.237	0.593	3.196	-	-	-	-
70 -	OBS	46992.0	27547.0	27056.0	21833.0	14607.0	11829.0	-	-	-	-
	EXP	46533.0	27145.1	27109.7	21810.0	15021.0	12264.0	9566.8*	6596.6*	6984.4*	6523.4*
	CHI	4.528	5.950	0.106	0.024	11.411	15.431	-	-	-	-
75 -	OBS	83043.0	69144.0	46827.0	40661.0	31848.0	22717.0	-	-	-	-
	EXP	83043.0	69606.8	47043.9	40778.1	31536.1	22240.9	18386.6*	14407.9*	10027.0*	10717.8*
	CHI	0.000	3.077	1.000	0.336	3.086	10.191	-	-	-	-
30-79	OBS	165120.0	126313.0	102200.0	84597.0	64339.0	48758.0	-	-	-	-
	EXP	165137.5	126323.0	102209.1	84608.6	64349.3	48780.0	39562.7*	31645.6*	26090.0*	24602.1*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Germany Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

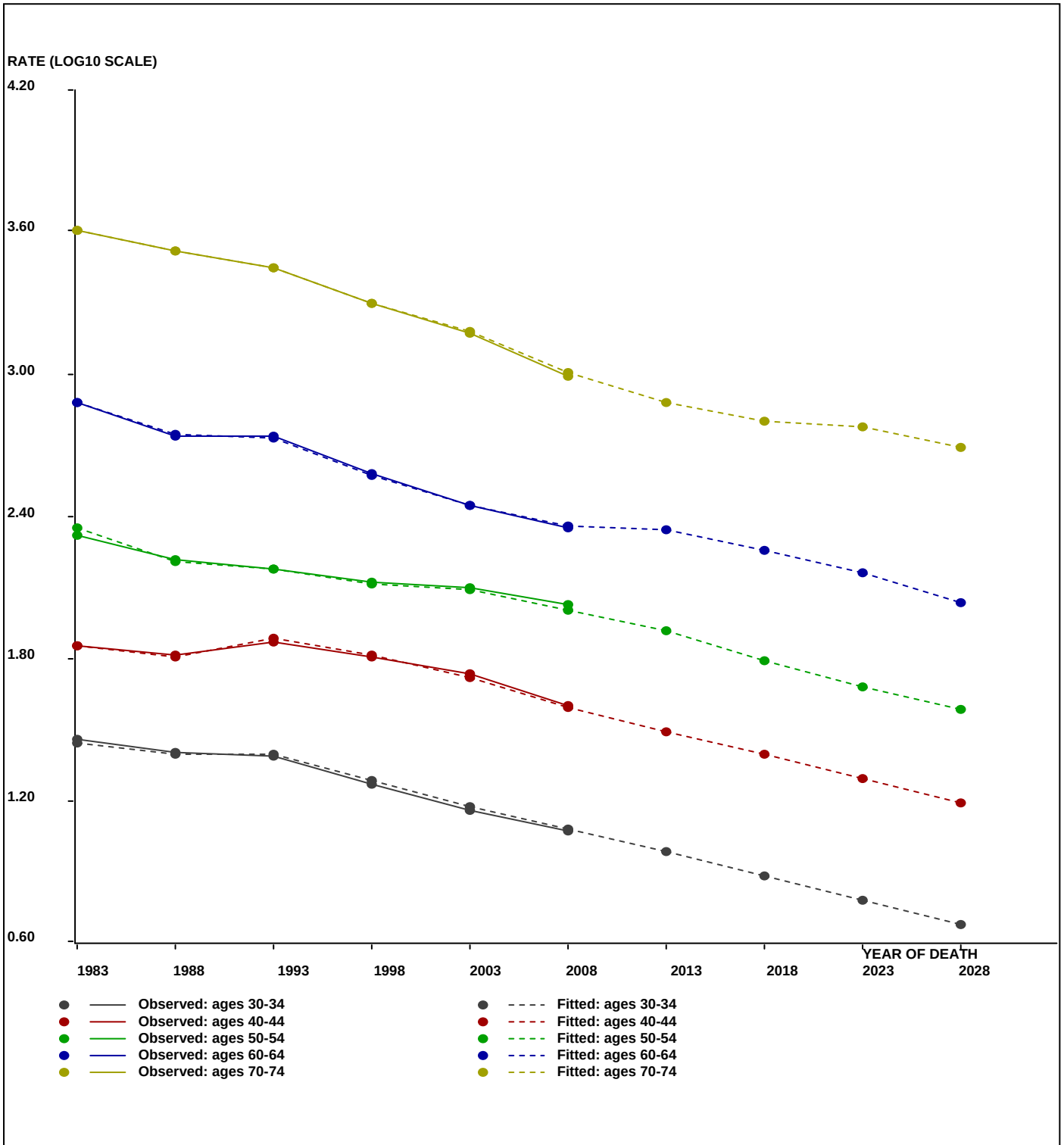


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Germany Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Germany Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	9.5	18.1	30.5	50.3	81.6	121.1	217.3	364.2	754.6	1678.1
2016	PRE	7.6	14.4	24.5	39.2	61.2	98.1	178.2	346.2	626.7	1257.2
2021	PRE	6.0	11.4	19.5	31.5	47.7	73.5	144.4	283.9	595.8	1044.1
2026	PRE	4.8	9.0	15.4	25.0	38.3	57.3	108.2	230.1	488.5	992.5

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	119.0	217.8	438.9	879.6	1359.8	1786.0	2762.2	4046.0	9566.8	18386.6
2016	PRE	97.4	180.3	296.3	562.6	1061.4	1611.8	2570.5	4260.7	6596.6	14407.9
2021	PRE	70.7	147.4	245.2	380.1	679.4	1259.3	2324.7	3971.7	6984.4	10027.0
2026	PRE	51.0	107.1	200.3	314.5	459.6	807.0	1818.8	3602.6	6523.4	10717.8

Osmond and Gardner Modelling

Germany Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	2456.28	48.16	51	P, C	99.64	13210.50	0.0000
AGE-PERIOD	401.01	8.91	45	Cohort	97.80	2133.01	0.0000
AGE-COHORT	28.44	0.79	36	Period	68.92	150.82	0.0000
PERIOD-COHORT	70.55	1.76	40	Age	87.47	374.82	0.0000
FULL AGE-PERIOD-COHORT	8.84	0.28	32			46.88	0.0434

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.589599	3.886863
35	1.097697	12.522673
40	1.529891	33.875903
45	1.878533	75.602025
50	2.161602	145.078283
55	2.395940	248.851510
60	2.602361	400.277446
65	2.770199	589.113236
70	2.901067	796.281543
75	2.993756	985.724873

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.085272	0.821728
1986	-0.045236	0.901081
1991	-0.006665	0.984771
1996	0.012214	1.028522
2001	0.024741	1.058621
2006	0.034485	1.082642

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.183459	0.655453
1911	-0.180969	0.659221
1916	-0.107747	0.780285
1921	-0.066126	0.858764
1926	-0.076356	0.838773
1931	-0.015957	0.963925
1936	-0.053468	0.884163
1941	0.037401	1.089937
1946	0.159318	1.443170
1951	0.238231	1.730738
1956	0.266728	1.848110
1961	0.236722	1.724733
1966	0.153295	1.423295
1971	0.105055	1.273664
1976	0.109194	1.285860

Osmond and Gardner Modelling

Germany Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	84.0	92.0	112.0	99.0	62.0	65.0
EXP	71.7	94.1	109.7	100.3	75.5	65.0
CHI	2.1	0.0	0.0	0.0	2.4	0.0
35 - OBS	185.0	264.0	320.0	383.0	317.0	261.0
EXP	178.8	254.3	341.1	375.2	333.3	249.0
CHI	0.2	0.4	1.3	0.2	0.8	0.6
40 - OBS	429.0	545.0	734.0	958.0	1082.0	936.0
EXP	445.9	531.3	767.5	976.2	1046.3	919.0
CHI	0.6	0.4	1.5	0.3	1.2	0.3
45 - OBS	779.0	1058.0	1313.0	1805.0	2293.0	2329.0
EXP	772.5	1086.9	1307.3	1796.8	2239.1	2375.9
CHI	0.1	0.8	0.0	0.0	1.3	0.9
50 - OBS	1358.0	1552.0	2313.0	2567.0	3572.0	4340.0
EXP	1333.9	1610.7	2277.9	2604.5	3523.1	4354.1
CHI	0.4	2.1	0.5	0.5	0.7	0.0
55 - OBS	2185.0	2529.0	2975.0	4011.0	4595.0	6031.0
EXP	2247.1	2462.2	2997.2	4026.6	4516.5	6079.1
CHI	1.7	1.8	0.2	0.1	1.4	0.4
60 - OBS	3193.0	3796.0	4298.0	5060.0	6359.0	7154.0
EXP	3172.3	3830.3	4233.7	4920.5	6485.3	7222.2
CHI	0.1	0.3	1.0	4.0	2.5	0.6
65 - OBS	3434.0	4856.0	5907.0	6145.0	7112.0	9520.0
EXP	3513.3	4840.8	5874.7	6226.8	7150.4	9370.8
CHI	1.8	0.0	0.2	1.1	0.2	2.4
70 - OBS	5120.0	4755.0	6526.0	7615.0	7939.0	9250.0
EXP	5035.6	4655.3	6569.0	7626.2	8041.6	9279.9
CHI	1.4	2.1	0.3	0.0	1.3	0.1
75 - OBS	4737.0	5580.0	5254.0	7373.0	8536.0	9075.0
EXP	4737.0	5665.7	5276.4	7366.1	8462.2	9048.6
CHI	0.0	1.3	0.1	0.0	0.6	0.1

Osmond and Gardner Modelling

Germany Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	3.886863
35	12.522673
40	33.875903
45	75.602025
50	145.078283
55	248.851510
60	400.277446
65	589.113236
70	796.281543
75	985.724873

PERIOD	EFFECT	LOWER	UPPER
% Period Change	102.2691	99.2691	105.2691
1981	0.821728		
1986	0.901081		
1991	0.984771		
1996	1.028522		
2001	1.058621		
2006	1.082642		
2011	1.107208	1.074729	1.139687
2016	1.132331	1.066873	1.199738
2021	1.158025	1.059075	1.262953
2026	1.184301	1.051334	1.329499

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.655453	1.000000	
1911	0.659221	2.000000	
1916	0.780285	4.000000	
1921	0.858764	8.000000	
1926	0.838773	16.000000	
1931	0.963925	32.000000	
1936	0.884163	64.000000	
1941	1.089937	128.000000	
1946	1.443170	256.000000	
1951	1.730738	512.000000	
1956	1.848110	1024.000000	
1961	1.724733	2048.000000	
1966	1.423295	4096.000000	
1971	1.273664	8192.000000	
1976	1.274748	EXTRAPOLATION	1.285860
1981	1.215227	EXTRAPOLATION	
1986	1.158485	EXTRAPOLATION	
1991	1.104392	EXTRAPOLATION	
1996	1.052825	EXTRAPOLATION	

Osmond and Gardner Modelling

**Germany Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	6.5	6.3	6.7	5.6	4.3	5.4	-	-	-	-
	EXP	5.5	6.5	6.6	5.7	5.2	5.4	5.2*	5.1*	5.0*	4.8*
	Elow							5.1	4.8	4.5	4.3
	Eup							5.4	5.4	5.4	5.4
35	OBS	15.4	20.3	21.4	22.7	17.9	18.1	-	-	-	-
	EXP	14.9	19.5	22.8	22.2	18.9	17.3	17.7*	17.2*	16.8*	16.4*
	Elow							17.2	16.2	15.4	14.5
	Eup							18.2	18.3	18.3	18.4
40	OBS	29.2	45.2	55.2	63.2	64.0	53.2	-	-	-	-
	EXP	30.3	44.1	57.7	64.4	61.9	52.2	47.8*	48.9*	47.7*	46.5*
	Elow							46.4	46.1	43.6	41.3
	Eup							49.2	51.8	52.0	52.2
45	OBS	55.4	72.3	107.9	135.2	151.5	138.4	-	-	-	-
	EXP	54.9	74.3	107.4	134.6	147.9	141.2	119.1*	109.0*	111.6*	108.8*
	Elow							115.6	102.7	102.1	96.6
	Eup							122.6	115.5	121.7	122.1
50	OBS	117.0	111.4	158.1	212.2	269.5	289.3	-	-	-	-
	EXP	114.9	115.6	155.7	215.3	265.8	290.3	277.0*	233.8*	214.0*	219.0*
	Elow							268.9	220.3	195.7	194.4
	Eup							285.2	247.7	233.4	245.9
55	OBS	166.8	222.0	215.1	277.9	386.8	462.6	-	-	-	-
	EXP	171.5	216.1	216.7	279.0	380.2	466.3	509.2*	486.0*	410.2*	375.4*
	Elow							494.3	457.9	375.1	333.2
	Eup							524.1	514.9	447.3	421.4
60	OBS	284.3	299.8	385.7	374.3	452.9	619.5	-	-	-	-
	EXP	282.5	302.5	380.0	364.0	461.9	625.4	767.0*	837.6*	799.5*	674.7*
	Elow							744.5	789.2	731.2	599.0
	Eup							789.5	887.5	871.9	757.4
65	OBS	369.2	457.3	489.3	576.4	548.4	706.2	-	-	-	-
	EXP	377.7	455.9	486.6	584.1	551.4	695.2	941.3*	1154.5*	1260.8*	1203.3*
	Elow							913.7	1087.8	1153.1	1068.2
	Eup							969.0	1223.3	1375.0	1350.9
70	OBS	438.6	571.9	669.0	685.9	802.2	759.8	-	-	-	-
	EXP	431.3	559.9	673.4	686.9	812.6	762.2	960.9*	1301.2*	1595.9*	1742.8*
	Elow							932.8	1226.0	1459.6	1547.2
	Eup							989.1	1378.7	1740.5	1956.5
75	OBS	530.9	576.7	754.2	871.5	882.9	1031.7	-	-	-	-
	EXP	530.9	585.5	757.4	870.6	875.3	1028.7	965.0*	1216.6*	1647.4*	2020.5*
	Elow							936.7	1146.2	1506.6	1793.6
	Eup							993.3	1289.0	1796.6	2268.2
30-79	OBS	142.6	169.4	202.5	231.2	263.7	301.3	-	-	-	-
	EXP	142.8	169.1	202.4	231.4	263.3	301.7	340.7*	381.0*	406.3*	408.7*
	Elow							330.7	359.0	371.6	362.8
	Eup							350.7	403.7	443.2	458.8

Osmond and Gardner Modelling

**Germany Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

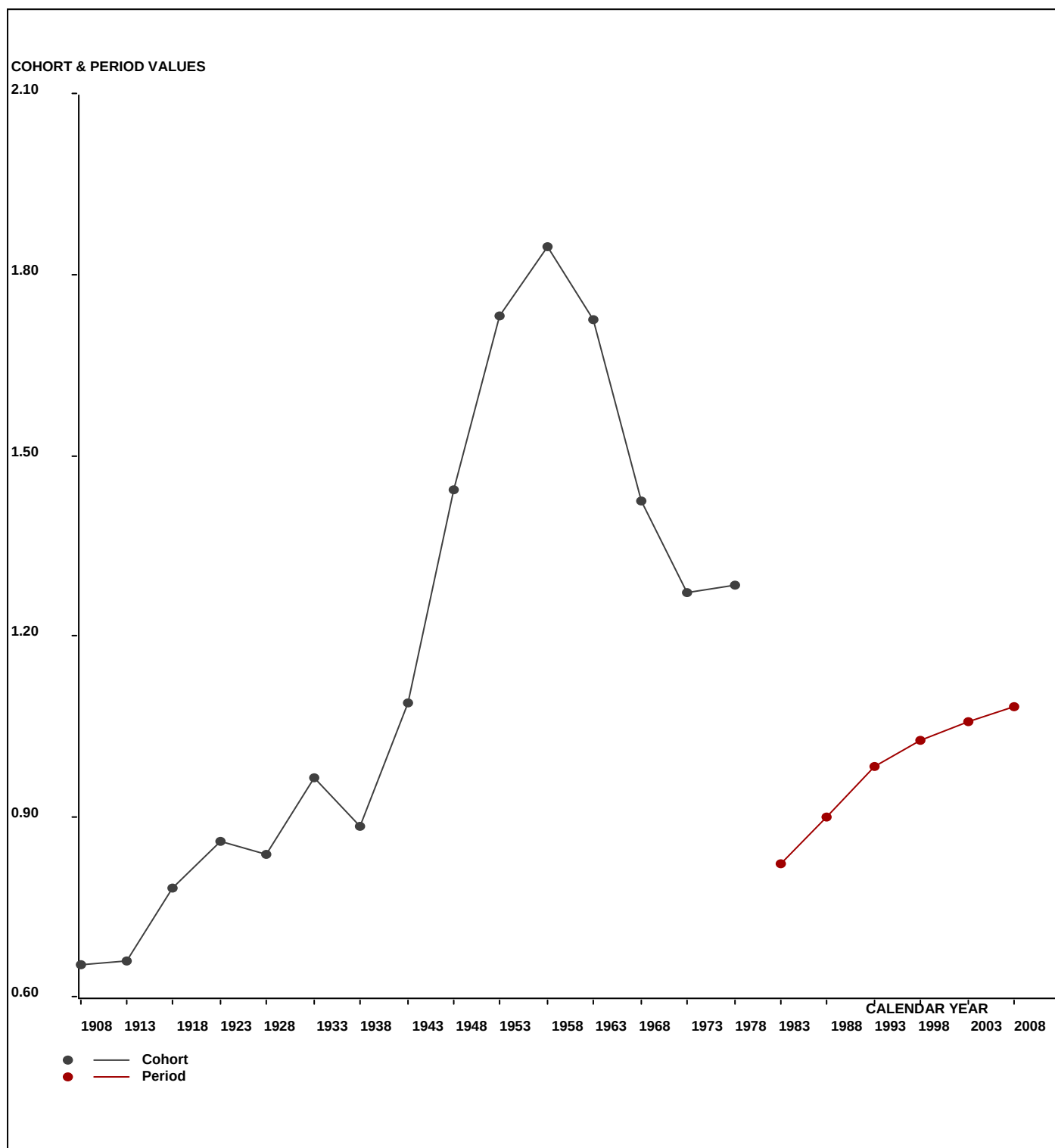
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	84.0	92.0	112.0	99.0	62.0	65.0	-	-	-	-
	EXP	71.7	94.1	109.7	100.3	75.5	64.4	65.2*	65.5*	58.5*	51.9*
	CHI	2.094	0.046	0.047	0.016	2.422	0.005	-	-	-	-
35 -	OBS	185.0	264.0	320.0	383.0	317.0	261.0	-	-	-	-
	EXP	178.8	254.3	341.1	375.2	333.3	249.0	212.8*	216.5*	217.4*	194.2*
	CHI	0.216	0.371	1.307	0.161	0.794	0.573	-	-	-	-
40 -	OBS	429.0	545.0	734.0	958.0	1082.0	936.0	-	-	-	-
	EXP	445.9	531.3	767.5	976.2	1046.3	919.0	687.3*	590.6*	600.5*	602.8*
	CHI	0.641	0.355	1.461	0.338	1.218	0.314	-	-	-	-
45 -	OBS	779.0	1058.0	1313.0	1805.0	2293.0	2329.0	-	-	-	-
	EXP	772.5	1086.9	1307.3	1796.8	2239.1	2375.9	2084.1*	1564.8*	1345.8*	1368.2*
	CHI	0.055	0.771	0.025	0.038	1.298	0.927	-	-	-	-
50 -	OBS	1358.0	1552.0	2313.0	2567.0	3572.0	4340.0	-	-	-	-
	EXP	1333.9	1610.7	2277.9	2604.5	3523.1	4354.1	4614.1*	4056.9*	3048.8*	2624.9*
	CHI	0.435	2.140	0.541	0.540	0.679	0.046	-	-	-	-
55 -	OBS	2185.0	2529.0	2975.0	4011.0	4595.0	6031.0	-	-	-	-
	EXP	2247.1	2462.2	2997.2	4026.6	4516.5	6079.1	7510.4*	7981.9*	7024.5*	5284.8*
	CHI	1.718	1.810	0.165	0.060	1.365	0.380	-	-	-	-
60 -	OBS	3193.0	3796.0	4298.0	5060.0	6359.0	7154.0	-	-	-	-
	EXP	3172.3	3830.3	4233.7	4920.5	6485.3	7222.2	9750.4*	12084.8*	12870.6*	11342.0*
	CHI	0.135	0.306	0.976	3.956	2.459	0.643	-	-	-	-
65 -	OBS	3434.0	4856.0	5907.0	6145.0	7112.0	9520.0	-	-	-	-
	EXP	3513.3	4840.8	5874.7	6226.8	7150.4	9370.8	10457.7*	14208.0*	17638.8*	18841.9*
	CHI	1.789	0.048	0.178	1.074	0.207	2.374	-	-	-	-
70 -	OBS	5120.0	4755.0	6526.0	7615.0	7939.0	9250.0	-	-	-	-
	EXP	5035.6	4655.3	6569.0	7626.2	8041.6	9279.9	12182.1*	13696.4*	18709.2*	23272.4*
	CHI	1.414	2.135	0.281	0.016	1.309	0.097	-	-	-	-
75 -	OBS	4737.0	5580.0	5254.0	7373.0	8536.0	9075.0	-	-	-	-
	EXP	4737.0	5665.7	5276.4	7366.1	8462.2	9048.6	10573.0*	13942.6*	15821.3*	21818.2*
	CHI	0.000	1.297	0.095	0.006	0.644	0.077	-	-	-	-
30-79	OBS	21504.0	25027.0	29752.0	36016.0	41867.0	48961.0	-	-	-	-
	EXP	21508.2	25031.6	29754.6	36019.1	41873.3	48963.1	58137.1*	68408.1*	77335.4*	85401.2*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Germany Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

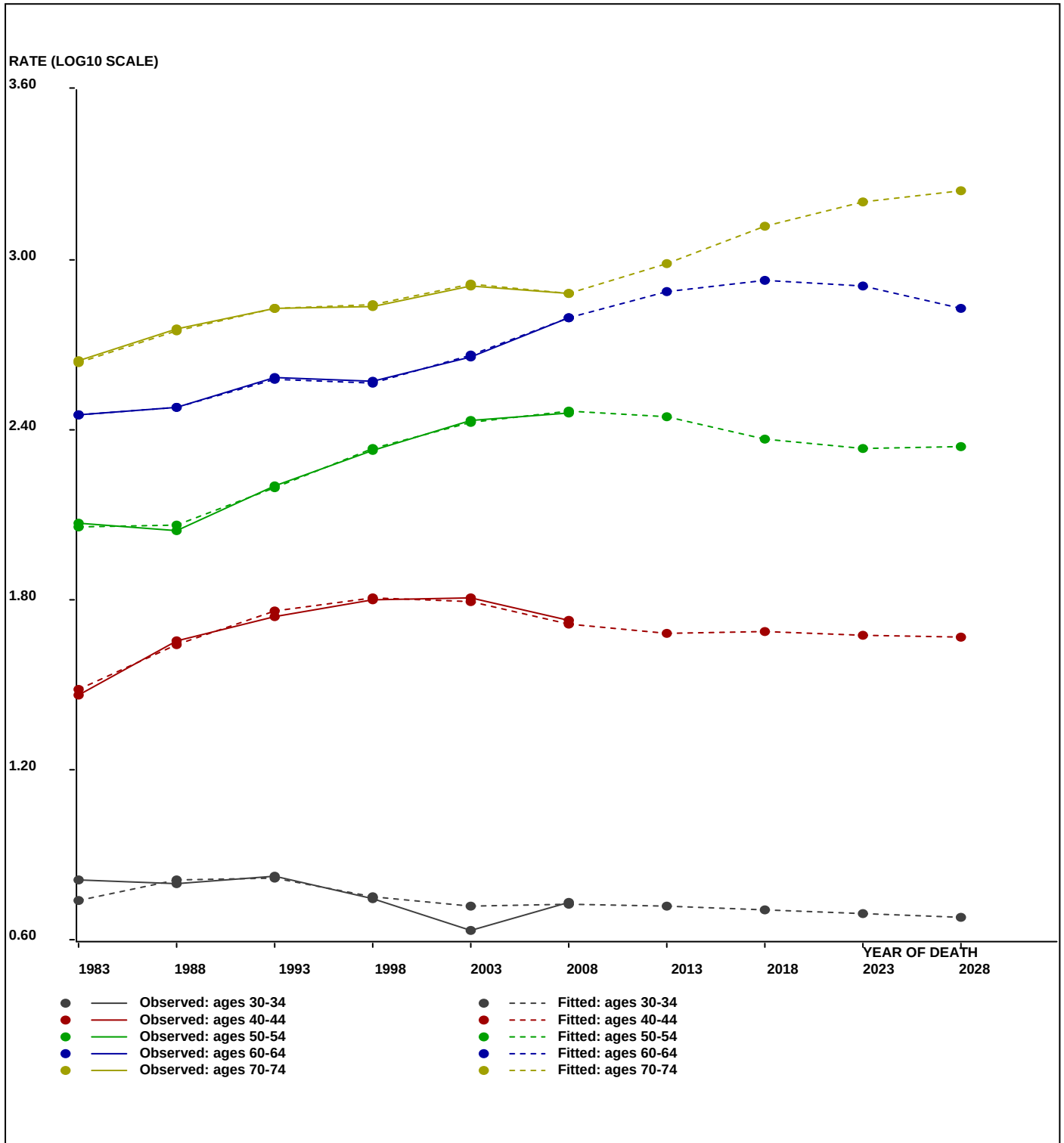


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Germany Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Germany Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	5.2	17.7	47.8	119.1	277.0	509.2	767.0	941.3	960.9	965.0
2016	PRE	5.1	17.2	48.9	109.0	233.8	486.0	837.6	1154.5	1301.2	1216.6
2021	PRE	5.0	16.8	47.7	111.6	214.0	410.2	799.5	1260.8	1595.9	1647.4
2026	PRE	4.8	16.4	46.5	108.8	219.0	375.4	674.7	1203.3	1742.8	2020.5

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	65.2	212.8	687.3	2084.1	4614.1	7510.4	9750.4	10457.7	12182.1	10573.0
2016	PRE	65.5	216.5	590.6	1564.8	4056.9	7981.9	12084.8	14208.0	13696.4	13942.6
2021	PRE	58.5	217.4	600.5	1345.8	3048.8	7024.5	12870.6	17638.8	18709.2	15821.3
2026	PRE	51.9	194.2	602.8	1368.2	2624.9	5284.8	11342.0	18841.9	23272.4	21818.2

Osmond and Gardner Modelling

Germany COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	415.60	8.15	51	P, C	85.50	2220.00	0.0000
AGE-PERIOD	238.11	5.29	45	Cohort	74.69	1270.34	0.0000
AGE-COHORT	98.57	2.74	36	Period	38.86	524.04	0.0000
PERIOD-COHORT	71.96	1.80	40	Age	16.25	383.73	0.0000
FULL AGE-PERIOD-COHORT	60.27	1.88	32			320.72	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.929026	8.492309
35	1.034137	10.817756
40	1.263828	18.358095
45	1.549967	35.478650
50	1.789509	61.589788
55	2.041244	109.962343
60	2.301020	199.995360
65	2.555384	359.239418
70	2.803412	635.934550
75	3.031151	1074.364010

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.055170	1.135455
1986	0.015269	1.035785
1991	0.031502	1.075232
1996	-0.018401	0.958516
2001	-0.055881	0.879264
2006	-0.034958	0.922661

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.052452	0.886233
1911	-0.053010	0.885096
1916	0.011783	1.027503
1921	0.032135	1.076799
1926	0.015414	1.036130
1931	0.032527	1.077773
1936	-0.041960	0.907904
1941	-0.015605	0.964706
1946	0.043041	1.104183
1951	0.040274	1.097169
1956	-0.039902	0.912217
1961	-0.104048	0.786958
1966	-0.289487	0.513468
1971	-0.312283	0.487210
1976	-0.417401	0.382471

Osmond and Gardner Modelling

Germany COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	136.0	124.0	105.0	75.0	58.0	36.0
EXP	137.3	116.6	119.4	73.7	52.4	36.0
CHI	0.0	0.5	1.7	0.0	0.6	0.0
35 - OBS	190.0	165.0	135.0	134.0	84.0	64.0
EXP	163.3	160.1	158.8	137.8	86.3	70.1
CHI	4.4	0.2	3.6	0.1	0.1	0.5
40 - OBS	388.0	212.0	238.0	196.0	233.0	154.0
EXP	295.5	253.2	287.9	243.3	214.9	153.1
CHI	28.9	6.7	8.6	9.2	1.5	0.0
45 - OBS	701.0	525.0	379.0	424.0	390.0	432.0
EXP	514.4	519.0	512.5	498.1	430.8	433.6
CHI	67.7	0.1	34.8	11.0	3.9	0.0
50 - OBS	955.0	845.0	833.0	668.0	776.0	868.0
EXP	874.9	807.1	934.5	788.4	787.5	777.6
CHI	7.3	1.8	11.0	18.4	0.2	10.5
55 - OBS	1652.0	1402.0	1457.0	1395.0	1284.0	1568.0
EXP	1694.9	1398.4	1484.9	1467.6	1268.3	1451.2
CHI	1.1	0.0	0.5	3.6	0.2	9.4
60 - OBS	2647.0	2585.0	2630.0	2318.0	2377.0	2562.0
EXP	2746.2	2717.5	2582.5	2352.7	2382.1	2352.9
CHI	3.6	6.5	0.9	0.5	0.0	18.6
65 - OBS	3714.0	4256.0	4868.0	4017.0	3740.0	4370.0
EXP	3898.3	4254.7	4831.8	3956.6	3718.8	4310.4
CHI	8.7	0.0	0.3	0.9	0.1	0.8
70 - OBS	7346.0	5618.0	7227.0	7225.0	6041.0	6267.0
EXP	7461.0	5627.7	7182.4	7011.5	5964.2	6485.7
CHI	1.8	0.0	0.3	6.5	1.0	7.4
75 - OBS	9646.0	9644.0	8456.0	9433.0	9381.0	9120.0
EXP	9646.0	9530.5	8268.6	9381.7	9462.9	9397.6
CHI	0.0	1.4	4.2	0.3	0.7	8.2

Osmond and Gardner Modelling

Germany COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	8.492309
35	10.817756
40	18.358095
45	35.478650
50	61.589788
55	109.962343
60	199.995360
65	359.239418
70	635.934550
75	1074.364010

PERIOD	EFFECT	LOWER	UPPER
% Period Change	104.9356	101.9356	107.9356
1981	1.135455		
1986	1.035785		
1991	1.075232		
1996	0.958516		
2001	0.879264		
2006	0.922661		
2011	0.968200	0.940520	0.995880
2016	1.015987	0.958725	1.074909
2021	1.066132	0.977282	1.160210
2026	1.118752	0.996198	1.252279

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.886233	1.000000	
1911	0.885096	2.000000	
1916	1.027503	4.000000	
1921	1.076799	8.000000	
1926	1.036130	16.000000	
1931	1.077773	32.000000	
1936	0.907904	64.000000	
1941	0.964706	128.000000	
1946	1.104183	256.000000	
1951	1.097169	512.000000	
1956	0.912217	1024.000000	
1961	0.786958	2048.000000	
1966	0.513468	4096.000000	
1971	0.487210	8192.000000	
1976	0.410634	EXTRAPOLATION	0.382471
1981	0.347776	EXTRAPOLATION	
1986	0.294540	EXTRAPOLATION	
1991	0.249453	EXTRAPOLATION	
1996	0.211268	EXTRAPOLATION	

Osmond and Gardner Modelling

**Germany COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	10.5	8.5	6.3	4.3	4.0	3.0	-	-	-	-
	EXP	10.6	8.0	7.2	4.2	3.6	3.2	2.9*	2.5*	2.3*	2.0*
	Elow							2.8	2.4	2.1	1.8
	Eup							2.9	2.7	2.5	2.2
35	OBS	15.8	12.7	9.0	7.9	4.8	4.4	-	-	-	-
	EXP	13.6	12.3	10.6	8.2	4.9	4.9	4.3*	3.8*	3.4*	3.0*
	Elow							4.2	3.6	3.1	2.7
	Eup							4.4	4.0	3.7	3.4
40	OBS	26.4	17.6	17.9	12.9	13.8	8.7	-	-	-	-
	EXP	20.1	21.0	21.7	16.1	12.7	8.7	8.7*	7.7*	6.8*	6.0*
	Elow							8.4	7.2	6.2	5.4
	Eup							8.9	8.1	7.4	6.8
45	OBS	49.8	35.9	31.1	31.8	25.8	25.7	-	-	-	-
	EXP	36.6	35.5	42.1	37.3	28.5	25.8	17.6*	17.6*	15.5*	13.8*
	Elow							17.1	16.6	14.2	12.3
	Eup							18.1	18.6	16.9	15.5
50	OBS	82.3	60.6	56.9	55.2	58.5	57.9	-	-	-	-
	EXP	75.4	57.9	63.9	65.2	59.4	51.8	46.9*	32.1*	32.0*	28.3*
	Elow							45.6	30.3	29.3	25.2
	Eup							48.3	34.0	34.8	31.7
55	OBS	126.1	123.1	105.3	96.6	108.1	120.3	-	-	-	-
	EXP	129.4	122.8	107.3	101.7	106.8	111.3	97.1*	87.9*	60.2*	59.9*
	Elow							94.3	83.0	55.2	53.4
	Eup							99.9	93.0	65.5	67.1
60	OBS	235.7	204.2	236.0	171.5	169.3	221.9	-	-	-	-
	EXP	244.5	214.6	231.8	174.0	169.6	203.8	212.5*	185.4*	167.8*	114.9*
	Elow							206.4	174.9	153.8	102.3
	Eup							218.5	196.1	182.6	128.6
65	OBS	399.3	400.8	403.2	376.8	288.4	324.2	-	-	-	-
	EXP	419.1	400.7	400.2	371.1	286.8	319.8	384.1*	400.4*	349.4*	316.3*
	Elow							373.1	377.9	320.3	281.6
	Eup							395.0	423.7	380.2	354.0
70	OBS	629.3	675.6	740.9	650.8	610.4	514.8	-	-	-	-
	EXP	639.1	676.8	736.3	631.6	602.6	532.7	594.0*	713.4*	743.9*	649.0*
	Elow							577.0	673.2	681.9	577.9
	Eup							611.0	754.8	809.5	726.5
75	OBS	1081.1	996.7	1213.9	1114.9	970.3	1036.8	-	-	-	-
	EXP	1081.1	984.9	1187.0	1108.9	978.8	1068.4	944.4*	1053.0*	1264.7*	1318.7*
	Elow							917.4	993.7	1159.3	1174.3
	Eup							971.4	1114.1	1376.4	1476.1
30-79	OBS	161.4	151.4	162.3	143.8	130.3	135.3	-	-	-	-
	EXP	160.9	151.9	163.7	145.3	130.3	133.8	134.8*	140.9*	141.4*	130.1*
	Elow							131.0	132.9	129.6	115.9
	Eup							138.7	149.0	153.9	145.6

Osmond and Gardner Modelling

**Germany COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

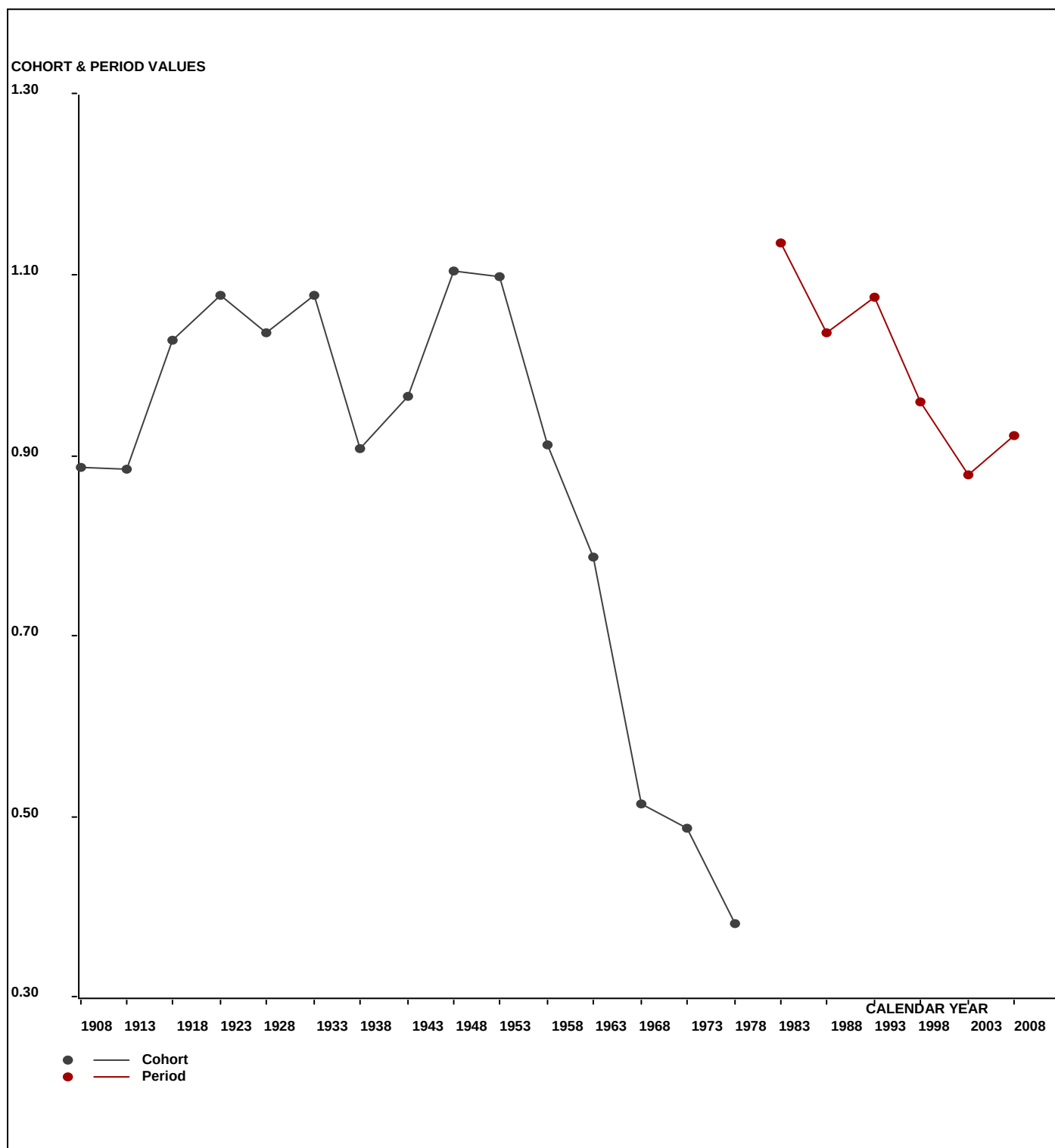
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	136.0	124.0	105.0	75.0	58.0	36.0	-	-	-	-
	EXP	137.3	116.6	119.4	73.7	52.4	38.7	35.6*	32.7*	26.6*	21.5*
	CHI	0.012	0.467	1.744	0.024	0.593	0.182	-	-	-	-
35 -	OBS	190.0	165.0	135.0	134.0	84.0	64.0	-	-	-	-
	EXP	163.3	160.1	158.8	137.8	86.3	70.1	51.8*	48.0*	44.0*	35.8*
	CHI	4.371	0.152	3.569	0.106	0.059	0.537	-	-	-	-
40 -	OBS	388.0	212.0	238.0	196.0	233.0	154.0	-	-	-	-
	EXP	295.5	253.2	287.9	243.3	214.9	153.1	124.6*	92.5*	85.7*	78.5*
	CHI	28.927	6.708	8.644	9.211	1.527	0.005	-	-	-	-
45 -	OBS	701.0	525.0	379.0	424.0	390.0	432.0	-	-	-	-
	EXP	514.4	519.0	512.5	498.1	430.8	433.6	308.5*	252.0*	187.3*	173.6*
	CHI	67.707	0.070	34.785	11.034	3.860	0.006	-	-	-	-
50 -	OBS	955.0	845.0	833.0	668.0	776.0	868.0	-	-	-	-
	EXP	874.9	807.1	934.5	788.4	787.5	777.6	781.6*	557.5*	455.8*	339.1*
	CHI	7.332	1.778	11.033	18.383	0.168	10.521	-	-	-	-
55 -	OBS	1652.0	1402.0	1457.0	1395.0	1284.0	1568.0	-	-	-	-
	EXP	1694.9	1398.4	1484.9	1467.6	1268.3	1451.2	1432.4*	1444.0*	1030.9*	843.8*
	CHI	1.086	0.009	0.524	3.595	0.195	9.392	-	-	-	-
60 -	OBS	2647.0	2585.0	2630.0	2318.0	2377.0	2562.0	-	-	-	-
	EXP	2746.2	2717.5	2582.5	2352.7	2382.1	2352.9	2700.6*	2674.1*	2701.4*	1931.2*
	CHI	3.585	6.456	0.875	0.511	0.011	18.578	-	-	-	-
65 -	OBS	3714.0	4256.0	4868.0	4017.0	3740.0	4370.0	-	-	-	-
	EXP	3898.3	4254.7	4831.8	3956.6	3718.8	4310.4	4266.6*	4928.1*	4887.9*	4952.4*
	CHI	8.709	0.000	0.272	0.924	0.121	0.825	-	-	-	-
70 -	OBS	7346.0	5618.0	7227.0	7225.0	6041.0	6267.0	-	-	-	-
	EXP	7461.0	5627.7	7182.4	7011.5	5964.2	6485.7	7530.1*	7509.1*	8720.4*	8666.2*
	CHI	1.774	0.017	0.277	6.502	0.989	7.373	-	-	-	-
75 -	OBS	9646.0	9644.0	8456.0	9433.0	9381.0	9120.0	-	-	-	-
	EXP	9646.0	9530.5	8268.6	9381.7	9462.9	9397.6	10347.5*	12068.3*	12146.6*	14240.6*
	CHI	0.000	1.351	4.247	0.280	0.709	8.202	-	-	-	-
30-79	OBS	27375.0	25376.0	26328.0	25885.0	24364.0	25441.0	-	-	-	-
	EXP	27431.8	25384.7	26363.3	25911.4	24368.1	25470.9	27579.3*	29606.3*	30286.5*	31282.7*
	O/E	0.998	1.000	0.999	0.999	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

Germany COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

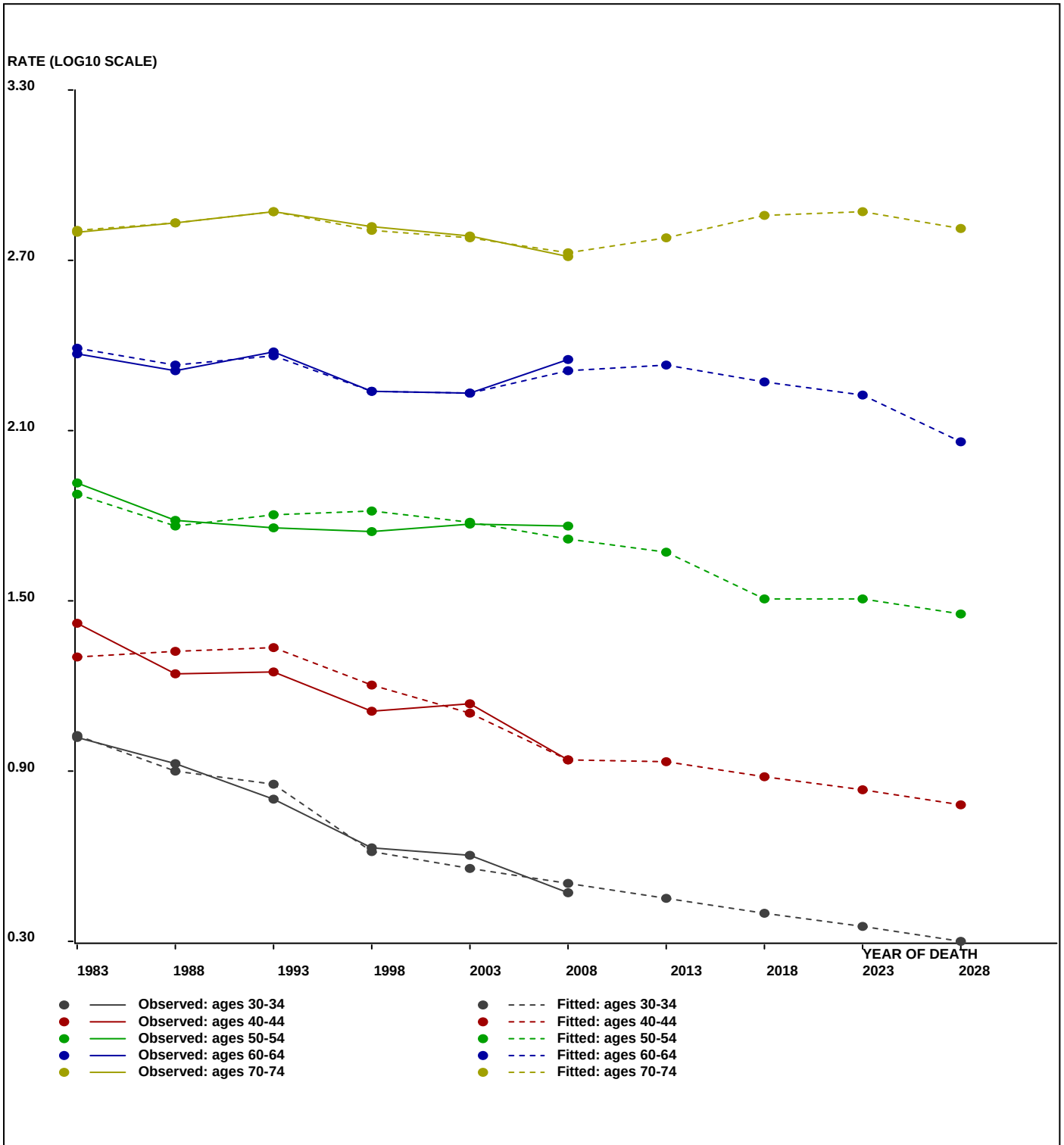


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Germany COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Germany COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	2.9	4.3	8.7	17.6	46.9	97.1	212.5	384.1	594.0	944.4
2016	PRE	2.5	3.8	7.7	17.6	32.1	87.9	185.4	400.4	713.4	1053.0
2021	PRE	2.3	3.4	6.8	15.5	32.0	60.2	167.8	349.4	743.9	1264.7
2026	PRE	2.0	3.0	6.0	13.8	28.3	59.9	114.9	316.3	649.0	1318.7

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	35.6	51.8	124.6	308.5	781.6	1432.4	2700.6	4266.6	7530.1	10347.5
2016	PRE	32.7	48.0	92.5	252.0	557.5	1444.0	2674.1	4928.1	7509.1	12068.3
2021	PRE	26.6	44.0	85.7	187.3	455.8	1030.9	2701.4	4887.9	8720.4	12146.6
2026	PRE	21.5	35.8	78.5	173.6	339.1	843.8	1931.2	4952.4	8666.2	14240.6

Osmond and Gardner Modelling

Hungary IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	1115.22	21.87	51	P, C	98.05	6041.67	0.0000
AGE-PERIOD	500.35	11.12	45	Cohort	95.66	2705.91	0.0000
AGE-COHORT	63.11	1.75	36	Period	65.57	334.75	0.0000
PERIOD-COHORT	113.56	2.84	40	Age	80.87	602.73	0.0000
FULL AGE-PERIOD-COHORT	21.73	0.68	32			115.21	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	2.541797	348.174919
35	2.847678	704.170598
40	3.106448	1277.755162
45	3.310156	2042.470923
50	3.494568	3122.971979
55	3.654449	4512.829059
60	3.822239	6641.090584
65	3.977717	9499.864400
70	4.147944	14058.668435
75	4.328431	21302.512440

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.029187	1.069515
1986	0.016343	1.038348
1991	0.028516	1.067864
1996	-0.009441	0.978495
2001	-0.036431	0.919536
2006	-0.040150	0.911696

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.028780	0.935880
1911	-0.020934	0.952942
1916	0.018174	1.042736
1921	0.030259	1.072159
1926	0.025155	1.059631
1931	0.040078	1.096676
1936	0.013969	1.032688
1941	-0.022826	0.948798
1946	-0.040416	0.911138
1951	-0.054511	0.882042
1956	-0.080836	0.830165
1961	-0.180952	0.659246
1966	-0.343540	0.453378
1971	-0.541366	0.287497
1976	-0.753334	0.176468

Osmond and Gardner Modelling

Hungary IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	685.0	633.0	426.0	234.0	167.0	119.0
EXP	696.0	625.4	403.8	251.0	170.1	119.0
CHI	0.2	0.1	1.2	1.2	0.1	0.0
35 - OBS	1195.0	1315.0	1364.0	710.0	462.0	344.0
EXP	1256.9	1320.3	1262.4	740.9	475.0	340.9
CHI	3.0	0.0	8.2	1.3	0.4	0.0
40 - OBS	2153.0	1976.0	2465.0	2049.0	1259.0	875.0
EXP	2156.8	2129.3	2372.5	2043.8	1236.6	846.2
CHI	0.0	11.0	3.6	0.0	0.4	1.0
45 - OBS	3390.0	3119.0	3566.0	3355.0	2805.0	1882.0
EXP	3450.0	3179.5	3327.5	3332.5	2943.2	1897.3
CHI	1.0	1.2	17.1	0.2	6.5	0.1
50 - OBS	5744.0	4744.0	4716.0	4461.0	4422.0	4227.0
EXP	5783.0	4768.8	4663.8	4386.4	4503.3	4210.5
CHI	0.3	0.1	0.6	1.3	1.5	0.1
55 - OBS	7942.0	7522.0	6558.0	5689.0	5357.0	5920.0
EXP	8138.9	7344.9	6431.4	5678.3	5461.1	5940.2
CHI	4.8	4.3	2.5	0.0	2.0	0.1
60 - OBS	9009.0	10045.0	9638.0	7753.0	6983.0	7100.0
EXP	8955.4	10076.5	9692.7	7701.0	6991.7	7111.1
CHI	0.3	0.1	0.3	0.4	0.0	0.0
65 - OBS	8918.0	10493.0	11905.0	10663.0	8679.0	8527.0
EXP	8768.4	10294.1	12131.2	10702.2	8777.4	8517.8
CHI	2.6	3.8	4.2	0.1	1.1	0.0
70 - OBS	13363.0	9445.0	11863.0	12666.0	11711.0	10305.0
EXP	13200.7	9400.6	12040.0	12667.2	11743.9	10303.0
CHI	2.0	0.2	2.6	0.0	0.1	0.0
75 - OBS	11664.0	12672.0	9517.0	11683.0	13072.0	12775.0
EXP	11664.0	12836.3	9714.5	11762.1	12628.4	12788.7
CHI	0.0	2.1	4.0	0.5	15.6	0.0

Osmond and Gardner Modelling

Hungary IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	348.174919
35	704.170598
40	1277.755162
45	2042.470923
50	3122.971979
55	4512.829059
60	6641.090584
65	9499.864400
70	14058.668435
75	21302.512440

PERIOD	EFFECT	LOWER	UPPER
% Period Change	99.1474	96.1474	102.1474

1981	1.069515		
1986	1.038348		
1991	1.067864		
1996	0.978495		
2001	0.919536		
2006	0.911696		
2011	0.903923	0.876572	0.931274
2016	0.896216	0.842801	0.951271
2021	0.888574	0.810331	0.971699
2026	0.880998	0.779112	0.992565

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.935880	1.000000	
1911	0.952942	2.000000	
1916	1.042736	4.000000	
1921	1.072159	8.000000	
1926	1.059631	16.000000	
1931	1.096676	32.000000	
1936	1.032688	64.000000	
1941	0.948798	128.000000	
1946	0.911138	256.000000	
1951	0.882042	512.000000	
1956	0.830165	1024.000000	
1961	0.659246	2048.000000	
1966	0.453378	4096.000000	
1971	0.287497	8192.000000	
1976	0.240876	EXTRAPOLATION	0.176468
1981	0.184477	EXTRAPOLATION	
1986	0.141284	EXTRAPOLATION	
1991	0.108203	EXTRAPOLATION	
1996	0.082869	EXTRAPOLATION	

Osmond and Gardner Modelling

**Hungary IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	323.3	303.8	258.6	144.0	90.3	56.0	-	-	-	-
	EXP	328.5	300.1	245.1	154.5	92.0	76.5	58.1*	44.1*	33.5*	25.4*
	Elow							56.3	41.5	30.5	22.5
	Eup							59.8	46.8	36.6	28.6
35	OBS	652.4	642.4	674.5	435.3	285.5	186.2	-	-	-	-
	EXP	686.2	644.9	624.2	454.2	293.6	184.6	153.3*	116.4*	88.4*	67.1*
	Elow							148.7	109.5	80.6	59.4
	Eup							158.0	123.6	96.7	75.6
40	OBS	1294.3	1121.8	1250.4	1040.6	788.6	546.1	-	-	-	-
	EXP	1296.6	1208.9	1203.5	1037.9	774.6	528.2	332.1*	275.8*	209.5*	159.0*
	Elow							322.0	259.4	191.0	140.6
	Eup							342.1	292.8	229.0	179.2
45	OBS	2216.6	1973.9	2129.7	1774.7	1486.0	1217.7	-	-	-	-
	EXP	2255.9	2012.2	1987.3	1762.8	1559.2	1227.6	837.0*	526.3*	437.2*	332.0*
	Elow							811.7	494.9	398.7	293.6
	Eup							862.4	558.6	478.1	374.0
50	OBS	3638.2	3331.3	3199.5	2831.6	2487.2	2372.9	-	-	-	-
	EXP	3663.0	3348.7	3164.2	2784.3	2532.9	2363.6	1861.0*	1268.9*	797.8*	662.7*
	Elow							1804.7	1193.3	727.6	586.1
	Eup							1917.3	1346.9	872.4	746.7
55	OBS	4990.6	5262.8	5074.6	4197.6	3708.9	3616.7	-	-	-	-
	EXP	5114.4	5138.9	4976.6	4189.7	3781.0	3629.0	3386.4*	2666.3*	1818.0*	1143.0*
	Elow							3284.0	2507.4	1658.0	1010.8
	Eup							3488.9	2830.1	1988.1	1287.8
60	OBS	7660.8	7284.1	7733.5	6756.0	5786.8	5508.0	-	-	-	-
	EXP	7615.3	7307.0	7777.4	6710.7	5794.0	5516.6	5294.9*	4941.0*	3890.3*	2652.6*
	Elow							5134.7	4646.5	3547.7	2345.8
	Eup							5455.1	5244.6	4254.2	2988.5
65	OBS	10775.3	10780.3	10549.0	10156.9	8919.9	8226.4	-	-	-	-
	EXP	10594.5	10575.9	10749.5	10194.2	9021.0	8217.5	7824.1*	7509.6*	7007.7*	5517.5*
	Elow							7587.3	7062.1	6390.6	4879.4
	Eup							8060.8	7971.0	7663.3	6216.2
70	OBS	14504.5	15293.6	15859.4	14575.3	14137.5	13238.8	-	-	-	-
	EXP	14328.4	15221.6	16096.0	14576.6	14177.2	13236.2	12057.3*	11480.0*	11018.6*	10282.1*
	Elow							11692.5	10795.8	10048.4	9093.0
	Eup							12422.1	12185.2	12049.4	11584.2
75	OBS	21322.5	20808.7	23238.2	22198.2	21485.6	21276.1	-	-	-	-
	EXP	21322.5	21078.5	23720.3	22348.5	20756.5	21299.0	19885.3*	18114.1*	17246.8*	16553.7*
	Elow							19283.6	17034.5	15728.1	14639.3
	Eup							20487.0	19226.9	18860.2	18650.0
30-79	OBS	4625.1	4549.6	4690.1	4205.4	3785.7	3546.7	-	-	-	-
	EXP	4625.1	4547.2	4691.7	4204.6	3791.8	3549.0	3213.1*	2855.1*	2489.2*	2088.5*
	Elow							3115.9	2684.9	2270.0	1847.0
	Eup							3310.4	3030.5	2722.0	2353.0

Osmond and Gardner Modelling

**Hungary IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

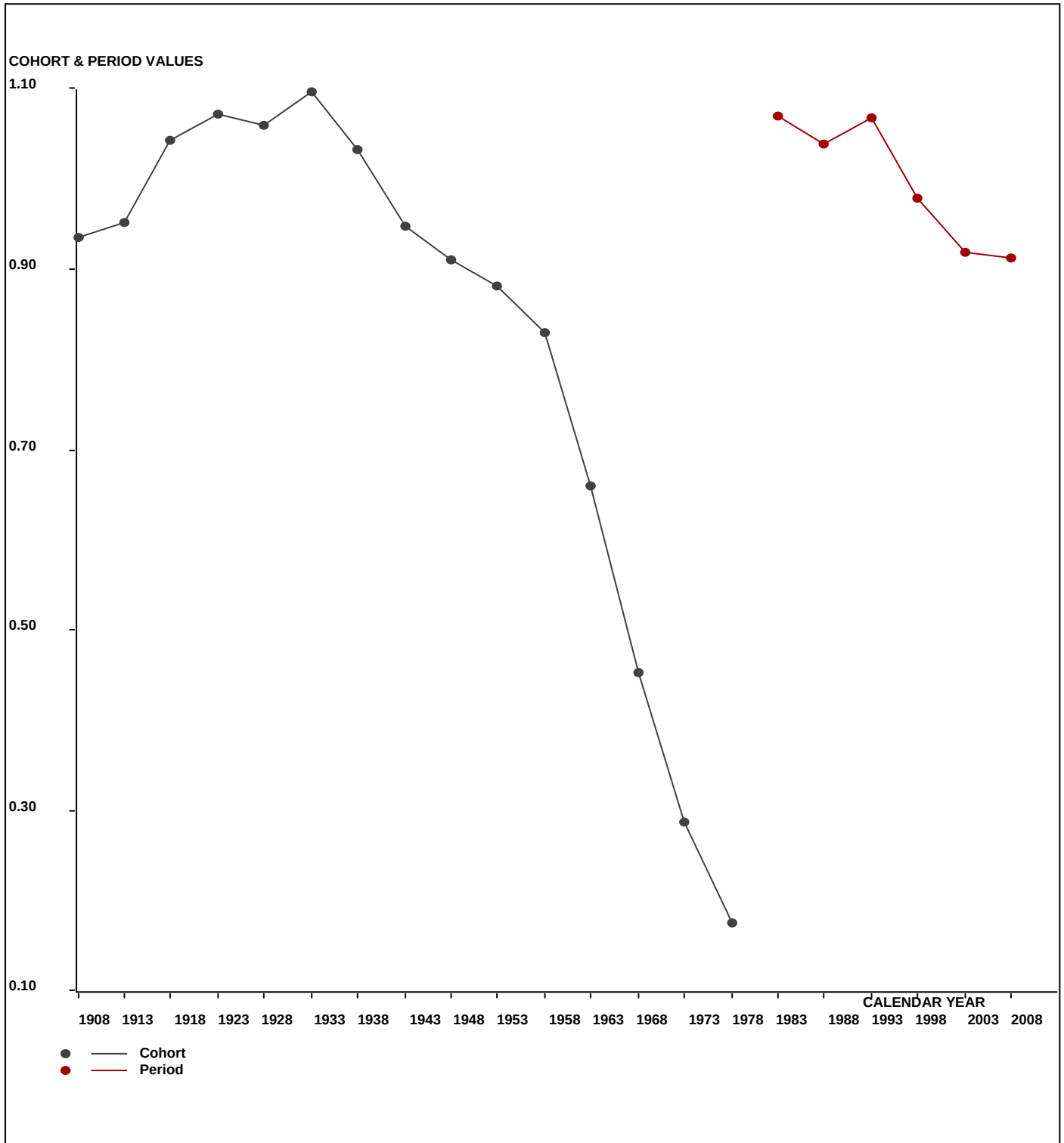
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	685.0	633.0	426.0	234.0	167.0	119.0	-	-	-	-
	EXP	696.0	625.4	403.8	251.0	170.1	162.4	113.5*	74.9*	55.5*	37.2*
	CHI	0.173	0.092	1.220	1.155	0.058	11.614	-	-	-	-
35 -	OBS	1195.0	1315.0	1364.0	710.0	462.0	344.0	-	-	-	-
	EXP	1256.9	1320.3	1262.4	740.9	475.0	340.9	326.0*	227.8*	150.7*	111.8*
	CHI	3.046	0.021	8.174	1.288	0.358	0.028	-	-	-	-
40 -	OBS	2153.0	1976.0	2465.0	2049.0	1259.0	875.0	-	-	-	-
	EXP	2156.8	2129.3	2372.5	2043.8	1236.6	846.2	607.7*	580.7*	406.3*	269.6*
	CHI	0.007	11.032	3.607	0.013	0.407	0.980	-	-	-	-
45 -	OBS	3390.0	3119.0	3566.0	3355.0	2805.0	1882.0	-	-	-	-
	EXP	3450.0	3179.5	3327.5	3332.5	2943.2	1897.3	1307.4*	937.9*	898.9*	630.3*
	CHI	1.044	1.150	17.098	0.152	6.487	0.123	-	-	-	-
50 -	OBS	5744.0	4744.0	4716.0	4461.0	4422.0	4227.0	-	-	-	-
	EXP	5783.0	4768.8	4663.8	4386.4	4503.3	4210.5	2730.1*	1888.3*	1359.9*	1309.8*
	CHI	0.264	0.129	0.583	1.269	1.469	0.064	-	-	-	-
55 -	OBS	7942.0	7522.0	6558.0	5689.0	5357.0	5920.0	-	-	-	-
	EXP	8138.9	7344.9	6431.4	5678.3	5461.1	5940.2	5570.1*	3627.2*	2529.4*	1831.1*
	CHI	4.764	4.269	2.492	0.020	1.984	0.068	-	-	-	-
60 -	OBS	9009.0	10045.0	9638.0	7753.0	6983.0	7100.0	-	-	-	-
	EXP	8955.4	10076.5	9692.7	7701.0	6991.7	7111.1	7769.0*	7314.1*	4805.0*	3382.4*
	CHI	0.320	0.099	0.309	0.351	0.011	0.017	-	-	-	-
65 -	OBS	8918.0	10493.0	11905.0	10663.0	8679.0	8527.0	-	-	-	-
	EXP	8768.4	10294.1	12131.2	10702.2	8777.4	8517.8	8682.0*	9550.5*	9066.4*	6014.4*
	CHI	2.554	3.844	4.218	0.143	1.102	0.010	-	-	-	-
70 -	OBS	13363.0	9445.0	11863.0	12666.0	11711.0	10305.0	-	-	-	-
	EXP	13200.7	9400.6	12040.0	12667.2	11743.9	10303.0	10163.8*	10393.7*	11604.5*	11112.8*
	CHI	1.995	0.210	2.602	0.000	0.092	0.000	-	-	-	-
75 -	OBS	11664.0	12672.0	9517.0	11683.0	13072.0	12775.0	-	-	-	-
	EXP	11664.0	12836.3	9714.5	11762.1	12628.4	12788.7	11383.0*	11410.0*	11764.5*	13378.7*
	CHI	0.000	2.104	4.013	0.532	15.582	0.015	-	-	-	-
30-79	OBS	64063.0	61964.0	62018.0	59263.0	54917.0	52074.0	-	-	-	-
	EXP	64070.1	61975.6	62039.8	59265.5	54930.8	52118.1	48652.6*	46005.1*	42641.2*	38078.2*
	O/E	1.000	1.000	1.000	1.000	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

Hungary IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

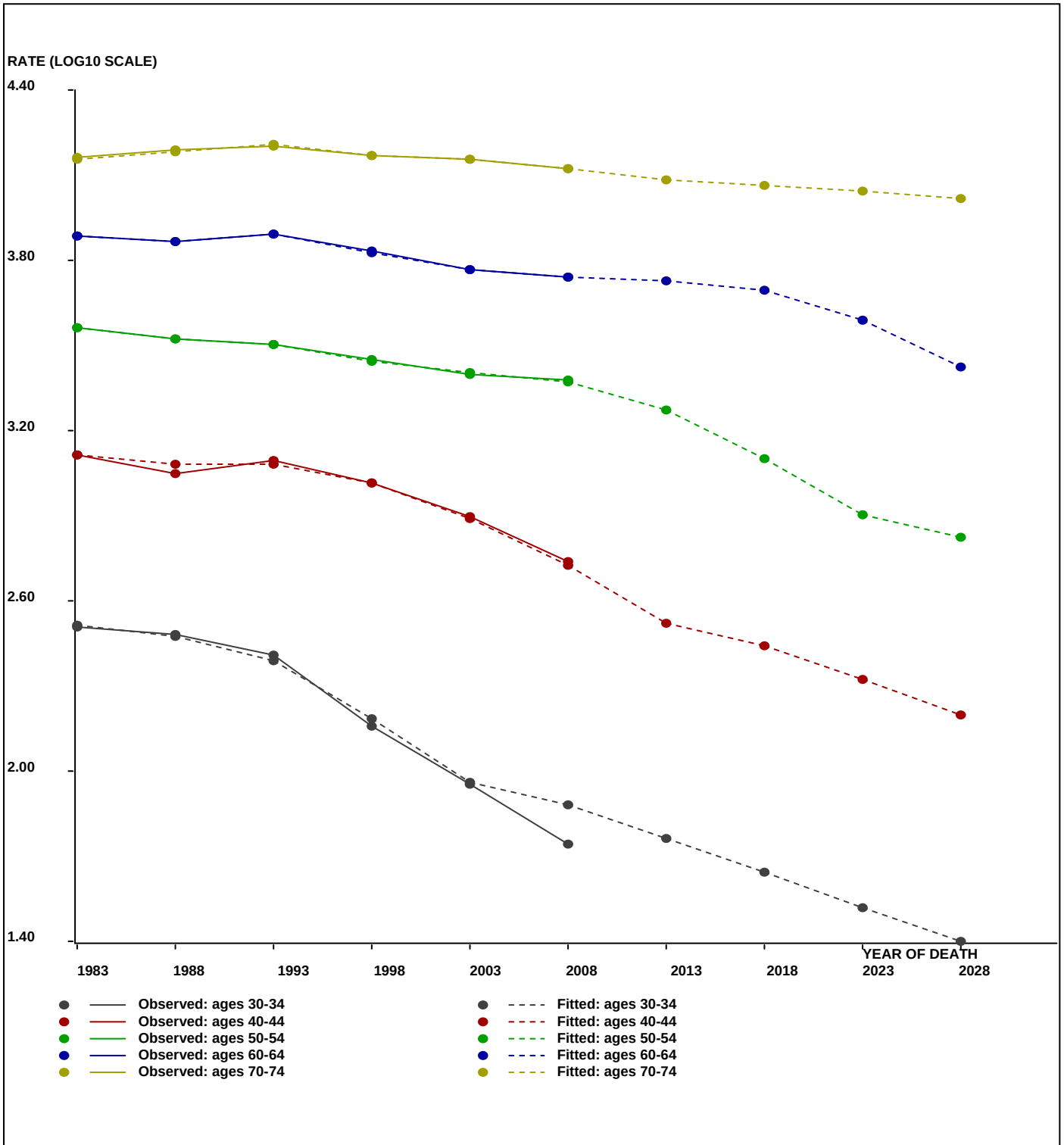
O&G Cohort and Period parameter values



Osmond and Gardner Modelling

Hungary IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Hungary IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	58.1	153.3	332.1	837.0	1861.0	3386.4	5294.9	7824.1	12057.3	19885.3
2016	PRE	44.1	116.4	275.8	526.3	1268.9	2666.3	4941.0	7509.6	11480.0	18114.1
2021	PRE	33.5	88.4	209.5	437.2	797.8	1818.0	3890.3	7007.7	11018.6	17246.8
2026	PRE	25.4	67.1	159.0	332.0	662.7	1143.0	2652.6	5517.5	10282.1	16553.7

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	113.5	326.0	607.7	1307.4	2730.1	5570.1	7769.0	8682.0	10163.8	11383.0
2016	PRE	74.9	227.8	580.7	937.9	1888.3	3627.2	7314.1	9550.5	10393.7	11410.0
2021	PRE	55.5	150.7	406.3	898.9	1359.9	2529.4	4805.0	9066.4	11604.5	11764.5
2026	PRE	37.2	111.8	269.6	630.3	1309.8	1831.1	3382.4	6014.4	11112.8	13378.7

Osmond and Gardner Modelling

Hungary Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	1784.40	34.99	51	P, C	98.26	9598.19	0.0000
AGE-PERIOD	59.78	1.33	45	Cohort	48.06	318.12	0.0000
AGE-COHORT	162.35	4.51	36	Period	80.88	861.85	0.0000
PERIOD-COHORT	31.52	0.79	40	Age	1.49	167.18	0.0000
FULL AGE-PERIOD-COHORT	31.05	0.97	32			164.69	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.935018	86.103019
35	2.284088	192.348201
40	2.588038	387.291414
45	2.845975	701.414477
50	3.080096	1202.530350
55	3.298770	1989.619260
60	3.536789	3441.829171
65	3.745026	5559.375126
70	3.969157	9314.443606
75	4.169725	14781.722024

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.092678	1.237879
1986	0.054000	1.132401
1991	0.037687	1.090653
1996	-0.014945	0.966173
2001	-0.080074	0.831623
2006	-0.208509	0.618715

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.026161	1.062090
1911	-0.001041	0.997606
1916	0.003557	1.008223
1921	0.003351	1.007746
1926	-0.005191	0.988118
1931	0.008171	1.018992
1936	0.002990	1.006909
1941	-0.014298	0.967614
1946	-0.023134	0.948127
1951	-0.005801	0.986732
1956	0.016657	1.039100
1961	-0.032789	0.927280
1966	-0.098987	0.796184
1971	-0.203826	0.625423
1976	-0.290315	0.512489

Osmond and Gardner Modelling

Hungary Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	230.0	206.0	160.0	102.0	67.0	58.0
EXP	222.9	211.1	143.5	107.6	82.8	58.0
CHI	0.2	0.1	1.9	0.3	3.0	0.0
35 - OBS	379.0	426.0	487.0	286.0	184.0	151.0
EXP	413.5	440.0	440.8	281.1	206.1	137.5
CHI	2.9	0.4	4.8	0.1	2.4	1.3
40 - OBS	720.0	693.0	888.0	774.0	461.0	331.0
EXP	771.6	732.4	821.6	765.6	476.8	305.7
CHI	3.5	2.1	5.4	0.1	0.5	2.1
45 - OBS	1263.0	1163.0	1367.0	1288.0	1086.0	615.0
EXP	1337.1	1214.4	1214.5	1264.1	1144.2	621.9
CHI	4.1	2.2	19.2	0.5	3.0	0.1
50 - OBS	2254.0	1955.0	2021.0	1758.0	1704.0	1382.0
EXP	2394.8	1952.6	1870.6	1735.5	1754.4	1377.2
CHI	8.3	0.0	12.1	0.3	1.4	0.0
55 - OBS	3705.0	3377.0	2966.0	2580.0	2162.0	1951.0
EXP	3872.9	3281.4	2823.7	2521.0	2265.9	1988.2
CHI	7.3	2.8	7.2	1.4	4.8	0.7
60 - OBS	5209.0	5329.0	4642.0	3841.0	3298.0	2591.0
EXP	5049.2	5311.0	4767.2	3842.5	3342.1	2602.6
CHI	5.1	0.1	3.3	0.0	0.6	0.1
65 - OBS	5791.0	6295.0	6638.0	5732.0	4568.0	3377.0
EXP	5742.5	6175.1	6761.4	5746.1	4529.5	3449.9
CHI	0.4	2.3	2.3	0.0	0.3	1.5
70 - OBS	10832.0	6673.0	7457.0	7714.0	6520.0	4402.0
EXP	10597.3	6567.6	7657.8	7727.6	6538.5	4516.9
CHI	5.2	1.7	5.3	0.0	0.1	2.9
75 - OBS	10631.0	9929.0	6500.0	7489.0	7667.0	5788.0
EXP	10631.0	10169.2	6656.8	7574.8	7390.2	5595.7
CHI	0.0	5.7	3.7	1.0	10.4	6.6

Osmond and Gardner Modelling

Hungary Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	86.103019
35	192.348201
40	387.291414
45	701.414477
50	1202.530350
55	1989.619260
60	3441.829171
65	5559.375126
70	9314.443606
75	14781.722024

PERIOD	EFFECT	LOWER	UPPER
% Period Change	74.3985	71.3985	77.3985

1981	1.237879		
1986	1.132401		
1991	1.090653		
1996	0.966173		
2001	0.831623		
2006	0.618715		
2011	0.460315	0.441754	0.478877
2016	0.342468	0.315406	0.370643
2021	0.254791	0.225195	0.286873
2026	0.189561	0.160786	0.222035

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.062090	1.000000	
1911	0.997606	2.000000	
1916	1.008223	4.000000	
1921	1.007746	8.000000	
1926	0.988118	16.000000	
1931	1.018992	32.000000	
1936	1.006909	64.000000	
1941	0.967614	128.000000	
1946	0.948127	256.000000	
1951	0.986732	512.000000	
1956	1.039100	1024.000000	
1961	0.927280	2048.000000	
1966	0.796184	4096.000000	
1971	0.625423	8192.000000	
1976	0.591121	EXTRAPOLATION	0.512489
1981	0.528045	EXTRAPOLATION	
1986	0.471699	EXTRAPOLATION	
1991	0.421366	EXTRAPOLATION	
1996	0.376403	EXTRAPOLATION	

Osmond and Gardner Modelling

**Hungary Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	108.5	98.9	97.1	62.8	36.2	27.3	-	-	-	-
	EXP	105.2	101.3	87.1	66.2	44.8	31.5	20.9*	13.9*	9.2*	6.1*
	Elow							20.1	12.8	8.2	5.2
	Eup							21.8	15.1	10.4	7.2
35	OBS	206.9	208.1	240.8	175.3	113.7	81.8	-	-	-	-
	EXP	225.8	214.9	218.0	172.3	127.4	74.4	52.3*	34.8*	23.1*	15.4*
	Elow							50.2	32.0	20.4	13.0
	Eup							54.4	37.6	26.0	18.0
40	OBS	432.8	393.4	450.5	393.1	288.8	206.6	-	-	-	-
	EXP	463.9	415.8	416.8	388.8	298.7	190.8	111.5*	78.4*	52.1*	34.6*
	Elow							107.0	72.2	46.1	29.4
	Eup							116.0	84.9	58.7	40.6
45	OBS	825.8	736.0	816.4	681.3	575.3	397.9	-	-	-	-
	EXP	874.3	768.6	725.3	668.7	606.1	402.4	257.1*	150.2*	105.6*	70.2*
	Elow							246.7	138.4	93.4	59.6
	Eup							267.4	162.6	118.9	82.2
50	OBS	1427.7	1372.8	1371.1	1115.9	958.4	775.8	-	-	-	-
	EXP	1516.9	1371.2	1269.1	1101.6	986.8	773.1	513.3*	327.9*	191.6*	134.7*
	Elow							492.6	302.0	169.4	114.3
	Eup							534.0	354.9	215.8	157.8
55	OBS	2328.2	2362.7	2295.1	1903.6	1496.9	1191.9	-	-	-	-
	EXP	2433.6	2295.8	2185.0	1860.1	1568.8	1214.7	951.7*	631.8*	403.6*	235.9*
	Elow							913.3	581.9	356.7	200.1
	Eup							990.0	683.8	454.4	276.3
60	OBS	4429.5	3864.3	3724.7	3347.1	2733.1	2010.0	-	-	-	-
	EXP	4293.6	3851.2	3825.1	3348.4	2769.6	2019.0	1563.3*	1224.8*	813.2*	519.5*
	Elow							1500.3	1128.0	718.7	440.6
	Eup							1626.3	1325.6	915.6	608.4
65	OBS	6997.0	6467.4	5881.9	5459.9	4694.8	3258.0	-	-	-	-
	EXP	6938.4	6344.2	5991.3	5473.3	4655.2	3328.3	2426.3*	1878.6*	1471.9*	977.2*
	Elow							2328.5	1730.2	1300.9	828.9
	Eup							2524.2	2033.2	1657.2	1144.6
70	OBS	11757.3	10805.1	9969.1	8876.8	7870.9	5655.2	-	-	-	-
	EXP	11502.5	10634.4	10237.5	8892.4	7893.2	5802.8	4148.7*	3024.4*	2341.7*	1834.7*
	Elow							3981.4	2785.4	2069.7	1556.2
	Eup							4316.0	3273.3	2636.6	2149.0
75	OBS	19434.1	16304.4	15871.4	14229.4	12601.8	9639.6	-	-	-	-
	EXP	19434.1	16698.8	16254.3	14392.3	12146.8	9319.4	6851.3*	4898.3*	3570.9*	2764.9*
	Elow							6575.0	4511.2	3156.1	2345.2
	Eup							7127.5	5301.3	4020.5	3238.5
30-79	OBS	2895.6	2619.2	2516.4	2219.7	1891.8	1398.3	-	-	-	-
	EXP	2900.0	2614.7	2517.0	2218.9	1896.4	1400.9	1019.4*	737.0*	531.2*	377.9*
	Elow							978.3	678.8	469.5	320.5
	Eup							1060.5	797.7	598.0	442.6

Osmond and Gardner Modelling

**Hungary Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

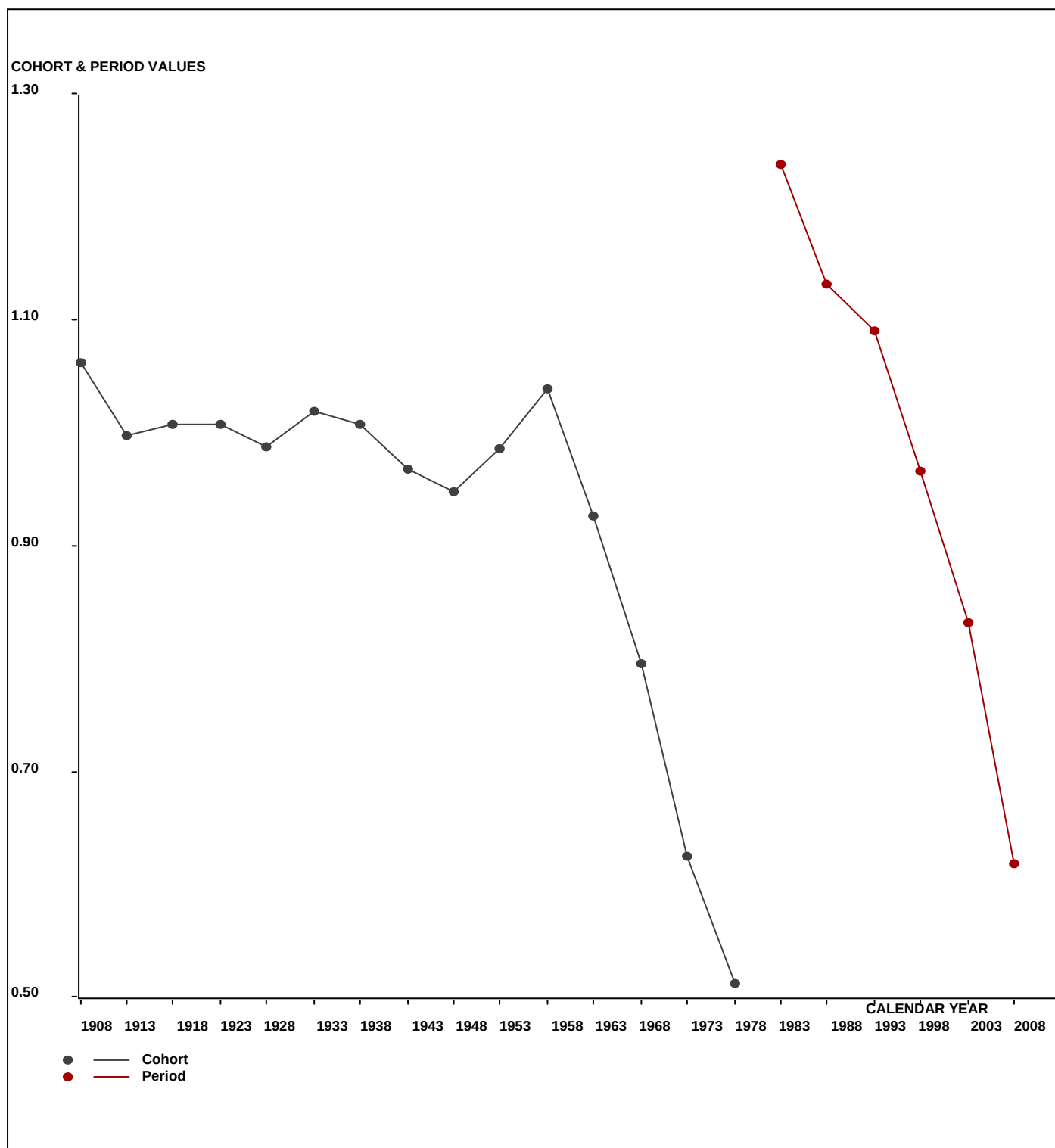
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	230.0	206.0	160.0	102.0	67.0	58.0	-	-	-	-
	EXP	222.9	211.1	143.5	107.6	82.8	66.9	40.9*	23.6*	15.3*	9.0*
	CHI	0.229	0.124	1.907	0.296	3.007	1.184	-	-	-	-
35 -	OBS	379.0	426.0	487.0	286.0	184.0	151.0	-	-	-	-
	EXP	413.5	440.0	440.8	281.1	206.1	137.5	111.3*	68.1*	39.4*	25.6*
	CHI	2.878	0.445	4.834	0.086	2.366	1.330	-	-	-	-
40 -	OBS	720.0	693.0	888.0	774.0	461.0	331.0	-	-	-	-
	EXP	771.6	732.4	821.6	765.6	476.8	305.7	204.1*	165.0*	101.1*	58.7*
	CHI	3.456	2.121	5.361	0.091	0.523	2.099	-	-	-	-
45 -	OBS	1263.0	1163.0	1367.0	1288.0	1086.0	615.0	-	-	-	-
	EXP	1337.1	1214.4	1214.5	1264.1	1144.2	621.9	401.5*	267.7*	217.2*	133.3*
	CHI	4.102	2.175	19.157	0.450	2.956	0.077	-	-	-	-
50 -	OBS	2254.0	1955.0	2021.0	1758.0	1704.0	1382.0	-	-	-	-
	EXP	2394.8	1952.6	1870.6	1735.5	1754.4	1377.2	753.0*	487.9*	326.6*	266.3*
	CHI	8.277	0.003	12.099	0.293	1.448	0.017	-	-	-	-
55 -	OBS	3705.0	3377.0	2966.0	2580.0	2162.0	1951.0	-	-	-	-
	EXP	3872.9	3281.4	2823.7	2521.0	2265.9	1988.2	1565.3*	859.5*	561.5*	377.9*
	CHI	7.276	2.786	7.171	1.383	4.764	0.698	-	-	-	-
60 -	OBS	5209.0	5329.0	4642.0	3841.0	3298.0	2591.0	-	-	-	-
	EXP	5049.2	5311.0	4767.2	3842.5	3342.1	2602.6	2293.8*	1813.1*	1004.4*	662.4*
	CHI	5.059	0.061	3.286	0.001	0.582	0.052	-	-	-	-
65 -	OBS	5791.0	6295.0	6638.0	5732.0	4568.0	3377.0	-	-	-	-
	EXP	5742.5	6175.1	6761.4	5746.1	4529.5	3449.9	2692.4*	2389.2*	1904.3*	1065.2*
	CHI	0.410	2.328	2.253	0.034	0.327	1.539	-	-	-	-
70 -	OBS	10832.0	6673.0	7457.0	7714.0	6520.0	4402.0	-	-	-	-
	EXP	10597.3	6567.6	7657.8	7727.6	6538.5	4516.9	3497.2*	2738.2*	2466.3*	1982.9*
	CHI	5.199	1.691	5.263	0.024	0.052	2.922	-	-	-	-
75 -	OBS	10631.0	9929.0	6500.0	7489.0	7667.0	5788.0	-	-	-	-
	EXP	10631.0	10169.2	6656.8	7574.8	7390.2	5595.7	3921.9*	3085.4*	2435.8*	2234.6*
	CHI	0.000	5.672	3.694	0.971	10.370	6.608	-	-	-	-
30-79	OBS	41014.0	36046.0	33126.0	31564.0	27717.0	20646.0	-	-	-	-
	EXP	41032.7	36054.7	33157.8	31565.8	27730.4	20662.5	15481.3*	11897.9*	9071.9*	6815.9*
	O/E	1.000	1.000	0.999	1.000	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

Hungary Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

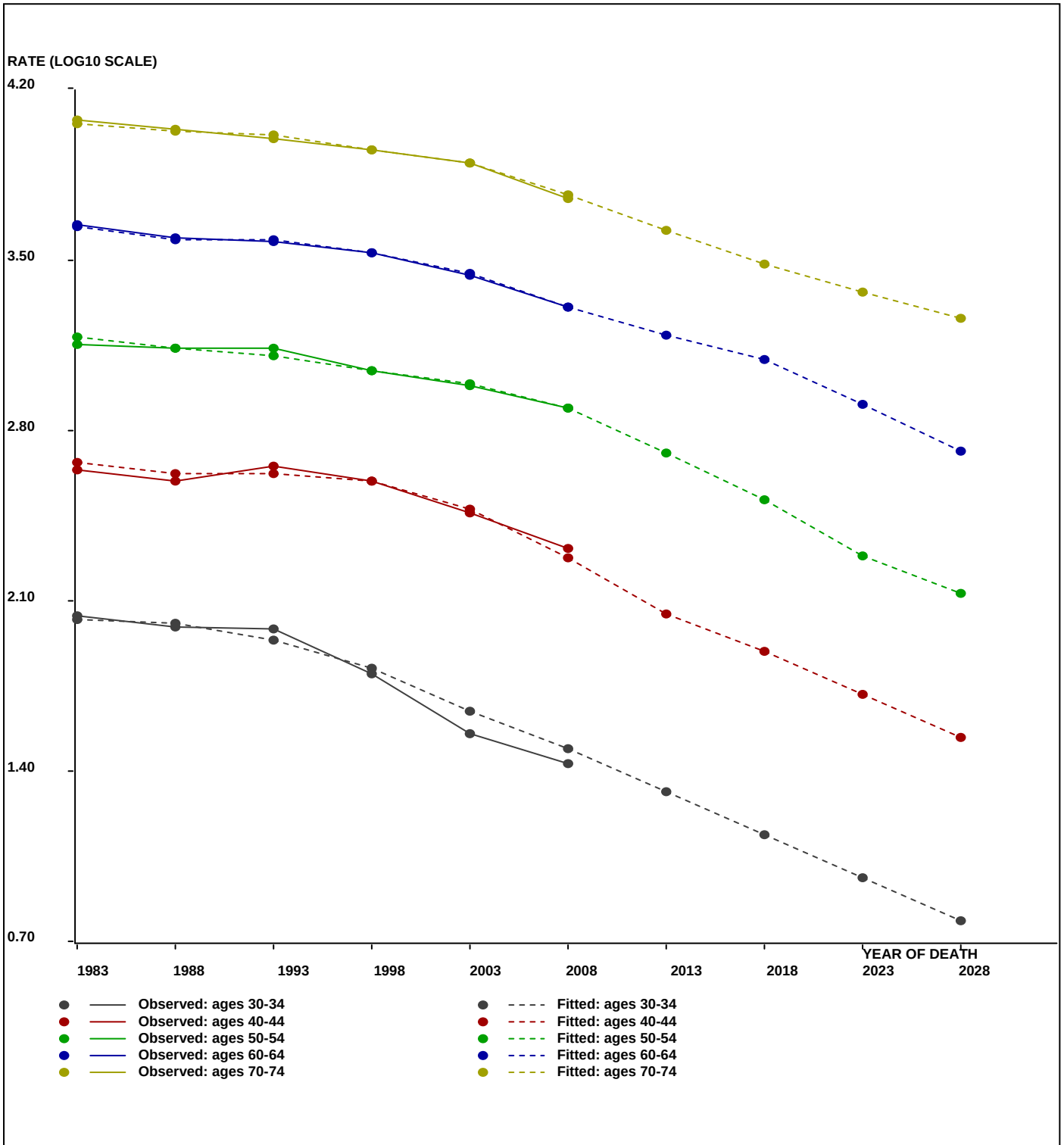


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Hungary Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Hungary Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	20.9	52.3	111.5	257.1	513.3	951.7	1563.3	2426.3	4148.7	6851.3
2016 PRE	13.9	34.8	78.4	150.2	327.9	631.8	1224.8	1878.6	3024.4	4898.3
2021 PRE	9.2	23.1	52.1	105.6	191.6	403.6	813.2	1471.9	2341.7	3570.9
2026 PRE	6.1	15.4	34.6	70.2	134.7	235.9	519.5	977.2	1834.7	2764.9

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	40.9	111.3	204.1	401.5	753.0	1565.3	2293.8	2692.4	3497.2	3921.9
2016 PRE	23.6	68.1	165.0	267.7	487.9	859.5	1813.1	2389.2	2738.2	3085.4
2021 PRE	15.3	39.4	101.1	217.2	326.6	561.5	1004.4	1904.3	2466.3	2435.8
2026 PRE	9.0	25.6	58.7	133.3	266.3	377.9	662.4	1065.2	1982.9	2234.6

Osmond and Gardner Modelling

Hungary Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	323.11	6.34	51	P, C	95.03	1738.38	0.0000
AGE-PERIOD	155.98	3.47	45	Cohort	89.71	847.69	0.0000
AGE-COHORT	154.96	4.30	36	Period	89.64	822.89	0.0000
PERIOD-COHORT	30.32	0.76	40	Age	47.07	161.38	0.0000
FULL AGE-PERIOD-COHORT	16.05	0.50	32			85.15	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.574107	37.506539
35	2.095686	124.648332
40	2.566889	368.883090
45	2.921752	835.125751
50	3.203721	1598.529337
55	3.405106	2541.595001
60	3.557025	3605.995882
65	3.663597	4608.901814
70	3.730894	5381.387889
75	3.751327	5640.625988

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.054529	0.882005
1986	0.009413	1.021911
1991	0.043607	1.105623
1996	0.029499	1.070285
2001	-0.006682	0.984731
2006	-0.032757	0.927348

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.046921	1.114093
1911	-0.029276	0.934812
1916	-0.052502	0.886131
1921	-0.036674	0.919023
1926	-0.032357	0.928204
1931	-0.006931	0.984168
1936	0.016529	1.038792
1941	0.006353	1.014736
1946	0.031753	1.075852
1951	0.071950	1.180184
1956	0.067989	1.169470
1961	-0.033352	0.926080
1966	-0.246524	0.566860
1971	-0.416470	0.383292
1976	-0.589830	0.257140

Osmond and Gardner Modelling

Hungary Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	73.0	113.0	48.0	38.0	26.0	19.0
EXP	82.7	93.4	63.3	37.0	26.2	19.0
CHI	1.1	4.1	3.7	0.0	0.0	0.0
35 - OBS	232.0	300.0	314.0	211.0	106.0	82.0
EXP	216.6	307.8	325.9	201.5	112.6	81.8
CHI	1.1	0.2	0.4	0.4	0.4	0.0
40 - OBS	518.0	688.0	988.0	914.0	543.0	316.0
EXP	549.2	714.3	948.9	909.2	537.0	310.7
CHI	1.8	1.0	1.6	0.0	0.1	0.1
45 - OBS	1097.0	1386.0	1686.0	2031.0	1811.0	1106.0
EXP	1170.2	1368.4	1663.3	1994.2	1815.5	1108.4
CHI	4.6	0.2	0.3	0.7	0.0	0.0
50 - OBS	2168.0	2454.0	2801.0	2798.0	3235.0	3078.0
EXP	2190.7	2416.5	2643.4	2899.8	3302.9	3088.2
CHI	0.2	0.6	9.4	3.6	1.4	0.0
55 - OBS	3268.0	3726.0	3788.0	3685.0	3892.0	4560.0
EXP	3311.3	3653.5	3772.4	3741.1	3889.1	4553.1
CHI	0.6	1.4	0.1	0.8	0.0	0.0
60 - OBS	3431.0	4636.0	4805.0	4715.0	4319.0	4721.0
EXP	3437.4	4716.9	4890.1	4600.8	4348.1	4637.5
CHI	0.0	1.4	1.5	2.8	0.2	1.5
65 - OBS	2976.0	4331.0	5267.0	5117.0	4588.0	4430.0
EXP	2981.3	4213.1	5337.8	5096.6	4587.2	4495.5
CHI	0.0	3.3	0.9	0.1	0.0	1.0
70 - OBS	4256.0	3025.0	4039.0	4675.0	4253.0	3935.0
EXP	4087.8	3009.5	4090.1	4645.8	4320.2	4035.2
CHI	6.9	0.1	0.6	0.2	1.0	2.5
75 - OBS	3032.0	3105.0	2253.0	2857.0	3297.0	3170.0
EXP	3032.0	3281.4	2263.2	2920.1	3136.8	3091.1
CHI	0.0	9.5	0.0	1.4	8.2	2.0

Osmond and Gardner Modelling

Hungary Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	37.506539
35	124.648332
40	368.883090
45	835.125751
50	1598.529337
55	2541.595001
60	3605.995882
65	4608.901814
70	5381.387889
75	5640.625988

PERIOD	EFFECT	LOWER	UPPER
% Period Change	94.1727	91.1727	97.1727
1981	0.882005		
1986	1.021911		
1991	1.105623		
1996	1.070285		
2001	0.984731		
2006	0.927348		
2011	0.873309	0.845488	0.901129
2016	0.822419	0.770855	0.875652
2021	0.774494	0.702809	0.850895
2026	0.729362	0.640771	0.826838

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.114093	1.000000	
1911	0.934812	2.000000	
1916	0.886131	4.000000	
1921	0.919023	8.000000	
1926	0.928204	16.000000	
1931	0.984168	32.000000	
1936	1.038792	64.000000	
1941	1.014736	128.000000	
1946	1.075852	256.000000	
1951	1.180184	512.000000	
1956	1.169470	1024.000000	
1961	0.926080	2048.000000	
1966	0.566860	4096.000000	
1971	0.383292	8192.000000	
1976	0.324094	EXTRAPOLATION	0.257140
1981	0.250882	EXTRAPOLATION	
1986	0.194208	EXTRAPOLATION	
1991	0.150337	EXTRAPOLATION	
1996	0.116376	EXTRAPOLATION	

Osmond and Gardner Modelling

**Hungary Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	34.5	54.2	29.1	23.4	14.1	8.9	-	-	-	-
	EXP	39.0	44.8	38.4	22.8	14.2	11.3	8.2*	6.0*	4.4*	3.2*
	Elow							8.0	5.6	4.0	2.8
	Eup							8.5	6.4	4.8	3.6
35	OBS	126.7	146.5	155.3	129.4	65.5	44.4	-	-	-	-
	EXP	118.3	150.3	161.2	123.5	69.6	44.3	35.3*	25.7*	18.7*	13.7*
	Elow							34.2	24.1	17.0	12.0
	Eup							36.4	27.4	20.6	15.5
40	OBS	311.4	390.6	501.2	464.2	340.1	197.2	-	-	-	-
	EXP	330.2	405.6	481.3	461.7	336.4	193.9	123.5*	98.3*	71.7*	52.3*
	Elow							119.5	92.2	65.0	45.9
	Eup							127.4	104.7	78.7	59.2
45	OBS	717.3	877.2	1006.9	1074.3	959.4	715.6	-	-	-	-
	EXP	765.2	866.0	993.4	1054.9	961.7	717.2	413.4*	263.3*	209.6*	152.8*
	Elow							400.3	246.7	190.2	134.3
	Eup							426.6	280.3	230.3	173.2
50	OBS	1373.2	1723.3	1900.3	1776.0	1819.6	1727.9	-	-	-	-
	EXP	1387.6	1696.9	1793.4	1840.7	1857.8	1733.6	1292.8*	745.2*	474.5*	377.9*
	Elow							1251.6	698.5	430.6	332.0
	Eup							1334.0	793.5	521.3	428.4
55	OBS	2053.6	2606.9	2931.2	2718.9	2694.6	2785.8	-	-	-	-
	EXP	2080.8	2556.2	2919.1	2760.3	2692.6	2781.6	2595.8*	1935.7*	1115.8*	710.5*
	Elow							2513.1	1814.4	1012.6	624.2
	Eup							2678.4	2061.0	1225.9	805.5
60	OBS	2917.6	3361.8	3855.5	4108.7	3579.2	3662.4	-	-	-	-
	EXP	2923.0	3420.4	3923.8	4009.2	3603.3	3597.7	3716.6*	3468.2*	2586.4*	1490.9*
	Elow							3598.2	3250.8	2347.0	1309.8
	Eup							3835.0	3692.7	2841.5	1690.1
65	OBS	3595.8	4449.6	4667.1	4874.1	4715.4	4273.9	-	-	-	-
	EXP	3602.2	4328.5	4729.9	4854.7	4714.6	4337.0	4330.3*	4473.4*	4174.5*	3113.1*
	Elow							4192.4	4193.0	3788.1	2734.9
	Eup							4468.2	4763.0	4586.3	3529.1
70	OBS	4619.6	4898.2	5399.7	5379.7	5134.2	5055.3	-	-	-	-
	EXP	4437.0	4873.1	5468.0	5346.1	5215.3	5184.0	4768.9*	4761.5*	4918.8*	4590.1*
	Elow							4617.0	4462.9	4463.6	4032.6
	Eup							4920.8	5069.7	5404.1	5203.6
75	OBS	5542.7	5098.7	5501.3	5428.4	5419.1	5279.5	-	-	-	-
	EXP	5542.7	5388.5	5526.3	5548.2	5155.7	5148.0	5117.1*	4707.3*	4700.0*	4855.3*
	Elow							4954.1	4412.2	4265.0	4265.6
	Eup							5280.1	5012.0	5163.6	5504.2
30-79	OBS	1530.5	1772.4	1961.5	1956.7	1846.5	1758.3	-	-	-	-
	EXP	1534.3	1769.0	1959.7	1957.9	1848.5	1759.6	1620.6*	1427.6*	1198.8*	942.7*
	Elow							1569.0	1338.1	1087.8	828.2
	Eup							1672.2	1520.0	1317.1	1068.7

Osmond and Gardner Modelling

**Hungary Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

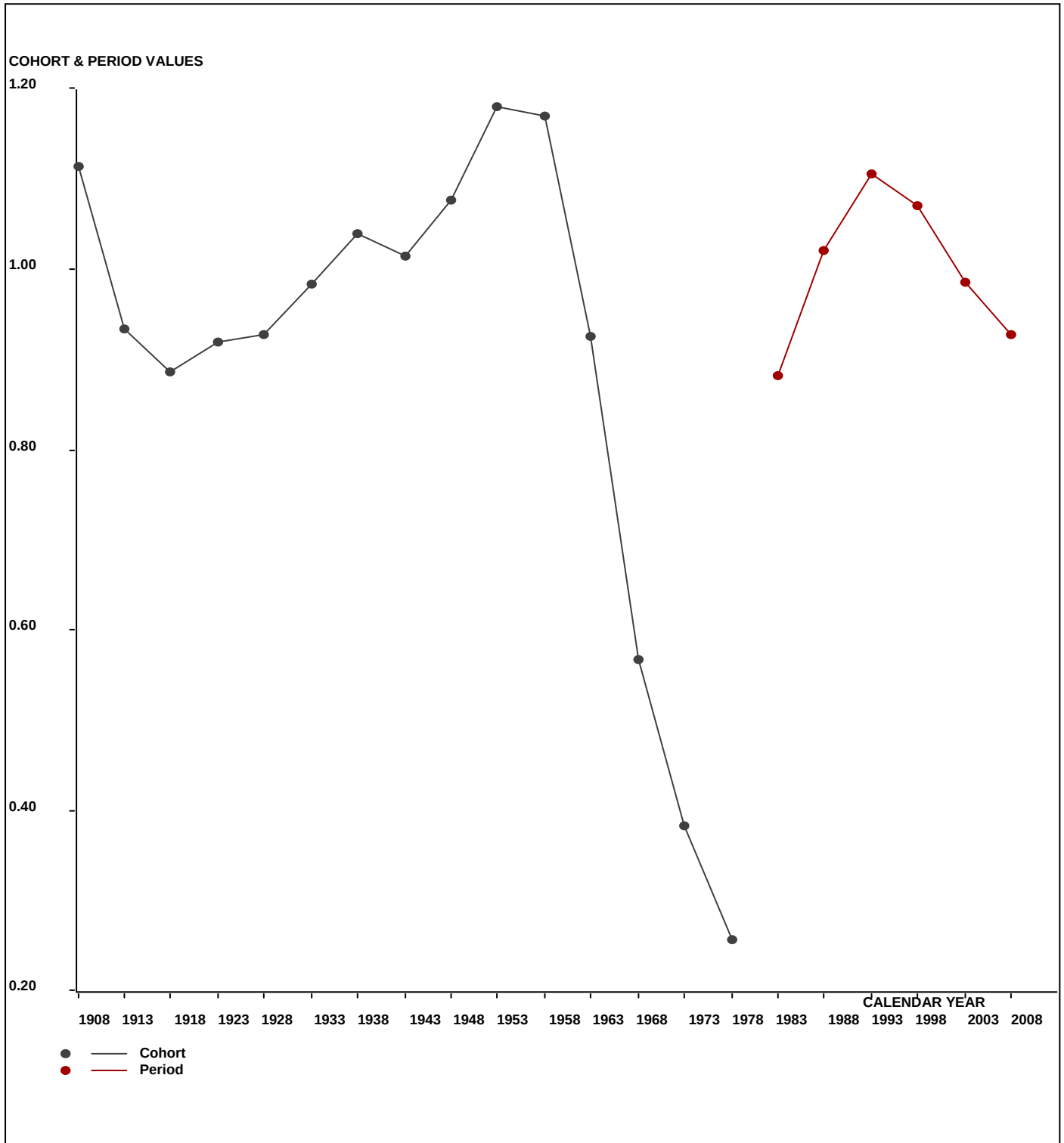
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	73.0	113.0	48.0	38.0	26.0	19.0	-	-	-	-
	EXP	82.7	93.4	63.3	37.0	26.2	23.9	16.1*	10.2*	7.2*	4.7*
	CHI	1.144	4.111	3.684	0.028	0.001	1.022	-	-	-	-
35 -	OBS	232.0	300.0	314.0	211.0	106.0	82.0	-	-	-	-
	EXP	216.6	307.8	325.9	201.5	112.6	81.8	75.0*	50.3*	32.0*	22.8*
	CHI	1.088	0.195	0.437	0.446	0.386	0.000	-	-	-	-
40 -	OBS	518.0	688.0	988.0	914.0	543.0	316.0	-	-	-	-
	EXP	549.2	714.3	948.9	909.2	537.0	310.7	226.0*	207.0*	139.1*	88.6*
	CHI	1.770	0.972	1.615	0.026	0.066	0.091	-	-	-	-
45 -	OBS	1097.0	1386.0	1686.0	2031.0	1811.0	1106.0	-	-	-	-
	EXP	1170.2	1368.4	1663.3	1994.2	1815.5	1108.4	645.7*	469.2*	431.0*	290.2*
	CHI	4.579	0.227	0.310	0.679	0.011	0.005	-	-	-	-
50 -	OBS	2168.0	2454.0	2801.0	2798.0	3235.0	3078.0	-	-	-	-
	EXP	2190.7	2416.5	2643.4	2899.8	3302.9	3088.2	1896.6*	1109.0*	808.9*	746.8*
	CHI	0.235	0.582	9.393	3.574	1.396	0.034	-	-	-	-
55 -	OBS	3268.0	3726.0	3788.0	3685.0	3892.0	4560.0	-	-	-	-
	EXP	3311.3	3653.5	3772.4	3741.1	3889.1	4553.1	4269.6*	2633.4*	1552.4*	1138.3*
	CHI	0.566	1.440	0.065	0.841	0.002	0.010	-	-	-	-
60 -	OBS	3431.0	4636.0	4805.0	4715.0	4319.0	4721.0	-	-	-	-
	EXP	3437.4	4716.9	4890.1	4600.8	4348.1	4637.5	5453.1*	5134.0*	3194.5*	1901.0*
	CHI	0.012	1.387	1.480	2.835	0.195	1.503	-	-	-	-
65 -	OBS	2976.0	4331.0	5267.0	5117.0	4588.0	4430.0	-	-	-	-
	EXP	2981.3	4213.1	5337.8	5096.6	4587.2	4495.5	4805.1*	5689.1*	5400.8*	3393.5*
	CHI	0.009	3.298	0.940	0.081	0.000	0.954	-	-	-	-
70 -	OBS	4256.0	3025.0	4039.0	4675.0	4253.0	3935.0	-	-	-	-
	EXP	4087.8	3009.5	4090.1	4645.8	4320.2	4035.2	4020.0*	4310.9*	5180.4*	4961.0*
	CHI	6.921	0.080	0.639	0.184	1.045	2.489	-	-	-	-
75 -	OBS	3032.0	3105.0	2253.0	2857.0	3297.0	3170.0	-	-	-	-
	EXP	3032.0	3281.4	2263.2	2920.1	3136.8	3091.1	2929.2*	2965.1*	3206.0*	3924.1*
	CHI	0.000	9.488	0.046	1.361	8.185	2.016	-	-	-	-
30-79	OBS	21051.0	23764.0	25989.0	27041.0	26070.0	25417.0	-	-	-	-
	EXP	21059.2	23774.8	25998.4	27046.0	26075.6	25425.5	24336.3*	22578.1*	19952.4*	16470.8*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Hungary Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

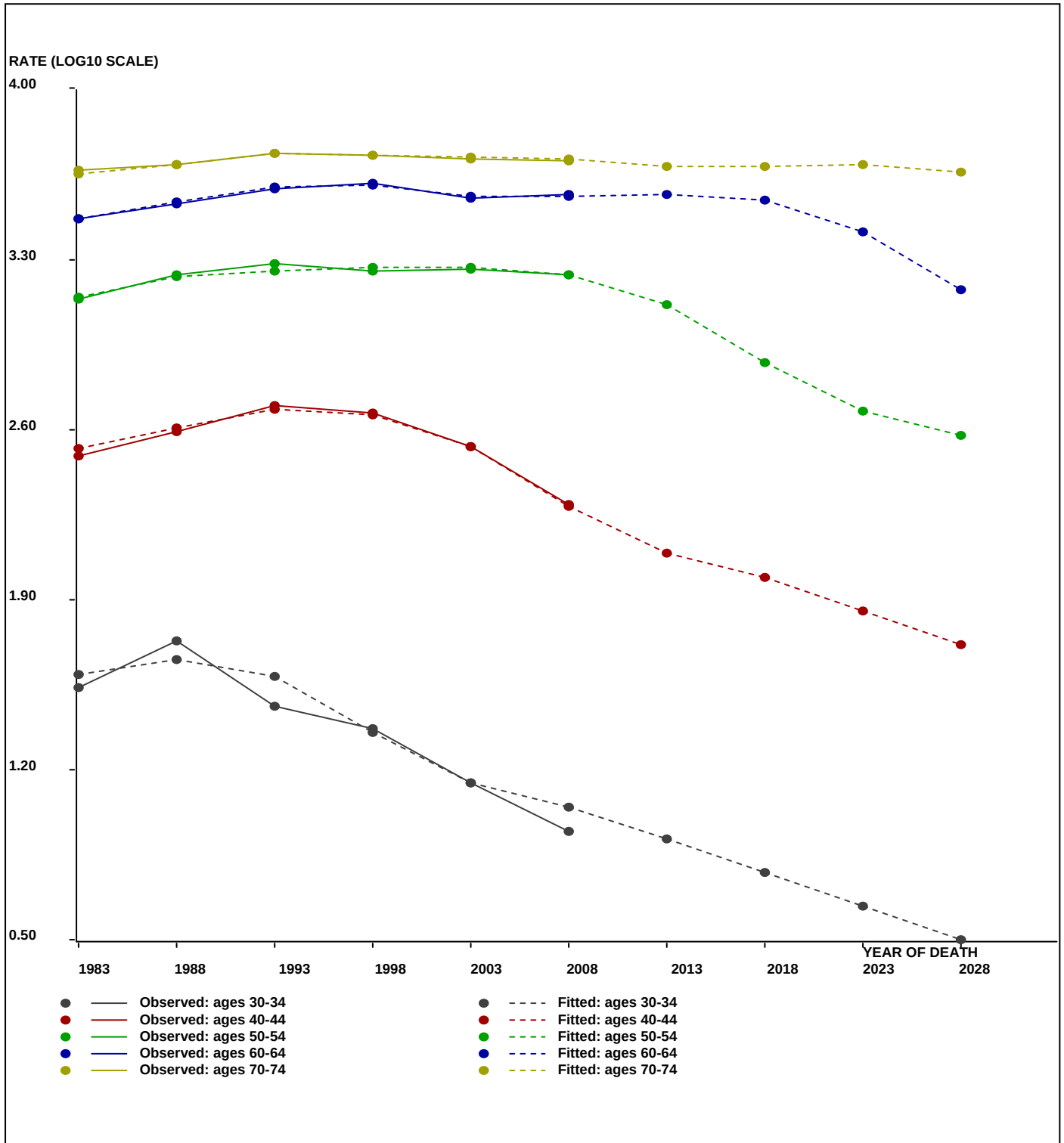


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Hungary Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Hungary Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	8.2	35.3	123.5	413.4	1292.8	2595.8	3716.6	4330.3	4768.9	5117.1
2016	PRE	6.0	25.7	98.3	263.3	745.2	1935.7	3468.2	4473.4	4761.5	4707.3
2021	PRE	4.4	18.7	71.7	209.6	474.5	1115.8	2586.4	4174.5	4918.8	4700.0
2026	PRE	3.2	13.7	52.3	152.8	377.9	710.5	1490.9	3113.1	4590.1	4855.3

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	16.1	75.0	226.0	645.7	1896.6	4269.6	5453.1	4805.1	4020.0	2929.2
2016	PRE	10.2	50.3	207.0	469.2	1109.0	2633.4	5134.0	5689.1	4310.9	2965.1
2021	PRE	7.2	32.0	139.1	431.0	808.9	1552.4	3194.5	5400.8	5180.4	3206.0
2026	PRE	4.7	22.8	88.6	290.2	746.8	1138.3	1901.0	3393.5	4961.0	3924.1

Osmond and Gardner Modelling

Hungary COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	393.09	7.71	51	P, C	98.42	2096.96	0.0000
AGE-PERIOD	53.07	1.18	45	Cohort	88.32	281.87	0.0000
AGE-COHORT	61.21	1.70	36	Period	89.87	324.85	0.0000
PERIOD-COHORT	18.53	0.46	40	Age	66.55	98.29	0.0000
FULL AGE-PERIOD-COHORT	6.20	0.19	32			32.87	0.4243

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.344790	22.120269
35	1.668575	46.620329
40	2.046218	111.229111
45	2.335497	216.519641
50	2.617604	414.575921
55	2.869668	740.743860
60	3.081932	1207.625794
65	3.280416	1907.286456
70	3.491740	3102.698013
75	3.674559	4726.706677

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.063981	1.158728
1986	0.024368	1.057714
1991	0.040673	1.098180
1996	-0.051494	0.888190
2001	-0.091520	0.809991
2006	-0.031912	0.929154

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.116958	1.309055
1911	0.043224	1.104647
1916	0.018191	1.042777
1921	-0.008621	0.980344
1926	-0.035404	0.921714
1931	-0.020930	0.952950
1936	-0.018660	0.957943
1941	-0.030863	0.931402
1946	-0.020456	0.953990
1951	-0.016951	0.961722
1956	0.044076	1.106818
1961	0.069770	1.174275
1966	0.053009	1.129820
1971	-0.102171	0.790368
1976	-0.242172	0.572569

Osmond and Gardner Modelling

Hungary COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	49.0	54.0	48.0	34.0	30.0	25.0
EXP	52.2	54.0	47.0	36.1	26.2	25.0
CHI	0.2	0.0	0.0	0.1	0.6	0.0
35 - OBS	104.0	97.0	103.0	87.0	66.0	59.0
EXP	94.4	97.1	114.6	79.3	69.0	63.2
CHI	1.0	0.0	1.2	0.7	0.1	0.3
40 - OBS	209.0	195.0	237.0	214.0	152.0	192.0
EXP	199.7	197.7	231.6	215.3	168.9	187.1
CHI	0.4	0.0	0.1	0.0	1.7	0.1
45 - OBS	390.0	343.0	361.0	335.0	363.0	372.0
EXP	367.6	337.0	379.8	349.6	366.4	365.1
CHI	1.4	0.1	0.9	0.6	0.0	0.1
50 - OBS	742.0	612.0	628.0	518.0	556.0	775.0
EXP	722.7	598.2	625.0	553.4	574.2	759.5
CHI	0.5	0.3	0.0	2.3	0.6	0.3
55 - OBS	1252.0	1036.0	1063.0	781.0	825.0	1113.0
EXP	1259.0	1067.1	1007.1	830.5	826.7	1083.5
CHI	0.0	0.9	3.1	3.0	0.0	0.8
60 - OBS	1590.0	1598.0	1552.0	1162.0	1140.0	1426.0
EXP	1613.2	1623.6	1575.0	1179.1	1099.4	1379.8
CHI	0.3	0.4	0.3	0.2	1.5	1.5
65 - OBS	1890.0	1912.0	2205.0	1725.0	1425.0	1699.0
EXP	1907.3	1925.0	2178.7	1694.8	1439.9	1710.9
CHI	0.2	0.1	0.3	0.5	0.2	0.1
70 - OBS	3647.0	2153.0	2480.0	2231.0	2013.0	2086.0
EXP	3658.9	2113.5	2498.6	2207.3	1983.9	2149.6
CHI	0.0	0.7	0.1	0.3	0.4	1.9
75 - OBS	3922.0	3375.0	2194.0	2220.0	2129.0	2487.0
EXP	3922.0	3363.2	2216.8	2166.1	2147.0	2513.0
CHI	0.0	0.0	0.2	1.3	0.2	0.3

Osmond and Gardner Modelling

Hungary COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
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AGE	EFFECT
30	22.120269
35	46.620329
40	111.229111
45	216.519641
50	414.575921
55	740.743860
60	1207.625794
65	1907.286456
70	3102.698013
75	4726.706677

PERIOD	EFFECT	LOWER	UPPER
% Period Change	114.7116	111.7116	117.7116
1981	1.158728		
1986	1.057714		
1991	1.098180		
1996	0.888190		
2001	0.809991		
2006	0.929154		
2011	1.065847	1.037972	1.093722
2016	1.222650	1.159535	1.287437
2021	1.402521	1.295335	1.515462
2026	1.608854	1.447039	1.783874

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.309055	1.000000	
1911	1.104647	2.000000	
1916	1.042777	4.000000	
1921	0.980344	8.000000	
1926	0.921714	16.000000	
1931	0.952950	32.000000	
1936	0.957943	64.000000	
1941	0.931402	128.000000	
1946	0.953990	256.000000	
1951	0.961722	512.000000	
1956	1.106818	1024.000000	
1961	1.174275	2048.000000	
1966	1.129820	4096.000000	
1971	0.790368	8192.000000	
1976	0.816027	EXTRAPOLATION	0.572569
1981	0.760915	EXTRAPOLATION	
1986	0.709525	EXTRAPOLATION	
1991	0.661606	EXTRAPOLATION	
1996	0.616924	EXTRAPOLATION	

Osmond and Gardner Modelling

**Hungary COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	23.1	25.9	29.1	20.9	16.2	11.8	-	-	-	-
	EXP	24.7	25.9	28.5	22.2	14.2	16.8	17.9*	19.2*	20.5*	22.0*
	Elow							17.5	18.2	19.0	19.7
	Eup							18.4	20.2	22.2	24.3
35	OBS	56.8	47.4	50.9	53.3	40.8	31.9	-	-	-	-
	EXP	51.5	47.4	56.7	48.6	42.7	34.2	40.5*	43.4*	46.4*	49.6*
	Elow							39.5	41.1	42.8	44.6
	Eup							41.6	45.7	50.1	55.0
40	OBS	125.6	110.7	120.2	108.7	95.2	119.8	-	-	-	-
	EXP	120.0	112.2	117.5	109.3	105.8	116.8	93.7*	111.0*	118.7*	127.0*
	Elow							91.3	105.2	109.6	114.2
	Eup							96.2	116.9	128.3	140.8
45	OBS	255.0	217.1	215.6	177.2	192.3	240.7	-	-	-	-
	EXP	240.3	213.3	226.8	184.9	194.1	236.2	260.7*	209.2*	247.8*	265.1*
	Elow							253.9	198.4	228.9	238.4
	Eup							267.6	220.3	267.8	293.9
50	OBS	470.0	429.8	426.1	328.8	312.7	435.1	-	-	-	-
	EXP	457.8	420.1	424.0	351.3	322.9	426.4	518.9*	572.7*	459.6*	544.3*
	Elow							505.3	543.1	424.4	489.5
	Eup							532.5	603.0	496.6	603.5
55	OBS	786.7	724.8	822.5	576.3	571.2	680.0	-	-	-	-
	EXP	791.1	746.6	779.3	612.8	572.4	661.9	873.9*	1063.5*	1173.8*	941.9*
	Elow							851.0	1008.6	1084.1	847.2
	Eup							896.7	1119.9	1268.3	1044.4
60	OBS	1352.1	1158.8	1245.3	1012.6	944.7	1106.3	-	-	-	-
	EXP	1371.8	1177.3	1263.8	1027.5	911.1	1070.4	1237.9*	1634.2*	1988.9*	2195.1*
	Elow							1205.5	1549.9	1836.9	1974.3
	Eup							1270.2	1720.8	2149.1	2433.9
65	OBS	2283.6	1964.4	1953.9	1643.1	1464.6	1639.1	-	-	-	-
	EXP	2304.6	1977.7	1930.6	1614.3	1479.9	1650.6	1939.3*	2242.7*	2960.7*	3603.3*
	Elow							1888.6	2126.9	2734.5	3240.9
	Eup							1990.1	2361.5	3199.2	3995.3
70	OBS	3958.5	3486.2	3315.5	2567.3	2430.1	2679.9	-	-	-	-
	EXP	3971.4	3422.2	3340.3	2540.0	2394.9	2761.6	3080.1*	3619.0*	4185.0*	5525.0*
	Elow							2999.6	3432.2	3865.2	4969.3
	Eup							3160.7	3810.7	4522.0	6126.0
75	OBS	7169.7	5542.1	5357.2	4218.1	3499.3	4142.0	-	-	-	-
	EXP	7169.7	5522.7	5412.8	4115.7	3528.9	4185.2	4826.1*	5382.7*	6324.3*	7313.5*
	Elow							4699.9	5104.8	5841.0	6577.9
	Eup							4952.3	5667.9	6833.6	8109.1
30-79	OBS	969.9	824.7	827.9	655.5	598.2	697.6	-	-	-	-
	EXP	969.8	824.0	828.0	657.1	598.4	698.1	811.0*	942.4*	1096.1*	1260.0*
	Elow							789.8	893.8	1012.3	1133.2
	Eup							832.2	992.4	1184.4	1397.0

Osmond and Gardner Modelling

**Hungary COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

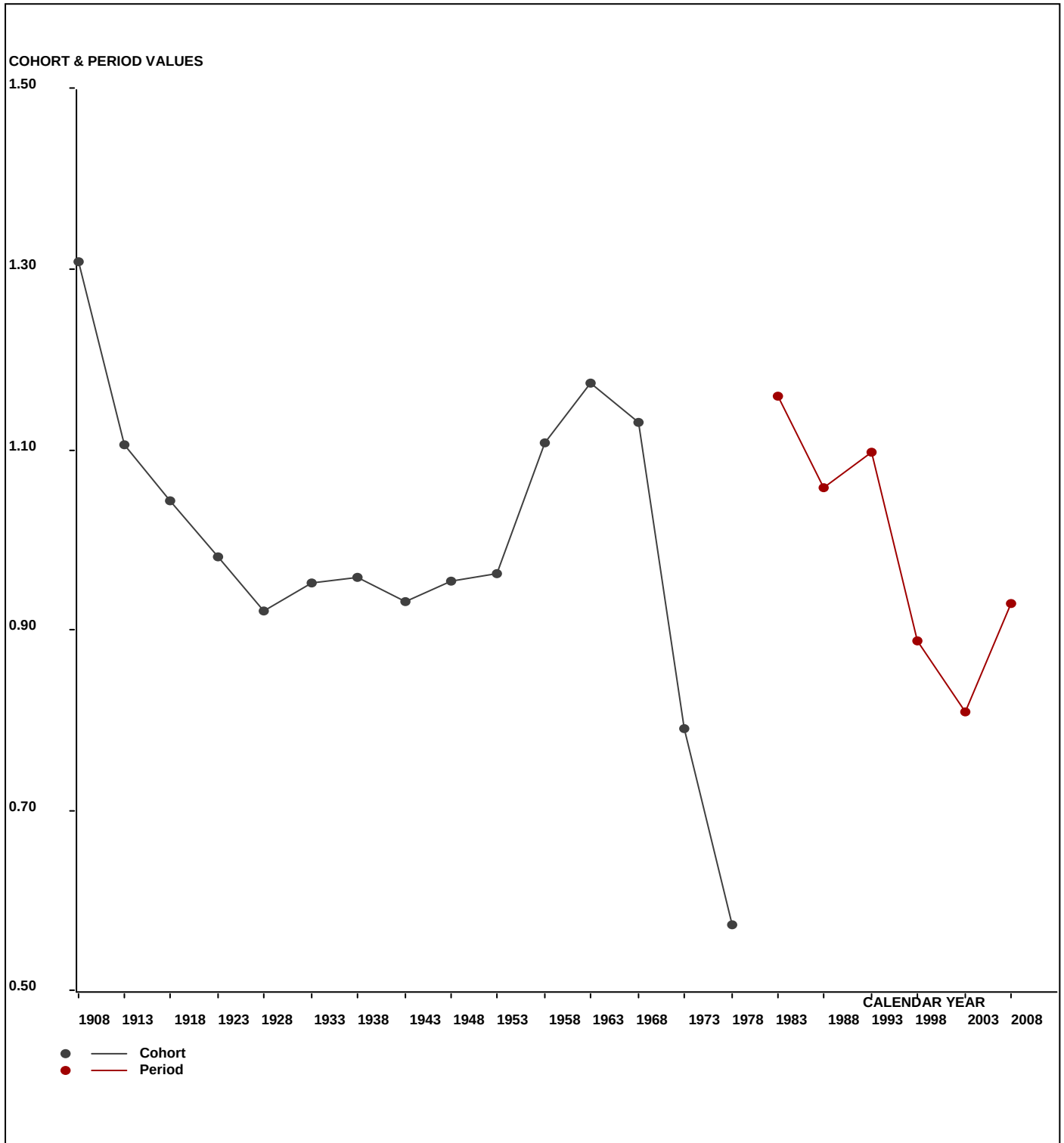
Matrix of observed and expected deaths including predictions

	1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 - OBS	49.0	54.0	48.0	34.0	30.0	25.0	-	-	-	-
EXP	52.2	54.0	47.0	36.1	26.2	35.6	35.1*	32.6*	34.1*	32.2*
CHI	0.200	0.000	0.022	0.119	0.559	3.171	-	-	-	-
35 - OBS	104.0	97.0	103.0	87.0	66.0	59.0	-	-	-	-
EXP	94.4	97.1	114.6	79.3	69.0	63.2	86.2*	84.9*	79.1*	82.6*
CHI	0.978	0.000	1.173	0.746	0.134	0.284	-	-	-	-
40 - OBS	209.0	195.0	237.0	214.0	152.0	192.0	-	-	-	-
EXP	199.7	197.7	231.6	215.3	168.9	187.1	171.5*	233.6*	230.3*	215.2*
CHI	0.435	0.037	0.127	0.008	1.690	0.129	-	-	-	-
45 - OBS	390.0	343.0	361.0	335.0	363.0	372.0	-	-	-	-
EXP	367.6	337.0	379.8	349.6	366.4	365.1	407.2*	372.9*	509.5*	503.3*
CHI	1.370	0.105	0.932	0.613	0.032	0.130	-	-	-	-
50 - OBS	742.0	612.0	628.0	518.0	556.0	775.0	-	-	-	-
EXP	722.7	598.2	625.0	553.4	574.2	759.5	761.2*	852.2*	783.3*	1075.7*
CHI	0.514	0.319	0.014	2.266	0.575	0.317	-	-	-	-
55 - OBS	1252.0	1036.0	1063.0	781.0	825.0	1113.0	-	-	-	-
EXP	1259.0	1067.1	1007.1	830.5	826.7	1083.5	1437.3*	1446.8*	1633.0*	1509.0*
CHI	0.039	0.909	3.108	2.952	0.004	0.805	-	-	-	-
60 - OBS	1590.0	1598.0	1552.0	1162.0	1140.0	1426.0	-	-	-	-
EXP	1613.2	1623.6	1575.0	1179.1	1099.4	1379.8	1816.3*	2419.1*	2456.6*	2799.0*
CHI	0.334	0.403	0.337	0.249	1.500	1.545	-	-	-	-
65 - OBS	1890.0	1912.0	2205.0	1725.0	1425.0	1699.0	-	-	-	-
EXP	1907.3	1925.0	2178.7	1694.8	1439.9	1710.9	2152.0*	2852.2*	3830.5*	3927.9*
CHI	0.158	0.088	0.317	0.539	0.155	0.083	-	-	-	-
70 - OBS	3647.0	2153.0	2480.0	2231.0	2013.0	2086.0	-	-	-	-
EXP	3658.9	2113.5	2498.6	2207.3	1983.9	2149.6	2596.4*	3276.5*	4407.6*	5971.4*
CHI	0.038	0.740	0.139	0.254	0.428	1.885	-	-	-	-
75 - OBS	3922.0	3375.0	2194.0	2220.0	2129.0	2487.0	-	-	-	-
EXP	3922.0	3363.2	2216.8	2166.1	2147.0	2513.0	2762.6*	3390.5*	4314.0*	5910.8*
CHI	0.000	0.041	0.234	1.341	0.151	0.268	-	-	-	-
30-79 OBS	13795.0	11375.0	10871.0	9307.0	8699.0	10234.0	-	-	-	-
EXP	13797.0	11376.3	10874.2	9311.6	8701.6	10247.4	12225.9*	14961.3*	18278.0*	22027.0*
O/E	1.000	1.000	1.000	1.000	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

Hungary COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

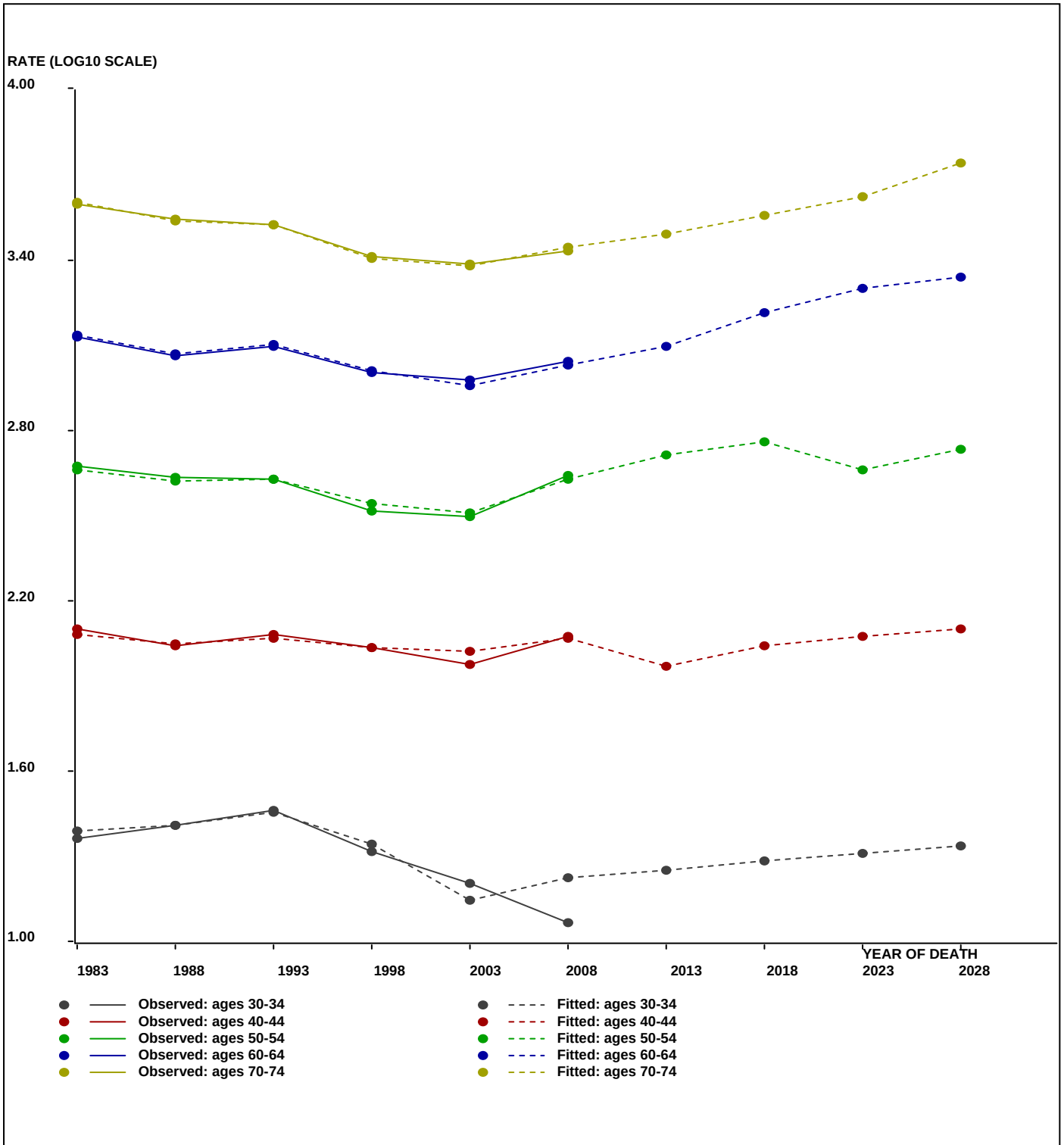


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Hungary COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Hungary COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	17.9	40.5	93.7	260.7	518.9	873.9	1237.9	1939.3	3080.1	4826.1
2016 PRE	19.2	43.4	111.0	209.2	572.7	1063.5	1634.2	2242.7	3619.0	5382.7
2021 PRE	20.5	46.4	118.7	247.8	459.6	1173.8	1988.9	2960.7	4185.0	6324.3
2026 PRE	22.0	49.6	127.0	265.1	544.3	941.9	2195.1	3603.3	5525.0	7313.5

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	35.1	86.2	171.5	407.2	761.2	1437.3	1816.3	2152.0	2596.4	2762.6
2016 PRE	32.6	84.9	233.6	372.9	852.2	1446.8	2419.1	2852.2	3276.5	3390.5
2021 PRE	34.1	79.1	230.3	509.5	783.3	1633.0	2456.6	3830.5	4407.6	4314.0
2026 PRE	32.2	82.6	215.2	503.3	1075.7	1509.0	2799.0	3927.9	5971.4	5910.8

Osmond and Gardner Modelling

Hungary IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	527.25	10.34	51	P, C	93.53	2827.53	0.0000
AGE-PERIOD	251.24	5.58	45	Cohort	86.41	1344.14	0.0000
AGE-COHORT	45.47	1.26	36	Period	24.93	241.26	0.0000
PERIOD-COHORT	61.01	1.53	40	Age	44.05	323.71	0.0000
FULL AGE-PERIOD-COHORT	34.14	1.07	32			181.05	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.891361	77.868349
35	2.239356	173.522556
40	2.453378	284.039065
45	2.675822	474.047556
50	2.870085	741.455108
55	3.115769	1305.477232
60	3.367059	2328.405524
65	3.620745	4175.855467
70	3.881197	7606.715357
75	4.144480	13946.963362

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.037486	1.090149
1986	0.019248	1.045317
1991	0.021456	1.050645
1996	-0.001936	0.995553
2001	-0.026344	0.941144
2006	-0.053640	0.883812

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.039272	0.913540
1911	-0.032430	0.928048
1916	0.016770	1.039369
1921	0.033845	1.081048
1926	0.016680	1.039155
1931	0.031164	1.074396
1936	-0.005522	0.987364
1941	-0.056336	0.878343
1946	-0.079227	0.833246
1951	-0.075151	0.841102
1956	-0.057056	0.876889
1961	-0.123717	0.752113
1966	-0.247502	0.565586
1971	-0.489694	0.323822
1976	-0.733172	0.184854

Osmond and Gardner Modelling

Hungary IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	133.0	164.0	96.0	69.0	45.0	26.0
EXP	148.7	147.1	100.7	69.8	42.7	26.0
CHI	1.7	1.9	0.2	0.0	0.1	0.0
35 - OBS	270.0	305.0	351.0	224.0	138.0	87.0
EXP	287.4	312.1	326.1	214.2	147.9	89.4
CHI	1.0	0.2	1.9	0.4	0.7	0.1
40 - OBS	429.0	425.0	539.0	516.0	335.0	237.0
EXP	473.4	442.3	506.4	505.1	330.8	226.8
CHI	4.2	0.7	2.1	0.2	0.1	0.5
45 - OBS	801.0	689.0	822.0	833.0	762.0	503.0
EXP	857.2	739.6	729.4	793.9	787.8	512.8
CHI	3.7	3.5	11.7	1.9	0.8	0.2
50 - OBS	1343.0	1252.0	1250.0	1097.0	1176.0	1104.0
EXP	1503.1	1244.2	1137.0	1067.4	1152.0	1133.7
CHI	17.1	0.0	11.2	0.8	0.5	0.8
55 - OBS	2598.0	2404.0	2317.0	1908.0	1723.0	1771.0
EXP	2744.6	2426.1	2127.8	1859.4	1729.0	1848.6
CHI	7.8	0.2	16.8	1.3	0.0	3.3
60 - OBS	4033.0	4358.0	4194.0	3468.0	3054.0	2688.0
EXP	4024.3	4384.0	4124.4	3468.5	3018.2	2777.9
CHI	0.0	0.2	1.2	0.0	0.4	2.9
65 - OBS	5289.0	6475.0	7125.0	6589.0	5408.0	4670.0
EXP	5226.6	6274.7	7207.9	6561.5	5507.8	4783.9
CHI	0.7	6.4	1.0	0.1	1.8	2.7
70 - OBS	10521.0	7908.0	9860.0	10845.0	9799.0	8424.0
EXP	10176.2	7669.6	10012.8	10951.4	10086.9	8475.6
CHI	11.7	7.4	2.3	1.0	8.2	0.3
75 - OBS	12220.0	13338.0	10570.0	14132.0	15772.0	14834.0
EXP	12220.0	13693.3	10879.4	14192.7	15419.2	14479.0
CHI	0.0	9.2	8.8	0.3	8.1	8.7

Osmond and Gardner Modelling

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 Projections using parameters Log Transformed

AGE	EFFECT
30	77.868349
35	173.522556
40	284.039065
45	474.047556
50	741.455108
55	1305.477232
60	2328.405524
65	4175.855467
70	7606.715357
75	13946.963362

PERIOD	EFFECT	LOWER	UPPER
% Period Change	93.9083	90.9083	96.9083

1981	1.090149		
1986	1.045317		
1991	1.050645		
1996	0.995553		
2001	0.941144		
2006	0.883812		
2011	0.829973	0.803458	0.856487
2016	0.779413	0.730410	0.830007
2021	0.731934	0.664004	0.804346
2026	0.687347	0.603635	0.779478

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.913540	1.000000	
1911	0.928048	2.000000	
1916	1.039369	4.000000	
1921	1.081048	8.000000	
1926	1.039155	16.000000	
1931	1.074396	32.000000	
1936	0.987364	64.000000	
1941	0.878343	128.000000	
1946	0.833246	256.000000	
1951	0.841102	512.000000	
1956	0.876889	1024.000000	
1961	0.752113	2048.000000	
1966	0.565586	4096.000000	
1971	0.323822	8192.000000	
1976	0.288920	EXTRAPOLATION	0.184854
1981	0.226980	EXTRAPOLATION	
1986	0.178318	EXTRAPOLATION	
1991	0.140089	EXTRAPOLATION	
1996	0.110056	EXTRAPOLATION	

Osmond and Gardner Modelling

**Hungary IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	63.9	79.6	58.7	43.3	25.0	12.7	-	-	-	-
	EXP	71.4	71.4	61.5	43.8	23.7	19.9	14.7*	10.8*	8.0*	5.9*
	Elow							14.2	10.1	7.2	5.2
	Eup							15.1	11.5	8.8	6.7
35	OBS	148.1	149.1	172.1	135.9	86.2	48.3	-	-	-	-
	EXP	157.6	152.6	159.9	129.9	92.4	49.7	41.6*	30.7*	22.6*	16.7*
	Elow							40.3	28.8	20.5	14.7
	Eup							42.9	32.7	24.9	18.9
40	OBS	246.4	237.7	267.1	253.3	203.6	148.4	-	-	-	-
	EXP	272.0	247.4	251.0	248.0	201.1	142.0	76.3*	64.0*	47.2*	34.8*
	Elow							73.9	59.9	42.8	30.6
	Eup							78.8	68.1	51.9	39.5
45	OBS	476.8	405.5	467.7	416.5	378.4	309.1	-	-	-	-
	EXP	510.3	435.2	415.0	396.9	391.2	315.1	222.5*	119.6*	100.2*	74.0*
	Elow							215.4	112.1	90.9	65.0
	Eup							229.6	127.4	110.2	83.9
50	OBS	775.9	770.1	752.2	632.1	599.1	559.6	-	-	-	-
	EXP	868.4	765.3	684.2	615.1	586.9	574.6	462.8*	326.9*	175.7*	147.2*
	Elow							448.1	306.3	159.4	129.3
	Eup							477.6	348.1	193.1	167.0
55	OBS	1399.9	1452.8	1474.7	1171.4	1020.2	929.7	-	-	-	-
	EXP	1478.9	1466.2	1354.3	1141.6	1023.8	970.5	950.1*	765.3*	540.4*	290.6*
	Elow							919.8	717.2	490.3	255.2
	Eup							980.5	815.0	593.9	329.5
60	OBS	2750.0	2514.2	2672.7	2288.4	1947.6	1659.2	-	-	-	-
	EXP	2744.0	2529.2	2628.3	2288.8	1924.8	1714.7	1625.4*	1591.4*	1281.8*	905.2*
	Elow							1573.5	1491.3	1162.8	794.9
	Eup							1677.4	1694.7	1408.6	1026.5
65	OBS	4788.1	4869.5	4506.7	4485.3	3810.1	3164.5	-	-	-	-
	EXP	4731.5	4718.9	4559.1	4466.6	3880.4	3241.7	2887.9*	2737.6*	2680.2*	2158.8*
	Elow							2795.6	2565.4	2431.4	1895.8
	Eup							2980.2	2915.3	2945.3	2448.1
70	OBS	7956.6	8521.4	8507.8	7792.9	7472.1	6597.5	-	-	-	-
	EXP	7695.8	8264.5	8639.7	7869.4	7691.6	6638.0	5545.3*	4940.1*	4682.9*	4584.8*
	Elow							5368.2	4629.5	4248.3	4026.4
	Eup							5722.5	5260.8	5146.2	5199.3
75	OBS	13889.7	13179.0	14797.1	14946.1	13952.1	13568.2	-	-	-	-
	EXP	13889.7	13530.0	15230.2	15010.3	13640.1	13243.5	11429.3*	9548.0*	8506.0*	8063.1*
	Elow							11064.2	8947.7	7716.6	7081.1
	Eup							11794.5	10167.8	9347.5	9143.9
30-79	OBS	1907.8	1894.2	1952.4	1819.1	1644.8	1472.9	-	-	-	-
	EXP	1919.0	1888.6	1943.4	1815.0	1649.3	1481.3	1283.6*	1114.2*	980.2*	849.7*
	Elow							1242.6	1044.1	889.2	746.2
	Eup							1324.6	1186.5	1077.1	963.6

Osmond and Gardner Modelling

**Hungary IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

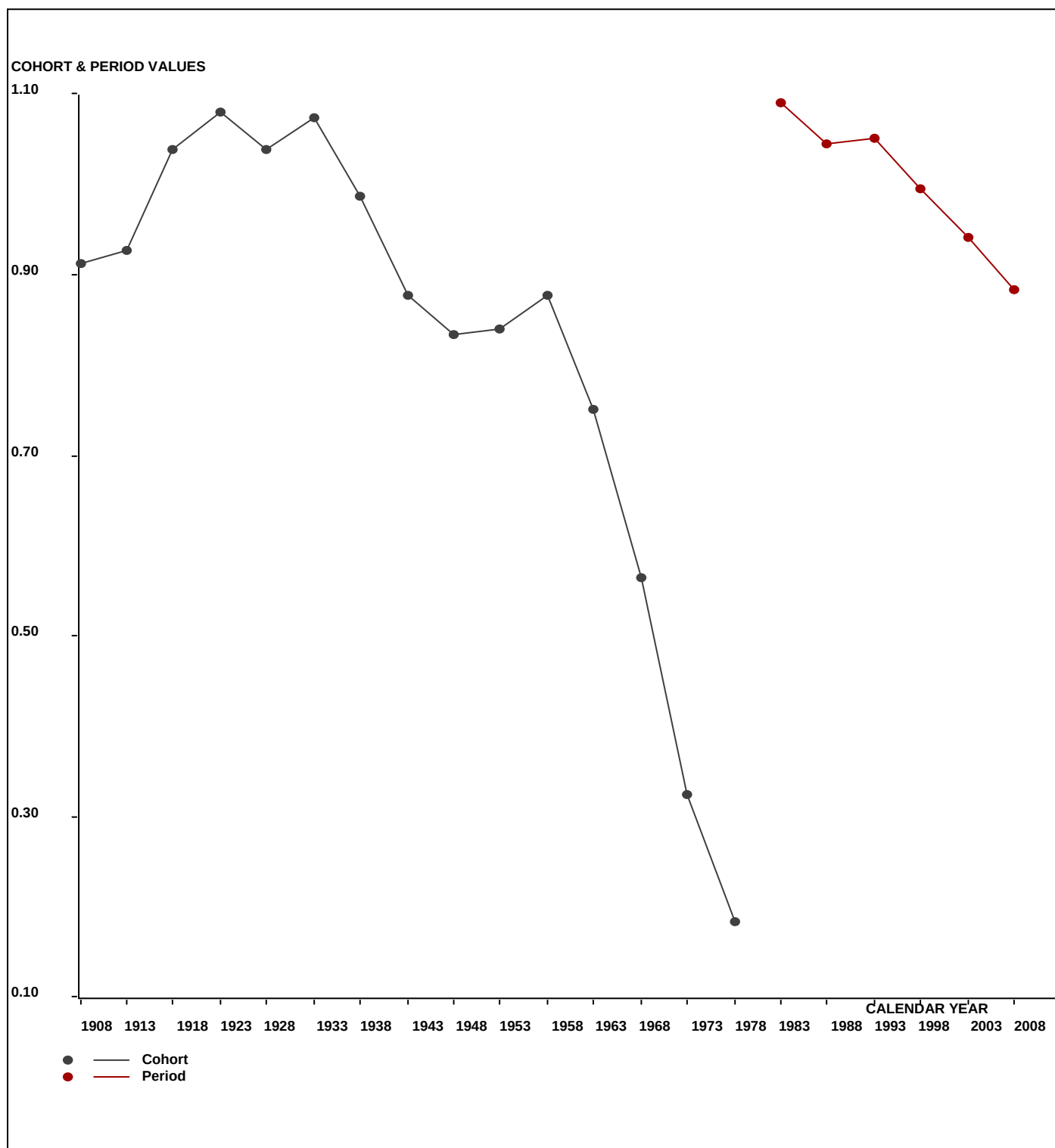
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	133.0	164.0	96.0	69.0	45.0	26.0	-	-	-	-
	EXP	148.7	147.1	100.7	69.8	42.7	40.6	27.5*	17.8*	12.8*	8.3*
	CHI	1.662	1.948	0.217	0.010	0.127	5.272	-	-	-	-
35 -	OBS	270.0	305.0	351.0	224.0	138.0	87.0	-	-	-	-
	EXP	287.4	312.1	326.1	214.2	147.9	89.4	85.3*	58.0*	37.4*	27.0*
	CHI	1.049	0.162	1.897	0.448	0.664	0.066	-	-	-	-
40 -	OBS	429.0	425.0	539.0	516.0	335.0	237.0	-	-	-	-
	EXP	473.4	442.3	506.4	505.1	330.8	226.8	137.2*	131.0*	89.1*	57.6*
	CHI	4.170	0.677	2.095	0.234	0.054	0.457	-	-	-	-
45 -	OBS	801.0	689.0	822.0	833.0	762.0	503.0	-	-	-	-
	EXP	857.2	739.6	729.4	793.9	787.8	512.8	352.5*	213.1*	203.8*	138.6*
	CHI	3.681	3.462	11.746	1.921	0.846	0.187	-	-	-	-
50 -	OBS	1343.0	1252.0	1250.0	1097.0	1176.0	1104.0	-	-	-	-
	EXP	1503.1	1244.2	1137.0	1067.4	1152.0	1133.7	739.1*	508.6*	308.0*	294.9*
	CHI	17.057	0.050	11.226	0.822	0.499	0.776	-	-	-	-
55 -	OBS	2598.0	2404.0	2317.0	1908.0	1723.0	1771.0	-	-	-	-
	EXP	2744.6	2426.1	2127.8	1859.4	1729.0	1848.6	1819.7*	1187.8*	819.9*	497.3*
	CHI	7.828	0.202	16.820	1.269	0.021	3.256	-	-	-	-
60 -	OBS	4033.0	4358.0	4194.0	3468.0	3054.0	2688.0	-	-	-	-
	EXP	4024.3	4384.0	4124.4	3468.5	3018.2	2777.9	2968.5*	2924.0*	1915.7*	1327.0*
	CHI	0.019	0.154	1.174	0.000	0.424	2.910	-	-	-	-
65 -	OBS	5289.0	6475.0	7125.0	6589.0	5408.0	4670.0	-	-	-	-
	EXP	5226.6	6274.7	7207.9	6561.5	5507.8	4783.9	4398.3*	4707.8*	4652.1*	3060.5*
	CHI	0.746	6.394	0.953	0.115	1.810	2.710	-	-	-	-
70 -	OBS	10521.0	7908.0	9860.0	10845.0	9799.0	8424.0	-	-	-	-
	EXP	10176.2	7669.6	10012.8	10951.4	10086.9	8475.6	7423.7*	6832.1*	7369.0*	7306.1*
	CHI	11.685	7.414	2.332	1.034	8.215	0.315	-	-	-	-
75 -	OBS	12220.0	13338.0	10570.0	14132.0	15772.0	14834.0	-	-	-	-
	EXP	12220.0	13693.3	10879.4	14192.7	15419.2	14479.0	12293.3*	10868.0*	10059.3*	10978.3*
	CHI	0.000	9.217	8.798	0.259	8.070	8.704	-	-	-	-
30-79	OBS	37637.0	37318.0	37124.0	39681.0	38212.0	34344.0	-	-	-	-
	EXP	37661.4	37332.8	37152.0	39684.0	38222.4	34368.3	30245.1*	27448.2*	25467.0*	23695.8*
	O/E	0.999	1.000	0.999	1.000	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

Hungary IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

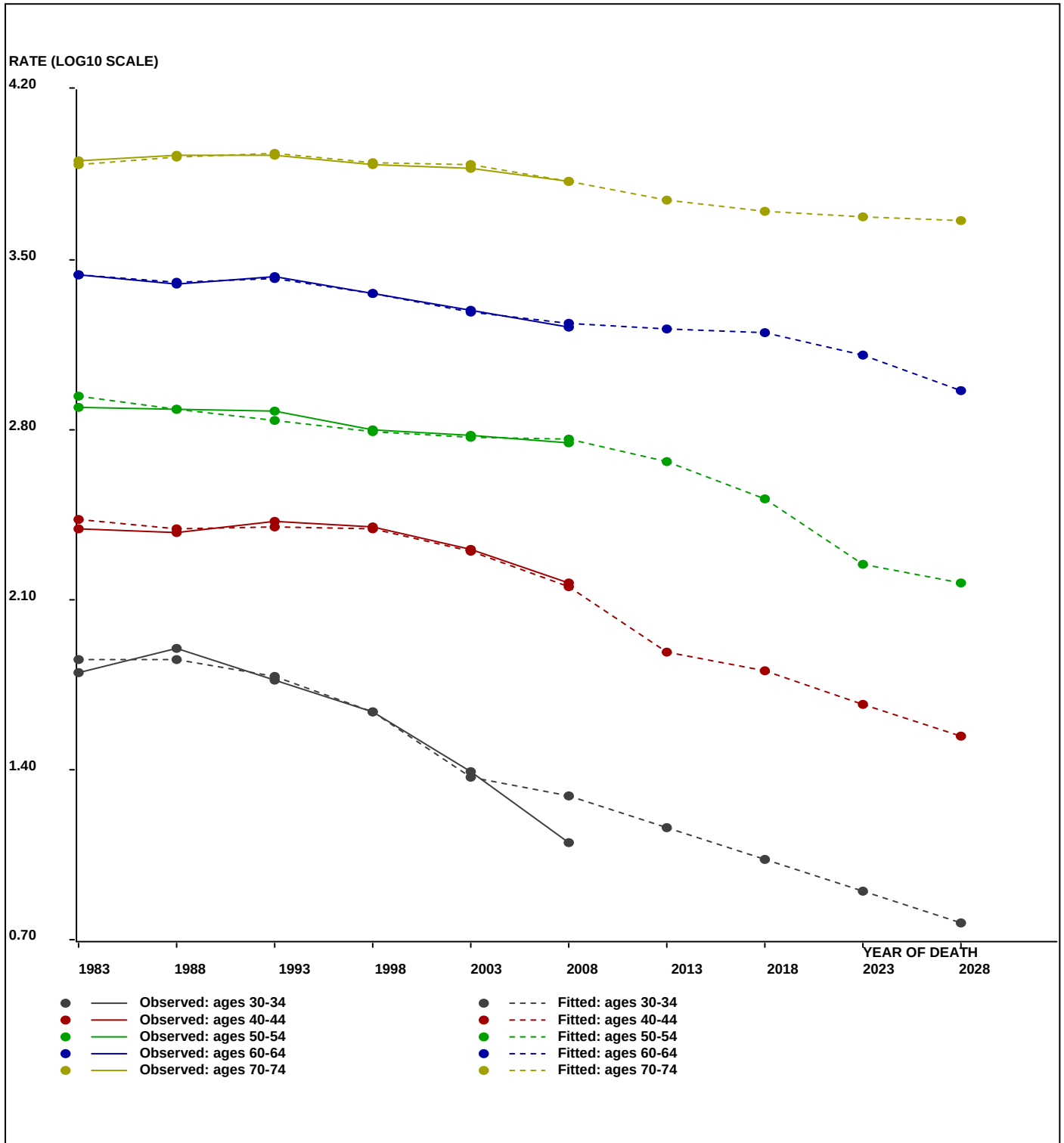


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Hungary IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Hungary IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	14.7	41.6	76.3	222.5	462.8	950.1	1625.4	2887.9	5545.3	11429.3
2016	PRE	10.8	30.7	64.0	119.6	326.9	765.3	1591.4	2737.6	4940.1	9548.0
2021	PRE	8.0	22.6	47.2	100.2	175.7	540.4	1281.8	2680.2	4682.9	8506.0
2026	PRE	5.9	16.7	34.8	74.0	147.2	290.6	905.2	2158.8	4584.8	8063.1

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	27.5	85.3	137.2	352.5	739.1	1819.7	2968.5	4398.3	7423.7	12293.3
2016	PRE	17.8	58.0	131.0	213.1	508.6	1187.8	2924.0	4707.8	6832.1	10868.0
2021	PRE	12.8	37.4	89.1	203.8	308.0	819.9	1915.7	4652.1	7369.0	10059.3
2026	PRE	8.3	27.0	57.6	138.6	294.9	497.3	1327.0	3060.5	7306.1	10978.3

Osmond and Gardner Modelling

Hungary Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	2972.10	58.28	51	P, C	99.39	16133.78	0.0000
AGE-PERIOD	65.95	1.47	45	Cohort	72.41	350.15	0.0000
AGE-COHORT	102.10	2.84	36	Period	82.18	541.94	0.0000
PERIOD-COHORT	22.31	0.56	40	Age	18.44	118.32	0.0000
FULL AGE-PERIOD-COHORT	18.20	0.57	32			96.51	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.830033	67.613434
35	2.126617	133.849688
40	2.391885	246.538786
45	2.597062	395.423195
50	2.786075	611.047160
55	2.986105	968.512188
60	3.227379	1688.025356
65	3.501585	3173.840025
70	3.790563	6173.948252
75	4.062616	11550.894875

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.126773	1.338975
1986	0.069856	1.174509
1991	0.020284	1.047813
1996	-0.037183	0.917947
2001	-0.110669	0.775052
2006	-0.260025	0.549510

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.025981	1.061650
1911	0.004658	1.010784
1916	0.031330	1.074807
1921	0.027197	1.064625
1926	-0.008877	0.979767
1931	-0.002830	0.993506
1936	-0.041387	0.909102
1941	-0.059722	0.871521
1946	-0.061454	0.868052
1951	-0.046253	0.898974
1956	-0.030475	0.932235
1961	-0.038451	0.915269
1966	-0.172289	0.672529
1971	-0.272282	0.534217
1976	-0.236980	0.579456

Osmond and Gardner Modelling

Hungary Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	173.0	163.0	96.0	64.0	48.0	44.0
EXP	169.5	152.5	106.1	66.5	50.3	44.0
CHI	0.1	0.7	1.0	0.1	0.1	0.0
35 - OBS	277.0	279.0	286.0	188.0	103.0	73.0
EXP	283.6	289.1	266.7	185.4	111.7	70.8
CHI	0.2	0.4	1.4	0.0	0.7	0.1
40 - OBS	431.0	465.0	512.0	429.0	281.0	156.0
EXP	500.8	449.4	468.5	429.8	287.7	145.6
CHI	9.7	0.5	4.0	0.0	0.2	0.8
45 - OBS	732.0	681.0	655.0	673.0	597.0	337.0
EXP	808.6	687.8	632.2	652.7	575.3	323.6
CHI	7.3	0.1	0.8	0.6	0.8	0.6
50 - OBS	1353.0	1101.0	976.0	872.0	822.0	563.0
EXP	1406.9	1060.7	927.3	845.0	835.7	617.5
CHI	2.1	1.5	2.6	0.9	0.2	4.8
55 - OBS	2246.0	1931.0	1517.0	1322.0	1063.0	864.0
EXP	2358.0	1870.1	1449.6	1262.1	1100.5	911.4
CHI	5.3	2.0	3.1	2.8	1.3	2.5
60 - OBS	3577.0	3326.0	2745.0	2222.0	1726.0	1281.0
EXP	3529.0	3367.0	2757.5	2134.8	1788.0	1304.4
CHI	0.7	0.5	0.1	3.6	2.1	0.4
65 - OBS	5041.0	5387.0	5142.0	4187.0	3120.0	2264.0
EXP	5045.5	5277.1	5151.3	4252.1	3174.2	2243.1
CHI	0.0	2.3	0.0	1.0	0.9	0.2
70 - OBS	11305.0	7308.0	7876.0	7648.0	6156.0	3865.0
EXP	11049.0	7232.8	7981.8	7727.4	6234.5	3938.1
CHI	5.9	0.8	1.4	0.8	1.0	1.4
75 - OBS	14446.0	13617.0	9221.0	10619.0	10151.0	7039.0
EXP	14446.0	13878.4	9292.4	10673.4	9915.5	6894.4
CHI	0.0	4.9	0.5	0.3	5.6	3.0

Osmond and Gardner Modelling

Hungary Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	67.613434
35	133.849688
40	246.538786
45	395.423195
50	611.047160
55	968.512188
60	1688.025356
65	3173.840025
70	6173.948252
75	11550.894875

PERIOD	EFFECT	LOWER	UPPER
% Period Change	70.8997	67.8997	73.8997
1981	1.338975		
1986	1.174509		
1991	1.047813		
1996	0.917947		
2001	0.775052		
2006	0.549510		
2011	0.389601	0.373116	0.406086
2016	0.276226	0.253344	0.300096
2021	0.195843	0.172020	0.221770
2026	0.138852	0.116801	0.163888

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.061650	1.000000	
1911	1.010784	2.000000	
1916	1.074807	4.000000	
1921	1.064625	8.000000	
1926	0.979767	16.000000	
1931	0.993506	32.000000	
1936	0.909102	64.000000	
1941	0.871521	128.000000	
1946	0.868052	256.000000	
1951	0.898974	512.000000	
1956	0.932235	1024.000000	
1961	0.915269	2048.000000	
1966	0.672529	4096.000000	
1971	0.534217	8192.000000	
1976	0.494751	EXTRAPOLATION	0.579456
1981	0.432549	EXTRAPOLATION	
1986	0.378168	EXTRAPOLATION	
1991	0.330623	EXTRAPOLATION	
1996	0.289056	EXTRAPOLATION	

Osmond and Gardner Modelling

**Hungary Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	83.1	79.1	58.7	40.2	26.7	21.5	-	-	-	-
	EXP	81.4	74.0	64.8	41.7	28.0	18.4	11.4*	7.1*	4.4*	2.7*
	Elow							10.9	6.5	3.8	2.3
	Eup							11.9	7.7	5.0	3.2
35	OBS	151.9	136.4	140.2	114.0	64.3	40.5	-	-	-	-
	EXP	155.6	141.3	130.7	112.5	69.8	39.3	25.8*	16.0*	9.9*	6.1*
	Elow							24.7	14.7	8.7	5.2
	Eup							26.9	17.4	11.2	7.3
40	OBS	247.6	260.1	253.8	210.6	170.8	97.7	-	-	-	-
	EXP	287.7	251.4	232.2	211.0	174.9	91.1	51.3*	33.7*	20.9*	12.9*
	Elow							49.1	30.9	18.3	10.9
	Eup							53.5	36.6	23.6	15.3
45	OBS	435.7	400.8	372.7	336.5	296.5	207.1	-	-	-	-
	EXP	481.3	404.8	359.7	326.3	285.7	198.9	103.6*	58.4*	38.3*	23.7*
	Elow							99.2	53.5	33.7	20.0
	Eup							108.0	63.4	43.4	28.0
50	OBS	781.7	677.2	587.3	502.5	418.8	285.4	-	-	-	-
	EXP	812.9	652.4	558.0	486.9	425.7	313.0	217.9*	113.5*	63.9*	42.0*
	Elow							208.7	104.1	56.2	35.3
	Eup							227.1	123.3	72.4	49.5
55	OBS	1210.2	1166.9	965.5	811.6	629.4	453.6	-	-	-	-
	EXP	1270.6	1130.1	922.6	774.8	651.6	478.4	351.8*	244.9*	127.6*	71.8*
	Elow							336.9	224.6	112.0	60.4
	Eup							366.6	266.0	144.5	84.8
60	OBS	2439.0	1918.9	1749.3	1466.2	1100.7	790.7	-	-	-	-
	EXP	2406.3	1942.5	1757.2	1408.7	1140.2	805.2	591.2*	434.7*	302.6*	157.6*
	Elow							566.2	398.7	265.8	132.6
	Eup							616.2	472.2	342.6	186.1
65	OBS	4563.5	4051.3	3252.4	2850.2	2198.1	1534.1	-	-	-	-
	EXP	4567.6	3968.6	3258.3	2894.5	2236.3	1520.0	1073.4*	788.1*	579.5*	403.4*
	Elow							1028.0	722.8	509.0	339.3
	Eup							1118.8	856.2	656.2	476.1
70	OBS	8549.5	7874.9	6795.9	5495.7	4694.2	3027.0	-	-	-	-
	EXP	8355.9	7793.8	6887.2	5552.7	4754.1	3084.3	2096.3*	1480.4*	1087.0*	799.2*
	Elow							2007.6	1357.7	954.7	672.3
	Eup							2185.0	1608.3	1230.9	943.3
75	OBS	16419.9	13454.7	12908.6	11230.8	8979.7	6438.4	-	-	-	-
	EXP	16419.9	13712.9	13008.6	11288.3	8771.4	6306.1	4091.2*	2780.7*	1963.7*	1441.8*
	Elow							3918.1	2550.4	1724.8	1212.9
	Eup							4264.3	3021.0	2223.6	1701.8
30-79	OBS	1965.4	1712.9	1520.8	1290.5	1035.5	715.2	-	-	-	-
	EXP	1973.9	1706.2	1517.3	1286.4	1040.9	717.6	485.5*	334.5*	231.8*	158.7*
	Elow							464.9	306.8	203.6	133.5
	Eup							506.0	363.4	262.4	187.3

Osmond and Gardner Modelling

**Hungary Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

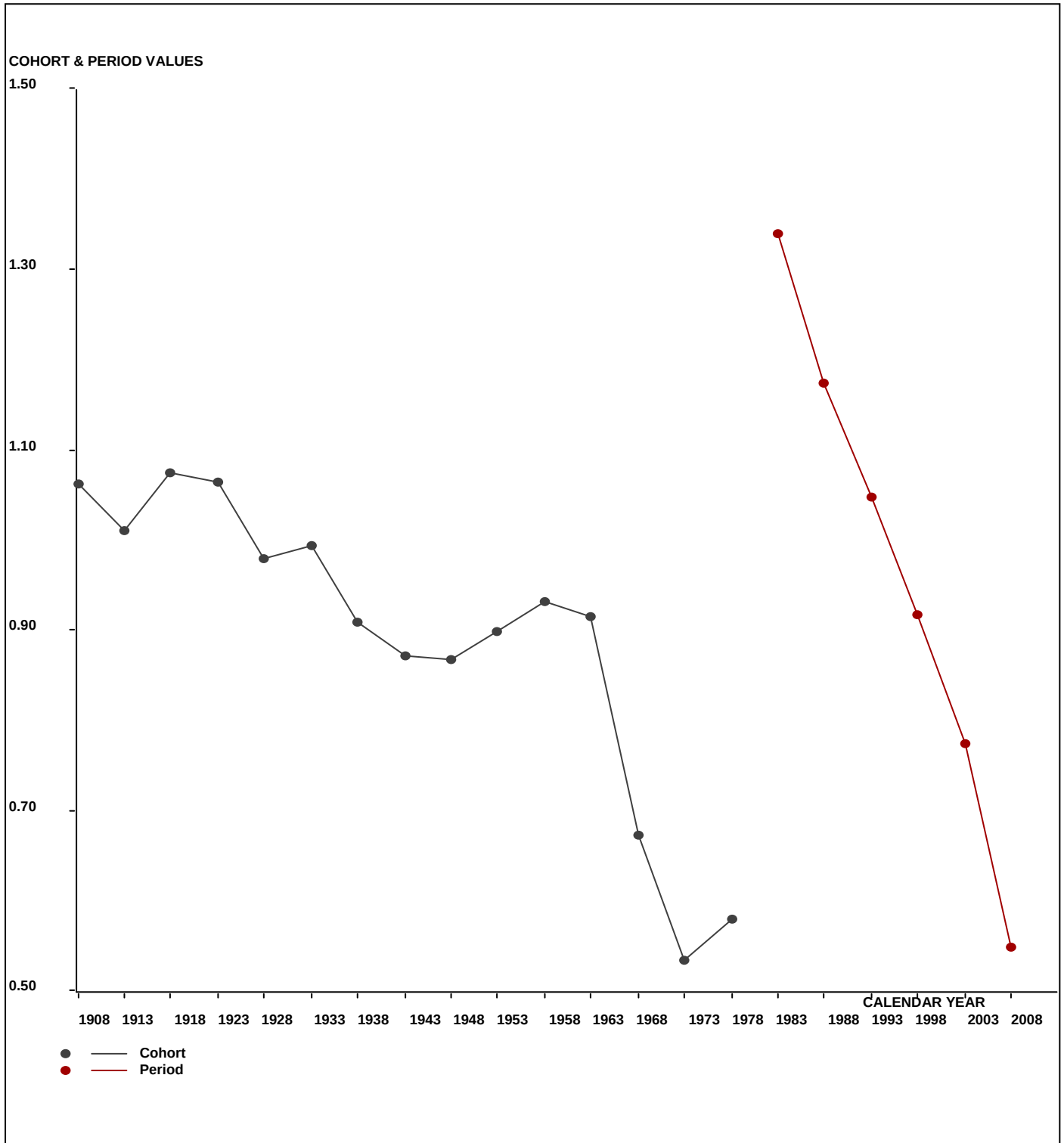
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	173.0	163.0	96.0	64.0	48.0	44.0	-	-	-	-
	EXP	169.5	152.5	106.1	66.5	50.3	37.6	21.4*	11.6*	7.0*	3.8*
	CHI	0.071	0.717	0.960	0.093	0.108	1.101	-	-	-	-
35 -	OBS	277.0	279.0	286.0	188.0	103.0	73.0	-	-	-	-
	EXP	283.6	289.1	266.7	185.4	111.7	70.8	52.9*	30.2*	16.4*	9.9*
	CHI	0.155	0.354	1.393	0.036	0.681	0.071	-	-	-	-
40 -	OBS	431.0	465.0	512.0	429.0	281.0	156.0	-	-	-	-
	EXP	500.8	449.4	468.5	429.8	287.7	145.6	92.2*	69.0*	39.4*	21.4*
	CHI	9.729	0.543	4.030	0.001	0.158	0.750	-	-	-	-
45 -	OBS	732.0	681.0	655.0	673.0	597.0	337.0	-	-	-	-
	EXP	808.6	687.8	632.2	652.7	575.3	323.6	164.1*	103.9*	77.9*	44.5*
	CHI	7.255	0.067	0.825	0.634	0.816	0.552	-	-	-	-
50 -	OBS	1353.0	1101.0	976.0	872.0	822.0	563.0	-	-	-	-
	EXP	1406.9	1060.7	927.3	845.0	835.7	617.5	348.0*	176.6*	112.0*	84.1*
	CHI	2.068	1.529	2.562	0.866	0.223	4.818	-	-	-	-
55 -	OBS	2246.0	1931.0	1517.0	1322.0	1063.0	864.0	-	-	-	-
	EXP	2358.0	1870.1	1449.6	1262.1	1100.5	911.4	673.7*	380.0*	193.5*	123.0*
	CHI	5.318	1.984	3.139	2.846	1.277	2.461	-	-	-	-
60 -	OBS	3577.0	3326.0	2745.0	2222.0	1726.0	1281.0	-	-	-	-
	EXP	3529.0	3367.0	2757.5	2134.8	1788.0	1304.4	1079.7*	798.7*	452.2*	231.1*
	CHI	0.653	0.498	0.057	3.564	2.148	0.421	-	-	-	-
65 -	OBS	5041.0	5387.0	5142.0	4187.0	3120.0	2264.0	-	-	-	-
	EXP	5045.5	5277.1	5151.3	4252.1	3174.2	2243.1	1634.7*	1355.4*	1005.8*	571.8*
	CHI	0.004	2.290	0.017	0.997	0.925	0.195	-	-	-	-
70 -	OBS	11305.0	7308.0	7876.0	7648.0	6156.0	3865.0	-	-	-	-
	EXP	11049.0	7232.8	7981.8	7727.4	6234.5	3938.1	2806.5*	2047.3*	1710.4*	1273.5*
	CHI	5.929	0.782	1.403	0.815	0.989	1.358	-	-	-	-
75 -	OBS	14446.0	13617.0	9221.0	10619.0	10151.0	7039.0	-	-	-	-
	EXP	14446.0	13878.4	9292.4	10673.4	9915.5	6894.4	4400.4*	3165.2*	2322.3*	1963.1*
	CHI	0.000	4.923	0.549	0.278	5.591	3.033	-	-	-	-
30-79	OBS	39581.0	34258.0	29026.0	28224.0	24067.0	16486.0	-	-	-	-
	EXP	39597.0	34264.8	29033.4	28229.0	24073.5	16486.5	11273.6*	8138.0*	5937.0*	4326.3*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Hungary Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

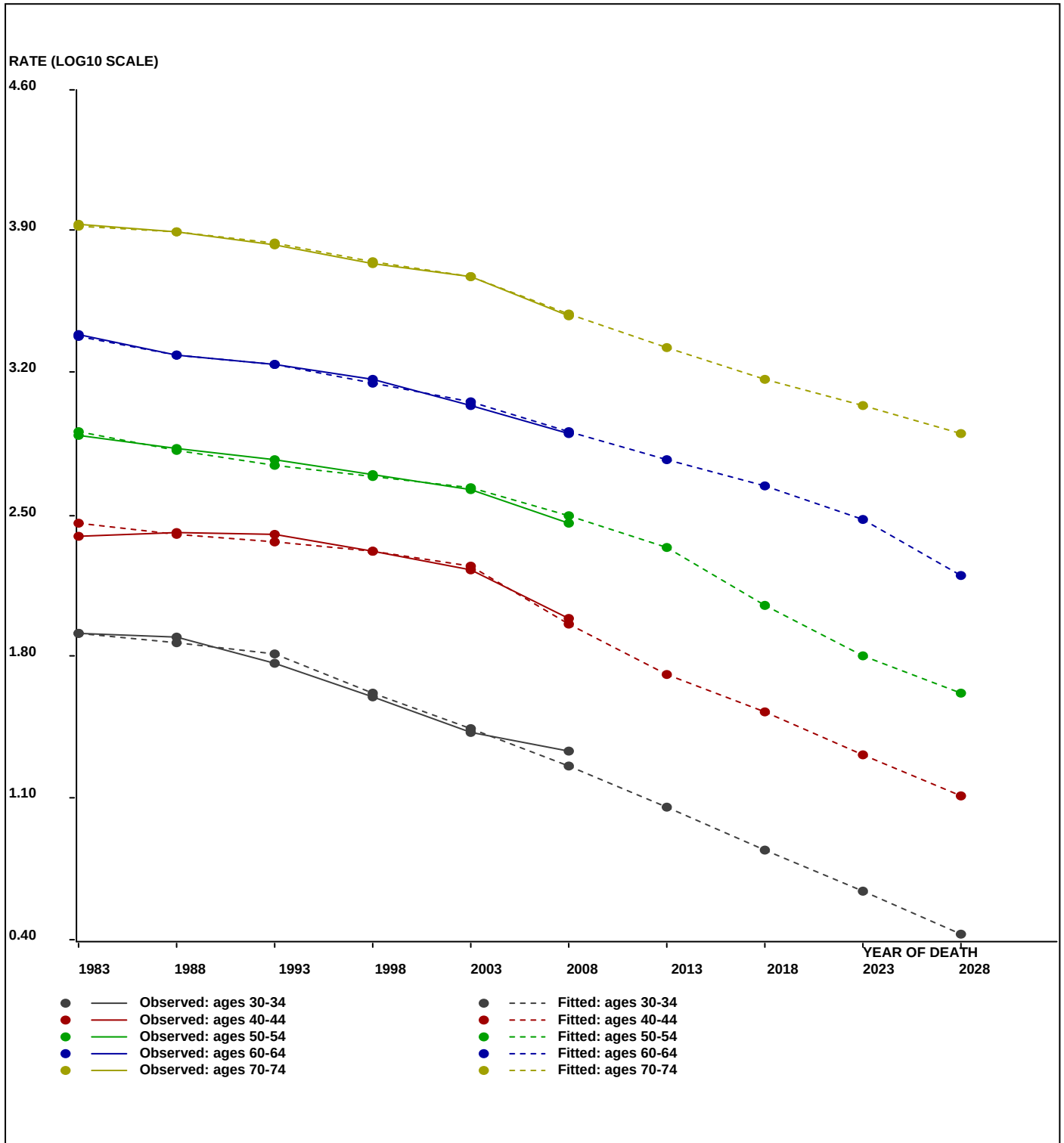


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Hungary Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Hungary Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	11.4	25.8	51.3	103.6	217.9	351.8	591.2	1073.4	2096.3	4091.2
2016	PRE	7.1	16.0	33.7	58.4	113.5	244.9	434.7	788.1	1480.4	2780.7
2021	PRE	4.4	9.9	20.9	38.3	63.9	127.6	302.6	579.5	1087.0	1963.7
2026	PRE	2.7	6.1	12.9	23.7	42.0	71.8	157.6	403.4	799.2	1441.8

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	21.4	52.9	92.2	164.1	348.0	673.7	1079.7	1634.7	2806.5	4400.4
2016	PRE	11.6	30.2	69.0	103.9	176.6	380.0	798.7	1355.4	2047.3	3165.2
2021	PRE	7.0	16.4	39.4	77.9	112.0	193.5	452.2	1005.8	1710.4	2322.3
2026	PRE	3.8	9.9	21.4	44.5	84.1	123.0	231.1	571.8	1273.5	1963.1

Osmond and Gardner Modelling

Hungary Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	731.67	14.35	51	P, C	99.32	3967.56	0.0000
AGE-PERIOD	138.78	3.08	45	Cohort	96.40	744.90	0.0000
AGE-COHORT	31.21	0.87	36	Period	84.00	165.71	0.0000
PERIOD-COHORT	38.51	0.96	40	Age	87.03	204.85	0.0000
FULL AGE-PERIOD-COHORT	4.99	0.16	32			26.48	0.7420

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.171699	14.849070
35	1.659293	45.634417
40	2.049065	111.960413
45	2.347087	222.375638
50	2.580888	380.967667
55	2.767407	585.338510
60	2.921199	834.063344
65	3.028872	1068.739956
70	3.126259	1337.393037
75	3.182235	1521.369683

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.160062	0.691732
1986	-0.073082	0.845120
1991	-0.003956	0.990932
1996	0.030121	1.071817
2001	0.032138	1.076807
2006	0.050990	1.124580

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.068374	0.854331
1911	-0.121461	0.756031
1916	-0.085759	0.820807
1921	-0.096825	0.800156
1926	-0.119506	0.759441
1931	-0.067373	0.856302
1936	-0.045340	0.900866
1941	-0.004374	0.989980
1946	0.097147	1.250682
1951	0.182274	1.521506
1956	0.261777	1.827162
1961	0.219584	1.657999
1966	0.017926	1.042140
1971	-0.114879	0.767576
1976	-0.277841	0.527423

Osmond and Gardner Modelling

Hungary Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	34.0	44.0	42.0	26.0	22.0	18.0
EXP	32.6	47.2	39.9	26.4	22.1	18.0
CHI	0.1	0.2	0.1	0.0	0.0	0.0
35 - OBS	74.0	118.0	165.0	139.0	80.0	71.0
EXP	72.0	120.0	168.6	133.7	82.0	70.9
CHI	0.1	0.0	0.1	0.2	0.0	0.0
40 - OBS	144.0	203.0	347.0	441.0	323.0	212.0
EXP	133.5	211.6	340.6	446.7	328.9	209.6
CHI	0.8	0.3	0.1	0.1	0.1	0.0
45 - OBS	256.0	319.0	488.0	719.0	858.0	673.0
EXP	232.8	316.2	484.4	725.3	881.1	674.7
CHI	2.3	0.0	0.0	0.1	0.6	0.0
50 - OBS	383.0	482.0	618.0	871.0	1205.0	1579.0
EXP	390.6	471.6	621.0	886.2	1225.1	1544.4
CHI	0.1	0.2	0.0	0.3	0.3	0.8
55 - OBS	567.0	711.0	821.0	1009.0	1307.0	1928.0
EXP	570.7	700.9	821.0	1011.7	1331.4	1907.8
CHI	0.0	0.1	0.0	0.0	0.4	0.2
60 - OBS	623.0	937.0	1147.0	1191.0	1387.0	1942.0
EXP	677.0	927.9	1110.6	1220.5	1394.2	1900.5
CHI	4.3	0.1	1.2	0.7	0.0	0.9
65 - OBS	670.0	978.0	1207.0	1456.0	1503.0	1755.0
EXP	670.3	961.0	1271.6	1441.0	1471.5	1755.9
CHI	0.0	0.3	3.3	0.2	0.7	0.0
70 - OBS	949.0	849.0	1237.0	1527.0	1622.0	1692.0
EXP	924.8	860.9	1229.0	1515.0	1617.2	1730.0
CHI	0.6	0.2	0.1	0.1	0.0	0.8
75 - OBS	791.0	959.0	896.0	1260.0	1451.0	1541.0
EXP	791.0	983.8	883.9	1233.7	1406.4	1601.7
CHI	0.0	0.6	0.2	0.6	1.4	2.3

Osmond and Gardner Modelling

Hungary Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	14.849070
35	45.634417
40	111.960413
45	222.375638
50	380.967667
55	585.338510
60	834.063344
65	1068.739956
70	1337.393037
75	1521.369683

PERIOD	EFFECT	LOWER	UPPER
% Period Change	104.4366	101.4366	107.4366

1981	0.691732		
1986	0.845120		
1991	0.990932		
1996	1.071817		
2001	1.076807		
2006	1.124580		
2011	1.174473	1.140736	1.208210
2016	1.226579	1.157123	1.298060
2021	1.280998	1.173746	1.394591
2026	1.337830	1.190608	1.498301

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.854331	1.000000	
1911	0.756031	2.000000	
1916	0.820807	4.000000	
1921	0.800156	8.000000	
1926	0.759441	16.000000	
1931	0.856302	32.000000	
1936	0.900866	64.000000	
1941	0.989980	128.000000	
1946	1.250682	256.000000	
1951	1.521506	512.000000	
1956	1.827162	1024.000000	
1961	1.657999	2048.000000	
1966	1.042140	4096.000000	
1971	0.767576	8192.000000	
1976	0.724293	EXTRAPOLATION	0.527423
1981	0.618134	EXTRAPOLATION	
1986	0.527535	EXTRAPOLATION	
1991	0.450215	EXTRAPOLATION	
1996	0.384228	EXTRAPOLATION	

Osmond and Gardner Modelling

**Hungary Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	16.3	21.4	25.7	16.3	12.2	8.8	-	-	-	-
	EXP	15.6	22.9	24.4	16.6	12.3	12.1	10.8*	9.6*	8.6*	7.6*
	Elow							10.5	9.1	7.8	6.8
	Eup							11.1	10.2	9.3	8.5
35	OBS	40.6	57.7	80.9	84.3	50.0	39.4	-	-	-	-
	EXP	39.5	58.7	82.6	81.1	51.2	39.4	38.8*	34.6*	30.8*	27.5*
	Elow							37.7	32.6	28.3	24.5
	Eup							39.9	36.6	33.6	30.8
40	OBS	82.7	113.5	172.0	216.5	196.3	132.7	-	-	-	-
	EXP	76.7	118.3	168.8	219.3	199.9	131.2	100.9*	99.5*	88.7*	79.0*
	Elow							98.0	93.8	81.2	70.3
	Eup							103.8	105.3	96.5	88.5
45	OBS	152.4	187.7	277.6	359.5	426.1	413.6	-	-	-	-
	EXP	138.6	186.1	275.6	362.6	437.5	414.6	272.2*	209.4*	206.3*	183.9*
	Elow							264.4	197.5	189.0	163.7
	Eup							280.0	221.6	224.6	206.0
50	OBS	221.3	296.5	371.9	501.9	613.9	800.4	-	-	-	-
	EXP	225.7	290.0	373.7	510.7	624.2	782.8	741.8*	487.0*	374.6*	369.2*
	Elow							720.5	459.4	343.2	328.5
	Eup							763.2	515.4	407.8	413.4
55	OBS	305.5	429.7	522.5	619.5	773.9	1012.2	-	-	-	-
	EXP	307.5	423.6	522.5	621.1	788.3	1001.5	1256.1*	1190.4*	781.4*	601.1*
	Elow							1220.0	1123.0	716.0	534.9
	Eup							1292.2	1259.8	850.7	673.2
60	OBS	424.8	540.6	730.9	785.9	884.5	1198.7	-	-	-	-
	EXP	461.6	535.3	707.7	805.3	889.1	1173.1	1490.4*	1869.3*	1771.5*	1162.9*
	Elow							1447.6	1763.4	1623.1	1034.9
	Eup							1533.3	1978.2	1928.5	1302.3
65	OBS	606.5	735.5	763.5	991.1	1058.9	1189.2	-	-	-	-
	EXP	606.8	722.7	804.3	980.9	1036.7	1189.8	1569.9*	1994.5*	2501.5*	2370.6*
	Elow							1524.8	1881.6	2292.0	2109.7
	Eup							1615.0	2110.8	2723.3	2654.9
70	OBS	717.7	914.9	1067.4	1097.3	1236.8	1325.1	-	-	-	-
	EXP	699.4	927.7	1060.4	1088.6	1233.2	1354.9	1555.0*	2051.6*	2606.6*	3269.2*
	Elow							1510.3	1935.5	2388.4	2909.4
	Eup							1599.7	2171.2	2837.8	3661.3
75	OBS	899.1	947.6	1254.3	1332.6	1283.6	1409.5	-	-	-	-
	EXP	899.1	972.1	1237.4	1304.8	1244.1	1465.0	1609.7*	1847.4*	2437.4*	3096.8*
	Elow							1563.4	1742.8	2233.3	2756.0
	Eup							1655.9	1955.0	2653.6	3468.2
30-79	OBS	253.2	320.0	400.9	469.4	521.2	606.9	-	-	-	-
	EXP	253.6	319.4	400.4	470.6	523.4	605.3	678.3*	730.8*	749.3*	719.5*
	Elow							658.8	689.5	686.5	640.4
	Eup							697.7	773.4	815.7	805.8

Osmond and Gardner Modelling

**Hungary Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

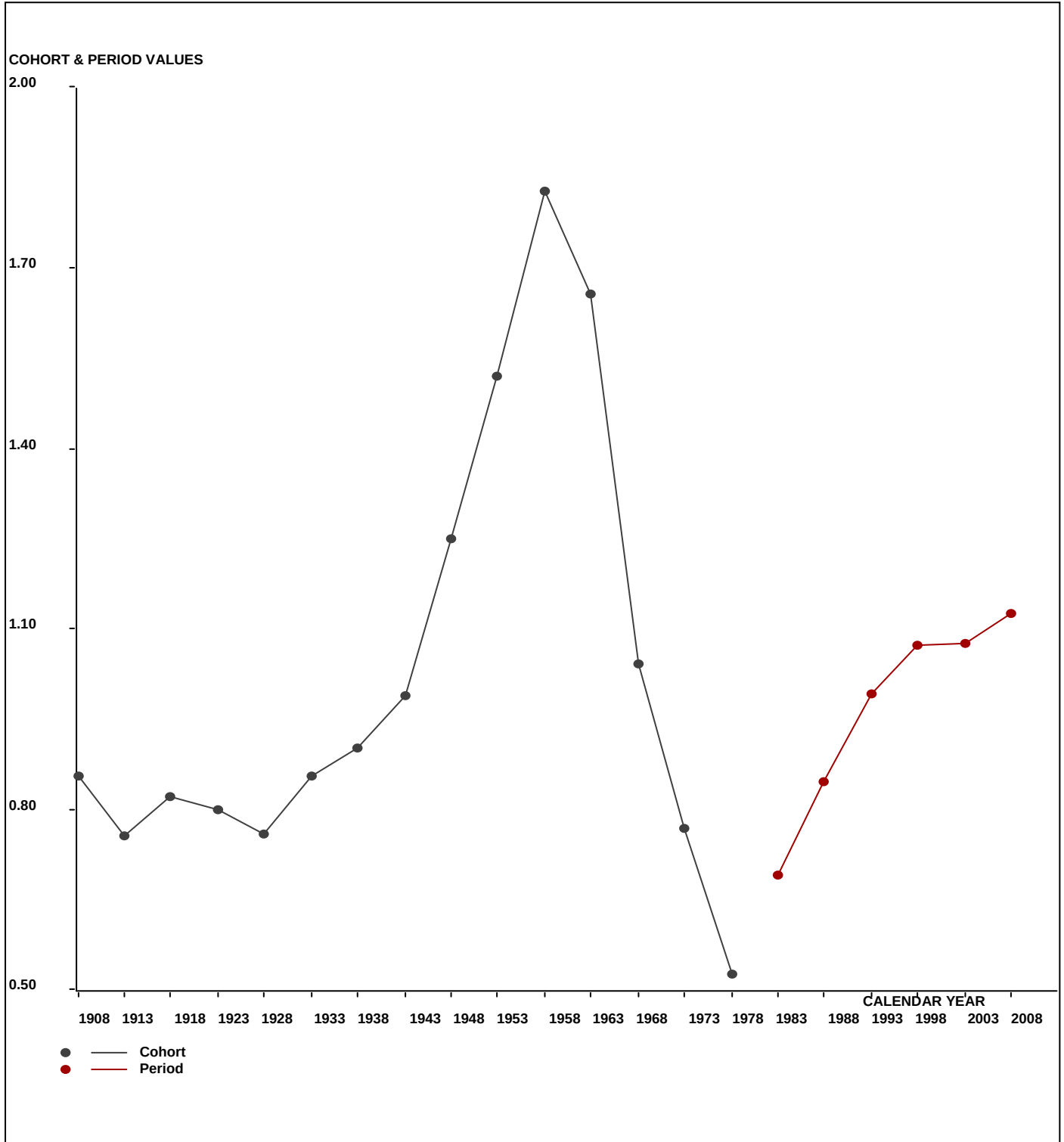
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	34.0	44.0	42.0	26.0	22.0	18.0	-	-	-	-
	EXP	32.6	47.2	39.9	26.4	22.1	24.7	20.2*	15.8*	13.7*	10.8*
	CHI	0.064	0.223	0.109	0.007	0.000	1.826	-	-	-	-
35 -	OBS	74.0	118.0	165.0	139.0	80.0	71.0	-	-	-	-
	EXP	72.0	120.0	168.6	133.7	82.0	70.9	79.6*	65.3*	51.0*	44.4*
	CHI	0.057	0.035	0.075	0.210	0.049	0.000	-	-	-	-
40 -	OBS	144.0	203.0	347.0	441.0	323.0	212.0	-	-	-	-
	EXP	133.5	211.6	340.6	446.7	328.9	209.6	181.4*	203.7*	167.3*	130.8*
	CHI	0.832	0.347	0.121	0.072	0.105	0.027	-	-	-	-
45 -	OBS	256.0	319.0	488.0	719.0	858.0	673.0	-	-	-	-
	EXP	232.8	316.2	484.4	725.3	881.1	674.7	431.1*	373.0*	419.4*	344.7*
	CHI	2.314	0.026	0.027	0.055	0.603	0.004	-	-	-	-
50 -	OBS	383.0	482.0	618.0	871.0	1205.0	1579.0	-	-	-	-
	EXP	390.6	471.6	621.0	886.2	1225.1	1544.4	1184.7*	757.8*	656.5*	739.2*
	CHI	0.147	0.232	0.015	0.262	0.330	0.777	-	-	-	-
55 -	OBS	567.0	711.0	821.0	1009.0	1307.0	1928.0	-	-	-	-
	EXP	570.7	700.9	821.0	1011.7	1331.4	1907.8	2405.7*	1847.6*	1185.5*	1028.7*
	CHI	0.023	0.144	0.000	0.007	0.445	0.214	-	-	-	-
60 -	OBS	623.0	937.0	1147.0	1191.0	1387.0	1942.0	-	-	-	-
	EXP	677.0	927.9	1110.6	1220.5	1394.2	1900.5	2721.9*	3434.6*	2647.5*	1704.8*
	CHI	4.313	0.090	1.194	0.711	0.038	0.907	-	-	-	-
65 -	OBS	670.0	978.0	1207.0	1456.0	1503.0	1755.0	-	-	-	-
	EXP	670.3	961.0	1271.6	1441.0	1471.5	1755.9	2390.9*	3430.1*	4341.9*	3360.8*
	CHI	0.000	0.301	3.277	0.157	0.672	0.000	-	-	-	-
70 -	OBS	949.0	849.0	1237.0	1527.0	1622.0	1692.0	-	-	-	-
	EXP	924.8	860.9	1229.0	1515.0	1617.2	1730.0	2081.7*	2837.4*	4101.8*	5209.6*
	CHI	0.631	0.166	0.053	0.096	0.014	0.835	-	-	-	-
75 -	OBS	791.0	959.0	896.0	1260.0	1451.0	1541.0	-	-	-	-
	EXP	791.0	983.8	883.9	1233.7	1406.4	1601.7	1731.4*	2102.8*	2882.5*	4216.4*
	CHI	0.000	0.624	0.165	0.561	1.413	2.302	-	-	-	-
30-79	OBS	4491.0	5600.0	6968.0	8639.0	9758.0	11411.0	-	-	-	-
	EXP	4495.2	5601.1	6970.5	8640.1	9759.8	11420.3	13228.6*	15067.9*	16467.2*	16790.3*
	O/E	0.999	1.000	1.000	1.000	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

Hungary Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

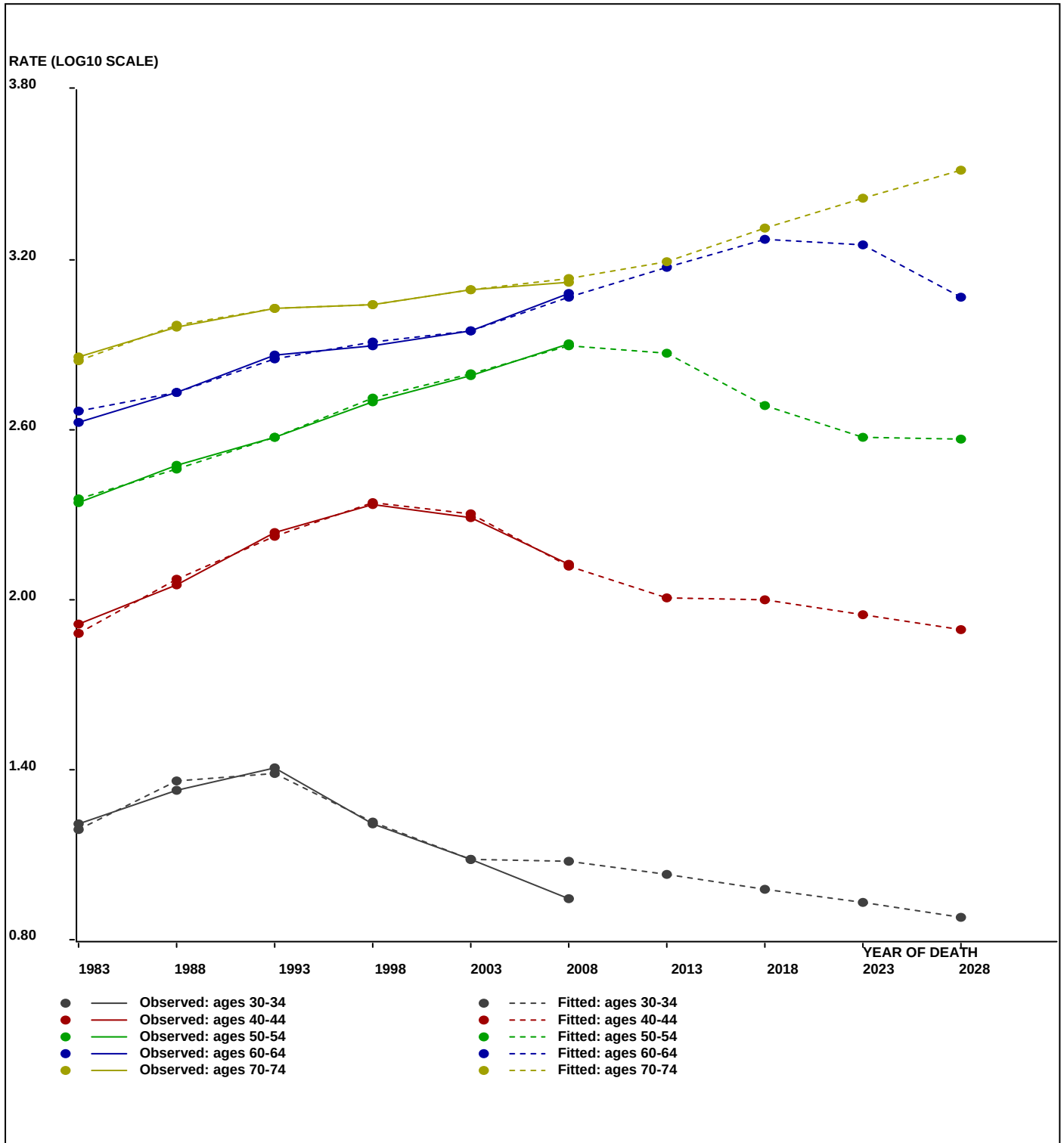


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Hungary Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Hungary Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	10.8	38.8	100.9	272.2	741.8	1256.1	1490.4	1569.9	1555.0	1609.7
2016	PRE	9.6	34.6	99.5	209.4	487.0	1190.4	1869.3	1994.5	2051.6	1847.4
2021	PRE	8.6	30.8	88.7	206.3	374.6	781.4	1771.5	2501.5	2606.6	2437.4
2026	PRE	7.6	27.5	79.0	183.9	369.2	601.1	1162.9	2370.6	3269.2	3096.8

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	20.2	79.6	181.4	431.1	1184.7	2405.7	2721.9	2390.9	2081.7	1731.4
2016	PRE	15.8	65.3	203.7	373.0	757.8	1847.6	3434.6	3430.1	2837.4	2102.8
2021	PRE	13.7	51.0	167.3	419.4	656.5	1185.5	2647.5	4341.9	4101.8	2882.5
2026	PRE	10.8	44.4	130.8	344.7	739.2	1028.7	1704.8	3360.8	5209.6	4216.4

Osmond and Gardner Modelling

Hungary COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	150.55	2.95	51	P, C	91.69	802.38	0.0000
AGE-PERIOD	72.93	1.62	45	Cohort	82.84	388.00	0.0000
AGE-COHORT	32.13	0.89	36	Period	61.05	170.93	0.0000
PERIOD-COHORT	23.55	0.59	40	Age	46.86	125.17	0.0000
FULL AGE-PERIOD-COHORT	12.51	0.39	32			66.64	0.0003

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.119466	13.166375
35	1.377782	23.866111
40	1.665371	46.277569
45	1.931497	85.407739
50	2.199140	158.175719
55	2.417233	261.356411
60	2.593570	392.256327
65	2.779698	602.140246
70	2.984623	965.213231
75	3.202031	1592.324085

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.020236	1.047699
1986	-0.002576	0.994086
1991	0.014825	1.034726
1996	-0.025345	0.943312
2001	-0.049107	0.893086
2006	0.029338	1.069888

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.135901	1.367418
1911	0.050966	1.124518
1916	0.042207	1.102066
1921	-0.028515	0.936451
1926	-0.069203	0.852702
1931	-0.038624	0.914905
1936	-0.024840	0.944408
1941	-0.022972	0.948481
1946	-0.002031	0.995334
1951	0.022197	1.052440
1956	0.110938	1.291034
1961	0.121876	1.323962
1966	-0.011399	0.974095
1971	-0.144109	0.717614
1976	-0.079017	0.833648

Osmond and Gardner Modelling

Hungary COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	24.0	32.0	25.0	28.0	17.0	24.0
EXP	30.2	34.8	29.5	19.3	15.2	24.0
CHI	1.3	0.2	0.7	4.0	0.2	0.0
35 - OBS	51.0	50.0	68.0	43.0	33.0	31.0
EXP	45.4	51.1	65.0	49.1	33.2	33.0
CHI	0.7	0.0	0.1	0.8	0.0	0.1
40 - OBS	113.0	73.0	96.0	82.0	102.0	66.0
EXP	80.1	81.9	101.7	114.8	90.0	77.0
CHI	13.6	1.0	0.3	9.4	1.6	1.6
45 - OBS	150.0	130.0	163.0	157.0	203.0	194.0
EXP	142.0	136.8	154.6	169.6	198.3	196.9
CHI	0.5	0.3	0.5	0.9	0.1	0.0
50 - OBS	267.0	253.0	244.0	234.0	289.0	453.0
EXP	262.4	241.4	258.0	257.7	291.8	431.0
CHI	0.1	0.6	0.8	2.2	0.0	1.1
55 - OBS	444.0	387.0	402.0	355.0	385.0	587.0
EXP	433.3	393.3	401.3	380.9	392.4	560.6
CHI	0.3	0.1	0.0	1.8	0.1	1.2
60 - OBS	537.0	530.0	607.0	546.0	527.0	700.0
EXP	564.4	576.3	582.7	529.6	521.0	676.7
CHI	1.3	3.7	1.0	0.5	0.1	0.8
65 - OBS	748.0	729.0	867.0	799.0	692.0	902.0
EXP	768.0	745.4	839.9	763.4	720.9	901.7
CHI	0.5	0.4	0.9	1.7	1.2	0.0
70 - OBS	1487.0	1037.0	1080.0	1063.0	1024.0	1236.0
EXP	1503.7	981.3	1083.9	1080.4	1034.3	1245.3
CHI	0.2	3.2	0.0	0.3	0.1	0.1
75 - OBS	2007.0	1818.0	1259.0	1376.0	1394.0	1654.0
EXP	2007.0	1801.5	1297.1	1330.0	1370.8	1704.0
CHI	0.0	0.2	1.1	1.6	0.4	1.5

Osmond and Gardner Modelling

Hungary COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
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Projections using parameters Log Transformed

AGE	EFFECT
30	13.166375
35	23.866111
40	46.277569
45	85.407739
50	158.175719
55	261.356411
60	392.256327
65	602.140246
70	965.213231
75	1592.324085

PERIOD	EFFECT	LOWER	UPPER
% Period Change	119.7967	116.7967	122.7967
1981	1.047699		
1986	0.994086		
1991	1.034726		
1996	0.943312		
2001	0.893086		
2006	1.069888		
2011	1.281690	1.249593	1.313787
2016	1.535422	1.459484	1.613287
2021	1.839386	1.704629	1.981063
2026	2.203523	1.990951	2.432680

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.367418	1.000000	
1911	1.124518	2.000000	
1916	1.102066	4.000000	
1921	0.936451	8.000000	
1926	0.852702	16.000000	
1931	0.914905	32.000000	
1936	0.944408	64.000000	
1941	0.948481	128.000000	
1946	0.995334	256.000000	
1951	1.052440	512.000000	
1956	1.291034	1024.000000	
1961	1.323962	2048.000000	
1966	0.974095	4096.000000	
1971	0.717614	8192.000000	
1976	0.701912	EXTRAPOLATION	0.833648
1981	0.624662	EXTRAPOLATION	
1986	0.555914	EXTRAPOLATION	
1991	0.494732	EXTRAPOLATION	
1996	0.440284	EXTRAPOLATION	

Osmond and Gardner Modelling

**Hungary COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	11.5	15.5	15.3	17.6	9.5	11.7	-	-	-	-
	EXP	14.5	16.9	18.0	12.1	8.4	9.9	10.5*	11.2*	12.0*	12.8*
	Elow							10.3	10.7	11.1	11.5
	Eup							10.8	11.8	12.9	14.1
35	OBS	28.0	24.4	33.3	26.1	20.6	17.2	-	-	-	-
	EXP	24.9	25.0	31.9	29.8	20.8	18.3	21.5*	22.9*	24.4*	26.0*
	Elow							20.9	21.8	22.6	23.5
	Eup							22.0	24.1	26.3	28.7
40	OBS	64.9	40.8	47.6	40.3	62.0	41.3	-	-	-	-
	EXP	46.0	45.8	50.4	56.4	54.7	48.2	42.6*	49.9*	53.2*	56.7*
	Elow							41.5	47.4	49.3	51.2
	Eup							43.6	52.4	57.3	62.6
45	OBS	89.3	76.5	92.7	78.5	100.8	119.2	-	-	-	-
	EXP	84.5	80.5	88.0	84.8	98.5	121.0	106.6*	94.1*	110.3*	117.6*
	Elow							104.0	89.5	102.2	106.2
	Eup							109.3	98.9	118.8	129.8
50	OBS	154.3	155.6	146.8	134.8	147.2	229.6	-	-	-	-
	EXP	151.6	148.5	155.2	148.5	148.7	218.5	268.4*	236.6*	208.8*	244.6*
	Elow							261.7	224.9	193.5	221.0
	Eup							275.1	248.6	224.9	270.1
55	OBS	239.2	233.9	255.9	217.9	228.0	308.2	-	-	-	-
	EXP	233.5	237.7	255.4	233.8	232.3	294.3	432.5*	531.3*	468.3*	413.3*
	Elow							421.6	505.0	434.0	373.4
	Eup							443.3	558.2	504.4	456.3
60	OBS	366.2	305.8	386.8	360.3	336.1	432.1	-	-	-	-
	EXP	384.9	332.5	371.3	349.4	332.3	417.7	529.1*	777.6*	955.3*	842.0*
	Elow							515.9	739.1	885.3	760.7
	Eup							542.4	817.0	1028.8	929.5
65	OBS	677.2	548.2	548.4	543.9	487.5	611.2	-	-	-	-
	EXP	695.3	560.5	531.3	519.7	507.9	611.0	768.2*	973.0*	1429.9*	1756.7*
	Elow							748.9	924.9	1325.2	1587.2
	Eup							787.4	1022.4	1540.0	1939.4
70	OBS	1124.6	1117.4	931.9	763.8	780.8	968.0	-	-	-	-
	EXP	1137.2	1057.4	935.3	776.4	788.7	975.3	1173.4*	1475.1*	1868.5*	2745.9*
	Elow							1144.0	1402.1	1731.6	2481.0
	Eup							1202.8	1549.9	2012.4	3031.4
75	OBS	2281.2	1796.3	1762.5	1455.3	1233.1	1512.9	-	-	-	-
	EXP	2281.2	1780.0	1815.8	1406.6	1212.6	1558.6	1927.4*	2318.9*	2915.2*	3692.7*
	Elow							1879.1	2204.2	2701.7	3336.5
	Eup							1975.7	2436.5	3139.8	4076.7
30-79	OBS	297.2	259.3	260.6	228.5	221.6	278.5	-	-	-	-
	EXP	296.9	259.6	261.0	230.8	221.7	277.3	342.5*	417.0*	501.9*	591.7*
	Elow							333.9	396.4	465.1	534.6
	Eup							351.0	438.1	540.5	653.2

Osmond and Gardner Modelling

**Hungary COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

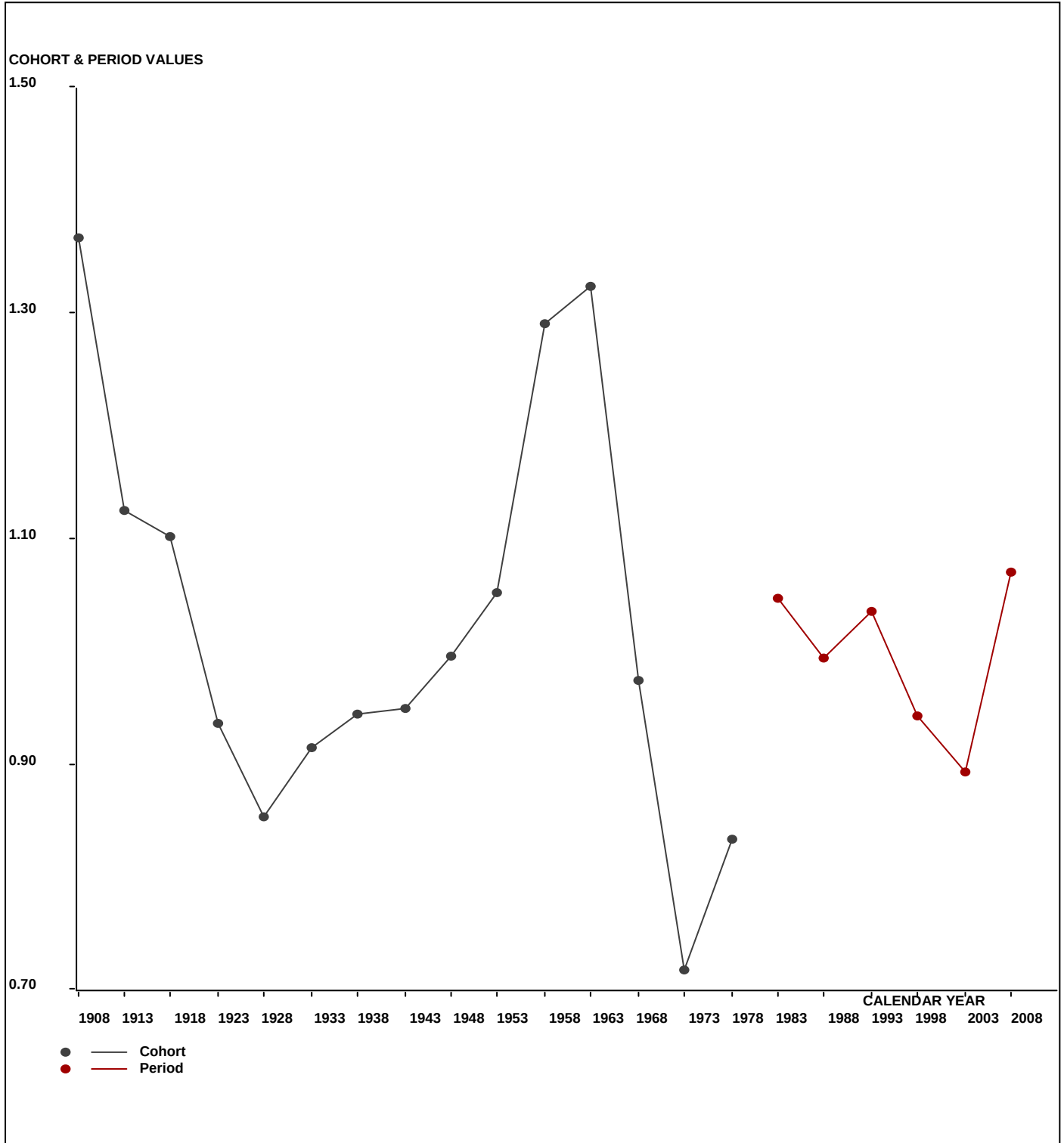
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	24.0	32.0	25.0	28.0	17.0	24.0	-	-	-	-
	EXP	30.2	34.8	29.5	19.3	15.2	20.2	19.8*	18.4*	19.2*	18.1*
	CHI	1.288	0.228	0.690	3.954	0.220	0.712	-	-	-	-
35 -	OBS	51.0	50.0	68.0	43.0	33.0	31.0	-	-	-	-
	EXP	45.4	51.1	65.0	49.1	33.2	33.0	44.0*	43.2*	40.3*	42.1*
	CHI	0.698	0.023	0.135	0.767	0.002	0.121	-	-	-	-
40 -	OBS	113.0	73.0	96.0	82.0	102.0	66.0	-	-	-	-
	EXP	80.1	81.9	101.7	114.8	90.0	77.0	76.5*	102.2*	100.4*	93.8*
	CHI	13.562	0.959	0.317	9.376	1.593	1.584	-	-	-	-
45 -	OBS	150.0	130.0	163.0	157.0	203.0	194.0	-	-	-	-
	EXP	142.0	136.8	154.6	169.6	198.3	196.9	168.9*	167.6*	224.1*	220.4*
	CHI	0.455	0.342	0.456	0.935	0.111	0.042	-	-	-	-
50 -	OBS	267.0	253.0	244.0	234.0	289.0	453.0	-	-	-	-
	EXP	262.4	241.4	258.0	257.7	291.8	431.0	428.6*	368.1*	365.9*	489.9*
	CHI	0.080	0.555	0.756	2.184	0.027	1.120	-	-	-	-
55 -	OBS	444.0	387.0	402.0	355.0	385.0	587.0	-	-	-	-
	EXP	433.3	393.3	401.3	380.9	392.4	560.6	828.3*	824.6*	710.5*	707.3*
	CHI	0.263	0.102	0.001	1.760	0.138	1.246	-	-	-	-
60 -	OBS	537.0	530.0	607.0	546.0	527.0	700.0	-	-	-	-
	EXP	564.4	576.3	582.7	529.6	521.0	676.7	966.3*	1428.7*	1427.7*	1234.3*
	CHI	1.331	3.724	1.012	0.509	0.068	0.801	-	-	-	-
65 -	OBS	748.0	729.0	867.0	799.0	692.0	902.0	-	-	-	-
	EXP	768.0	745.4	839.9	763.4	720.9	901.7	1169.9*	1673.3*	2481.9*	2490.5*
	CHI	0.520	0.359	0.872	1.659	1.156	0.000	-	-	-	-
70 -	OBS	1487.0	1037.0	1080.0	1063.0	1024.0	1236.0	-	-	-	-
	EXP	1503.7	981.3	1083.9	1080.4	1034.3	1245.3	1570.8*	2040.0*	2940.2*	4375.7*
	CHI	0.185	3.160	0.014	0.282	0.102	0.069	-	-	-	-
75 -	OBS	2007.0	1818.0	1259.0	1376.0	1394.0	1654.0	-	-	-	-
	EXP	2007.0	1801.5	1297.1	1330.0	1370.8	1704.0	2073.1*	2639.5*	3447.6*	5027.8*
	CHI	0.000	0.151	1.117	1.592	0.393	1.470	-	-	-	-
30-79	OBS	5828.0	5039.0	4811.0	4683.0	4666.0	5847.0	-	-	-	-
	EXP	5836.5	5043.8	4813.7	4694.8	4667.9	5846.5	7346.2*	9305.8*	11757.9*	14699.9*
	O/E	0.999	0.999	0.999	0.997	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Hungary COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

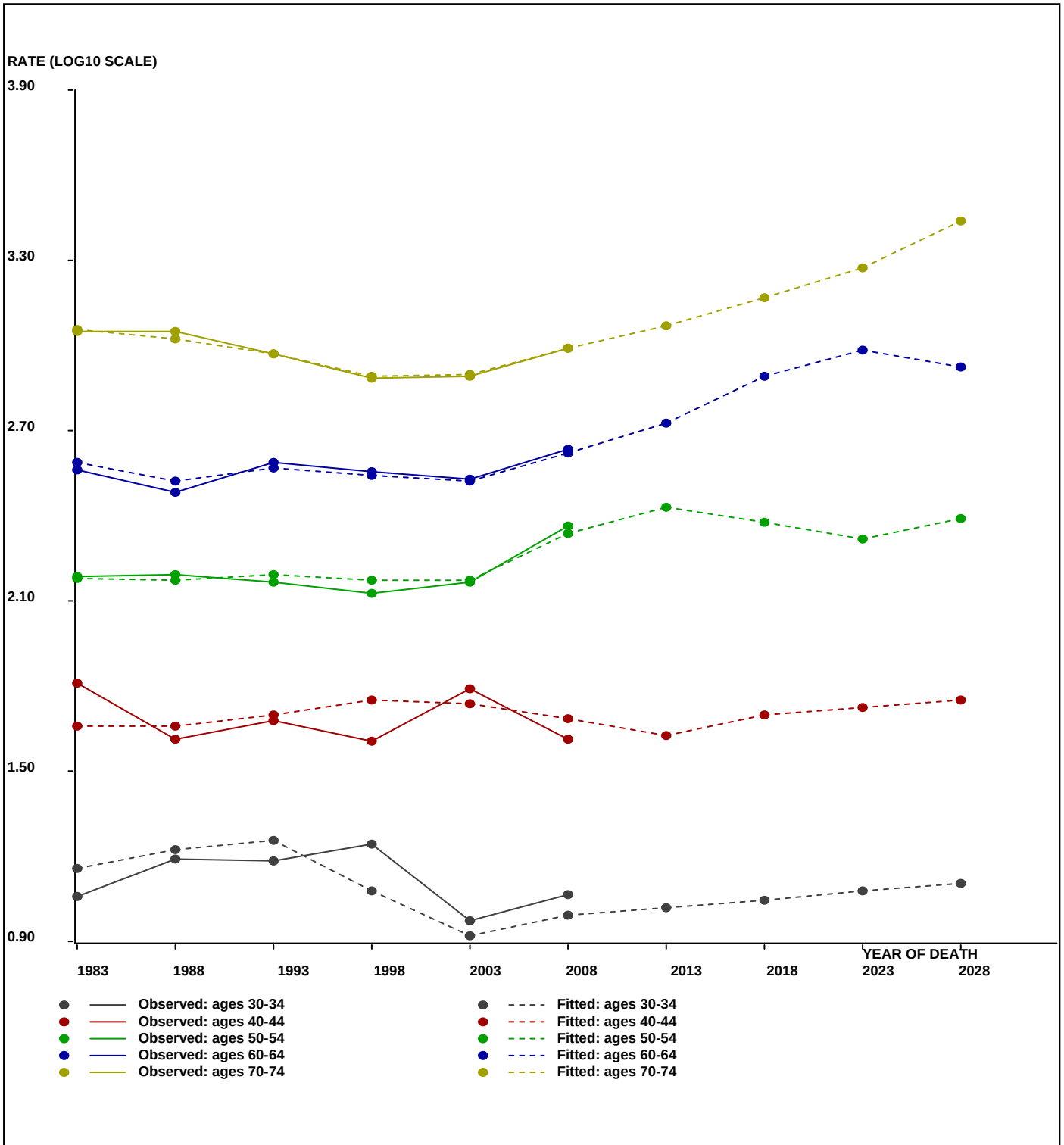


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Hungary COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Hungary COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	10.5	21.5	42.6	106.6	268.4	432.5	529.1	768.2	1173.4	1927.4
2016	PRE	11.2	22.9	49.9	94.1	236.6	531.3	777.6	973.0	1475.1	2318.9
2021	PRE	12.0	24.4	53.2	110.3	208.8	468.3	955.3	1429.9	1868.5	2915.2
2026	PRE	12.8	26.0	56.7	117.6	244.6	413.3	842.0	1756.7	2745.9	3692.7

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	19.8	44.0	76.5	168.9	428.6	828.3	966.3	1169.9	1570.8	2073.1
2016	PRE	18.4	43.2	102.2	167.6	368.1	824.6	1428.7	1673.3	2040.0	2639.5
2021	PRE	19.2	40.3	100.4	224.1	365.9	710.5	1427.7	2481.9	2940.2	3447.6
2026	PRE	18.1	42.1	93.8	220.4	489.9	707.3	1234.3	2490.5	4375.7	5027.8

Osmond and Gardner Modelling

Italy IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	14332.31	281.03	51	P, C	99.82	77530.18	0.0000
AGE-PERIOD	892.46	19.83	45	Cohort	97.12	4736.79	0.0000
AGE-COHORT	69.26	1.92	36	Period	62.86	367.26	0.0000
PERIOD-COHORT	249.81	6.25	40	Age	89.70	1325.64	0.0000
FULL AGE-PERIOD-COHORT	25.72	0.80	32			136.42	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	2.043949	110.649347
35	2.393376	247.386673
40	2.689583	489.308499
45	2.922102	835.798604
50	3.104342	1271.575289
55	3.265687	1843.684429
60	3.416036	2606.371031
65	3.556437	3601.118791
70	3.701552	5029.815771
75	3.864677	7322.795324

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.050224	1.122598
1986	0.018217	1.042838
1991	0.013125	1.030683
1996	-0.009141	0.979171
2001	-0.040997	0.909920
2006	-0.076829	0.837859

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.151324	1.416849
1911	0.134712	1.363678
1916	0.135822	1.367169
1921	0.095345	1.245504
1926	0.051060	1.124759
1931	-0.015354	0.965265
1936	-0.130187	0.740991
1941	-0.184203	0.654330
1946	-0.262071	0.546926
1951	-0.305972	0.494342
1956	-0.379263	0.417577
1961	-0.469404	0.339310
1966	-0.557415	0.277067
1971	-0.600605	0.250839
1976	-0.622194	0.238675

Osmond and Gardner Modelling

Italy IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	648.0	487.0	398.0	303.0	281.4	243.0
EXP	591.4	469.1	420.3	346.4	297.0	243.0
CHI	5.4	0.7	1.2	5.4	0.8	0.0
35 - OBS	1450.0	1311.0	983.0	813.0	728.4	651.0
EXP	1424.5	1228.4	1029.0	884.0	741.7	636.0
CHI	0.5	5.6	2.1	5.7	0.2	0.4
40 - OBS	3181.0	2678.0	2367.0	1798.0	1604.4	1436.0
EXP	3160.8	2595.9	2376.0	1909.2	1645.4	1383.3
CHI	0.1	2.6	0.0	6.5	1.0	2.0
45 - OBS	6068.0	4847.0	4505.0	3711.0	3053.2	2752.0
EXP	6248.4	4938.2	4312.2	3795.0	3029.5	2624.8
CHI	5.2	1.7	8.6	1.9	0.2	6.2
50 - OBS	11630.0	8629.0	7321.0	6097.0	5249.6	4365.0
EXP	11789.5	8601.3	7246.2	6106.0	5296.3	4255.5
CHI	2.2	0.1	0.8	0.0	0.4	2.8
55 - OBS	18903.0	15233.0	11966.0	9902.0	7983.6	6999.0
EXP	19213.0	15176.7	11864.0	9664.3	8070.1	7005.0
CHI	5.0	0.2	0.9	5.8	0.9	0.0
60 - OBS	22997.0	23545.0	19712.0	15347.0	12295.6	10013.0
EXP	23095.0	23383.7	19865.1	15126.3	12218.3	10226.6
CHI	0.4	1.1	1.2	3.2	0.5	4.5
65 - OBS	27231.0	26674.0	28622.0	23818.0	18156.8	14322.0
EXP	27204.8	26412.6	28646.5	23798.1	18118.0	14648.9
CHI	0.0	2.6	0.0	0.0	0.1	7.3
70 - OBS	38581.0	29098.0	30884.0	32469.0	27071.2	20984.0
EXP	37975.9	29093.3	30975.3	32569.6	27281.6	21198.6
CHI	9.6	0.0	0.3	0.3	1.6	2.2
75 - OBS	35353.0	37728.0	31873.0	33798.0	35807.0	30958.0
EXP	35353.0	38342.9	31903.9	33871.9	35537.5	30517.1
CHI	0.0	9.9	0.0	0.2	2.0	6.4

Osmond and Gardner Modelling

Italy IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	110.649347
35	247.386673
40	489.308499
45	835.798604
50	1271.575289
55	1843.684429
60	2606.371031
65	3601.118791
70	5029.815771
75	7322.795324

PERIOD	EFFECT	LOWER	UPPER
% Period Change	92.0805	89.0805	95.0805
1981	1.122598		
1986	1.042838		
1991	1.030683		
1996	0.979171		
2001	0.909920		
2006	0.837859		
2011	0.771505	0.746369	0.796641
2016	0.710406	0.664870	0.757451
2021	0.654146	0.592270	0.720188
2026	0.602341	0.527597	0.684759

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.416849	1.000000	
1911	1.363678	2.000000	
1916	1.367169	4.000000	
1921	1.245504	8.000000	
1926	1.124759	16.000000	
1931	0.965265	32.000000	
1936	0.740991	64.000000	
1941	0.654330	128.000000	
1946	0.546926	256.000000	
1951	0.494342	512.000000	
1956	0.417577	1024.000000	
1961	0.339310	2048.000000	
1966	0.277067	4096.000000	
1971	0.250839	8192.000000	
1976	0.209886	EXTRAPOLATION	0.238675
1981	0.178533	EXTRAPOLATION	
1986	0.151864	EXTRAPOLATION	
1991	0.129179	EXTRAPOLATION	
1996	0.109882	EXTRAPOLATION	

Osmond and Gardner Modelling

**Italy IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	67.3	50.0	36.6	26.3	23.9	22.1	-	-	-	-
	EXP	61.4	48.2	38.7	30.0	25.3	19.5	15.2*	11.9*	9.4*	7.3*
	Elow							14.7	11.2	8.5	6.4
	Eup							15.7	12.7	10.3	8.3
35	OBS	154.6	136.1	101.7	75.6	61.3	53.2	-	-	-	-
	EXP	151.9	127.5	106.5	82.2	62.4	52.0	40.1*	31.4*	24.6*	19.2*
	Elow							38.8	29.4	22.3	16.9
	Eup							41.4	33.5	27.1	21.9
40	OBS	361.7	287.9	248.4	188.4	147.3	117.9	-	-	-	-
	EXP	359.4	279.1	249.3	200.1	151.1	113.6	94.7*	73.0*	57.1*	44.8*
	Elow							91.6	68.3	51.7	39.2
	Eup							97.8	77.8	62.9	50.9
45	OBS	675.2	559.8	492.2	395.6	320.1	249.1	-	-	-	-
	EXP	695.2	570.3	471.1	404.6	317.6	237.6	178.7*	148.9*	114.8*	89.9*
	Elow							172.8	139.4	103.9	78.7
	Eup							184.5	158.8	126.3	102.2
50	OBS	1359.2	985.8	866.4	680.0	566.9	456.3	-	-	-	-
	EXP	1377.9	982.6	857.6	681.0	572.0	444.9	332.9*	250.3*	208.6*	160.8*
	Elow							322.0	234.2	188.9	140.8
	Eup							343.7	266.9	229.7	182.8
55	OBS	2290.4	1862.8	1420.2	1210.3	907.7	763.0	-	-	-	-
	EXP	2327.9	1855.9	1408.1	1181.2	917.5	763.6	594.0*	444.4*	334.2*	278.6*
	Elow							574.6	415.9	302.5	244.0
	Eup							613.3	473.8	367.9	316.7
60	OBS	3628.8	3078.2	2573.0	1918.7	1561.6	1169.4	-	-	-	-
	EXP	3644.2	3057.1	2593.0	1891.1	1551.8	1194.4	994.0*	773.2*	578.5*	435.0*
	Elow							961.7	723.6	523.8	381.0
	Eup							1026.4	824.4	636.9	494.5
65	OBS	5532.3	4723.6	4171.1	3406.5	2433.2	1930.2	-	-	-	-
	EXP	5526.9	4677.3	4174.7	3403.6	2428.0	1974.3	1519.5*	1264.7*	983.7*	736.0*
	Elow							1470.0	1183.6	890.6	644.7
	Eup							1569.0	1348.4	1083.0	836.7
70	OBS	7822.7	7172.3	6437.8	5522.4	4383.7	3091.1	-	-	-	-
	EXP	7700.0	7171.2	6456.9	5539.5	4417.8	3122.7	2539.1*	1954.3*	1626.5*	1265.1*
	Elow							2456.4	1829.0	1472.6	1108.1
	Eup							2621.9	2083.7	1790.7	1438.2
75	OBS	11647.3	10246.7	10308.7	8911.1	7551.3	6007.9	-	-	-	-
	EXP	11647.3	10413.7	10318.7	8930.6	7494.4	5922.4	4186.3*	3403.9*	2619.9*	2180.5*
	Elow							4049.9	3185.7	2372.1	1909.9
	Eup							4322.7	3629.3	2884.4	2478.8
30-79	OBS	2165.5	1847.4	1640.3	1353.3	1074.1	831.4	-	-	-	-
	EXP	2167.5	1845.9	1639.7	1353.1	1074.8	831.6	640.6*	506.7*	397.3*	312.7*
	Elow							619.7	474.2	359.7	273.9
	Eup							661.5	540.3	437.4	355.5

Osmond and Gardner Modelling

**Italy IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

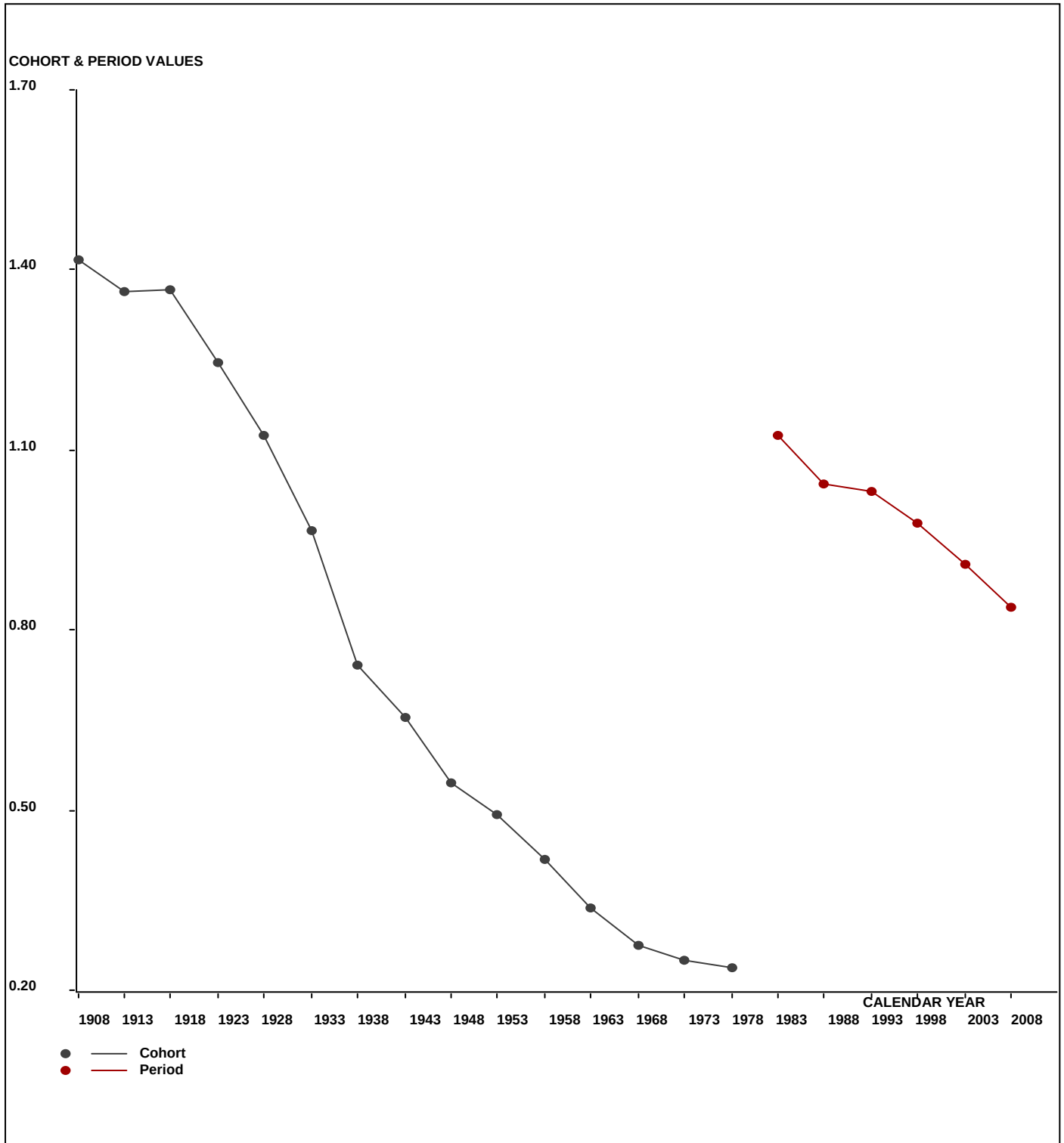
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	648.0	487.0	398.0	303.0	281.4	243.0	-	-	-	-
	EXP	591.4	469.1	420.3	346.4	297.0	213.7	145.6*	104.1*	79.8*	61.1*
	CHI	5.415	0.681	1.186	5.435	0.816	4.020	-	-	-	-
35 -	OBS	1450.0	1311.0	983.0	813.0	728.4	651.0	-	-	-	-
	EXP	1424.5	1228.4	1029.0	884.0	741.7	636.0	450.0*	304.6*	217.6*	166.6*
	CHI	0.458	5.552	2.059	5.707	0.237	0.353	-	-	-	-
40 -	OBS	3181.0	2678.0	2367.0	1798.0	1604.4	1436.0	-	-	-	-
	EXP	3160.8	2595.9	2376.0	1909.2	1645.4	1383.3	1168.6*	824.4*	558.5*	398.9*
	CHI	0.129	2.597	0.034	6.482	1.020	2.008	-	-	-	-
45 -	OBS	6068.0	4847.0	4505.0	3711.0	3053.2	2752.0	-	-	-	-
	EXP	6248.4	4938.2	4312.2	3795.0	3029.5	2624.8	2179.2*	1835.3*	1295.7*	878.2*
	CHI	5.207	1.684	8.624	1.861	0.186	6.167	-	-	-	-
50 -	OBS	11630.0	8629.0	7321.0	6097.0	5249.6	4365.0	-	-	-	-
	EXP	11789.5	8601.3	7246.2	6106.0	5296.3	4255.5	3662.5*	3026.3*	2551.4*	1802.2*
	CHI	2.157	0.089	0.772	0.013	0.411	2.817	-	-	-	-
55 -	OBS	18903.0	15233.0	11966.0	9902.0	7983.6	6999.0	-	-	-	-
	EXP	19213.0	15176.7	11864.0	9664.3	8070.1	7005.0	5605.2*	4801.9*	3974.0*	3353.9*
	CHI	5.002	0.209	0.876	5.848	0.926	0.005	-	-	-	-
60 -	OBS	22997.0	23545.0	19712.0	15347.0	12295.6	10013.0	-	-	-	-
	EXP	23095.0	23383.7	19865.1	15126.3	12218.3	10226.6	8852.4*	7063.5*	6068.1*	5031.2*
	CHI	0.416	1.112	1.180	3.219	0.489	4.459	-	-	-	-
65 -	OBS	27231.0	26674.0	28622.0	23818.0	18156.8	14322.0	-	-	-	-
	EXP	27204.8	26412.6	28646.5	23798.1	18118.0	14648.9	12291.6*	10659.7*	8555.8*	7375.4*
	CHI	0.025	2.587	0.021	0.017	0.083	7.297	-	-	-	-
70 -	OBS	38581.0	29098.0	30884.0	32469.0	27071.2	20984.0	-	-	-	-
	EXP	37975.9	29093.3	30975.3	32569.6	27281.6	21198.6	17125.8*	14458.4*	12609.7*	10200.3*
	CHI	9.643	0.001	0.269	0.310	1.622	2.173	-	-	-	-
75 -	OBS	35353.0	37728.0	31873.0	33798.0	35807.0	30958.0	-	-	-	-
	EXP	35353.0	38342.9	31903.9	33871.9	35537.5	30517.1	24110.0*	19577.5*	16807.3*	14759.8*
	CHI	0.000	9.861	0.030	0.161	2.044	6.371	-	-	-	-
30-79	OBS	166042.0	150230.0	138631.0	128056.0	112231.2	92723.0	-	-	-	-
	EXP	166056.2	150242.1	138638.5	128070.8	112235.1	92709.5	75590.9*	62655.8*	52717.9*	44027.4*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Italy IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

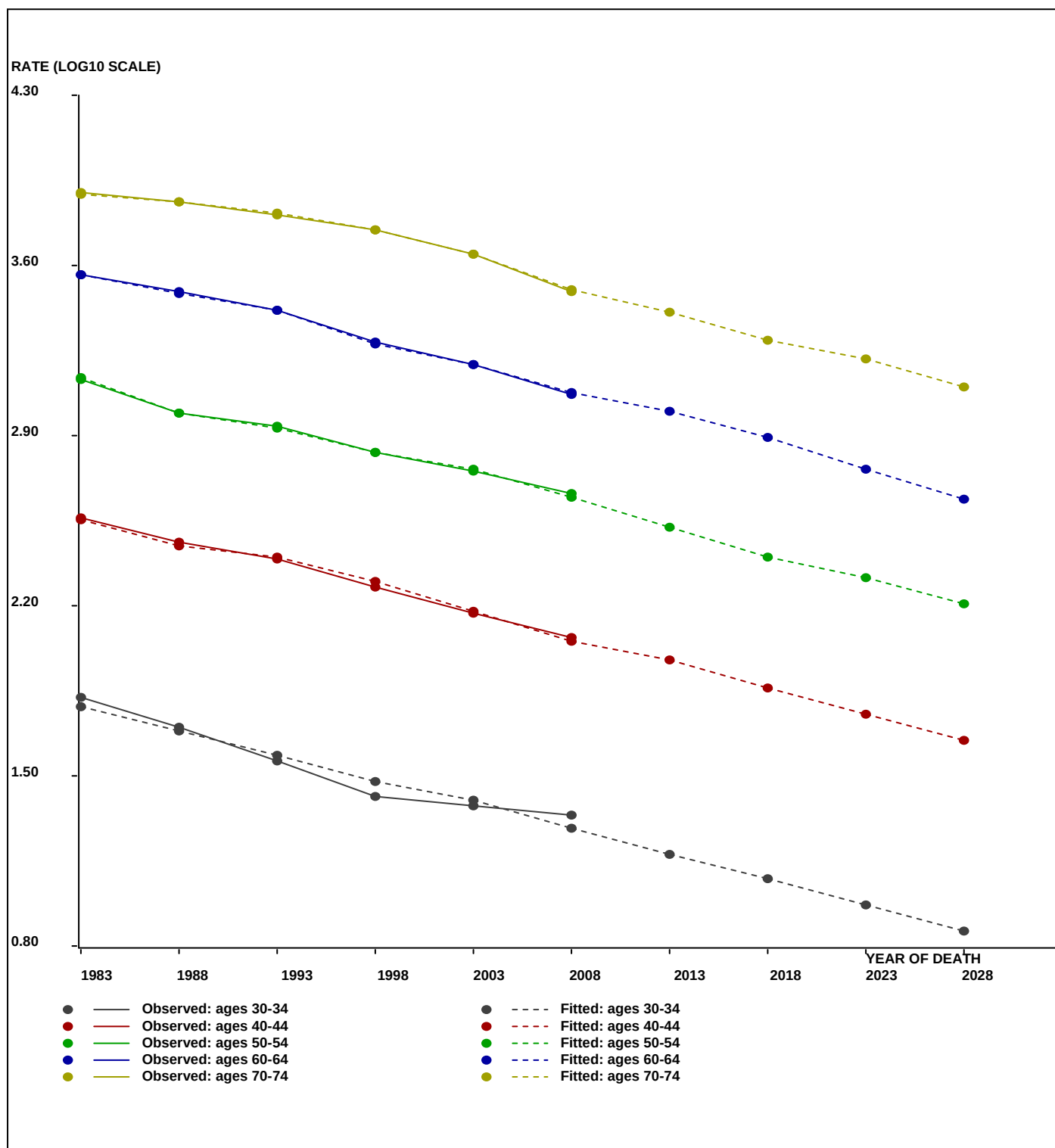


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Italy IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Italy IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	15.2	40.1	94.7	178.7	332.9	594.0	994.0	1519.5	2539.1	4186.3
2016	PRE	11.9	31.4	73.0	148.9	250.3	444.4	773.2	1264.7	1954.3	3403.9
2021	PRE	9.4	24.6	57.1	114.8	208.6	334.2	578.5	983.7	1626.5	2619.9
2026	PRE	7.3	19.2	44.8	89.9	160.8	278.6	435.0	736.0	1265.1	2180.5

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	145.6	450.0	1168.6	2179.2	3662.5	5605.2	8852.4	12291.6	17125.8	24110.0
2016	PRE	104.1	304.6	824.4	1835.3	3026.3	4801.9	7063.5	10659.7	14458.4	19577.5
2021	PRE	79.8	217.6	558.5	1295.7	2551.4	3974.0	6068.1	8555.8	12609.7	16807.3
2026	PRE	61.1	166.6	398.9	878.2	1802.2	3353.9	5031.2	7375.4	10200.3	14759.8

Osmond and Gardner Modelling

Italy Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	14836.25	290.91	51	P, C	99.90	81014.92	0.0000
AGE-PERIOD	168.27	3.74	45	Cohort	91.39	892.47	0.0000
AGE-COHORT	18.66	0.52	36	Period	22.40	98.96	0.0000
PERIOD-COHORT	45.54	1.14	40	Age	68.20	241.51	0.0000
FULL AGE-PERIOD-COHORT	14.48	0.45	32			76.80	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.938087	86.713489
35	2.119084	131.547911
40	2.326849	212.250721
45	2.514201	326.739296
50	2.687580	487.057257
55	2.871929	744.610014
60	3.076517	1192.661050
65	3.295910	1976.561365
70	3.545960	3515.284529
75	3.804417	6374.068247

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.084676	1.215279
1986	0.037357	1.089825
1991	-0.004662	0.989322
1996	-0.041764	0.908313
2001	-0.077171	0.837199
2006	-0.117179	0.763522

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.206163	1.607545
1911	0.163499	1.457134
1916	0.133493	1.359856
1921	0.033990	1.081409
1926	-0.025543	0.942881
1931	-0.096757	0.800282
1936	-0.207412	0.620280
1941	-0.268312	0.539123
1946	-0.345375	0.451465
1951	-0.396610	0.401227
1956	-0.427770	0.373447
1961	-0.515130	0.305400
1966	-0.547627	0.283382
1971	-0.628243	0.235373
1976	-0.649401	0.224181

Osmond and Gardner Modelling

Italy Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	405.0	345.0	310.0	249.0	182.8	163.0
EXP	407.2	343.6	284.6	257.6	200.9	163.0
CHI	0.0	0.0	2.3	0.3	1.6	0.0
35 - OBS	636.0	557.0	510.0	375.0	365.6	306.0
EXP	676.9	554.1	469.7	392.5	371.1	289.2
CHI	2.5	0.0	3.5	0.8	0.1	1.0
40 - OBS	1222.0	967.0	820.0	677.0	575.0	573.0
EXP	1222.9	971.4	802.9	687.1	591.1	559.3
CHI	0.0	0.0	0.4	0.1	0.4	0.3
45 - OBS	2161.0	1618.0	1433.0	1088.0	991.4	848.0
EXP	2213.6	1662.3	1335.7	1117.0	974.5	841.6
CHI	1.2	1.2	7.1	0.8	0.3	0.0
50 - OBS	3975.0	2852.0	2236.0	1844.0	1576.2	1277.0
EXP	4053.0	2882.2	2195.1	1790.9	1514.9	1328.4
CHI	1.5	0.3	0.8	1.6	2.5	2.0
55 - OBS	6995.0	5309.0	3891.0	3043.0	2474.0	2040.0
EXP	7041.8	5310.7	3850.0	2983.2	2475.4	2092.5
CHI	0.3	0.0	0.4	1.2	0.0	1.3
60 - OBS	9898.0	9400.0	7290.0	5362.0	4313.2	3409.0
EXP	9933.4	9374.2	7234.0	5374.8	4238.5	3520.1
CHI	0.1	0.1	0.4	0.0	1.3	3.5
65 - OBS	16036.0	13405.0	12434.0	10130.0	7712.2	5903.0
EXP	16078.3	13154.3	12651.9	10045.9	7659.2	6037.0
CHI	0.1	4.8	3.8	0.7	0.4	3.0
70 - OBS	30996.0	21228.0	17983.0	17738.0	14172.0	11302.0
EXP	30701.2	21135.5	18041.8	17700.9	14544.5	11301.6
CHI	2.8	0.4	0.2	0.1	9.5	0.0
75 - OBS	37797.0	36972.0	26463.0	23587.0	24057.6	20373.0
EXP	37797.0	37269.4	26513.5	23746.5	23858.8	20069.2
CHI	0.0	2.4	0.1	1.1	1.7	4.6

Osmond and Gardner Modelling

Italy Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	86.713489
35	131.547911
40	212.250721
45	326.739296
50	487.057257
55	744.610014
60	1192.661050
65	1976.561365
70	3515.284529
75	6374.068247

PERIOD	EFFECT	LOWER	UPPER
% Period Change	91.1996	88.1996	94.1996
1981	1.215279		
1986	1.089825		
1991	0.989322		
1996	0.908313		
2001	0.837199		
2006	0.763522		
2011	0.696329	0.673423	0.719234
2016	0.635049	0.593956	0.677516
2021	0.579162	0.523867	0.638217
2026	0.528193	0.462049	0.601198

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.607545	1.000000	
1911	1.457134	2.000000	
1916	1.359856	4.000000	
1921	1.081409	8.000000	
1926	0.942881	16.000000	
1931	0.800282	32.000000	
1936	0.620280	64.000000	
1941	0.539123	128.000000	
1946	0.451465	256.000000	
1951	0.401227	512.000000	
1956	0.373447	1024.000000	
1961	0.305400	2048.000000	
1966	0.283382	4096.000000	
1971	0.235373	8192.000000	
1976	0.206684	EXTRAPOLATION	0.224181
1981	0.179657	EXTRAPOLATION	
1986	0.156164	EXTRAPOLATION	
1991	0.135743	EXTRAPOLATION	
1996	0.117993	EXTRAPOLATION	

Osmond and Gardner Modelling

**Italy Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	42.1	35.4	28.5	21.6	15.5	14.8	-	-	-	-
	EXP	42.3	35.3	26.2	22.3	17.1	13.7	10.8*	8.6*	6.8*	5.4*
	Elow							10.5	8.0	6.2	4.7
	Eup							11.2	9.2	7.5	6.2
35	OBS	67.8	57.8	52.8	34.9	30.7	25.0	-	-	-	-
	EXP	72.2	57.5	48.6	36.5	31.2	23.6	18.9*	15.0*	11.9*	9.4*
	Elow							18.3	14.0	10.8	8.3
	Eup							19.6	16.0	13.1	10.7
40	OBS	139.0	104.0	86.0	70.9	52.8	47.1	-	-	-	-
	EXP	139.1	104.4	84.3	72.0	54.3	45.9	34.8*	27.9*	22.1*	17.5*
	Elow							33.6	26.1	20.0	15.3
	Eup							35.9	29.7	24.3	19.9
45	OBS	240.5	186.9	156.6	116.0	103.9	76.8	-	-	-	-
	EXP	246.3	192.0	145.9	119.1	102.2	76.2	64.5*	48.8*	39.1*	31.0*
	Elow							62.4	45.7	35.4	27.1
	Eup							66.6	52.1	43.1	35.3
50	OBS	464.6	325.8	264.6	205.7	170.2	133.5	-	-	-	-
	EXP	473.7	329.2	259.8	199.7	163.6	138.9	103.6*	87.7*	66.4*	53.2*
	Elow							100.2	82.0	60.1	46.5
	Eup							107.0	93.5	73.2	60.5
55	OBS	847.5	649.2	461.8	371.9	281.3	222.4	-	-	-	-
	EXP	853.2	649.4	456.9	364.6	281.4	228.1	193.6*	144.4*	122.2*	92.6*
	Elow							187.3	135.1	110.5	81.0
	Eup							200.0	154.1	134.7	105.4
60	OBS	1561.8	1228.9	951.6	670.3	547.8	398.1	-	-	-	-
	EXP	1567.4	1225.5	944.3	672.0	538.3	411.1	333.2*	282.8*	211.0*	178.5*
	Elow							322.3	264.5	190.8	156.2
	Eup							344.2	301.8	232.5	203.2
65	OBS	3257.9	2373.9	1812.0	1448.8	1033.5	795.6	-	-	-	-
	EXP	3266.5	2329.5	1843.8	1436.8	1026.4	813.6	621.4*	503.6*	427.5*	318.8*
	Elow							600.9	471.0	386.7	278.9
	Eup							641.8	537.3	471.1	362.9
70	OBS	6284.7	5232.5	3748.6	3016.9	2294.9	1664.9	-	-	-	-
	EXP	6225.0	5209.7	3760.9	3010.6	2355.2	1664.8	1319.7*	1007.8*	816.9*	693.4*
	Elow							1276.3	942.6	738.9	606.6
	Eup							1363.1	1075.2	900.2	789.2
75	OBS	12452.5	10041.4	8558.9	6218.9	5073.5	3953.7	-	-	-	-
	EXP	12452.5	10122.2	8575.3	6261.0	5031.6	3894.8	2753.1*	2182.3*	1666.6*	1350.8*
	Elow							2662.5	2041.1	1507.5	1181.7
	Eup							2843.6	2328.2	1836.6	1537.5
30-79	OBS	1388.4	1096.1	859.3	654.7	512.8	390.7	-	-	-	-
	EXP	1389.4	1095.4	858.6	654.5	512.6	391.8	298.3*	236.3*	187.4*	151.3*
	Elow							288.5	221.1	169.5	132.3
	Eup							308.1	252.2	206.5	172.2

Osmond and Gardner Modelling

**Italy Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

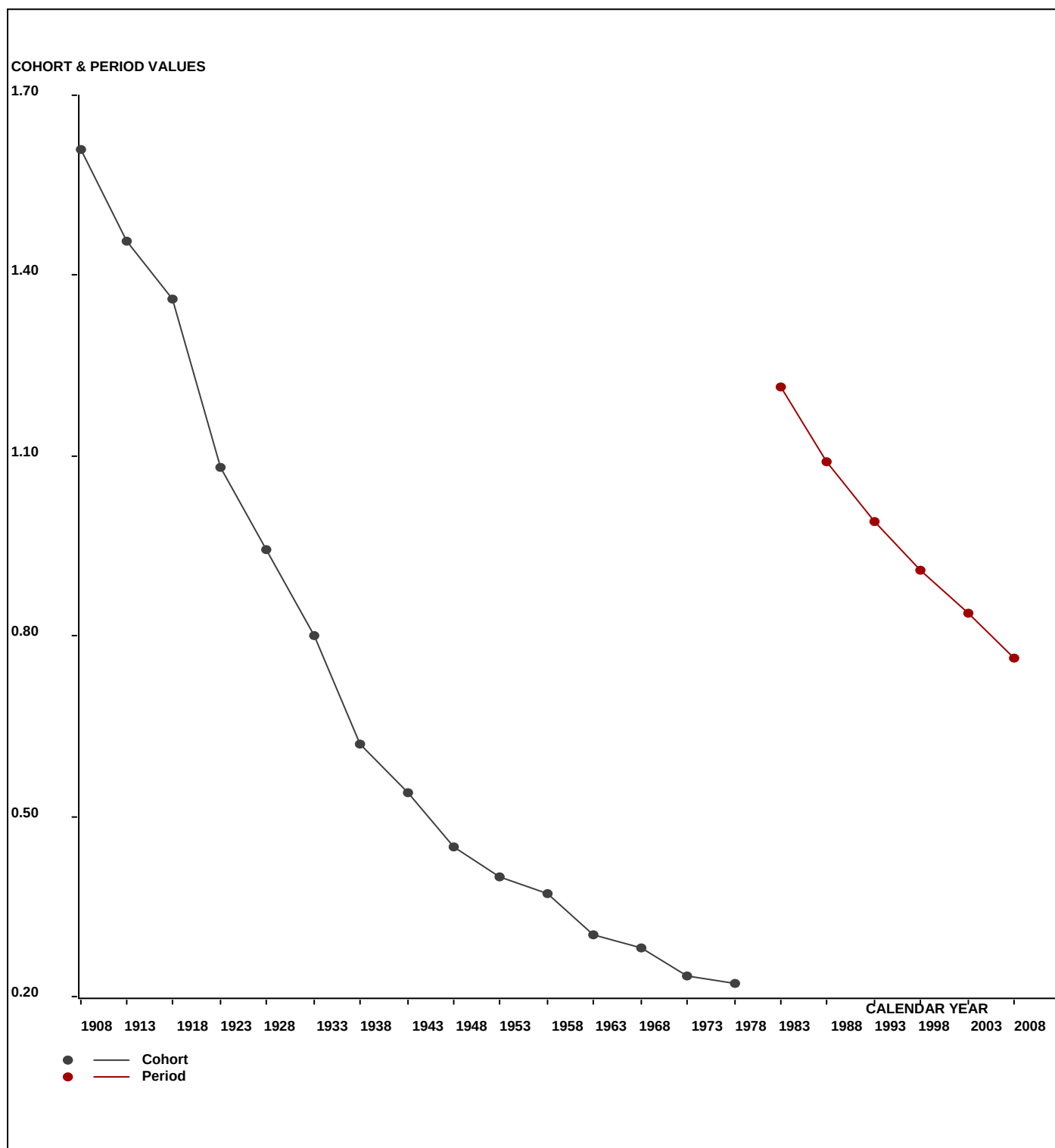
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	405.0	345.0	310.0	249.0	182.8	163.0	-	-	-	-
	EXP	407.2	343.6	284.6	257.6	200.9	150.3	103.6*	75.0*	58.2*	45.1*
	CHI	0.012	0.006	2.270	0.284	1.636	1.077	-	-	-	-
35 -	OBS	636.0	557.0	510.0	375.0	365.6	306.0	-	-	-	-
	EXP	676.9	554.1	469.7	392.5	371.1	289.2	212.7*	145.7*	105.3*	81.6*
	CHI	2.468	0.016	3.454	0.779	0.082	0.977	-	-	-	-
40 -	OBS	1222.0	967.0	820.0	677.0	575.0	573.0	-	-	-	-
	EXP	1222.9	971.4	802.9	687.1	591.1	559.3	429.3*	314.8*	215.8*	156.0*
	CHI	0.001	0.020	0.363	0.147	0.436	0.337	-	-	-	-
45 -	OBS	2161.0	1618.0	1433.0	1088.0	991.4	848.0	-	-	-	-
	EXP	2213.6	1662.3	1335.7	1117.0	974.5	841.6	786.4*	601.8*	441.6*	302.9*
	CHI	1.249	1.178	7.091	0.753	0.293	0.048	-	-	-	-
50 -	OBS	3975.0	2852.0	2236.0	1844.0	1576.2	1277.0	-	-	-	-
	EXP	4053.0	2882.2	2195.1	1790.9	1514.9	1328.4	1139.6*	1059.8*	811.9*	596.1*
	CHI	1.502	0.316	0.762	1.576	2.477	1.990	-	-	-	-
55 -	OBS	6995.0	5309.0	3891.0	3043.0	2474.0	2040.0	-	-	-	-
	EXP	7041.8	5310.7	3850.0	2983.2	2475.4	2092.5	1827.3*	1560.4*	1453.4*	1114.6*
	CHI	0.312	0.001	0.436	1.200	0.001	1.317	-	-	-	-
60 -	OBS	9898.0	9400.0	7290.0	5362.0	4313.2	3409.0	-	-	-	-
	EXP	9933.4	9374.2	7234.0	5374.8	4238.5	3520.1	2967.4*	2584.0*	2212.7*	2064.8*
	CHI	0.126	0.071	0.433	0.031	1.318	3.507	-	-	-	-
65 -	OBS	16036.0	13405.0	12434.0	10130.0	7712.2	5903.0	-	-	-	-
	EXP	16078.3	13154.3	12651.9	10045.9	7659.2	6037.0	5026.3*	4245.0*	3718.4*	3195.1*
	CHI	0.111	4.777	3.751	0.704	0.367	2.974	-	-	-	-
70 -	OBS	30996.0	21228.0	17983.0	17738.0	14172.0	11302.0	-	-	-	-
	EXP	30701.2	21135.5	18041.8	17700.9	14544.5	11301.6	8900.7*	7456.3*	6332.8*	5590.7*
	CHI	2.831	0.405	0.192	0.078	9.542	0.000	-	-	-	-
75 -	OBS	37797.0	36972.0	26463.0	23587.0	24057.6	20373.0	-	-	-	-
	EXP	37797.0	37269.4	26513.5	23746.5	23858.8	20069.2	15855.8*	12551.3*	10692.0*	9143.9*
	CHI	0.000	2.373	0.096	1.072	1.656	4.599	-	-	-	-
30-79	OBS	110121.0	92653.0	73370.0	64093.0	56420.0	46194.0	-	-	-	-
	EXP	110125.3	92657.6	73379.3	64096.3	56428.9	46189.2	37249.2*	30594.2*	26042.3*	22290.8*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Italy Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

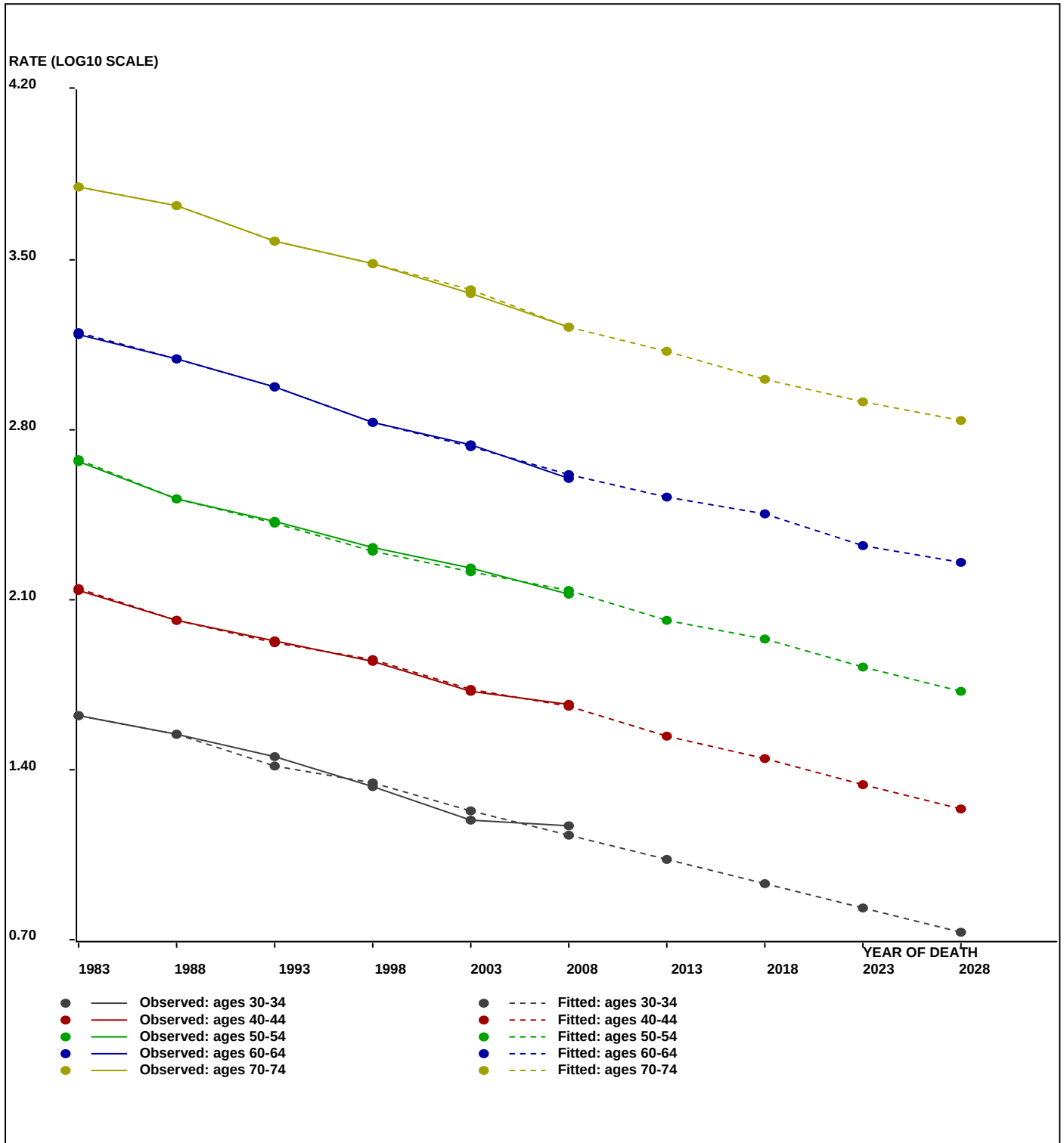


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Italy Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Italy Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	10.8	18.9	34.8	64.5	103.6	193.6	333.2	621.4	1319.7	2753.1
2016 PRE	8.6	15.0	27.9	48.8	87.7	144.4	282.8	503.6	1007.8	2182.3
2021 PRE	6.8	11.9	22.1	39.1	66.4	122.2	211.0	427.5	816.9	1666.6
2026 PRE	5.4	9.4	17.5	31.0	53.2	92.6	178.5	318.8	693.4	1350.8

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	103.6	212.7	429.3	786.4	1139.6	1827.3	2967.4	5026.3	8900.7	15855.8
2016 PRE	75.0	145.7	314.8	601.8	1059.8	1560.4	2584.0	4245.0	7456.3	12551.3
2021 PRE	58.2	105.3	215.8	441.6	811.9	1453.4	2212.7	3718.4	6332.8	10692.0
2026 PRE	45.1	81.6	156.0	302.9	596.1	1114.6	2064.8	3195.1	5590.7	9143.9

Osmond and Gardner Modelling

Italy Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	4828.78	94.68	51	P, C	99.84	25938.18	0.0000
AGE-PERIOD	2097.49	46.61	45	Cohort	99.63	11171.30	0.0000
AGE-COHORT	31.37	0.87	36	Period	75.04	166.35	0.0000
PERIOD-COHORT	381.78	9.54	40	Age	97.95	2030.86	0.0000
FULL AGE-PERIOD-COHORT	7.83	0.24	32			41.52	0.1208

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.542877	34.904178
35	1.959016	90.994761
40	2.374032	236.609400
45	2.715495	519.391609
50	2.984000	963.828627
55	3.203201	1596.617053
60	3.376197	2377.917080
65	3.507275	3215.696003
70	3.605983	4036.292620
75	3.664479	4618.269490

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.004424	1.010240
1986	0.016634	1.039044
1991	0.009291	1.021624
1996	-0.006538	0.985059
2001	-0.012915	0.970701
2006	-0.013431	0.969546

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.000847	1.001952
1911	0.009766	1.022742
1916	0.055731	1.136922
1921	0.078423	1.197906
1926	0.079729	1.201516
1931	0.045920	1.111528
1936	-0.053854	0.883376
1941	-0.094082	0.805226
1946	-0.175367	0.667780
1951	-0.259340	0.550377
1956	-0.377279	0.419490
1961	-0.497759	0.317864
1966	-0.605569	0.247988
1971	-0.671501	0.213059
1976	-0.683635	0.207188

Osmond and Gardner Modelling

Italy Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	189.0	141.0	134.0	97.0	79.6	77.0
EXP	186.9	148.1	123.1	98.4	84.9	77.0
CHI	0.0	0.3	1.0	0.0	0.3	0.0
35 - OBS	576.0	476.0	363.0	320.0	278.8	235.0
EXP	575.7	501.2	376.9	306.4	260.5	229.9
CHI	0.0	1.3	0.5	0.6	1.3	0.1
40 - OBS	1681.0	1518.0	1276.0	935.0	822.8	675.0
EXP	1692.7	1527.1	1267.9	933.0	795.1	692.8
CHI	0.1	0.1	0.1	0.0	1.0	0.5
45 - OBS	4246.0	3814.0	3165.0	2631.0	2025.8	1714.0
EXP	4165.8	3762.7	3243.1	2641.5	2017.6	1768.2
CHI	1.5	0.7	1.9	0.0	0.0	1.7
50 - OBS	9312.0	7673.0	6633.0	5774.0	4753.2	3760.0
EXP	9260.3	7744.1	6699.7	5684.9	4768.1	3749.7
CHI	0.3	0.7	0.7	1.4	0.0	0.0
55 - OBS	15810.0	15209.0	12260.0	10337.0	9020.6	7855.0
EXP	15994.8	15079.3	12140.7	10361.2	9102.9	7815.4
CHI	2.1	1.1	1.2	0.1	0.7	0.2
60 - OBS	18021.0	22745.0	20640.0	16520.0	14810.2	13260.0
EXP	18237.1	22707.1	20686.7	16551.2	14634.4	13182.3
CHI	2.6	0.1	0.1	0.1	2.1	0.5
65 - OBS	18176.0	22704.0	27224.0	24512.0	20571.6	18501.0
EXP	18179.9	22601.8	27086.0	24618.3	20576.0	18627.8
CHI	0.0	0.5	0.7	0.5	0.0	0.9
70 - OBS	20845.0	19412.0	23687.0	28033.0	26705.4	23373.0
EXP	20568.0	19344.1	23696.8	28087.7	26894.1	23467.6
CHI	3.7	0.2	0.0	0.1	1.3	0.4
75 - OBS	14189.0	17789.0	16521.0	20791.0	25603.2	25804.0
EXP	14189.0	18070.0	16585.2	20669.2	25541.2	25645.8
CHI	0.0	4.4	0.2	0.7	0.2	1.0

Osmond and Gardner Modelling

Italy Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	34.904178
35	90.994761
40	236.609400
45	519.391609
50	963.828627
55	1596.617053
60	2377.917080
65	3215.696003
70	4036.292620
75	4618.269490

PERIOD	EFFECT	LOWER	UPPER
% Period Change	99.8811	96.8811	102.8811

1981	1.010240		
1986	1.039044		
1991	1.021624		
1996	0.985059		
2001	0.970701		
2006	0.969546		
2011	0.968393	0.939307	0.997480
2016	0.967242	0.910011	1.026218
2021	0.966092	0.881628	1.055784
2026	0.964943	0.854131	1.086202

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.001952	1.000000	
1911	1.022742	2.000000	
1916	1.136922	4.000000	
1921	1.197906	8.000000	
1926	1.201516	16.000000	
1931	1.111528	32.000000	
1936	0.883376	64.000000	
1941	0.805226	128.000000	
1946	0.667780	256.000000	
1951	0.550377	512.000000	
1956	0.419490	1024.000000	
1961	0.317864	2048.000000	
1966	0.247988	4096.000000	
1971	0.213059	8192.000000	
1976	0.168651	EXTRAPOLATION	0.207188
1981	0.135743	EXTRAPOLATION	
1986	0.109256	EXTRAPOLATION	
1991	0.087937	EXTRAPOLATION	
1996	0.070778	EXTRAPOLATION	

Osmond and Gardner Modelling

**Italy Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	19.6	14.5	12.3	8.4	6.8	7.0	-	-	-	-
	EXP	19.4	15.2	11.3	8.5	7.2	5.7	4.6*	3.7*	3.0*	2.4*
	Elow							4.5	3.5	2.7	2.1
	Eup							4.7	3.9	3.2	2.7
35	OBS	61.4	49.4	37.6	29.8	23.4	19.2	-	-	-	-
	EXP	61.4	52.0	39.0	28.5	21.9	18.8	14.9*	11.9*	9.6*	7.7*
	Elow							14.4	11.2	8.8	6.8
	Eup							15.3	12.7	10.5	8.7
40	OBS	191.2	163.2	133.9	98.0	75.5	55.4	-	-	-	-
	EXP	192.5	164.2	133.0	97.8	73.0	56.9	48.8*	38.6*	31.0*	24.9*
	Elow							47.4	36.3	28.3	22.1
	Eup							50.3	41.0	33.9	28.1
45	OBS	472.4	440.5	345.8	280.5	212.4	155.2	-	-	-	-
	EXP	463.5	434.6	354.3	281.6	211.5	160.1	124.7*	107.0*	84.6*	68.0*
	Elow							121.0	100.7	77.2	60.2
	Eup							128.5	113.6	92.5	76.6
50	OBS	1088.3	876.5	785.0	644.0	513.3	393.1	-	-	-	-
	EXP	1082.3	884.7	792.9	634.0	514.9	392.0	296.7*	231.2*	198.4*	156.9*
	Elow							287.8	217.5	181.0	138.8
	Eup							305.6	245.3	216.8	176.6
55	OBS	1915.6	1859.8	1455.1	1263.5	1025.6	856.3	-	-	-	-
	EXP	1938.0	1844.0	1440.9	1266.4	1034.9	852.0	648.6*	490.9*	382.5*	328.2*
	Elow							629.1	461.8	349.1	290.6
	Eup							668.1	520.8	418.0	369.5
60	OBS	2843.6	2973.6	2694.2	2065.3	1881.0	1548.6	-	-	-	-
	EXP	2877.7	2968.7	2700.3	2069.2	1858.7	1539.6	1267.4*	964.8*	730.2*	569.0*
	Elow							1229.3	907.7	666.4	503.7
	Eup							1305.5	1023.7	798.0	640.5
65	OBS	3692.6	4020.6	3967.4	3505.7	2756.8	2493.4	-	-	-	-
	EXP	3693.4	4002.5	3947.3	3520.9	2757.4	2510.5	2079.5*	1711.9*	1303.2*	986.3*
	Elow							2017.0	1610.6	1189.3	873.1
	Eup							2142.0	1816.2	1424.2	1110.3
70	OBS	4226.5	4784.8	4937.6	4767.9	4324.5	3443.0	-	-	-	-
	EXP	4170.4	4768.1	4939.7	4777.2	4355.0	3457.0	3147.4*	2607.1*	2146.2*	1633.8*
	Elow							3052.9	2452.8	1958.5	1446.2
	Eup							3241.9	2766.0	2345.4	1839.1
75	OBS	4674.7	4831.4	5343.4	5481.7	5399.4	5007.7	-	-	-	-
	EXP	4674.7	4907.7	5364.2	5449.6	5386.3	4977.0	3950.7*	3596.9*	2979.4*	2452.7*
	Elow							3832.1	3384.1	2718.9	2171.0
	Eup							4069.4	3816.2	3256.0	2760.9
30-79	OBS	1369.9	1398.8	1323.1	1174.9	1021.4	865.6	-	-	-	-
	EXP	1370.6	1398.0	1323.6	1174.8	1021.3	865.7	714.9*	588.7*	469.9*	370.7*
	Elow							693.4	553.9	428.8	328.1
	Eup							736.3	624.6	513.5	417.2

Osmond and Gardner Modelling

**Italy Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

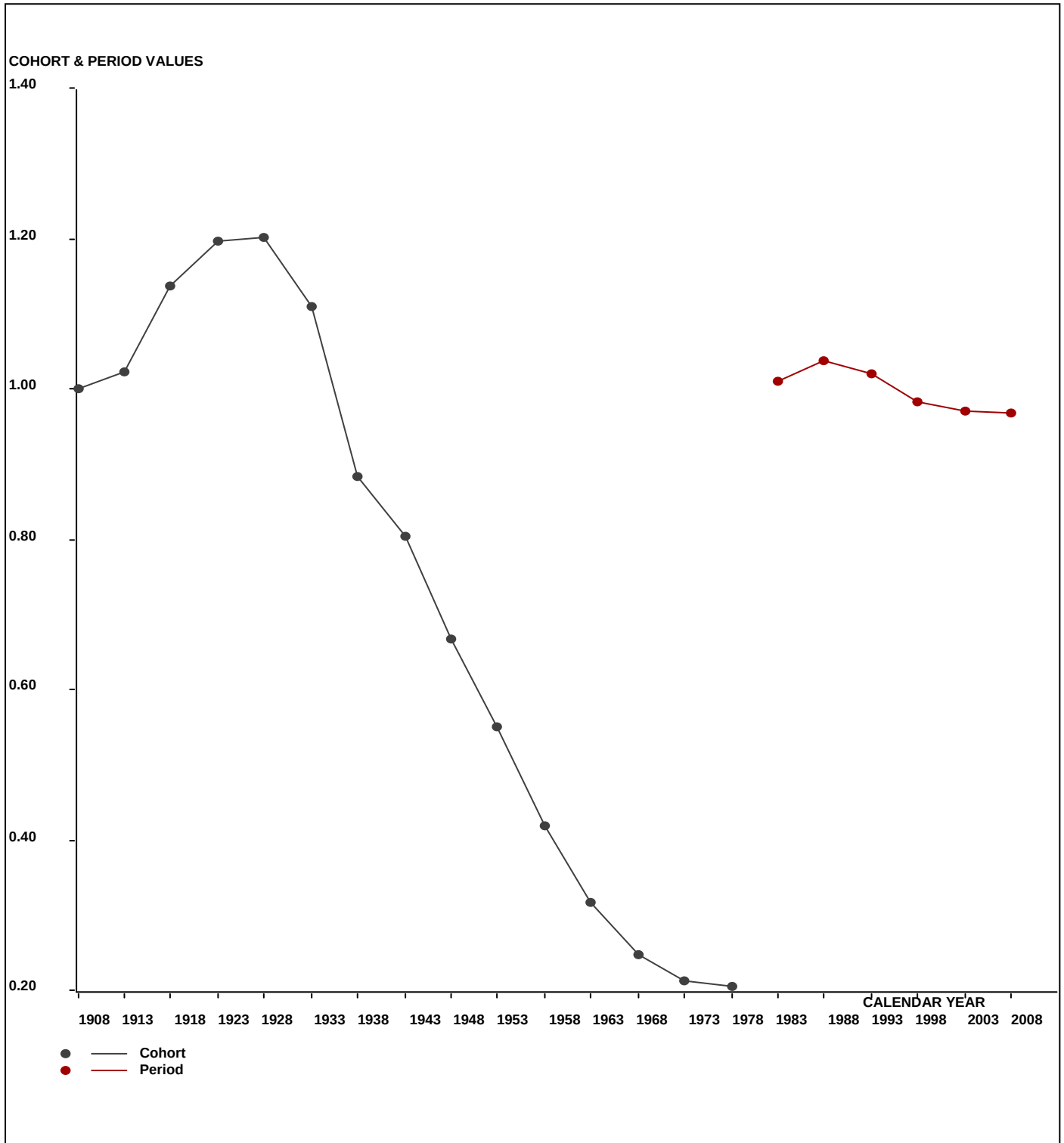
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	189.0	141.0	134.0	97.0	79.6	77.0	-	-	-	-
	EXP	186.9	148.1	123.1	98.4	84.9	62.7	43.8*	32.2*	25.3*	19.9*
	CHI	0.023	0.342	0.962	0.020	0.329	3.273	-	-	-	-
35 -	OBS	576.0	476.0	363.0	320.0	278.8	235.0	-	-	-	-
	EXP	575.7	501.2	376.9	306.4	260.5	229.9	166.9*	116.0*	85.0*	66.8*
	CHI	0.000	1.270	0.512	0.599	1.288	0.111	-	-	-	-
40 -	OBS	1681.0	1518.0	1276.0	935.0	822.8	675.0	-	-	-	-
	EXP	1692.7	1527.1	1267.9	933.0	795.1	692.8	602.5*	436.1*	303.2*	222.3*
	CHI	0.080	0.054	0.052	0.004	0.963	0.457	-	-	-	-
45 -	OBS	4246.0	3814.0	3165.0	2631.0	2025.8	1714.0	-	-	-	-
	EXP	4165.8	3762.7	3243.1	2641.5	2017.6	1768.2	1521.4*	1319.0*	955.5*	664.7*
	CHI	1.546	0.699	1.880	0.042	0.034	1.660	-	-	-	-
50 -	OBS	9312.0	7673.0	6633.0	5774.0	4753.2	3760.0	-	-	-	-
	EXP	9260.3	7744.1	6699.7	5684.9	4768.1	3749.7	3264.3*	2795.4*	2425.9*	1758.4*
	CHI	0.289	0.653	0.664	1.398	0.046	0.029	-	-	-	-
55 -	OBS	15810.0	15209.0	12260.0	10337.0	9020.6	7855.0	-	-	-	-
	EXP	15994.8	15079.3	12140.7	10361.2	9102.9	7815.4	6120.8*	5304.0*	4549.2*	3952.1*
	CHI	2.135	1.115	1.172	0.056	0.743	0.200	-	-	-	-
60 -	OBS	18021.0	22745.0	20640.0	16520.0	14810.2	13260.0	-	-	-	-
	EXP	18237.1	22707.1	20686.7	16551.2	14634.4	13182.3	11286.8*	8814.5*	7659.5*	6581.6*
	CHI	2.561	0.063	0.105	0.059	2.112	0.458	-	-	-	-
65 -	OBS	18176.0	22704.0	27224.0	24512.0	20571.6	18501.0	-	-	-	-
	EXP	18179.9	22601.8	27086.0	24618.3	20576.0	18627.8	16821.4*	14429.2*	11335.2*	9883.9*
	CHI	0.001	0.462	0.703	0.459	0.001	0.863	-	-	-	-
70 -	OBS	20845.0	19412.0	23687.0	28033.0	26705.4	23373.0	-	-	-	-
	EXP	20568.0	19344.1	23696.8	28087.7	26894.1	23467.6	21228.3*	19287.9*	16638.3*	13173.0*
	CHI	3.730	0.238	0.004	0.107	1.323	0.381	-	-	-	-
75 -	OBS	14189.0	17789.0	16521.0	20791.0	25603.2	25804.0	-	-	-	-
	EXP	14189.0	18070.0	16585.2	20669.2	25541.2	25645.8	22753.3*	20687.5*	19113.9*	16602.5*
	CHI	0.000	4.371	0.249	0.718	0.151	0.975	-	-	-	-
30-79	OBS	103045.0	111481.0	111903.0	109950.0	104671.2	95254.0	-	-	-	-
	EXP	103050.2	111485.7	111906.1	109951.7	104674.7	95242.3	83809.5*	73221.7*	63091.1*	52925.2*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Italy Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

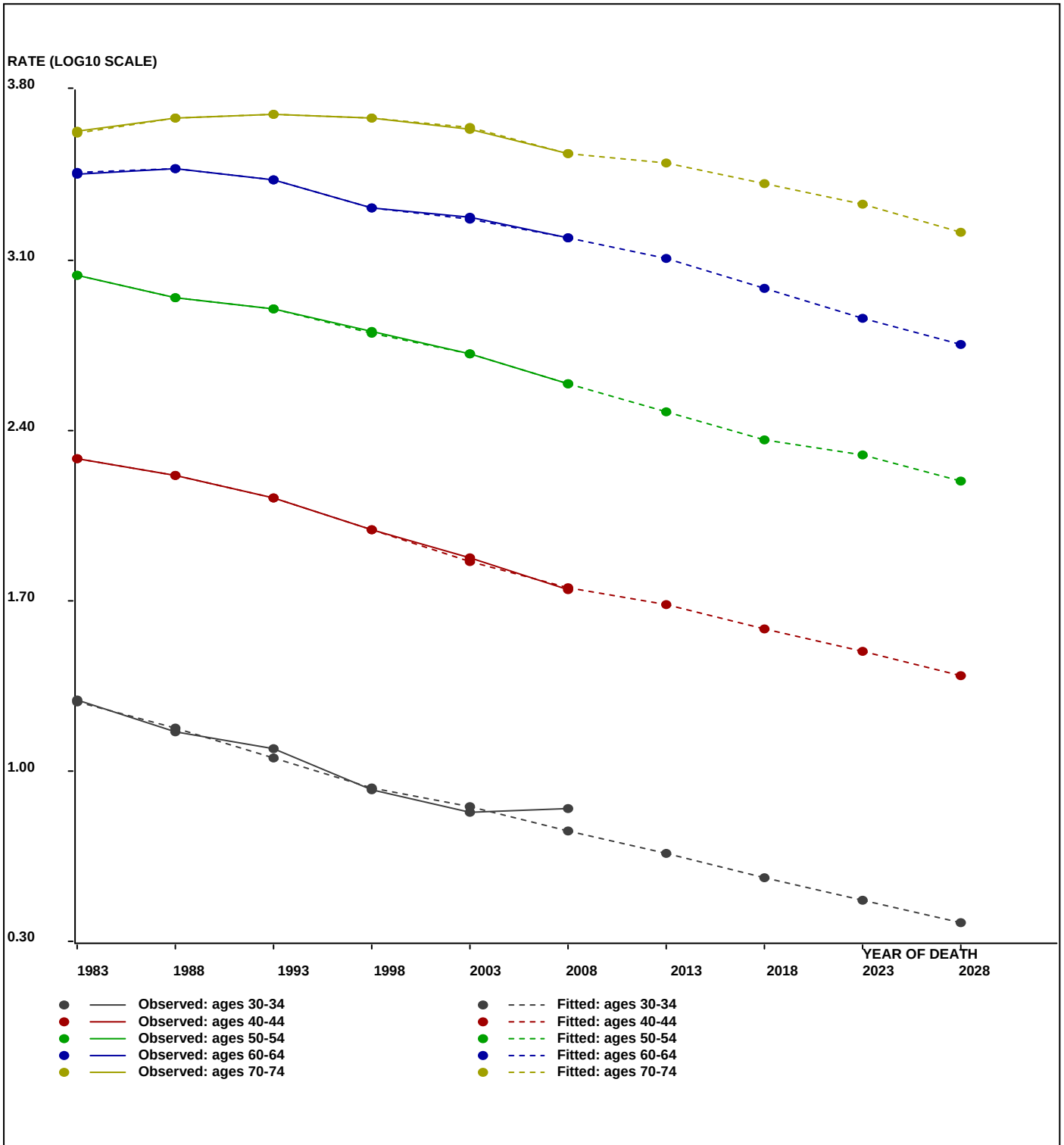


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Italy Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Italy Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	4.6	14.9	48.8	124.7	296.7	648.6	1267.4	2079.5	3147.4	3950.7
2016	PRE	3.7	11.9	38.6	107.0	231.2	490.9	964.8	1711.9	2607.1	3596.9
2021	PRE	3.0	9.6	31.0	84.6	198.4	382.5	730.2	1303.2	2146.2	2979.4
2026	PRE	2.4	7.7	24.9	68.0	156.9	328.2	569.0	986.3	1633.8	2452.7

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	43.8	166.9	602.5	1521.4	3264.3	6120.8	11286.8	16821.4	21228.3	22753.3
2016	PRE	32.2	116.0	436.1	1319.0	2795.4	5304.0	8814.5	14429.2	19287.9	20687.5
2021	PRE	25.3	85.0	303.2	955.5	2425.9	4549.2	7659.5	11335.2	16638.3	19113.9
2026	PRE	19.9	66.8	222.3	664.7	1758.4	3952.1	6581.6	9883.9	13173.0	16602.5

Osmond and Gardner Modelling

Italy COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	5774.46	113.22	51	P, C	99.85	31564.03	0.0000
AGE-PERIOD	376.03	8.36	45	Cohort	97.72	1998.92	0.0000
AGE-COHORT	44.39	1.23	36	Period	80.72	235.44	0.0000
PERIOD-COHORT	78.61	1.97	40	Age	89.11	418.06	0.0000
FULL AGE-PERIOD-COHORT	8.56	0.27	32			45.40	0.0586

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.214868	16.400924
35	1.344190	22.089693
40	1.528945	33.802235
45	1.784773	60.921831
50	2.087350	122.278445
55	2.385433	242.903207
60	2.675410	473.597708
65	2.963242	918.844443
70	3.249255	1775.231547
75	3.521562	3323.242314

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.118745	1.314452
1986	0.049341	1.120318
1991	-0.010564	0.975968
1996	-0.063349	0.864272
2001	-0.101930	0.790805
2006	-0.114863	0.767604

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.077165	1.194441
1911	0.082099	1.208088
1916	0.105580	1.275204
1921	0.049287	1.120177
1926	0.011489	1.026807
1931	-0.071880	0.847461
1936	-0.198544	0.633076
1941	-0.267273	0.540415
1946	-0.386240	0.410922
1951	-0.429374	0.372072
1956	-0.453791	0.351730
1961	-0.511044	0.308287
1966	-0.519347	0.302450
1971	-0.593509	0.254971
1976	-0.910237	0.122960

Osmond and Gardner Modelling

Italy COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	65.0	67.0	59.0	48.0	41.6	17.0
EXP	77.3	62.9	53.6	49.5	38.9	17.0
CHI	1.9	0.3	0.5	0.0	0.2	0.0
35 - OBS	98.0	103.0	74.0	69.0	56.2	50.0
EXP	111.9	88.7	73.3	63.3	62.8	52.9
CHI	1.7	2.3	0.0	0.5	0.7	0.2
40 - OBS	190.0	129.0	125.0	113.0	92.6	103.0
EXP	211.2	144.7	117.0	98.1	89.8	95.6
CHI	2.1	1.7	0.5	2.3	0.1	0.6
45 - OBS	460.0	318.0	218.0	206.0	155.0	144.0
EXP	455.6	319.4	223.6	183.8	161.6	159.3
CHI	0.0	0.0	0.1	2.7	0.3	1.5
50 - OBS	1182.0	761.0	520.0	417.0	324.8	301.0
EXP	1165.5	759.2	545.0	389.4	333.2	315.8
CHI	0.2	0.0	1.1	2.0	0.2	0.7
55 - OBS	2805.0	1842.0	1245.0	942.0	669.4	608.0
EXP	2705.8	1885.9	1264.5	928.2	694.3	636.4
CHI	3.6	1.0	0.3	0.2	0.9	1.3
60 - OBS	4407.0	4086.0	2993.0	2087.0	1649.6	1308.0
EXP	4419.3	4167.2	3000.9	2072.7	1593.6	1279.1
CHI	0.0	1.6	0.0	0.1	2.0	0.7
65 - OBS	7475.0	6613.0	6357.0	4763.0	3363.6	2803.0
EXP	7581.0	6511.5	6318.5	4705.6	3432.6	2828.2
CHI	1.5	1.6	0.2	0.7	1.4	0.2
70 - OBS	13943.0	10345.0	9265.0	9148.0	7343.4	5923.0
EXP	13903.3	10289.1	9310.4	9262.7	7347.0	5856.2
CHI	0.1	0.3	0.2	1.4	0.0	0.8
75 - OBS	15837.0	16521.0	12837.0	12158.0	12850.4	11120.0
EXP	15837.0	16560.8	12787.9	12202.7	12795.8	11139.6
CHI	0.0	0.1	0.2	0.2	0.2	0.0

Osmond and Gardner Modelling

Italy COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	16.400924
35	22.089693
40	33.802235
45	60.921831
50	122.278445
55	242.903207
60	473.597708
65	918.844443
70	1775.231547
75	3323.242314

PERIOD	EFFECT	LOWER	UPPER
% Period Change	97.0660	94.0660	100.0660

1981	1.314452		
1986	1.120318		
1991	0.975968		
1996	0.864272		
2001	0.790805		
2006	0.767604		
2011	0.745082	0.722054	0.768111
2016	0.723222	0.679208	0.768618
2021	0.702003	0.638904	0.769126
2026	0.681407	0.600992	0.769633

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.194441	1.000000	
1911	1.208088	2.000000	
1916	1.275204	4.000000	
1921	1.120177	8.000000	
1926	1.026807	16.000000	
1931	0.847461	32.000000	
1936	0.633076	64.000000	
1941	0.540415	128.000000	
1946	0.410922	256.000000	
1951	0.372072	512.000000	
1956	0.351730	1024.000000	
1961	0.308287	2048.000000	
1966	0.302450	4096.000000	
1971	0.254971	8192.000000	
1976	0.230283	EXTRAPOLATION	0.122960
1981	0.206061	EXTRAPOLATION	
1986	0.184387	EXTRAPOLATION	
1991	0.164993	EXTRAPOLATION	
1996	0.147638	EXTRAPOLATION	

Osmond and Gardner Modelling

**Italy COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	6.7	6.9	5.4	4.2	3.5	1.5	-	-	-	-
	EXP	8.0	6.5	4.9	4.3	3.3	2.9	2.5*	2.2*	1.9*	1.6*
	Elow							2.4	2.1	1.7	1.5
	Eup							2.6	2.3	2.1	1.9
35	OBS	10.4	10.7	7.7	6.4	4.7	4.1	-	-	-	-
	EXP	11.9	9.2	7.6	5.9	5.3	4.3	3.8*	3.3*	2.9*	2.5*
	Elow							3.7	3.1	2.6	2.2
	Eup							3.9	3.5	3.1	2.8
40	OBS	21.6	13.9	13.1	11.8	8.5	8.5	-	-	-	-
	EXP	24.0	15.6	12.3	10.3	8.2	7.8	6.4*	5.6*	4.9*	4.2*
	Elow							6.2	5.3	4.5	3.7
	Eup							6.6	6.0	5.4	4.8
45	OBS	51.2	36.7	23.8	22.0	16.2	13.0	-	-	-	-
	EXP	50.7	36.9	24.4	19.6	16.9	14.4	13.7*	11.2*	9.8*	8.6*
	Elow							13.3	10.6	9.0	7.5
	Eup							14.2	11.9	10.8	9.7
50	OBS	138.1	86.9	61.5	46.5	35.1	31.5	-	-	-	-
	EXP	136.2	86.7	64.5	43.4	36.0	33.0	28.1*	26.7*	21.9*	19.2*
	Elow							27.2	25.1	19.9	16.9
	Eup							29.0	28.4	24.0	21.7
55	OBS	339.9	225.2	147.8	115.1	76.1	66.3	-	-	-	-
	EXP	327.8	230.6	150.1	113.5	78.9	69.4	63.7*	54.2*	51.6*	42.2*
	Elow							61.7	50.9	46.9	37.2
	Eup							65.6	57.6	56.5	47.7
60	OBS	695.4	534.2	390.7	260.9	209.5	152.8	-	-	-	-
	EXP	697.3	544.8	391.7	259.1	202.4	149.4	131.3*	120.5*	102.5*	97.6*
	Elow							127.2	113.1	93.3	86.1
	Eup							135.4	128.0	112.3	110.2
65	OBS	1518.6	1171.1	926.4	681.2	450.8	377.8	-	-	-	-
	EXP	1540.2	1153.1	920.8	673.0	460.0	381.2	281.3*	247.3*	226.9*	193.0*
	Elow							272.6	232.2	206.5	170.2
	Eup							290.0	262.8	248.6	218.0
70	OBS	2827.1	2549.9	1931.3	1555.9	1189.1	872.5	-	-	-	-
	EXP	2819.0	2536.2	1940.8	1575.4	1189.7	862.7	714.8*	527.6*	463.7*	425.5*
	Elow							692.7	495.5	422.0	375.3
	Eup							736.9	560.7	508.0	480.6
75	OBS	5217.6	4487.0	4151.9	3205.6	2710.0	2158.0	-	-	-	-
	EXP	5217.6	4497.8	4136.0	3217.4	2698.5	2161.8	1567.6*	1298.9*	958.7*	842.5*
	Elow							1519.1	1219.8	872.5	743.1
	Eup							1616.0	1380.4	1050.3	951.6
30-79	OBS	583.7	480.3	389.5	298.8	232.2	182.1	-	-	-	-
	EXP	584.1	480.1	389.7	298.4	232.4	182.5	142.3*	117.1*	96.9*	86.0*
	Elow							137.9	110.0	88.2	75.8
	Eup							146.7	124.4	106.1	97.1

Osmond and Gardner Modelling

**Italy COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

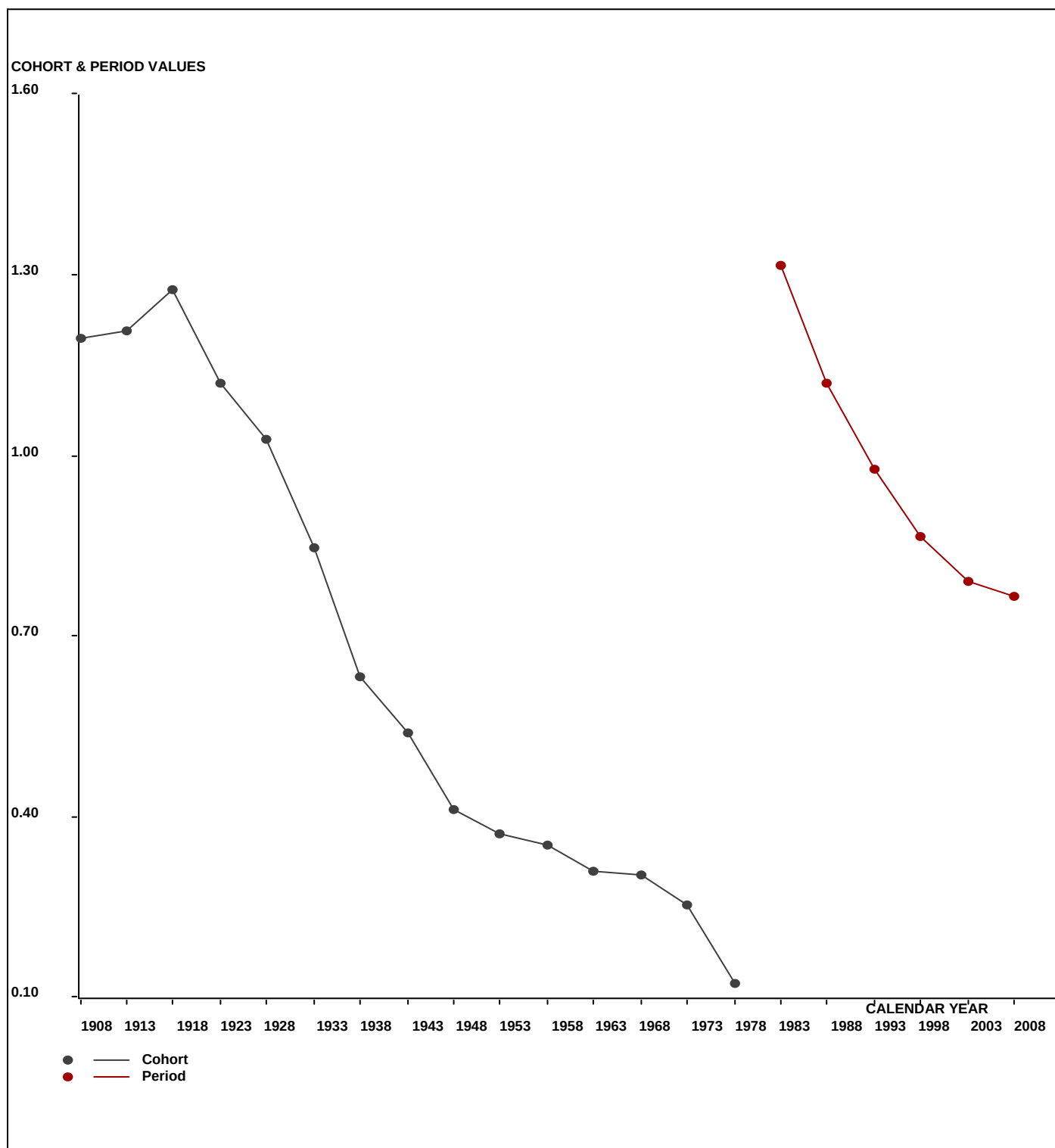
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	65.0	67.0	59.0	48.0	41.6	17.0	-	-	-	-
	EXP	77.3	62.9	53.6	49.5	38.9	31.8	24.1*	19.1*	16.2*	13.8*
	CHI	1.944	0.264	0.544	0.044	0.189	6.915	-	-	-	-
35 -	OBS	98.0	103.0	74.0	69.0	56.2	50.0	-	-	-	-
	EXP	111.9	88.7	73.3	63.3	62.8	52.9	42.6*	32.0*	25.3*	21.5*
	CHI	1.726	2.308	0.007	0.513	0.699	0.158	-	-	-	-
40 -	OBS	190.0	129.0	125.0	113.0	92.6	103.0	-	-	-	-
	EXP	211.2	144.7	117.0	98.1	89.8	95.6	79.3*	63.6*	47.8*	37.8*
	CHI	2.120	1.713	0.550	2.276	0.090	0.578	-	-	-	-
45 -	OBS	460.0	318.0	218.0	206.0	155.0	144.0	-	-	-	-
	EXP	455.6	319.4	223.6	183.8	161.6	159.3	167.5*	138.4*	111.2*	83.6*
	CHI	0.042	0.006	0.141	2.689	0.274	1.461	-	-	-	-
50 -	OBS	1182.0	761.0	520.0	417.0	324.8	301.0	-	-	-	-
	EXP	1165.5	759.2	545.0	389.4	333.2	315.8	309.0*	323.4*	267.6*	215.1*
	CHI	0.235	0.004	1.143	1.958	0.209	0.693	-	-	-	-
55 -	OBS	2805.0	1842.0	1245.0	942.0	669.4	608.0	-	-	-	-
	EXP	2705.8	1885.9	1264.5	928.2	694.3	636.4	600.7*	585.2*	613.4*	508.1*
	CHI	3.639	1.022	0.302	0.205	0.890	1.266	-	-	-	-
60 -	OBS	4407.0	4086.0	2993.0	2087.0	1649.6	1308.0	-	-	-	-
	EXP	4419.3	4167.2	3000.9	2072.7	1593.6	1279.1	1169.2*	1100.6*	1075.1*	1128.9*
	CHI	0.034	1.581	0.021	0.098	1.967	0.654	-	-	-	-
65 -	OBS	7475.0	6613.0	6357.0	4763.0	3363.6	2803.0	-	-	-	-
	EXP	7581.0	6511.5	6318.5	4705.6	3432.6	2828.2	2275.7*	2084.1*	1973.3*	1934.3*
	CHI	1.483	1.582	0.234	0.701	1.387	0.224	-	-	-	-
70 -	OBS	13943.0	10345.0	9265.0	9148.0	7343.4	5923.0	-	-	-	-
	EXP	13903.3	10289.1	9310.4	9262.7	7347.0	5856.2	4821.1*	3903.2*	3594.8*	3430.4*
	CHI	0.113	0.303	0.222	1.420	0.002	0.761	-	-	-	-
75 -	OBS	15837.0	16521.0	12837.0	12158.0	12850.4	11120.0	-	-	-	-
	EXP	15837.0	16560.8	12787.9	12202.7	12795.8	11139.6	9028.0*	7470.3*	6150.1*	5703.3*
	CHI	0.000	0.096	0.189	0.164	0.233	0.034	-	-	-	-
30-79	OBS	46462.0	40785.0	33693.0	29951.0	26546.6	22377.0	-	-	-	-
	EXP	46467.8	40789.4	33694.7	29955.9	26549.6	22394.8	18517.1*	15719.8*	13874.8*	13076.8*
	O/E	1.000	1.000	1.000	1.000	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

Italy COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

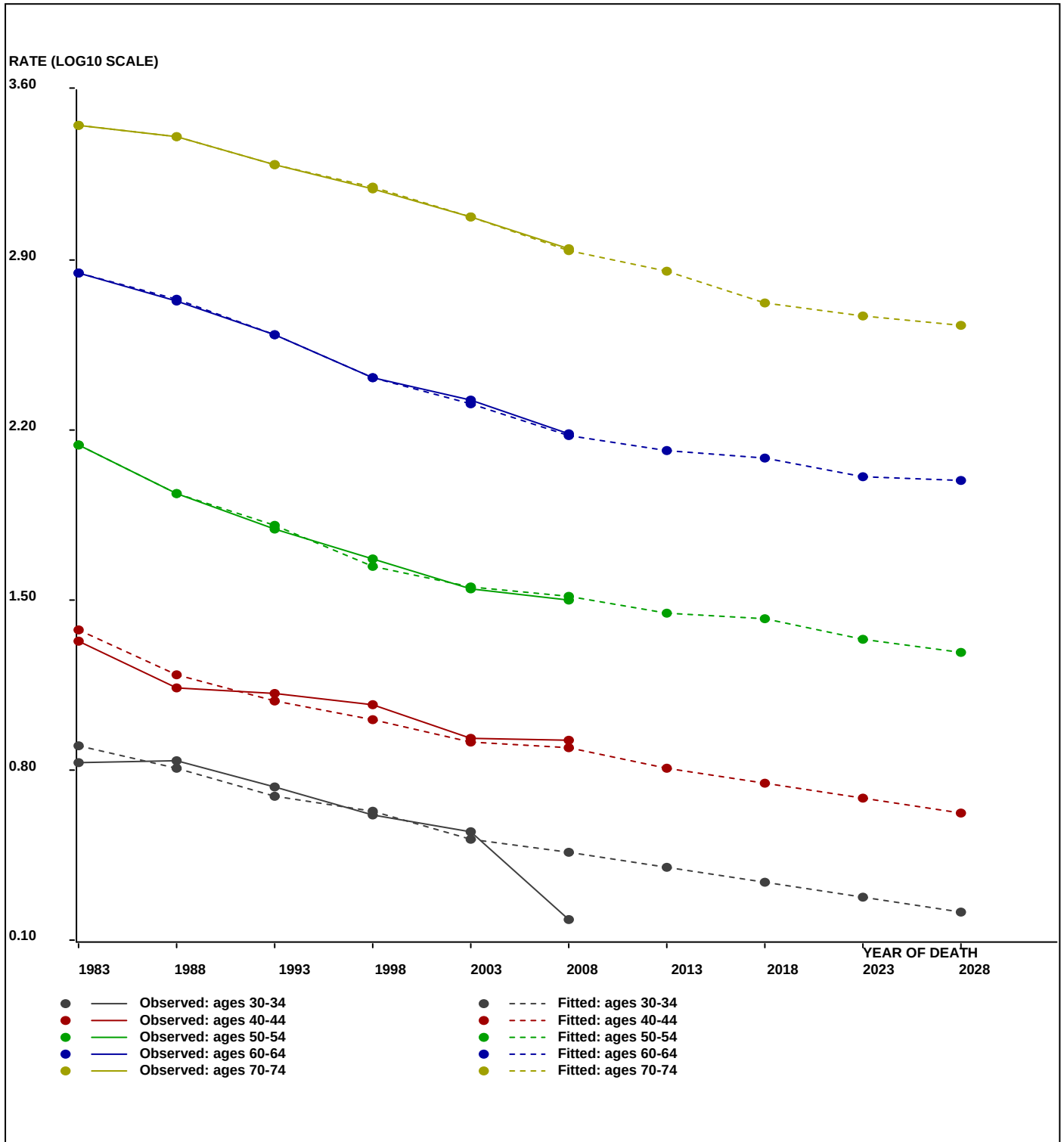


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Italy COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Italy COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	2.5	3.8	6.4	13.7	28.1	63.7	131.3	281.3	714.8	1567.6
2016	PRE	2.2	3.3	5.6	11.2	26.7	54.2	120.5	247.3	527.6	1298.9
2021	PRE	1.9	2.9	4.9	9.8	21.9	51.6	102.5	226.9	463.7	958.7
2026	PRE	1.6	2.5	4.2	8.6	19.2	42.2	97.6	193.0	425.5	842.5

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	24.1	42.6	79.3	167.5	309.0	600.7	1169.2	2275.7	4821.1	9028.0
2016	PRE	19.1	32.0	63.6	138.4	323.4	585.2	1100.6	2084.1	3903.2	7470.3
2021	PRE	16.2	25.3	47.8	111.2	267.6	613.4	1075.1	1973.3	3594.8	6150.1
2026	PRE	13.8	21.5	37.8	83.6	215.1	508.1	1128.9	1934.3	3430.4	5703.3

Osmond and Gardner Modelling

Italy IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	7437.49	145.83	51	P, C	99.78	40296.27	0.0000
AGE-PERIOD	166.92	3.71	45	Cohort	90.01	885.38	0.0000
AGE-COHORT	45.53	1.26	36	Period	63.39	241.47	0.0000
PERIOD-COHORT	40.48	1.01	40	Age	58.83	214.71	0.0000
FULL AGE-PERIOD-COHORT	16.67	0.52	32			88.39	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.124636	13.324036
35	1.451369	28.272816
40	1.756039	57.021574
45	2.055110	113.529779
50	2.293736	196.669007
55	2.549945	354.768813
60	2.825611	669.284764
65	3.099420	1257.246449
70	3.374449	2368.367837
75	3.649627	4463.003060

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.106075	1.276660
1986	0.047614	1.115871
1991	0.014538	1.034041
1996	-0.030431	0.932329
2001	-0.090025	0.812784
2006	-0.164301	0.685014

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.080149	1.202677
1911	0.059722	1.147418
1916	0.071651	1.179373
1921	0.029834	1.071111
1926	-0.008597	0.980398
1931	-0.051665	0.887840
1936	-0.132632	0.736831
1941	-0.161521	0.689412
1946	-0.200679	0.629972
1951	-0.205858	0.622504
1956	-0.220976	0.601207
1961	-0.261611	0.547506
1966	-0.284735	0.519117
1971	-0.289606	0.513327
1976	-0.349256	0.447450

Osmond and Gardner Modelling

Italy IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	107.0	84.0	90.0	72.0	53.8	44.0
EXP	102.7	86.6	81.2	73.7	64.1	44.0
CHI	0.2	0.1	0.9	0.0	1.7	0.0
35 - OBS	208.0	204.0	181.0	146.0	121.0	129.0
EXP	216.1	190.3	170.2	155.3	140.2	119.9
CHI	0.3	1.0	0.7	0.6	2.6	0.7
40 - OBS	453.0	394.0	355.0	278.0	269.2	265.0
EXP	453.3	378.0	354.1	308.3	277.0	246.2
CHI	0.0	0.7	0.0	3.0	0.2	1.4
45 - OBS	963.0	829.0	718.0	610.0	508.8	485.0
EXP	999.2	779.4	691.5	631.5	538.6	477.6
CHI	1.3	3.2	1.0	0.7	1.6	0.1
50 - OBS	1965.0	1514.0	1248.0	1054.0	934.6	850.0
EXP	2020.8	1488.1	1236.1	1070.3	950.7	802.3
CHI	1.5	0.5	0.1	0.2	0.3	2.8
55 - OBS	3895.0	3169.0	2466.0	2050.0	1688.8	1476.0
EXP	4077.3	3113.2	2442.3	1982.9	1676.7	1458.5
CHI	8.1	1.0	0.2	2.3	0.1	0.2
60 - OBS	6841.0	6442.0	5283.0	4102.0	3287.6	2624.0
EXP	6884.3	6476.6	5288.6	4058.2	3217.8	2655.5
CHI	0.3	0.2	0.0	0.5	1.5	0.4
65 - OBS	11546.0	10832.0	10801.0	8567.0	6569.0	4751.0
EXP	11669.4	10664.4	10725.6	8605.6	6451.6	4957.1
CHI	1.3	2.6	0.5	0.2	2.1	8.6
70 - OBS	23362.0	17417.0	17035.0	16919.0	13111.6	9645.0
EXP	22927.6	17275.0	17169.9	16924.7	13378.3	9823.5
CHI	8.2	1.2	1.1	0.0	5.3	3.2
75 - OBS	32232.0	31353.0	25870.0	25756.0	25138.2	19648.0
EXP	32232.0	31794.5	25889.9	25747.3	24995.9	19343.4
CHI	0.0	6.1	0.0	0.0	0.8	4.8

Osmond and Gardner Modelling

Italy IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	13.324036
35	28.272816
40	57.021574
45	113.529779
50	196.669007
55	354.768813
60	669.284764
65	1257.246449
70	2368.367837
75	4463.003060

PERIOD	EFFECT	LOWER	UPPER
% Period Change	84.2799	81.2799	87.2799

1981	1.276660		
1986	1.115871		
1991	1.034041		
1996	0.932329		
2001	0.812784		
2006	0.685014		
2011	0.577329	0.556778	0.597879
2016	0.486572	0.452549	0.521828
2021	0.410083	0.367831	0.455451
2026	0.345617	0.298973	0.397517

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.202677	1.000000	
1911	1.147418	2.000000	
1916	1.179373	4.000000	
1921	1.071111	8.000000	
1926	0.980398	16.000000	
1931	0.887840	32.000000	
1936	0.736831	64.000000	
1941	0.689412	128.000000	
1946	0.629972	256.000000	
1951	0.622504	512.000000	
1956	0.601207	1024.000000	
1961	0.547506	2048.000000	
1966	0.519117	4096.000000	
1971	0.513327	8192.000000	
1976	0.482139	EXTRAPOLATION	0.447450
1981	0.458896	EXTRAPOLATION	
1986	0.436773	EXTRAPOLATION	
1991	0.415717	EXTRAPOLATION	
1996	0.395675	EXTRAPOLATION	

Osmond and Gardner Modelling

**Italy IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	11.0	8.7	8.4	6.3	4.7	4.1	-	-	-	-
	EXP	10.6	8.9	7.5	6.4	5.6	4.4	3.5*	2.8*	2.3*	1.8*
	Elow							3.4	2.6	2.0	1.6
	Eup							3.7	3.0	2.5	2.1
35	OBS	21.9	21.1	18.7	13.6	10.3	10.7	-	-	-	-
	EXP	22.7	19.6	17.6	14.4	11.9	9.9	7.9*	6.3*	5.1*	4.1*
	Elow							7.6	5.9	4.5	3.5
	Eup							8.1	6.8	5.6	4.7
40	OBS	50.2	41.8	36.8	28.8	24.7	21.8	-	-	-	-
	EXP	50.2	40.1	36.7	32.0	25.4	20.3	16.9*	13.4*	10.7*	8.6*
	Elow							16.3	12.4	9.6	7.4
	Eup							17.5	14.3	11.9	9.9
45	OBS	102.9	92.9	76.8	63.6	52.4	43.2	-	-	-	-
	EXP	106.8	87.3	74.0	65.9	55.5	42.6	34.0*	28.4*	22.4*	18.0*
	Elow							32.8	26.4	20.1	15.6
	Eup							35.2	30.4	24.9	20.7
50	OBS	216.8	164.5	141.6	113.7	97.8	85.8	-	-	-	-
	EXP	222.9	161.7	140.2	115.5	99.5	81.0	62.2*	49.7*	41.4*	32.8*
	Elow							60.0	46.2	37.1	28.3
	Eup							64.4	53.3	46.0	37.7
55	OBS	424.2	357.8	272.9	235.8	183.0	153.1	-	-	-	-
	EXP	444.0	351.5	270.3	228.0	181.7	151.3	123.1*	94.5*	75.5*	62.9*
	Elow							118.8	87.9	67.7	54.4
	Eup							127.5	101.4	83.9	72.4
60	OBS	909.5	728.3	613.8	464.7	383.2	285.4	-	-	-	-
	EXP	915.2	732.2	614.4	459.8	375.0	288.8	240.5*	195.8*	150.3*	120.1*
	Elow							232.0	182.1	134.8	103.9
	Eup							249.1	210.0	166.9	138.1
65	OBS	1873.0	1526.3	1283.5	1036.0	766.6	569.1	-	-	-	-
	EXP	1893.0	1502.7	1274.6	1040.7	752.9	593.7	457.3*	380.8*	310.0*	237.9*
	Elow							441.0	354.2	278.0	205.8
	Eup							473.5	408.4	344.3	273.6
70	OBS	3535.1	3142.5	2602.5	2164.1	1675.0	1173.7	-	-	-	-
	EXP	3469.3	3116.8	2623.1	2164.8	1709.1	1195.4	942.7*	726.0*	604.6*	492.1*
	Elow							909.1	675.2	542.3	425.7
	Eup							976.2	778.6	671.5	566.0
75	OBS	6852.5	5634.9	5438.5	4458.4	3576.6	2757.1	-	-	-	-
	EXP	6852.5	5714.3	5442.7	4456.9	3556.4	2714.3	1898.5*	1497.1*	1153.0*	960.2*
	Elow							1831.0	1392.4	1034.2	830.6
	Eup							1966.1	1605.6	1280.5	1104.4
30-79	OBS	758.4	634.4	554.6	452.3	356.1	269.4	-	-	-	-
	EXP	760.3	632.4	554.2	452.3	356.4	270.0	204.9*	162.6*	129.8*	105.2*
	Elow							197.6	151.3	116.4	91.0
	Eup							212.1	174.4	144.1	120.9

Osmond and Gardner Modelling

**Italy IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

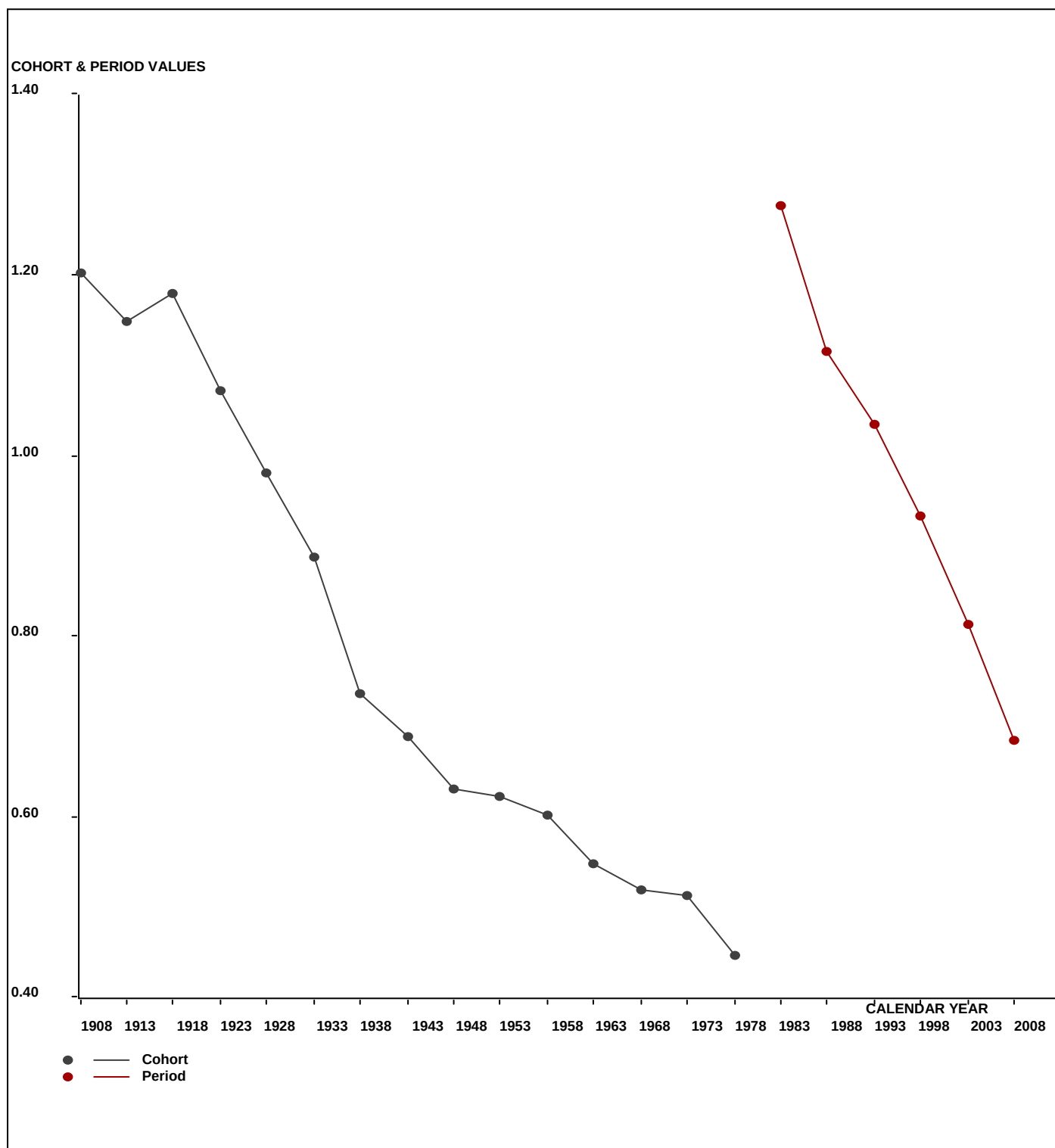
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	107.0	84.0	90.0	72.0	53.8	44.0	-	-	-	-
	EXP	102.7	86.6	81.2	73.7	64.1	47.4	33.3*	24.1*	18.6*	14.5*
	CHI	0.182	0.079	0.947	0.039	1.652	0.245	-	-	-	-
35 -	OBS	208.0	204.0	181.0	146.0	121.0	129.0	-	-	-	-
	EXP	216.1	190.3	170.2	155.3	140.2	119.9	87.4*	60.6*	43.8*	33.7*
	CHI	0.306	0.986	0.688	0.552	2.625	0.688	-	-	-	-
40 -	OBS	453.0	394.0	355.0	278.0	269.2	265.0	-	-	-	-
	EXP	453.3	378.0	354.1	308.3	277.0	246.2	207.5*	149.8*	104.0*	75.2*
	CHI	0.000	0.679	0.002	2.969	0.219	1.431	-	-	-	-
45 -	OBS	963.0	829.0	718.0	610.0	508.8	485.0	-	-	-	-
	EXP	999.2	779.4	691.5	631.5	538.6	477.6	418.2*	348.8*	252.0*	175.1*
	CHI	1.311	3.163	1.018	0.734	1.650	0.114	-	-	-	-
50 -	OBS	1965.0	1514.0	1248.0	1054.0	934.6	850.0	-	-	-	-
	EXP	2020.8	1488.1	1236.1	1070.3	950.7	802.3	703.7*	608.4*	508.1*	367.2*
	CHI	1.542	0.451	0.115	0.250	0.273	2.837	-	-	-	-
55 -	OBS	3895.0	3169.0	2466.0	2050.0	1688.8	1476.0	-	-	-	-
	EXP	4077.3	3113.2	2442.3	1982.9	1676.7	1458.5	1223.5*	1060.5*	918.3*	767.3*
	CHI	8.147	0.999	0.230	2.274	0.087	0.211	-	-	-	-
60 -	OBS	6841.0	6442.0	5283.0	4102.0	3287.6	2624.0	-	-	-	-
	EXP	6884.3	6476.6	5288.6	4058.2	3217.8	2655.5	2302.6*	1915.1*	1663.8*	1441.9*
	CHI	0.272	0.185	0.006	0.473	1.516	0.375	-	-	-	-
65 -	OBS	11546.0	10832.0	10801.0	8567.0	6569.0	4751.0	-	-	-	-
	EXP	11669.4	10664.4	10725.6	8605.6	6451.6	4957.1	4095.9*	3549.9*	2964.9*	2580.3*
	CHI	1.304	2.632	0.531	0.173	2.136	8.568	-	-	-	-
70 -	OBS	23362.0	17417.0	17035.0	16919.0	13111.6	9645.0	-	-	-	-
	EXP	22927.6	17275.0	17169.9	16924.7	13378.3	9823.5	7516.5*	6225.0*	5418.4*	4545.2*
	CHI	8.229	1.167	1.060	0.002	5.317	3.245	-	-	-	-
75 -	OBS	32232.0	31353.0	25870.0	25756.0	25138.2	19648.0	-	-	-	-
	EXP	32232.0	31794.5	25889.9	25747.3	24995.9	19343.4	14309.3*	10987.9*	9203.1*	8044.7*
	CHI	0.000	6.131	0.015	0.003	0.810	4.795	-	-	-	-
30-79	OBS	81572.0	72238.0	64047.0	59554.0	51682.6	39917.0	-	-	-	-
	EXP	81582.7	72246.2	64049.3	59557.8	51690.9	39931.5	30898.0*	24930.0*	21094.9*	18045.2*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Italy IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

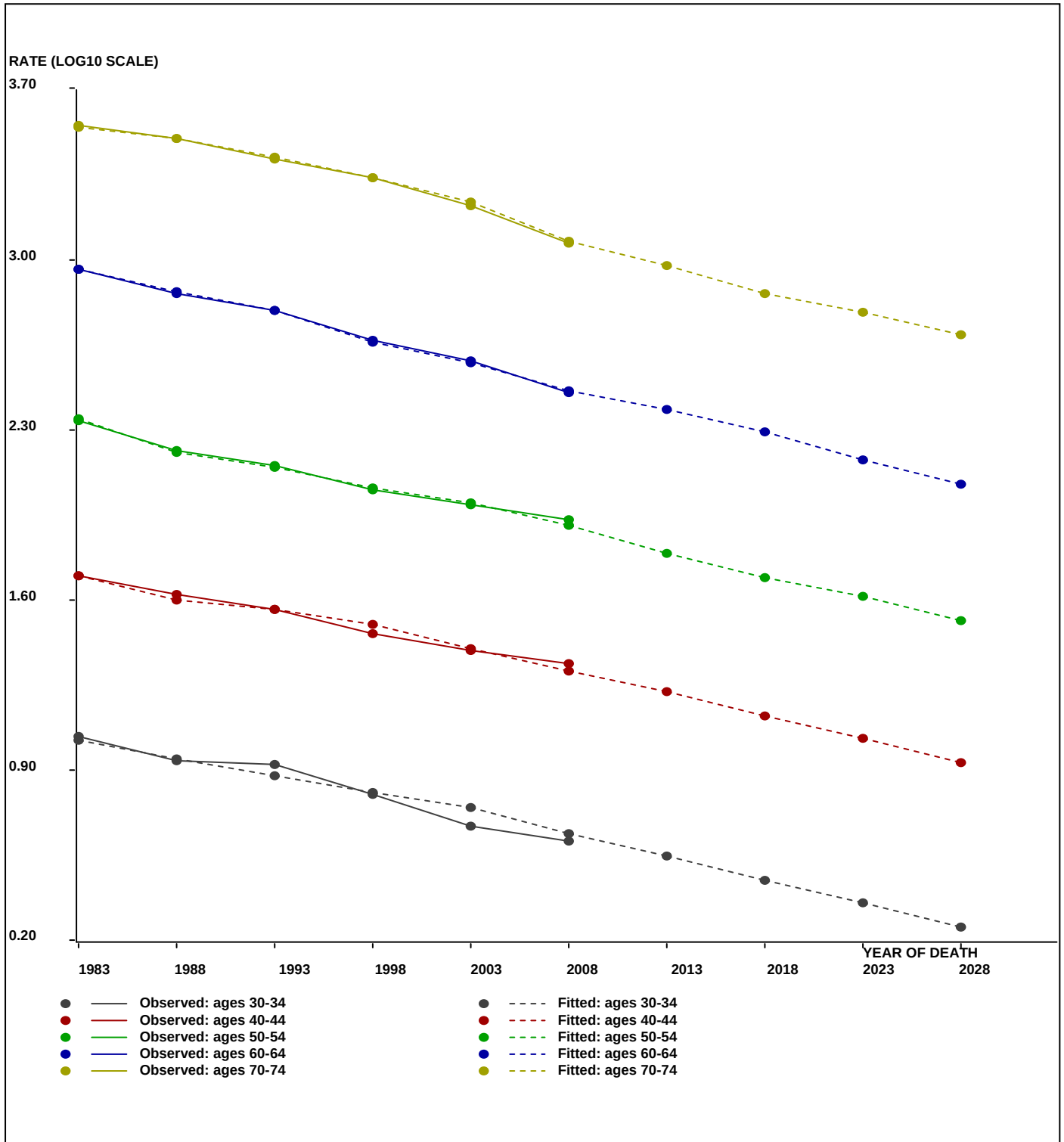


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Italy IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Italy IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	3.5	7.9	16.9	34.0	62.2	123.1	240.5	457.3	942.7	1898.5
2016	PRE	2.8	6.3	13.4	28.4	49.7	94.5	195.8	380.8	726.0	1497.1
2021	PRE	2.3	5.1	10.7	22.4	41.4	75.5	150.3	310.0	604.6	1153.0
2026	PRE	1.8	4.1	8.6	18.0	32.8	62.9	120.1	237.9	492.1	960.2

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	33.3	87.4	207.5	418.2	703.7	1223.5	2302.6	4095.9	7516.5	14309.3
2016	PRE	24.1	60.6	149.8	348.8	608.4	1060.5	1915.1	3549.9	6225.0	10987.9
2021	PRE	18.6	43.8	104.0	252.0	508.1	918.3	1663.8	2964.9	5418.4	9203.1
2026	PRE	14.5	33.7	75.2	175.1	367.2	767.3	1441.9	2580.3	4545.2	8044.7

Osmond and Gardner Modelling

Italy Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	14326.36	280.91	51	P, C	99.87	78538.41	0.0000
AGE-PERIOD	189.17	4.20	45	Cohort	90.03	1003.70	0.0000
AGE-COHORT	20.83	0.58	36	Period	9.46	110.47	0.0000
PERIOD-COHORT	48.82	1.22	40	Age	61.37	259.00	0.0000
FULL AGE-PERIOD-COHORT	18.86	0.59	32			100.04	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.819018	65.920056
35	2.009499	102.211304
40	2.194105	156.352732
45	2.384073	242.143775
50	2.524346	334.461642
55	2.665599	463.019165
60	2.858340	721.672888
65	3.098043	1253.264834
70	3.391823	2465.035637
75	3.695930	4965.118833

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.084426	1.214578
1986	0.037757	1.090830
1991	-0.006404	0.985362
1996	-0.048033	0.895296
2001	-0.086019	0.820316
2006	-0.125473	0.749078

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.194357	1.564433
1911	0.147624	1.404829
1916	0.116999	1.309178
1921	0.013692	1.032030
1926	-0.066205	0.858608
1931	-0.142608	0.720099
1936	-0.257264	0.553014
1941	-0.316942	0.482013
1946	-0.387946	0.409311
1951	-0.410449	0.388643
1956	-0.445520	0.358493
1961	-0.497479	0.318069
1966	-0.569040	0.269749
1971	-0.642180	0.227940
1976	-0.692494	0.203004

Osmond and Gardner Modelling

Italy Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	279.0	216.0	257.0	196.0	143.6	108.0
EXP	301.7	249.8	222.5	181.9	142.1	108.0
CHI	1.7	4.6	5.4	1.1	0.0	0.0
35 - OBS	456.0	432.0	356.0	325.0	262.6	209.0
EXP	483.0	419.9	349.6	313.1	265.8	210.5
CHI	1.5	0.3	0.1	0.5	0.0	0.0
40 - OBS	781.0	675.0	586.0	539.0	417.0	372.0
EXP	826.8	658.3	577.7	484.0	445.3	383.6
CHI	2.5	0.4	0.1	6.3	1.8	0.4
45 - OBS	1453.0	1117.0	978.0	852.0	686.4	625.0
EXP	1521.7	1136.1	913.1	807.5	691.4	647.2
CHI	3.1	0.3	4.6	2.4	0.0	0.8
50 - OBS	2592.0	1832.0	1417.0	1188.0	1059.8	861.0
EXP	2651.8	1856.8	1400.5	1135.7	1018.8	889.7
CHI	1.3	0.3	0.2	2.4	1.7	0.9
55 - OBS	4394.0	3139.0	2387.0	1822.0	1446.0	1210.0
EXP	4433.7	3221.6	2279.7	1737.5	1435.0	1299.5
CHI	0.4	2.1	5.0	4.1	0.1	6.2
60 - OBS	6986.0	6013.0	4283.0	3152.0	2476.8	1908.0
EXP	6804.5	5978.8	4407.4	3153.7	2448.3	2034.4
CHI	4.8	0.2	3.5	0.0	0.3	7.9
65 - OBS	12153.0	10135.0	8958.0	6747.0	4846.6	3709.0
EXP	12284.8	10012.9	8922.6	6681.3	4871.5	3778.0
CHI	1.4	1.5	0.1	0.6	0.1	1.3
70 - OBS	28001.0	19686.0	16294.0	14672.0	11263.2	8400.0
EXP	27796.2	19511.1	16408.1	14814.5	11398.2	8391.5
CHI	1.5	1.6	0.8	1.4	1.6	0.0
75 - OBS	44376.0	42129.0	30423.0	26309.0	24690.6	19415.0
EXP	44376.0	42335.0	30467.6	26502.7	24579.3	19086.3
CHI	0.0	1.0	0.1	1.4	0.5	5.7

Osmond and Gardner Modelling

Italy Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	65.920056
35	102.211304
40	156.352732
45	242.143775
50	334.461642
55	463.019165
60	721.672888
65	1253.264834
70	2465.035637
75	4965.118833

PERIOD	EFFECT	LOWER	UPPER
% Period Change	91.3159	88.3159	94.3159
1981	1.214578		
1986	1.090830		
1991	0.985362		
1996	0.895296		
2001	0.820316		
2006	0.749078		
2011	0.684027	0.661555	0.706500
2016	0.624626	0.584258	0.666341
2021	0.570382	0.515993	0.628466
2026	0.520850	0.455703	0.592743

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.564433	1.000000	
1911	1.404829	2.000000	
1916	1.309178	4.000000	
1921	1.032030	8.000000	
1926	0.858608	16.000000	
1931	0.720099	32.000000	
1936	0.553014	64.000000	
1941	0.482013	128.000000	
1946	0.409311	256.000000	
1951	0.388643	512.000000	
1956	0.358493	1024.000000	
1961	0.318069	2048.000000	
1966	0.269749	4096.000000	
1971	0.227940	8192.000000	
1976	0.201120	EXTRAPOLATION	0.203004
1981	0.175060	EXTRAPOLATION	
1986	0.152377	EXTRAPOLATION	
1991	0.132633	EXTRAPOLATION	
1996	0.115448	EXTRAPOLATION	

Osmond and Gardner Modelling

**Italy Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	28.8	22.3	23.9	17.2	12.5	10.0	-	-	-	-
	EXP	31.1	25.8	20.7	15.9	12.3	9.9	7.9*	6.3*	5.0*	4.0*
	Elow							7.6	5.9	4.5	3.5
	Eup							8.2	6.7	5.5	4.5
35	OBS	48.0	44.6	36.8	30.2	22.3	17.3	-	-	-	-
	EXP	50.8	43.3	36.1	29.1	22.6	17.5	14.1*	11.2*	8.9*	7.1*
	Elow							13.6	10.5	8.0	6.2
	Eup							14.5	11.9	9.8	8.0
40	OBS	86.5	71.6	60.7	55.9	38.2	30.6	-	-	-	-
	EXP	91.5	69.8	59.9	50.2	40.8	31.6	24.4*	19.6*	15.6*	12.4*
	Elow							23.6	18.4	14.1	10.9
	Eup							25.2	21.0	17.2	14.1
45	OBS	155.3	125.2	104.6	88.9	70.7	55.7	-	-	-	-
	EXP	162.6	127.3	97.7	84.3	71.2	57.7	44.7*	34.5*	27.8*	22.1*
	Elow							43.2	32.2	25.1	19.3
	Eup							46.1	36.8	30.6	25.1
50	OBS	285.9	199.1	160.7	128.2	110.9	86.9	-	-	-	-
	EXP	292.5	201.8	158.9	122.6	106.6	89.8	72.8*	56.4*	43.5*	35.0*
	Elow							70.4	52.7	39.3	30.7
	Eup							75.2	60.1	47.9	39.9
55	OBS	478.5	354.4	264.2	209.5	156.7	125.5	-	-	-	-
	EXP	482.9	363.7	252.3	199.8	155.5	134.8	113.5*	92.0*	71.2*	55.0*
	Elow							109.8	86.0	64.4	48.1
	Eup							117.3	98.1	78.5	62.6
60	OBS	928.7	679.8	497.6	357.1	288.7	207.5	-	-	-	-
	EXP	904.6	675.9	512.1	357.3	285.4	221.3	191.9*	161.6*	130.9*	101.4*
	Elow							185.5	151.2	118.4	88.7
	Eup							198.2	172.4	144.3	115.4
65	OBS	1971.4	1428.1	1064.5	815.9	565.6	444.3	-	-	-	-
	EXP	1992.8	1410.9	1060.3	808.0	568.5	452.5	350.9*	304.2*	256.3*	207.6*
	Elow							339.4	284.6	231.8	181.7
	Eup							362.4	324.6	282.4	236.3
70	OBS	4237.0	3551.8	2489.3	1876.7	1438.9	1022.2	-	-	-	-
	EXP	4206.0	3520.3	2506.8	1894.9	1456.1	1021.1	812.7*	630.2*	546.4*	460.3*
	Elow							786.0	589.5	494.3	402.7
	Eup							839.4	672.3	602.1	523.8
75	OBS	9434.4	7571.7	6395.7	4554.1	3512.9	2724.4	-	-	-	-
	EXP	9434.4	7608.7	6405.1	4587.6	3497.1	2678.2	1878.2*	1494.9*	1159.2*	1005.1*
	Elow							1816.5	1398.3	1048.6	879.4
	Eup							1939.9	1594.7	1277.2	1143.8
30-79	OBS	931.1	732.3	569.0	423.4	323.1	245.2	-	-	-	-
	EXP	932.3	732.0	568.3	421.7	323.1	247.1	188.8*	151.9*	123.1*	102.2*
	Elow							182.6	142.1	111.4	89.4
	Eup							195.0	162.0	135.6	116.3

Osmond and Gardner Modelling

**Italy Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

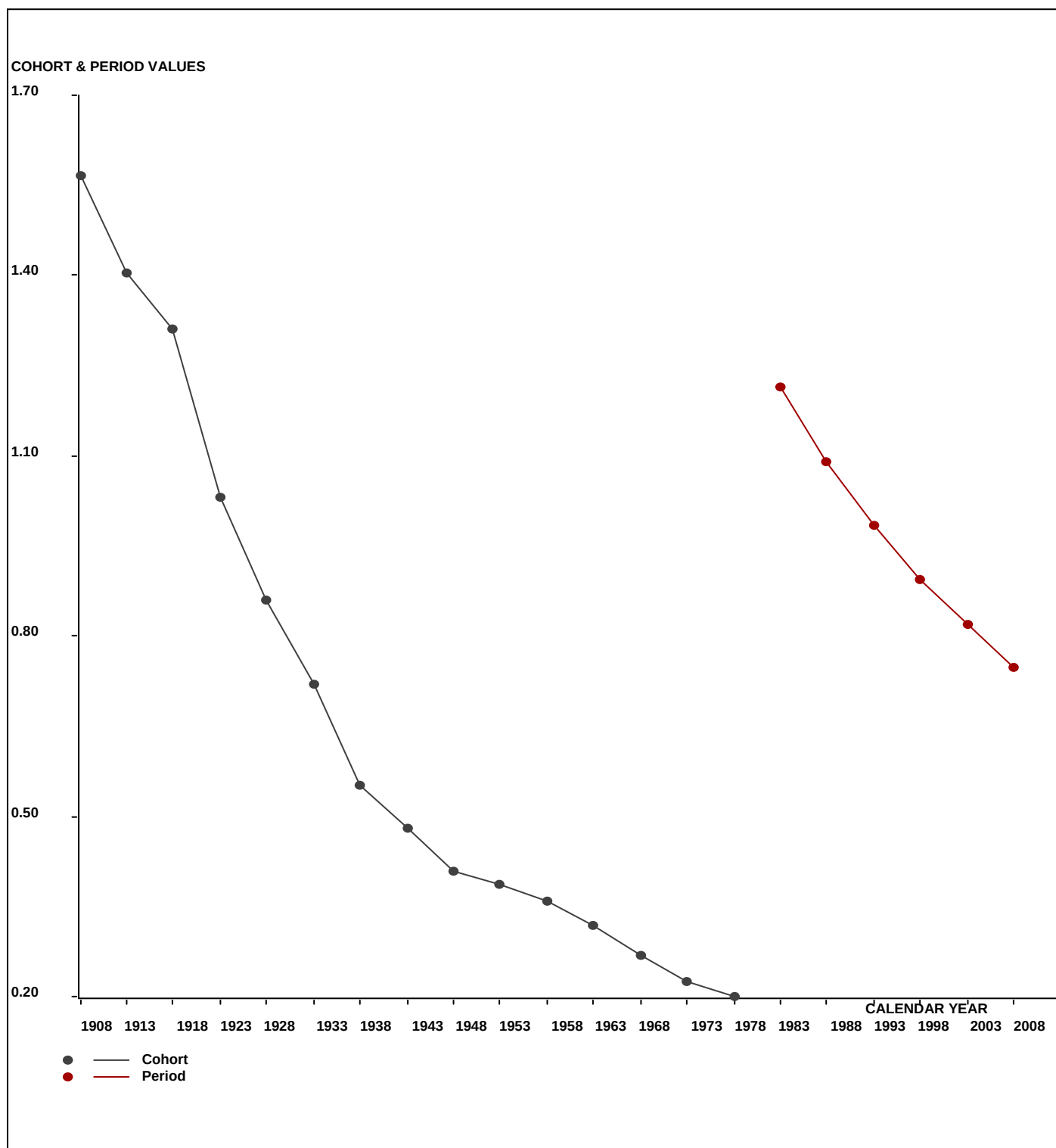
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	279.0	216.0	257.0	196.0	143.6	108.0	-	-	-	-
	EXP	301.7	249.8	222.5	181.9	142.1	107.0	74.5*	53.4*	40.7*	31.5*
	CHI	1.710	4.565	5.359	1.092	0.016	0.009	-	-	-	-
35 -	OBS	456.0	432.0	356.0	325.0	262.6	209.0	-	-	-	-
	EXP	483.0	419.9	349.6	313.1	265.8	210.5	156.2*	107.4*	76.9*	58.6*
	CHI	1.506	0.350	0.118	0.451	0.038	0.011	-	-	-	-
40 -	OBS	781.0	675.0	586.0	539.0	417.0	372.0	-	-	-	-
	EXP	826.8	658.3	577.7	484.0	445.3	383.6	299.4*	219.9*	151.3*	108.4*
	CHI	2.536	0.425	0.120	6.255	1.802	0.353	-	-	-	-
45 -	OBS	1453.0	1117.0	978.0	852.0	686.4	625.0	-	-	-	-
	EXP	1521.7	1136.1	913.1	807.5	691.4	647.2	549.1*	424.1*	311.9*	214.7*
	CHI	3.102	0.321	4.611	2.447	0.035	0.759	-	-	-	-
50 -	OBS	2592.0	1832.0	1417.0	1188.0	1059.8	861.0	-	-	-	-
	EXP	2651.8	1856.8	1400.5	1135.7	1018.8	889.7	823.7*	690.1*	533.7*	392.6*
	CHI	1.350	0.330	0.194	2.409	1.654	0.924	-	-	-	-
55 -	OBS	4394.0	3139.0	2387.0	1822.0	1446.0	1210.0	-	-	-	-
	EXP	4433.7	3221.6	2279.7	1737.5	1435.0	1299.5	1128.2*	1032.2*	866.2*	670.1*
	CHI	0.355	2.116	5.050	4.111	0.085	6.168	-	-	-	-
60 -	OBS	6986.0	6013.0	4283.0	3152.0	2476.8	1908.0	-	-	-	-
	EXP	6804.5	5978.8	4407.4	3153.7	2448.3	2034.4	1836.6*	1580.7*	1449.6*	1217.5*
	CHI	4.840	0.196	3.513	0.001	0.331	7.857	-	-	-	-
65 -	OBS	12153.0	10135.0	8958.0	6747.0	4846.6	3709.0	-	-	-	-
	EXP	12284.8	10012.9	8922.6	6681.3	4871.5	3778.0	3143.1*	2836.1*	2451.2*	2251.9*
	CHI	1.414	1.488	0.140	0.646	0.128	1.259	-	-	-	-
70 -	OBS	28001.0	19686.0	16294.0	14672.0	11263.2	8400.0	-	-	-	-
	EXP	27796.2	19511.1	16408.1	14814.5	11398.2	8391.5	6480.7*	5404.0*	4897.2*	4251.1*
	CHI	1.509	1.567	0.793	1.370	1.600	0.009	-	-	-	-
75 -	OBS	44376.0	42129.0	30423.0	26309.0	24690.6	19415.0	-	-	-	-
	EXP	44376.0	42335.0	30467.6	26502.7	24579.3	19086.3	14155.9*	10971.5*	9252.6*	8420.6*
	CHI	0.000	1.003	0.065	1.416	0.504	5.661	-	-	-	-
30-79	OBS	101471.0	85374.0	65939.0	55802.0	47292.6	36817.0	-	-	-	-
	EXP	101480.2	85380.3	65948.8	55811.9	47295.7	36827.7	28647.3*	23319.4*	20031.3*	17617.0*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Italy Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

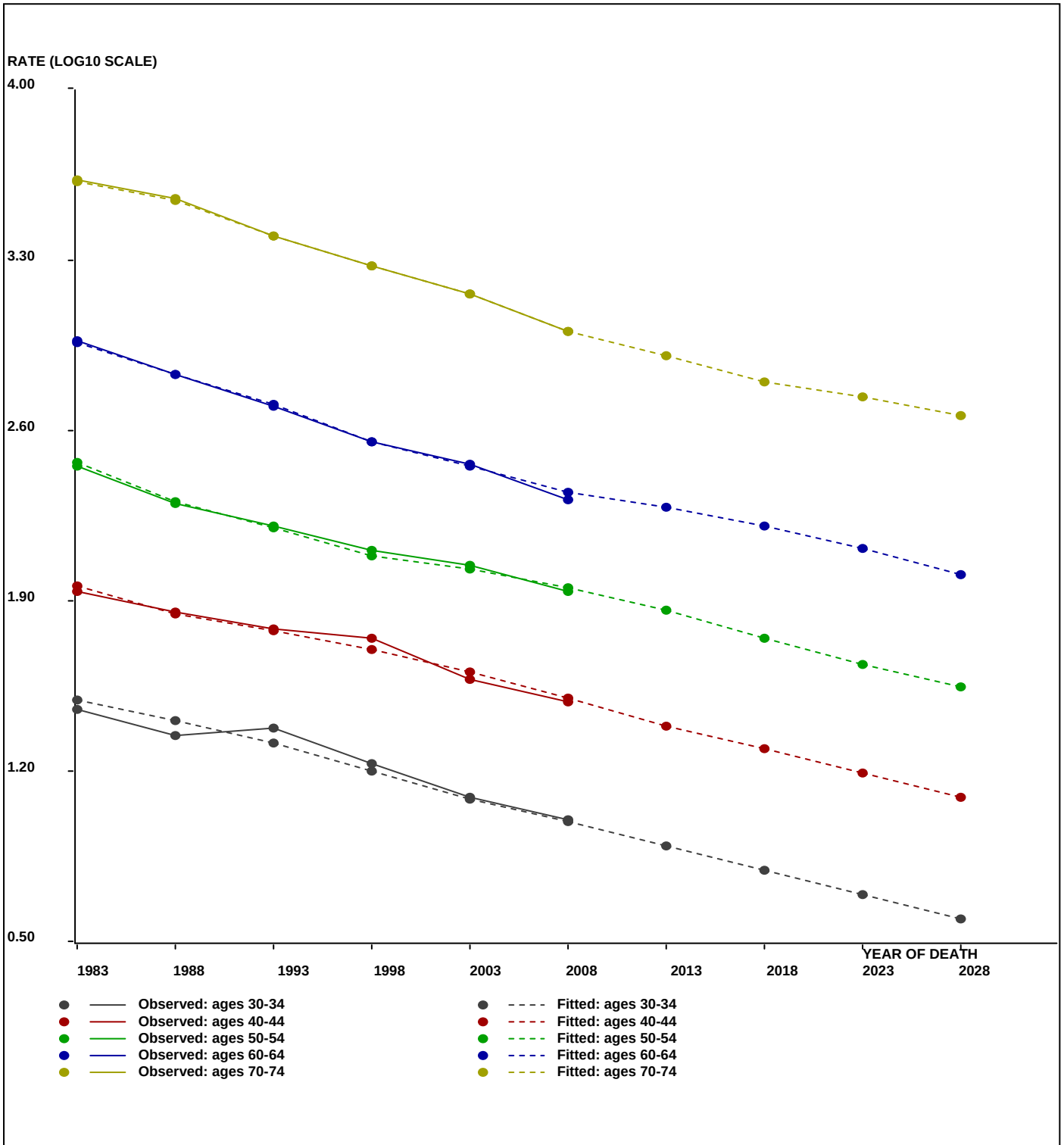


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Italy Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Italy Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	7.9	14.1	24.4	44.7	72.8	113.5	191.9	350.9	812.7	1878.2
2016	PRE	6.3	11.2	19.6	34.5	56.4	92.0	161.6	304.2	630.2	1494.9
2021	PRE	5.0	8.9	15.6	27.8	43.5	71.2	130.9	256.3	546.4	1159.2
2026	PRE	4.0	7.1	12.4	22.1	35.0	55.0	101.4	207.6	460.3	1005.1

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	74.5	156.2	299.4	549.1	823.7	1128.2	1836.6	3143.1	6480.7	14155.9
2016	PRE	53.4	107.4	219.9	424.1	690.1	1032.2	1580.7	2836.1	5404.0	10971.5
2021	PRE	40.7	76.9	151.3	311.9	533.7	866.2	1449.6	2451.2	4897.2	9252.6
2026	PRE	31.5	58.6	108.4	214.7	392.6	670.1	1217.5	2251.9	4251.1	8420.6

Osmond and Gardner Modelling

Italy Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	375.06	7.35	51	P, C	97.68	1996.56	0.0000
AGE-PERIOD	87.53	1.95	45	Cohort	90.05	464.84	0.0000
AGE-COHORT	11.73	0.33	36	Period	25.75	62.20	0.0043
PERIOD-COHORT	15.88	0.40	40	Age	45.16	84.23	0.0001
FULL AGE-PERIOD-COHORT	8.71	0.27	32			46.19	0.0501

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.739693	5.491521
35	1.144007	13.931789
40	1.513157	32.595459
45	1.827921	67.285412
50	2.095309	124.540150
55	2.317462	207.712382
60	2.506488	320.987488
65	2.676096	474.347281
70	2.816914	656.015078
75	2.927871	846.975764

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.043474	0.904745
1986	-0.015268	0.965454
1991	-0.007823	0.982149
1996	-0.005025	0.988496
2001	0.013976	1.032705
2006	0.030334	1.072344

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.114667	0.767950
1911	-0.096226	0.801261
1916	-0.032437	0.928032
1921	-0.008253	0.981176
1926	-0.005544	0.987316
1931	0.000819	1.001887
1936	-0.023617	0.947072
1941	0.010300	1.024000
1946	0.049889	1.121731
1951	0.097112	1.250580
1956	0.151728	1.418168
1961	0.116796	1.308568
1966	0.053756	1.131764
1971	-0.037003	0.918326
1976	-0.024249	0.945695

Osmond and Gardner Modelling

Italy Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model

Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	58.0	64.0	77.0	76.0	63.4	60.0
EXP	60.2	72.9	76.0	70.2	60.0	60.0
CHI	0.1	1.1	0.0	0.5	0.2	0.0
35 - OBS	134.0	179.0	204.0	168.0	185.6	162.0
EXP	134.4	163.0	187.9	193.9	191.3	165.5
CHI	0.0	1.6	1.4	3.5	0.2	0.1
40 - OBS	301.0	326.0	345.0	437.0	500.6	480.0
EXP	272.8	332.9	386.2	440.7	480.8	480.4
CHI	2.9	0.1	4.4	0.0	0.8	0.0
45 - OBS	569.0	615.0	720.0	759.0	910.4	1062.0
EXP	539.4	593.6	693.1	797.2	956.7	1059.1
CHI	1.6	0.8	1.0	1.8	2.2	0.0
50 - OBS	1012.0	1014.0	1056.0	1288.0	1579.2	1916.0
EXP	1023.4	1047.9	1104.3	1279.6	1536.7	1876.1
CHI	0.1	1.1	2.1	0.1	1.2	0.9
55 - OBS	1652.0	1773.0	1792.0	1823.0	2218.2	2704.0
EXP	1703.7	1779.6	1745.7	1828.2	2221.0	2685.5
CHI	1.6	0.0	1.2	0.0	0.0	0.1
60 - OBS	2171.0	2767.0	2714.0	2574.0	2931.0	3524.0
EXP	2143.4	2706.4	2718.6	2652.3	2912.4	3550.0
CHI	0.4	1.4	0.0	2.3	0.1	0.2
65 - OBS	2392.0	3155.0	3881.0	3905.0	4057.4	4331.0
EXP	2455.2	3188.9	3870.7	3884.6	3975.2	4348.7
CHI	1.6	0.4	0.0	0.1	1.7	0.1
70 - OBS	3182.0	3286.0	4092.0	5066.0	5279.8	5425.0
EXP	3142.9	3257.7	4137.9	5005.5	5313.1	5475.0
CHI	0.5	0.2	0.5	0.7	0.2	0.5
75 - OBS	2768.0	3606.0	3706.0	4797.0	5987.6	6520.0
EXP	2768.0	3645.6	3672.2	4745.6	6069.7	6484.8
CHI	0.0	0.4	0.3	0.6	1.1	0.2

Osmond and Gardner Modelling

Italy Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	5.491521
35	13.931789
40	32.595459
45	67.285412
50	124.540150
55	207.712382
60	320.987488
65	474.347281
70	656.015078
75	846.975764

PERIOD	EFFECT	LOWER	UPPER
% Period Change	103.8384	100.8384	106.8384

1981	0.904745		
1986	0.965454		
1991	0.982149		
1996	0.988496		
2001	1.032705		
2006	1.072344		
2011	1.113505	1.081335	1.145675
2016	1.156246	1.090401	1.224021
2021	1.200627	1.099543	1.307725
2026	1.246712	1.108761	1.397152

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.767950	1.000000	
1911	0.801261	2.000000	
1916	0.928032	4.000000	
1921	0.981176	8.000000	
1926	0.987316	16.000000	
1931	1.001887	32.000000	
1936	0.947072	64.000000	
1941	1.024000	128.000000	
1946	1.121731	256.000000	
1951	1.250580	512.000000	
1956	1.418168	1024.000000	
1961	1.308568	2048.000000	
1966	1.131764	4096.000000	
1971	0.918326	8192.000000	
1976	0.909143	EXTRAPOLATION	0.945695
1981	0.844384	EXTRAPOLATION	
1986	0.784238	EXTRAPOLATION	
1991	0.728376	EXTRAPOLATION	
1996	0.676493	EXTRAPOLATION	

Osmond and Gardner Modelling

**Italy Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	6.0	6.6	7.2	6.7	5.5	5.6	-	-	-	-
	EXP	6.2	7.5	7.1	6.1	5.2	5.4	5.2*	5.0*	4.8*	4.6*
	Elow							5.0	4.7	4.4	4.1
	Eup							5.3	5.3	5.2	5.2
35	OBS	14.1	18.5	21.1	15.6	15.8	13.4	-	-	-	-
	EXP	14.1	16.8	19.4	18.0	16.3	13.7	14.1*	13.6*	13.1*	12.7*
	Elow							13.7	12.8	12.0	11.3
	Eup							14.5	14.4	14.3	14.2
40	OBS	33.3	34.6	35.8	45.3	45.9	39.5	-	-	-	-
	EXP	30.2	35.3	40.0	45.7	44.0	39.6	33.3*	34.3*	33.0*	31.9*
	Elow							32.4	32.3	30.3	28.3
	Eup							34.3	36.3	36.0	35.7
45	OBS	60.8	68.9	77.0	79.2	93.8	94.7	-	-	-	-
	EXP	57.7	66.5	74.1	83.2	98.5	94.4	84.8*	71.4*	73.4*	70.8*
	Elow							82.3	67.4	67.3	63.0
	Eup							87.2	75.6	80.0	79.4
50	OBS	111.6	110.2	119.8	139.0	165.3	193.4	-	-	-	-
	EXP	112.9	113.9	125.3	138.1	160.8	189.4	181.5*	163.0*	137.3*	141.2*
	Elow							176.2	153.7	125.8	125.5
	Eup							186.7	172.5	149.6	158.2
55	OBS	179.9	200.2	198.3	209.6	240.3	280.5	-	-	-	-
	EXP	185.5	200.9	193.2	210.3	240.6	278.6	328.0*	314.3*	282.2*	237.8*
	Elow							318.5	296.4	258.5	211.5
	Eup							337.5	332.7	307.4	266.5
60	OBS	288.6	312.8	315.3	291.6	341.6	383.3	-	-	-	-
	EXP	284.9	306.0	315.9	300.5	339.4	386.1	447.0*	526.3*	504.3*	452.9*
	Elow							434.1	496.4	461.8	402.8
	Eup							459.9	557.2	549.3	507.6
65	OBS	388.0	444.6	461.2	472.2	473.5	518.8	-	-	-	-
	EXP	398.3	449.3	460.0	469.8	463.9	520.9	592.5*	685.9*	807.7*	773.9*
	Elow							575.4	646.8	739.7	688.2
	Eup							609.6	726.1	879.7	867.2
70	OBS	481.5	592.9	625.2	648.0	674.5	660.2	-	-	-	-
	EXP	475.6	587.8	632.2	640.2	678.7	666.2	748.0*	850.8*	985.0*	1159.9*
	Elow							726.4	802.4	902.1	1031.5
	Eup							769.6	900.7	1072.9	1299.8
75	OBS	588.5	648.1	779.1	830.4	851.9	914.9	-	-	-	-
	EXP	588.5	655.2	772.0	821.5	863.6	910.0	893.2*	1002.8*	1140.7*	1320.5*
	Elow							867.4	945.7	1044.7	1174.4
	Eup							919.0	1061.6	1242.4	1479.9
30-79	OBS	150.5	168.9	179.5	185.6	201.0	216.6	-	-	-	-
	EXP	150.6	168.8	179.6	186.3	200.6	216.4	233.4*	251.5*	263.9*	267.9*
	Elow							226.6	237.1	241.7	238.3
	Eup							240.1	266.2	287.4	300.2

Osmond and Gardner Modelling

**Italy Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

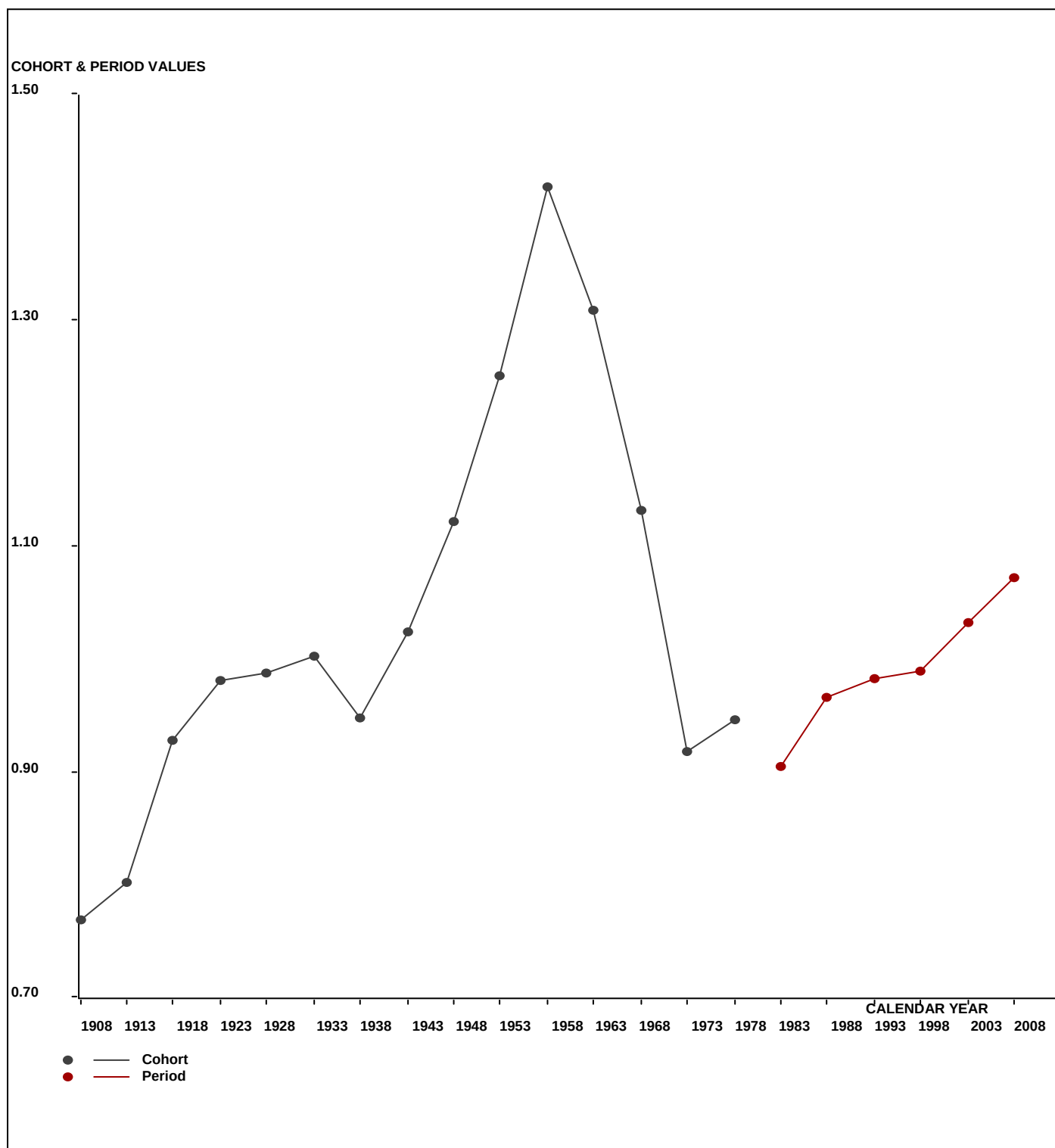
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	58.0	64.0	77.0	76.0	63.4	60.0	-	-	-	-
	EXP	60.2	72.9	76.0	70.2	60.0	57.7	48.7*	42.3*	39.2*	36.8*
	CHI	0.084	1.075	0.013	0.479	0.188	0.093	-	-	-	-
35 -	OBS	134.0	179.0	204.0	168.0	185.6	162.0	-	-	-	-
	EXP	134.4	163.0	187.9	193.9	191.3	165.5	156.7*	130.7*	113.5*	105.0*
	CHI	0.001	1.572	1.383	3.450	0.173	0.074	-	-	-	-
40 -	OBS	301.0	326.0	345.0	437.0	500.6	480.0	-	-	-	-
	EXP	272.8	332.9	386.2	440.7	480.8	480.4	409.4*	383.7*	320.3*	278.3*
	CHI	2.923	0.142	4.405	0.031	0.812	0.000	-	-	-	-
45 -	OBS	569.0	615.0	720.0	759.0	910.4	1062.0	-	-	-	-
	EXP	539.4	593.6	693.1	797.2	956.7	1059.1	1042.1*	878.8*	824.6*	688.7*
	CHI	1.622	0.773	1.045	1.833	2.243	0.008	-	-	-	-
50 -	OBS	1012.0	1014.0	1056.0	1288.0	1579.2	1916.0	-	-	-	-
	EXP	1023.4	1047.9	1104.3	1279.6	1536.7	1876.1	2054.2*	1995.8*	1685.2*	1581.6*
	CHI	0.126	1.100	2.109	0.055	1.176	0.850	-	-	-	-
55 -	OBS	1652.0	1773.0	1792.0	1823.0	2218.2	2704.0	-	-	-	-
	EXP	1703.7	1779.6	1745.7	1828.2	2221.0	2685.5	3259.1*	3526.4*	3431.8*	2899.0*
	CHI	1.568	0.025	1.228	0.015	0.003	0.128	-	-	-	-
60 -	OBS	2171.0	2767.0	2714.0	2574.0	2931.0	3524.0	-	-	-	-
	EXP	2143.4	2706.4	2718.6	2652.3	2912.4	3550.0	4278.9*	5148.4*	5583.6*	5438.5*
	CHI	0.356	1.355	0.008	2.314	0.119	0.191	-	-	-	-
65 -	OBS	2392.0	3155.0	3881.0	3905.0	4057.4	4331.0	-	-	-	-
	EXP	2455.2	3188.9	3870.7	3884.6	3975.2	4348.7	5307.2*	6393.9*	7725.5*	8393.2*
	CHI	1.627	0.361	0.027	0.107	1.699	0.072	-	-	-	-
70 -	OBS	3182.0	3286.0	4092.0	5066.0	5279.8	5425.0	-	-	-	-
	EXP	3142.9	3257.7	4137.9	5005.5	5313.1	5475.0	5964.5*	7295.8*	8827.5*	10712.6*
	CHI	0.487	0.246	0.510	0.732	0.209	0.456	-	-	-	-
75 -	OBS	2768.0	3606.0	3706.0	4797.0	5987.6	6520.0	-	-	-	-
	EXP	2768.0	3645.6	3672.2	4745.6	6069.7	6484.8	6732.0*	7360.0*	9105.1*	11063.6*
	CHI	0.000	0.430	0.311	0.556	1.111	0.191	-	-	-	-
30-79	OBS	14239.0	16785.0	18587.0	20893.0	23713.2	26184.0	-	-	-	-
	EXP	14243.3	16788.5	18592.6	20897.9	23717.1	26182.7	29252.7*	33155.8*	37656.3*	41197.4*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Italy Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

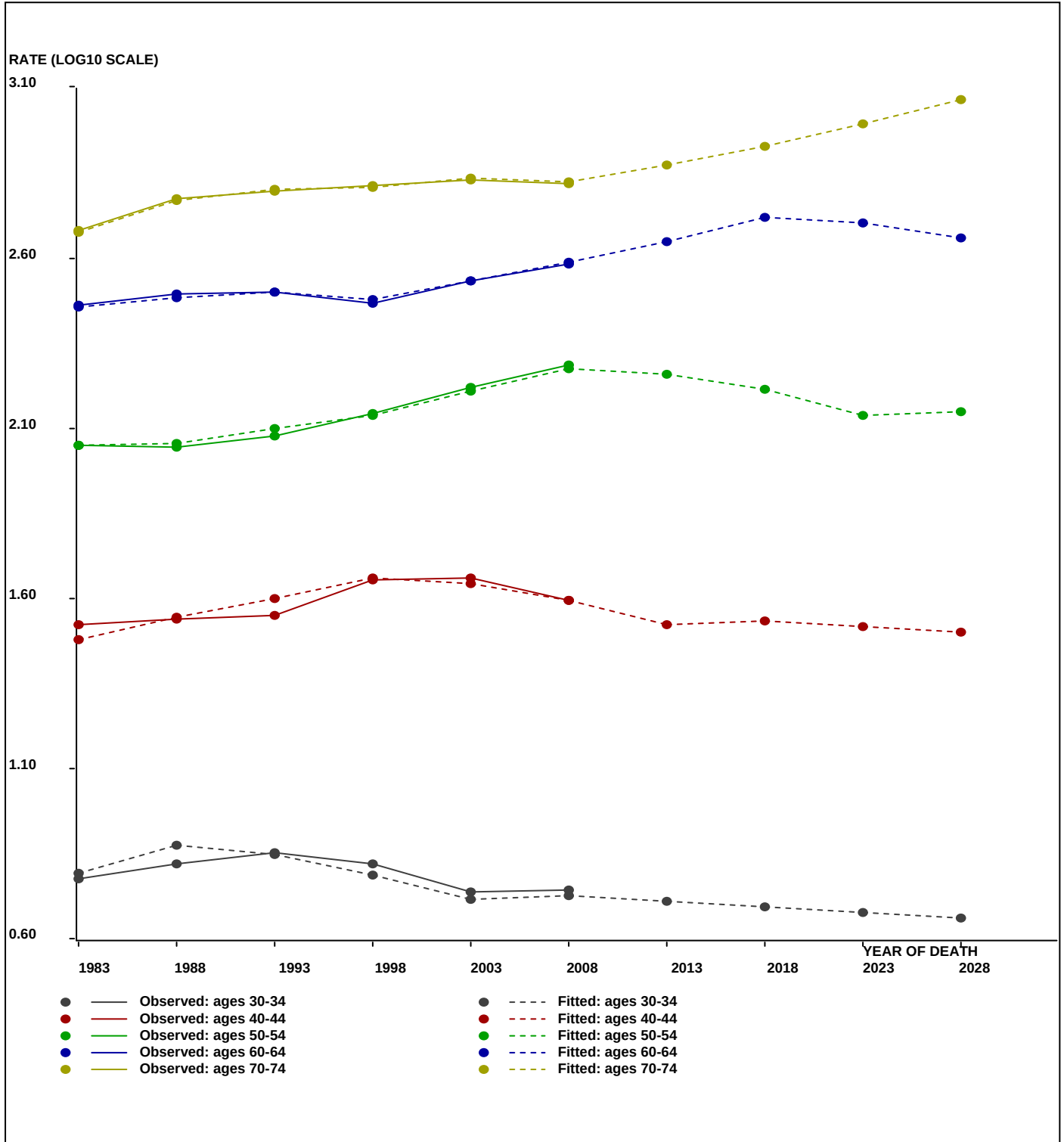


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Italy Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Italy Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	5.2	14.1	33.3	84.8	181.5	328.0	447.0	592.5	748.0	893.2
2016	PRE	5.0	13.6	34.3	71.4	163.0	314.3	526.3	685.9	850.8	1002.8
2021	PRE	4.8	13.1	33.0	73.4	137.3	282.2	504.3	807.7	985.0	1140.7
2026	PRE	4.6	12.7	31.9	70.8	141.2	237.8	452.9	773.9	1159.9	1320.5

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	48.7	156.7	409.4	1042.1	2054.2	3259.1	4278.9	5307.2	5964.5	6732.0
2016	PRE	42.3	130.7	383.7	878.8	1995.8	3526.4	5148.4	6393.9	7295.8	7360.0
2021	PRE	39.2	113.5	320.3	824.6	1685.2	3431.8	5583.6	7725.5	8827.5	9105.1
2026	PRE	36.8	105.0	278.3	688.7	1581.6	2899.0	5438.5	8393.2	10712.6	11063.6

Osmond and Gardner Modelling

Italy COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	1113.14	21.83	51	P, C	99.45	5979.88	0.0000
AGE-PERIOD	51.21	1.14	45	Cohort	88.15	271.94	0.0000
AGE-COHORT	28.17	0.78	36	Period	78.46	149.48	0.0000
PERIOD-COHORT	15.16	0.38	40	Age	59.98	80.55	0.0002
FULL AGE-PERIOD-COHORT	6.07	0.19	32			32.24	0.4550

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.762918	5.793192
35	0.835496	6.846925
40	1.038318	10.922409
45	1.242767	17.489074
50	1.476114	29.930513
55	1.729871	53.687291
60	2.024034	105.690040
65	2.321942	209.865900
70	2.642973	439.514657
75	2.962293	916.838503

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.158295	1.439776
1986	0.067150	1.167212
1991	-0.007885	0.982008
1996	-0.074132	0.843078
2001	-0.116930	0.763958
2006	-0.135232	0.732433

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.015887	0.964080
1911	0.011999	1.028013
1916	0.055119	1.135321
1921	0.022528	1.053241
1926	0.008630	1.020071
1931	-0.003061	0.992977
1936	-0.064193	0.862595
1941	-0.077764	0.836058
1946	-0.105142	0.784980
1951	-0.110388	0.775554
1956	-0.153299	0.702589
1961	-0.212681	0.612800
1966	-0.229862	0.589030
1971	-0.402401	0.395912
1976	-0.337840	0.459367

Osmond and Gardner Modelling

Italy COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	45.0	50.0	40.0	38.0	22.8	21.0
EXP	62.7	46.0	37.5	32.9	20.2	21.0
CHI	5.0	0.3	0.2	0.8	0.3	0.0
35 - OBS	64.0	68.0	49.0	42.0	31.6	21.0
EXP	73.6	60.1	45.7	38.1	36.2	23.9
CHI	1.2	1.0	0.2	0.4	0.6	0.4
40 - OBS	131.0	88.0	77.0	59.0	56.8	56.0
EXP	118.8	94.4	80.3	62.4	55.8	57.2
CHI	1.3	0.4	0.1	0.2	0.0	0.0
45 - OBS	214.0	162.0	126.0	107.0	79.6	80.0
EXP	203.2	152.3	126.0	109.6	91.1	88.1
CHI	0.6	0.6	0.0	0.1	1.5	0.7
50 - OBS	386.0	276.0	201.0	185.0	179.4	159.0
EXP	387.9	277.3	216.6	183.5	169.4	152.6
CHI	0.0	0.0	1.1	0.0	0.6	0.3
55 - OBS	688.0	558.0	453.0	319.0	289.0	296.0
EXP	724.0	551.2	410.9	329.1	297.2	294.0
CHI	1.8	0.1	4.3	0.3	0.2	0.0
60 - OBS	1225.0	1128.0	843.0	670.0	574.2	580.0
EXP	1205.6	1113.1	887.0	678.4	579.2	558.7
CHI	0.3	0.2	2.2	0.1	0.0	0.8
65 - OBS	2097.0	1814.0	1768.0	1461.0	1205.2	1080.0
EXP	2114.7	1831.0	1769.1	1452.8	1185.0	1072.9
CHI	0.1	0.2	0.0	0.0	0.3	0.0
70 - OBS	4334.0	3243.0	2985.0	2972.0	2599.4	2215.0
EXP	4299.1	3228.1	2975.5	2955.1	2609.9	2281.9
CHI	0.3	0.1	0.0	0.1	0.0	2.0
75 - OBS	5986.0	6086.0	4865.0	4691.0	5026.0	4792.0
EXP	5986.0	6121.1	4862.3	4703.2	5021.8	4752.0
CHI	0.0	0.2	0.0	0.0	0.0	0.3

Osmond and Gardner Modelling

Italy COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	5.793192
35	6.846925
40	10.922409
45	17.489074
50	29.930513
55	53.687291
60	105.690040
65	209.865900
70	439.514657
75	916.838503

PERIOD	EFFECT	LOWER	UPPER
% Period Change	95.8734	92.8734	98.8734
1981	1.439776		
1986	1.167212		
1991	0.982008		
1996	0.843078		
2001	0.763958		
2006	0.732433		
2011	0.702208	0.680235	0.724181
2016	0.673231	0.631757	0.716022
2021	0.645449	0.586735	0.707956
2026	0.618814	0.544920	0.699980

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.964080	1.000000	
1911	1.028013	2.000000	
1916	1.135321	4.000000	
1921	1.053241	8.000000	
1926	1.020071	16.000000	
1931	0.992977	32.000000	
1936	0.862595	64.000000	
1941	0.836058	128.000000	
1946	0.784980	256.000000	
1951	0.775554	512.000000	
1956	0.702589	1024.000000	
1961	0.612800	2048.000000	
1966	0.589030	4096.000000	
1971	0.395912	8192.000000	
1976	0.366836	EXTRAPOLATION	0.459367
1981	0.314098	EXTRAPOLATION	
1986	0.268943	EXTRAPOLATION	
1991	0.230279	EXTRAPOLATION	
1996	0.197173	EXTRAPOLATION	

Osmond and Gardner Modelling

**Italy COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	4.6	5.2	3.7	3.3	2.0	1.9	-	-	-	-
	EXP	6.5	4.8	3.5	2.9	1.8	1.6	1.3*	1.0*	0.9*	0.7*
	Elow							1.2	1.0	0.8	0.6
	Eup							1.3	1.1	0.9	0.8
35	OBS	6.7	7.0	5.1	3.9	2.7	1.7	-	-	-	-
	EXP	7.7	6.2	4.7	3.5	3.1	2.0	1.8*	1.4*	1.2*	1.0*
	Elow							1.7	1.4	1.1	0.9
	Eup							1.8	1.5	1.3	1.1
40	OBS	14.5	9.3	8.0	6.1	5.2	4.6	-	-	-	-
	EXP	13.1	10.0	8.3	6.5	5.1	4.7	3.0*	2.7*	2.2*	1.8*
	Elow							2.9	2.5	2.0	1.6
	Eup							3.1	2.9	2.4	2.1
45	OBS	22.9	18.2	13.5	11.2	8.2	7.1	-	-	-	-
	EXP	21.7	17.1	13.5	11.4	9.4	7.8	7.2*	4.7*	4.1*	3.4*
	Elow							7.0	4.4	3.8	3.0
	Eup							7.5	5.0	4.5	3.8
50	OBS	42.6	30.0	22.8	20.0	18.8	16.1	-	-	-	-
	EXP	42.8	30.1	24.6	19.8	17.7	15.4	12.9*	11.9*	7.6*	6.8*
	Elow							12.5	11.1	7.0	6.0
	Eup							13.3	12.6	8.4	7.7
55	OBS	74.9	63.0	50.1	36.7	31.3	30.7	-	-	-	-
	EXP	78.8	62.2	45.5	37.8	32.2	30.5	26.5*	22.1*	20.4*	13.2*
	Elow							25.7	20.8	18.6	11.6
	Eup							27.3	23.6	22.4	14.9
60	OBS	162.9	127.5	97.9	75.9	66.9	63.1	-	-	-	-
	EXP	160.3	125.8	103.1	76.9	67.5	60.8	57.6*	50.0*	41.8*	38.5*
	Elow							55.8	46.9	38.0	33.9
	Eup							59.4	53.2	45.9	43.6
65	OBS	340.2	255.6	210.1	176.7	140.7	129.4	-	-	-	-
	EXP	343.0	258.0	210.2	175.7	138.3	128.5	115.7*	109.6*	95.2*	79.6*
	Elow							112.1	102.8	86.5	70.1
	Eup							119.3	116.5	104.4	90.0
70	OBS	655.8	585.1	456.0	380.1	332.1	269.5	-	-	-	-
	EXP	650.5	582.4	454.6	378.0	333.4	277.7	258.0*	232.3*	220.0*	191.1*
	Elow							250.0	218.0	200.0	168.3
	Eup							266.1	247.0	241.3	216.2
75	OBS	1272.6	1093.8	1022.7	812.0	715.1	672.4	-	-	-	-
	EXP	1272.6	1100.1	1022.2	814.1	714.5	666.8	555.3*	516.1*	464.5*	440.0*
	Elow							538.0	484.3	422.3	387.5
	Eup							572.7	548.9	509.5	497.7
30-79	OBS	141.4	117.6	98.5	79.7	68.5	61.7	-	-	-	-
	EXP	141.6	117.4	98.5	79.7	68.6	61.6	54.1*	49.1*	43.9*	38.9*
	Elow							52.4	46.1	39.9	34.2
	Eup							55.8	52.3	48.1	44.0

Osmond and Gardner Modelling

**Italy COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

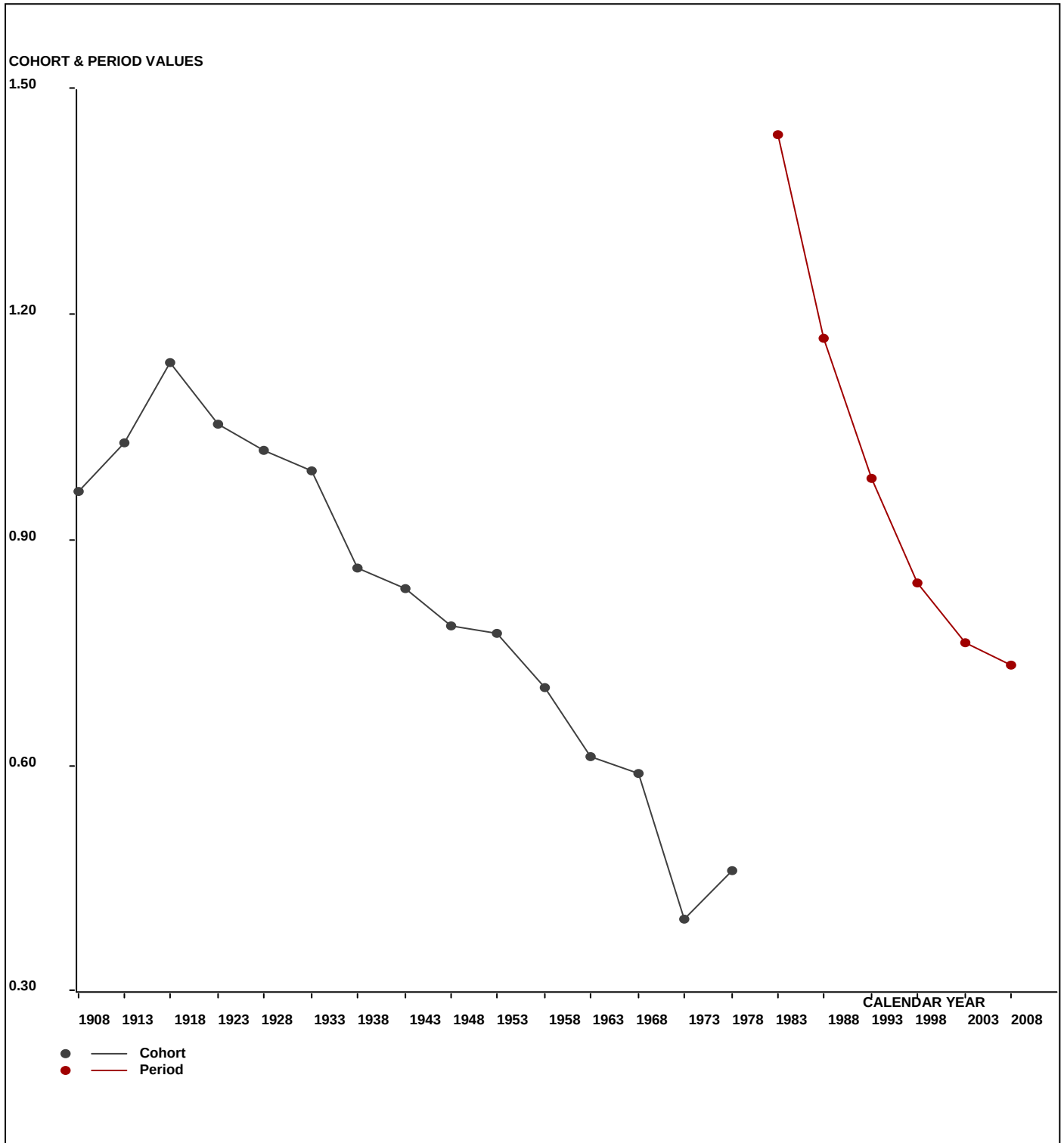
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	45.0	50.0	40.0	38.0	22.8	21.0	-	-	-	-
	EXP	62.7	46.0	37.5	32.9	20.2	16.8	12.1*	8.9*	7.0*	5.6*
	CHI	5.007	0.342	0.161	0.800	0.334	1.067	-	-	-	-
35 -	OBS	64.0	68.0	49.0	42.0	31.6	21.0	-	-	-	-
	EXP	73.6	60.1	45.7	38.1	36.2	23.9	19.6*	13.9*	10.3*	8.1*
	CHI	1.240	1.050	0.232	0.409	0.586	0.363	-	-	-	-
40 -	OBS	131.0	88.0	77.0	59.0	56.8	56.0	-	-	-	-
	EXP	118.8	94.4	80.3	62.4	55.8	57.2	37.3*	30.2*	21.5*	15.9*
	CHI	1.262	0.430	0.132	0.185	0.017	0.026	-	-	-	-
45 -	OBS	214.0	162.0	126.0	107.0	79.6	80.0	-	-	-	-
	EXP	203.2	152.3	126.0	109.6	91.1	88.1	88.9*	57.3*	46.5*	33.1*
	CHI	0.572	0.619	0.000	0.062	1.461	0.737	-	-	-	-
50 -	OBS	386.0	276.0	201.0	185.0	179.4	159.0	-	-	-	-
	EXP	387.9	277.3	216.6	183.5	169.4	152.6	145.8*	145.4*	93.9*	76.1*
	CHI	0.009	0.006	1.130	0.012	0.587	0.271	-	-	-	-
55 -	OBS	688.0	558.0	453.0	319.0	289.0	296.0	-	-	-	-
	EXP	724.0	551.2	410.9	329.1	297.2	294.0	263.2*	248.5*	248.2*	160.3*
	CHI	1.791	0.085	4.312	0.307	0.225	0.013	-	-	-	-
60 -	OBS	1225.0	1128.0	843.0	670.0	574.2	580.0	-	-	-	-
	EXP	1205.6	1113.1	887.0	678.4	579.2	558.7	551.0*	489.0*	462.8*	462.6*
	CHI	0.313	0.199	2.187	0.104	0.043	0.812	-	-	-	-
65 -	OBS	2097.0	1814.0	1768.0	1461.0	1205.2	1080.0	-	-	-	-
	EXP	2114.7	1831.0	1769.1	1452.8	1185.0	1072.9	1036.2*	1021.5*	910.3*	863.2*
	CHI	0.149	0.158	0.001	0.046	0.344	0.046	-	-	-	-
70 -	OBS	4334.0	3243.0	2985.0	2972.0	2599.4	2215.0	-	-	-	-
	EXP	4299.1	3228.1	2975.5	2955.1	2609.9	2281.9	2057.5*	1991.7*	1971.8*	1764.9*
	CHI	0.283	0.069	0.030	0.097	0.042	1.962	-	-	-	-
75 -	OBS	5986.0	6086.0	4865.0	4691.0	5026.0	4792.0	-	-	-	-
	EXP	5986.0	6121.1	4862.3	4703.2	5021.8	4752.0	4185.7*	3787.5*	3707.9*	3686.5*
	CHI	0.000	0.201	0.002	0.031	0.004	0.337	-	-	-	-
30-79	OBS	15170.0	13473.0	11407.0	10544.0	10064.0	9300.0	-	-	-	-
	EXP	15175.6	13474.6	11411.1	10545.0	10065.9	9298.1	8397.2*	7793.9*	7480.2*	7076.3*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Italy COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

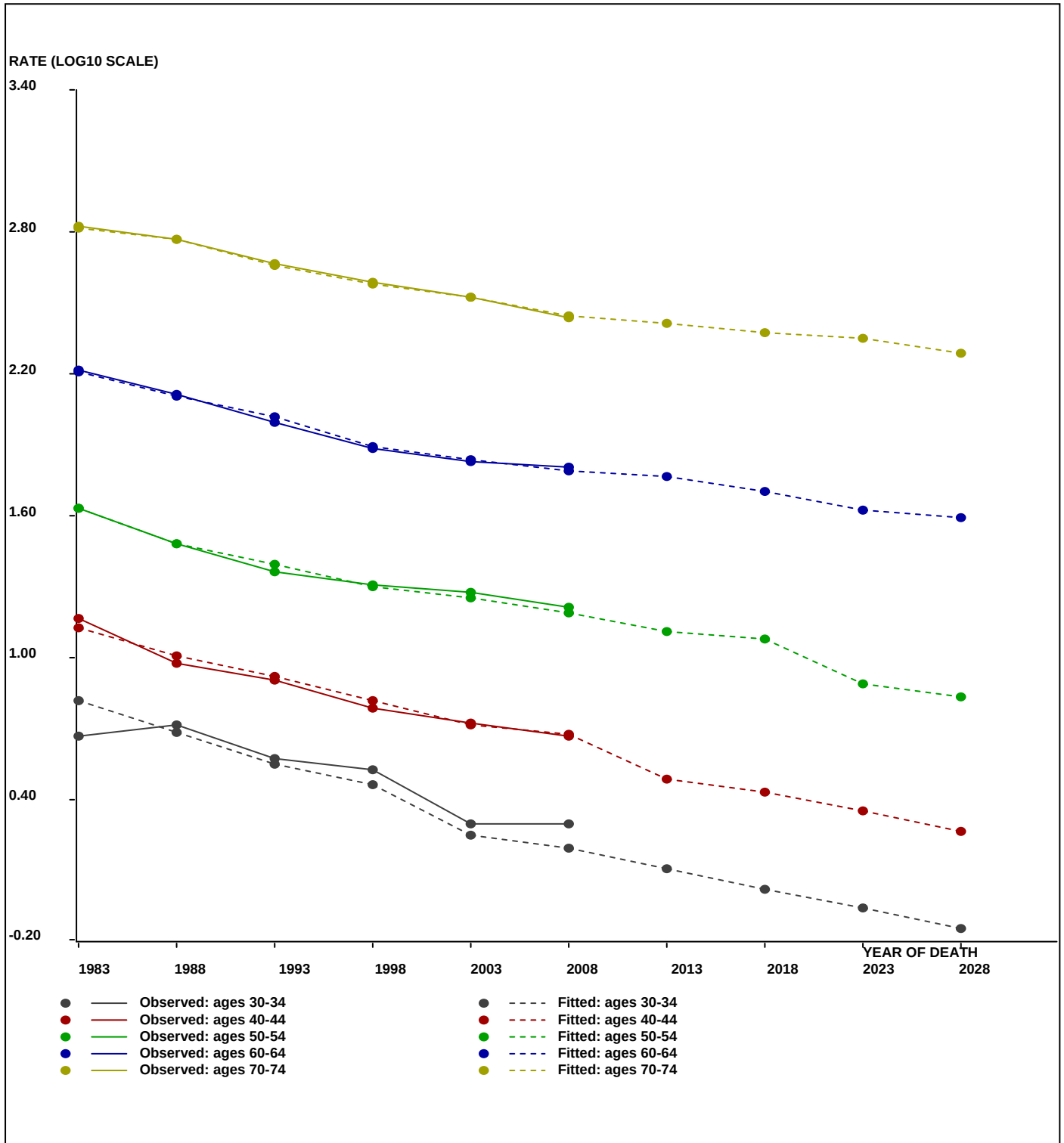


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Italy COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Italy COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	1.3	1.8	3.0	7.2	12.9	26.5	57.6	115.7	258.0	555.3
2016 PRE	1.0	1.4	2.7	4.7	11.9	22.1	50.0	109.6	232.3	516.1
2021 PRE	0.9	1.2	2.2	4.1	7.6	20.4	41.8	95.2	220.0	464.5
2026 PRE	0.7	1.0	1.8	3.4	6.8	13.2	38.5	79.6	191.1	440.0

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	12.1	19.6	37.3	88.9	145.8	263.2	551.0	1036.2	2057.5	4185.7
2016 PRE	8.9	13.9	30.2	57.3	145.4	248.5	489.0	1021.5	1991.7	3787.5
2021 PRE	7.0	10.3	21.5	46.5	93.9	248.2	462.8	910.3	1971.8	3707.9
2026 PRE	5.6	8.1	15.9	33.1	76.1	160.3	462.6	863.2	1764.9	3686.5

Osmond and Gardner Modelling

Japan IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	3470.90	68.06	51	P, C	98.25	18515.64	0.0000
AGE-PERIOD	1489.10	33.09	45	Cohort	95.92	7931.80	0.0000
AGE-COHORT	672.33	18.68	36	Period	90.95	3568.20	0.0000
PERIOD-COHORT	486.09	12.15	40	Age	87.49	2589.69	0.0000
FULL AGE-PERIOD-COHORT	60.81	1.90	32			322.54	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.296964	19.813638
35	1.646245	44.283788
40	1.983648	96.304894
45	2.294977	197.231807
50	2.557382	360.896031
55	2.779591	601.992783
60	2.983110	961.855332
65	3.161550	1450.607008
70	3.343070	2203.279647
75	3.529863	3387.373366

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.011045	1.025757
1986	-0.043364	0.904973
1991	-0.017590	0.960307
1996	0.049710	1.121271
2001	0.017154	1.040289
2006	-0.030552	0.932069

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.189097	1.545601
1911	0.157172	1.436057
1916	0.105252	1.274244
1921	0.024190	1.057279
1926	-0.018038	0.959317
1931	-0.046946	0.897540
1936	-0.071487	0.848228
1941	-0.074824	0.841736
1946	-0.083958	0.824217
1951	-0.007927	0.981914
1956	-0.004960	0.988645
1961	0.060160	1.148576
1966	0.138876	1.376817
1971	0.160886	1.448390
1976	0.179159	1.510632

Osmond and Gardner Modelling

Japan IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	482.0	329.0	398.0	649.0	789.0	639.0
EXP	495.6	363.7	432.8	648.8	713.3	639.0
CHI	0.4	3.3	2.8	0.0	8.0	0.0
35 - OBS	1068.0	913.0	787.0	1176.0	1381.0	1341.0
EXP	953.7	970.1	863.3	1130.0	1341.6	1423.0
CHI	13.7	3.4	6.7	1.9	1.2	4.7
40 - OBS	1980.0	1672.0	2032.0	2265.0	2349.0	2560.0
EXP	1793.0	1809.1	2232.5	2184.9	2265.3	2600.5
CHI	19.5	10.4	18.0	2.9	3.1	0.6
45 - OBS	3736.0	3092.0	3653.0	5361.0	4183.0	4019.0
EXP	3461.1	3181.9	3902.4	5285.0	4117.1	4118.9
CHI	21.8	2.5	15.9	1.1	1.1	2.4
50 - OBS	6624.0	5328.0	5601.0	8298.0	8933.0	6632.0
EXP	6274.7	5436.2	6078.4	8184.1	8800.0	6674.3
CHI	19.4	2.2	37.5	1.6	2.0	0.3
55 - OBS	9084.0	8712.0	9147.0	11519.0	12394.0	12882.0
EXP	8896.9	8866.3	9350.2	11524.2	12274.0	12832.6
CHI	3.9	2.7	4.4	0.0	1.2	0.2
60 - OBS	10911.0	11735.0	14241.0	16764.0	16609.0	16973.0
EXP	11000.0	11863.9	14303.2	16698.0	16414.1	16956.2
CHI	0.7	1.4	0.3	0.3	2.3	0.0
65 - OBS	15662.0	13437.0	17861.0	23454.0	21904.0	21323.0
EXP	16316.9	13429.9	17572.4	23339.9	21834.5	21164.1
CHI	26.3	0.0	4.7	0.6	0.2	1.2
70 - OBS	22523.0	19238.0	19661.0	27740.0	29007.0	27066.0
EXP	22933.8	18957.3	19060.2	27706.6	29416.0	27179.4
CHI	7.4	4.2	18.9	0.0	5.7	0.5
75 - OBS	24960.0	24806.0	25117.0	27761.0	32757.0	34763.0
EXP	24960.0	24402.2	24760.8	28294.7	33144.5	34615.3
CHI	0.0	6.7	5.1	10.1	4.5	0.6

Osmond and Gardner Modelling

Japan IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	19.813638
35	44.283788
40	96.304894
45	197.231807
50	360.896031
55	601.992783
60	961.855332
65	1450.607008
70	2203.279647
75	3387.373366

PERIOD	EFFECT	LOWER	UPPER
% Period Change	89.5971	86.5971	92.5971

1981	1.025757		
1986	0.904973		
1991	0.960307		
1996	1.121271		
2001	1.040289		
2006	0.932069		
2011	0.835106	0.807144	0.863068
2016	0.748231	0.698963	0.799176
2021	0.670393	0.605282	0.740014
2026	0.600653	0.524156	0.685231

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.545601	1.000000	
1911	1.436057	2.000000	
1916	1.274244	4.000000	
1921	1.057279	8.000000	
1926	0.959317	16.000000	
1931	0.897540	32.000000	
1936	0.848228	64.000000	
1941	0.841736	128.000000	
1946	0.824217	256.000000	
1951	0.981914	512.000000	
1956	0.988645	1024.000000	
1961	1.148576	2048.000000	
1966	1.376817	4096.000000	
1971	1.448390	8192.000000	
1976	1.601360	EXTRAPOLATION	1.510632
1981	1.765201	EXTRAPOLATION	
1986	1.945805	EXTRAPOLATION	
1991	2.144888	EXTRAPOLATION	
1996	2.364339	EXTRAPOLATION	

Osmond and Gardner Modelling

**Japan IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	19.4	16.0	20.1	30.6	33.0	27.9	-	-	-	-
	EXP	20.0	17.7	21.9	30.6	29.9	29.6	29.2*	28.8*	28.5*	28.1*
	Elow							28.2	26.9	25.7	24.6
	Eup							30.2	30.8	31.4	32.1
35	OBS	41.9	37.0	38.3	59.4	65.3	56.3	-	-	-	-
	EXP	37.4	39.4	42.0	57.0	63.4	59.8	59.2*	58.5*	57.8*	57.1*
	Elow							57.2	54.6	52.2	49.8
	Eup							61.2	62.5	63.8	65.1
40	OBS	91.8	66.4	82.7	110.7	119.3	121.7	-	-	-	-
	EXP	83.2	71.8	90.8	106.8	115.1	123.6	116.5*	115.4*	114.0*	112.6*
	Elow							112.6	107.8	102.9	98.2
	Eup							120.4	123.2	125.8	128.4
45	OBS	185.2	146.0	146.1	220.3	206.1	206.0	-	-	-	-
	EXP	171.6	150.2	156.1	217.2	202.8	211.1	226.8*	213.7*	211.7*	209.1*
	Elow							219.2	199.7	191.2	182.5
	Eup							234.4	228.3	233.7	238.6
50	OBS	350.8	271.5	268.8	338.2	374.2	330.5	-	-	-	-
	EXP	332.3	277.0	291.7	333.5	368.6	332.6	346.2*	371.8*	350.4*	347.1*
	Elow							334.6	347.3	316.4	302.9
	Eup							357.8	397.1	386.8	396.0
55	OBS	604.8	480.5	479.7	567.9	521.2	553.1	-	-	-	-
	EXP	592.4	489.0	490.4	568.2	516.2	551.0	497.0*	517.4*	555.6*	523.7*
	Elow							480.4	483.3	501.7	457.0
	Eup							513.7	552.6	613.3	597.5
60	OBS	1034.7	826.0	825.4	918.4	852.2	739.7	-	-	-	-
	EXP	1043.1	835.0	829.0	914.8	842.2	738.9	788.7*	711.5*	740.6*	795.4*
	Elow							762.3	664.7	668.7	694.1
	Eup							815.1	760.0	817.5	907.5
65	OBS	1819.9	1388.7	1358.3	1467.0	1284.1	1146.6	-	-	-	-
	EXP	1896.0	1388.0	1336.4	1459.9	1280.0	1138.1	998.5*	1065.8*	961.4*	1000.8*
	Elow							965.0	995.6	868.1	873.3
	Eup							1031.9	1138.3	1061.3	1141.7
70	OBS	3187.4	2578.4	2307.5	2372.8	2028.6	1734.7	-	-	-	-
	EXP	3245.5	2540.7	2237.0	2370.0	2057.2	1741.9	1548.8*	1358.8*	1450.3*	1308.4*
	Elow							1496.9	1269.3	1309.5	1141.7
	Eup							1600.6	1451.3	1601.0	1492.6
75	OBS	5370.4	4475.1	4204.6	3940.0	3341.0	2845.9	-	-	-	-
	EXP	5370.4	4402.2	4145.0	4015.7	3380.5	2833.8	2399.5*	2133.4*	1871.7*	1997.8*
	Elow							2319.1	1992.9	1689.9	1743.4
	Eup							2479.8	2278.7	2066.1	2279.2
30-79	OBS	749.3	600.2	575.7	621.4	561.4	503.6	-	-	-	-
	EXP	751.7	599.6	575.5	621.4	560.4	504.4	469.3*	450.6*	442.1*	442.2*
	Elow							453.6	421.0	399.1	385.9
	Eup							485.0	481.3	488.0	504.5

Osmond and Gardner Modelling

**Japan IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

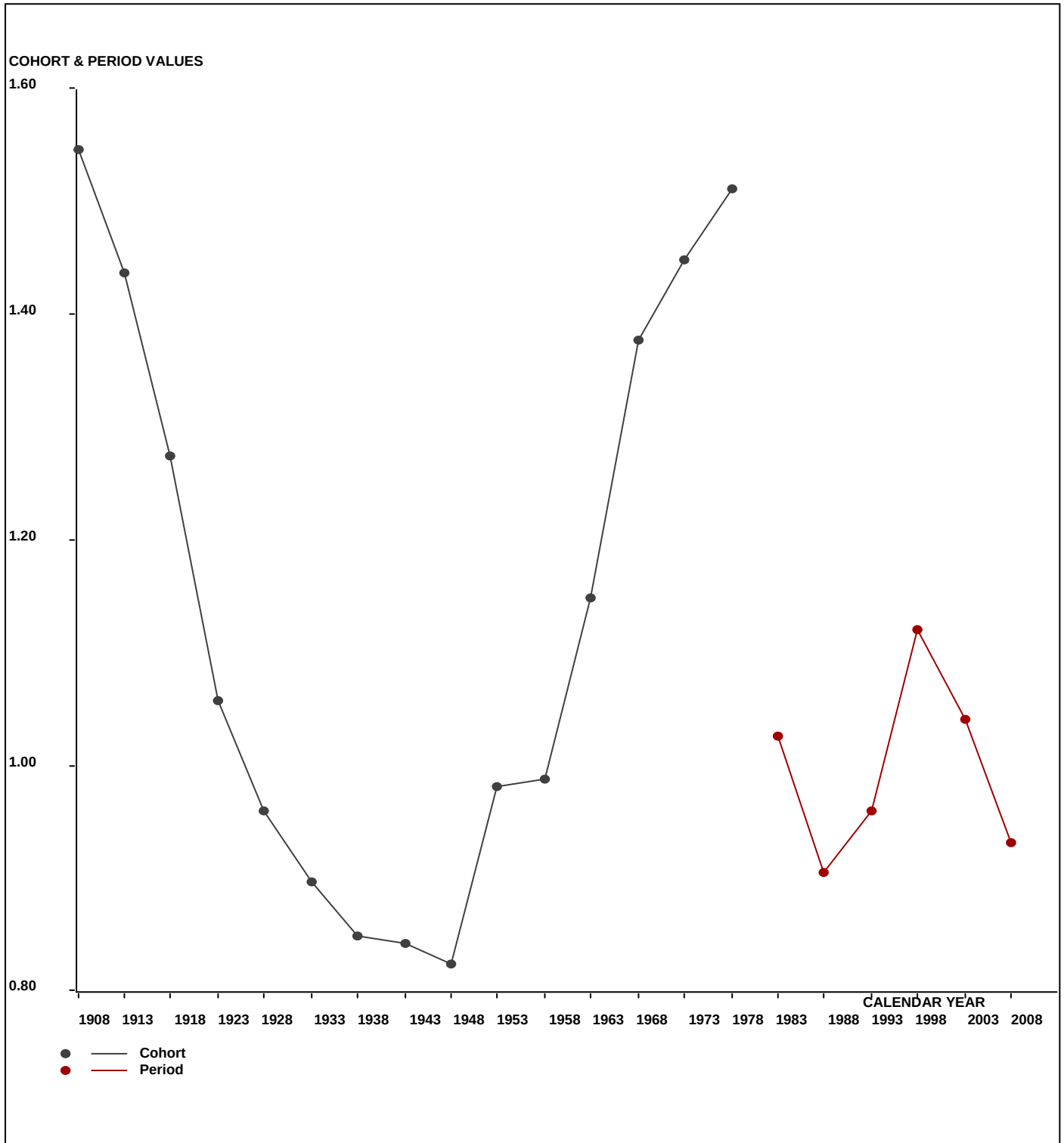
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	482.0	329.0	398.0	649.0	789.0	639.0	-	-	-	-
	EXP	495.6	363.7	432.8	648.8	713.3	677.4	576.9*	523.9*	467.8*	437.3*
	CHI	0.375	3.310	2.799	0.000	8.041	2.174	-	-	-	-
35 -	OBS	1068.0	913.0	787.0	1176.0	1381.0	1341.0	-	-	-	-
	EXP	953.7	970.1	863.3	1130.0	1341.6	1423.0	1347.9*	1154.7*	1048.8*	936.8*
	CHI	13.702	3.358	6.737	1.870	1.157	4.729	-	-	-	-
40 -	OBS	1980.0	1672.0	2032.0	2265.0	2349.0	2560.0	-	-	-	-
	EXP	1793.0	1809.1	2232.5	2184.9	2265.3	2600.5	2759.2*	2615.8*	2242.4*	2037.5*
	CHI	19.501	10.388	18.008	2.935	3.090	0.630	-	-	-	-
45 -	OBS	3736.0	3092.0	3653.0	5361.0	4183.0	4019.0	-	-	-	-
	EXP	3461.1	3181.9	3902.4	5285.0	4117.1	4118.9	4728.8*	5022.5*	4764.2*	4086.9*
	CHI	21.837	2.540	15.940	1.094	1.055	2.424	-	-	-	-
50 -	OBS	6624.0	5328.0	5601.0	8298.0	8933.0	6632.0	-	-	-	-
	EXP	6274.7	5436.2	6078.4	8184.1	8800.0	6674.3	6654.0*	7644.6*	8128.5*	7715.0*
	CHI	19.442	2.155	37.496	1.585	2.009	0.268	-	-	-	-
55 -	OBS	9084.0	8712.0	9147.0	11519.0	12394.0	12882.0	-	-	-	-
	EXP	8896.9	8866.3	9350.2	11524.2	12274.0	12832.6	9753.7*	9717.9*	11182.5*	11907.8*
	CHI	3.933	2.684	4.416	0.002	1.173	0.190	-	-	-	-
60 -	OBS	10911.0	11735.0	14241.0	16764.0	16609.0	16973.0	-	-	-	-
	EXP	11000.0	11863.9	14303.2	16698.0	16414.1	16956.2	17691.7*	13467.7*	13457.6*	15516.7*
	CHI	0.720	1.401	0.271	0.261	2.313	0.017	-	-	-	-
65 -	OBS	15662.0	13437.0	17861.0	23454.0	21904.0	21323.0	-	-	-	-
	EXP	16316.9	13429.9	17572.4	23339.9	21834.5	21164.1	21744.1*	22634.9*	17315.5*	17366.0*
	CHI	26.281	0.004	4.739	0.558	0.221	1.194	-	-	-	-
70 -	OBS	22523.0	19238.0	19661.0	27740.0	29007.0	27066.0	-	-	-	-
	EXP	22933.8	18957.3	19060.2	27706.6	29416.0	27179.4	26490.4*	27188.5*	28453.0*	21911.8*
	CHI	7.360	4.157	18.939	0.040	5.687	0.473	-	-	-	-
75 -	OBS	24960.0	24806.0	25117.0	27761.0	32757.0	34763.0	-	-	-	-
	EXP	24960.0	24402.2	24760.8	28294.7	33144.5	34615.3	32268.9*	31590.1*	32825.4*	34593.9*
	CHI	0.000	6.682	5.124	10.067	4.530	0.630	-	-	-	-
30-79	OBS	97030.0	89262.0	98498.0	124987.0	130306.0	128198.0	-	-	-	-
	EXP	97085.7	89280.6	98556.2	124996.2	130320.5	128241.7	124015.8*	121560.6*	119885.8*	116509.8*
	O/E	0.999	1.000	0.999	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Japan IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

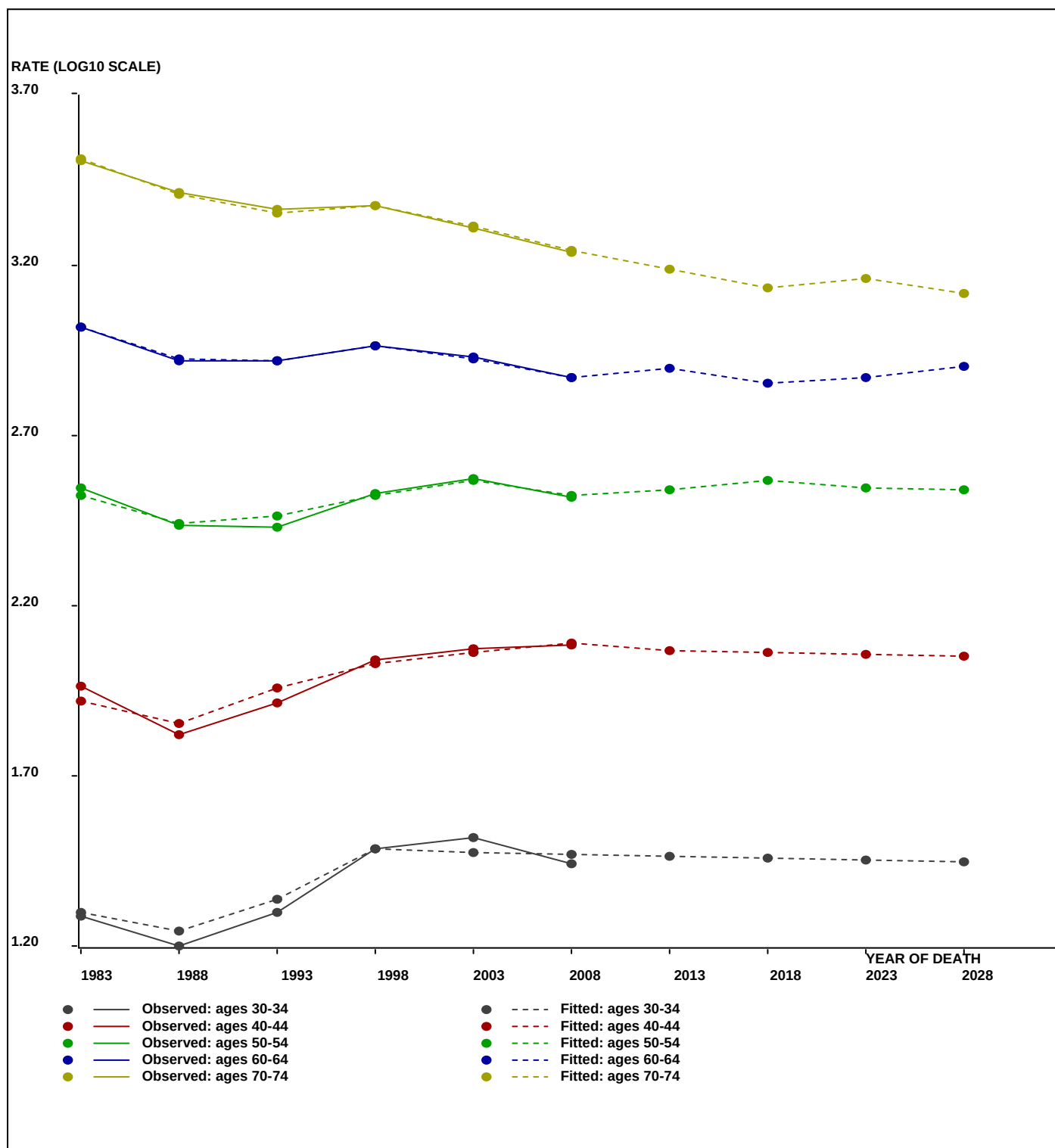


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Japan IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Japan IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	29.2	59.2	116.5	226.8	346.2	497.0	788.7	998.5	1548.8	2399.5
2016	PRE	28.8	58.5	115.4	213.7	371.8	517.4	711.5	1065.8	1358.8	2133.4
2021	PRE	28.5	57.8	114.0	211.7	350.4	555.6	740.6	961.4	1450.3	1871.7
2026	PRE	28.1	57.1	112.6	209.1	347.1	523.7	795.4	1000.8	1308.4	1997.8

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	576.9	1347.9	2759.2	4728.8	6654.0	9753.7	17691.7	21744.1	26490.4	32268.9
2016	PRE	523.9	1154.7	2615.8	5022.5	7644.6	9717.9	13467.7	22634.9	27188.5	31590.1
2021	PRE	467.8	1048.8	2242.4	4764.2	8128.5	11182.5	13457.6	17315.5	28453.0	32825.4
2026	PRE	437.3	936.8	2037.5	4086.9	7715.0	11907.8	15516.7	17366.0	21911.8	34593.9

Osmond and Gardner Modelling

Japan Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	30762.44	603.19	51	P, C	99.58	167450.36	0.0000
AGE-PERIOD	988.41	21.96	45	Cohort	87.02	5251.08	0.0000
AGE-COHORT	897.72	24.94	36	Period	85.71	4763.35	0.0000
PERIOD-COHORT	468.76	11.72	40	Age	72.63	2487.34	0.0000
FULL AGE-PERIOD-COHORT	128.28	4.01	32			680.26	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.681148	47.989744
35	2.051249	112.525036
40	2.370079	234.465418
45	2.623624	420.362287
50	2.821598	663.129287
55	2.983583	962.904234
60	3.157090	1435.787442
65	3.354465	2261.855104
70	3.588675	3878.602679
75	3.838323	6891.642479

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.166163	1.466100
1986	0.032359	1.077356
1991	-0.014559	0.967033
1996	-0.017653	0.960167
2001	-0.085462	0.821368
2006	-0.159306	0.692938

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.180858	1.516554
1911	0.142600	1.388674
1916	0.079829	1.201792
1921	0.012011	1.028042
1926	-0.019181	0.956795
1931	-0.039308	0.913465
1936	-0.063198	0.864573
1941	-0.094552	0.804356
1946	-0.124782	0.750271
1951	-0.083514	0.825062
1956	-0.117566	0.762841
1961	-0.094457	0.804532
1966	-0.064200	0.862581
1971	-0.052098	0.886957
1976	-0.012541	0.971536

Osmond and Gardner Modelling

Japan Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	1424.0	824.0	778.0	829.0	812.0	740.0
EXP	1441.7	809.2	739.4	843.1	835.3	740.0
CHI	0.2	0.3	2.0	0.2	0.6	0.0
35 - OBS	3190.0	2551.0	1634.0	1651.0	1678.0	1669.0
EXP	3152.9	2465.7	1704.4	1722.3	1686.3	1646.2
CHI	0.4	2.9	2.9	3.0	0.0	0.3
40 - OBS	6142.0	5038.0	4490.0	3225.0	2957.0	2971.0
EXP	5962.2	4773.0	4599.0	3514.8	3050.2	2948.9
CHI	5.4	14.7	2.6	23.9	2.8	0.2
45 - OBS	10917.0	7995.0	7667.0	7498.0	5307.0	4692.0
EXP	10746.5	7714.9	7624.1	8104.7	5345.8	4571.5
CHI	2.7	10.2	0.2	45.4	0.3	3.2
50 - OBS	16374.0	12734.0	10997.0	10944.0	10620.0	7396.0
EXP	16771.3	12120.7	10747.5	11721.9	10727.5	7035.0
CHI	9.4	31.0	5.8	51.6	1.1	18.5
55 - OBS	19204.0	17838.0	15763.0	14484.0	13936.0	13532.0
EXP	20286.5	17182.8	15350.9	15083.8	14110.4	12822.3
CHI	57.8	25.0	11.1	23.9	2.2	39.3
60 - OBS	22078.0	20735.0	22459.0	21636.0	18469.0	17692.0
EXP	22819.8	21027.5	21881.9	21755.6	18486.5	17129.0
CHI	24.1	4.1	15.2	0.7	0.0	18.5
65 - OBS	34844.0	23741.0	27537.0	31800.0	27354.0	23329.0
EXP	34296.3	24240.0	27519.1	31716.7	27398.8	23444.1
CHI	8.7	10.3	0.0	0.2	0.1	0.6
70 - OBS	57035.0	37548.0	32301.0	42201.0	41337.0	35186.0
EXP	55799.4	37469.8	32853.8	41656.4	41611.3	36256.0
CHI	27.4	0.2	9.3	7.1	1.8	31.6
75 - OBS	71217.0	55890.0	47210.0	49672.0	53874.0	52612.0
EXP	71217.0	57153.2	47844.6	47931.6	53102.1	53285.9
CHI	0.0	27.9	8.4	63.2	11.2	8.5

Osmond and Gardner Modelling

Japan Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	47.989744
35	112.525036
40	234.465418
45	420.362287
50	663.129287
55	962.904234
60	1435.787442
65	2261.855104
70	3878.602679
75	6891.642479

PERIOD	EFFECT	LOWER	UPPER
% Period Change	84.3639	81.3639	87.3639
1981	1.466100		
1986	1.077356		
1991	0.967033		
1996	0.960167		
2001	0.821368		
2006	0.692938		
2011	0.584589	0.563801	0.605377
2016	0.493182	0.458730	0.528881
2021	0.416067	0.373241	0.462051
2026	0.351011	0.303683	0.403665

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.516554	1.000000	
1911	1.388674	2.000000	
1916	1.201792	4.000000	
1921	1.028042	8.000000	
1926	0.956795	16.000000	
1931	0.913465	32.000000	
1936	0.864573	64.000000	
1941	0.804356	128.000000	
1946	0.750271	256.000000	
1951	0.825062	512.000000	
1956	0.762841	1024.000000	
1961	0.804532	2048.000000	
1966	0.862581	4096.000000	
1971	0.886957	8192.000000	
1976	0.900961	EXTRAPOLATION	0.971536
1981	0.923605	EXTRAPOLATION	
1986	0.946817	EXTRAPOLATION	
1991	0.970613	EXTRAPOLATION	
1996	0.995007	EXTRAPOLATION	

Osmond and Gardner Modelling

**Japan Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	57.3	40.2	39.3	39.1	34.0	32.3	-	-	-	-
	EXP	58.0	39.4	37.3	39.7	35.0	30.0	25.9*	22.4*	19.4*	16.8*
	Elow							25.0	20.8	17.4	14.5
	Eup							26.8	24.0	21.5	19.3
35	OBS	125.2	103.5	79.6	83.3	79.3	70.1	-	-	-	-
	EXP	123.8	100.0	83.0	86.9	79.7	69.2	59.3*	51.3*	44.3*	38.3*
	Elow							57.2	47.7	39.8	33.2
	Eup							61.4	55.0	49.2	44.1
40	OBS	284.8	200.0	182.6	157.6	150.2	141.2	-	-	-	-
	EXP	276.5	189.5	187.1	171.7	154.9	140.1	121.6*	104.2*	90.1*	77.9*
	Elow							117.2	96.9	80.8	67.4
	Eup							125.9	111.7	100.1	89.6
45	OBS	541.3	377.5	306.7	308.1	261.5	240.5	-	-	-	-
	EXP	532.8	364.3	305.0	333.0	263.4	234.3	212.0*	183.9*	157.6*	136.3*
	Elow							204.4	171.0	141.4	117.9
	Eup							219.5	197.2	175.0	156.7
50	OBS	867.0	648.9	527.8	446.0	444.9	368.5	-	-	-	-
	EXP	888.1	617.7	515.8	477.7	449.4	350.5	311.9*	282.1*	244.7*	209.7*
	Elow							300.8	262.4	219.5	181.4
	Eup							323.0	302.5	271.8	241.2
55	OBS	1278.6	983.8	826.7	714.1	586.1	581.0	-	-	-	-
	EXP	1350.7	947.6	805.1	743.7	593.4	550.5	429.4*	382.1*	345.6*	299.8*
	Elow							414.1	355.4	310.0	259.4
	Eup							444.7	409.7	383.8	344.8
60	OBS	2093.7	1459.4	1301.8	1185.3	947.7	771.0	-	-	-	-
	EXP	2164.0	1480.0	1268.3	1191.9	948.6	746.5	692.5*	540.2*	480.6*	434.7*
	Elow							667.9	502.4	431.1	376.1
	Eup							717.1	579.3	533.7	499.9
65	OBS	4048.9	2453.6	2094.1	1989.0	1603.6	1254.5	-	-	-	-
	EXP	3985.3	2505.2	2092.8	1983.8	1606.2	1260.7	992.1*	920.4*	717.9*	638.7*
	Elow							956.8	856.1	644.0	552.6
	Eup							1027.3	987.0	797.2	734.6
70	OBS	8071.4	5032.3	3791.0	3609.8	2890.9	2255.1	-	-	-	-
	EXP	7896.6	5021.8	3855.9	3563.2	2910.1	2323.7	1823.8*	1435.2*	1331.5*	1038.6*
	Elow							1758.9	1334.9	1194.4	898.5
	Eup							1888.6	1539.0	1478.6	1194.3
75	OBS	15323.0	10082.7	7903.0	7049.7	5494.7	4307.1	-	-	-	-
	EXP	15323.0	10310.6	8009.3	6802.7	5416.0	4362.2	3483.2*	2733.9*	2151.3*	1995.9*
	Elow							3359.3	2542.9	1929.9	1726.8
	Eup							3607.0	2931.8	2389.1	2295.3
30-79	OBS	1860.5	1233.9	999.6	915.2	747.6	612.9	-	-	-	-
	EXP	1861.0	1235.8	1000.5	916.6	748.5	609.9	501.1*	417.4*	355.2*	308.9*
	Elow							483.3	388.2	318.7	267.2
	Eup							518.9	447.6	394.5	355.2

Osmond and Gardner Modelling

**Japan Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

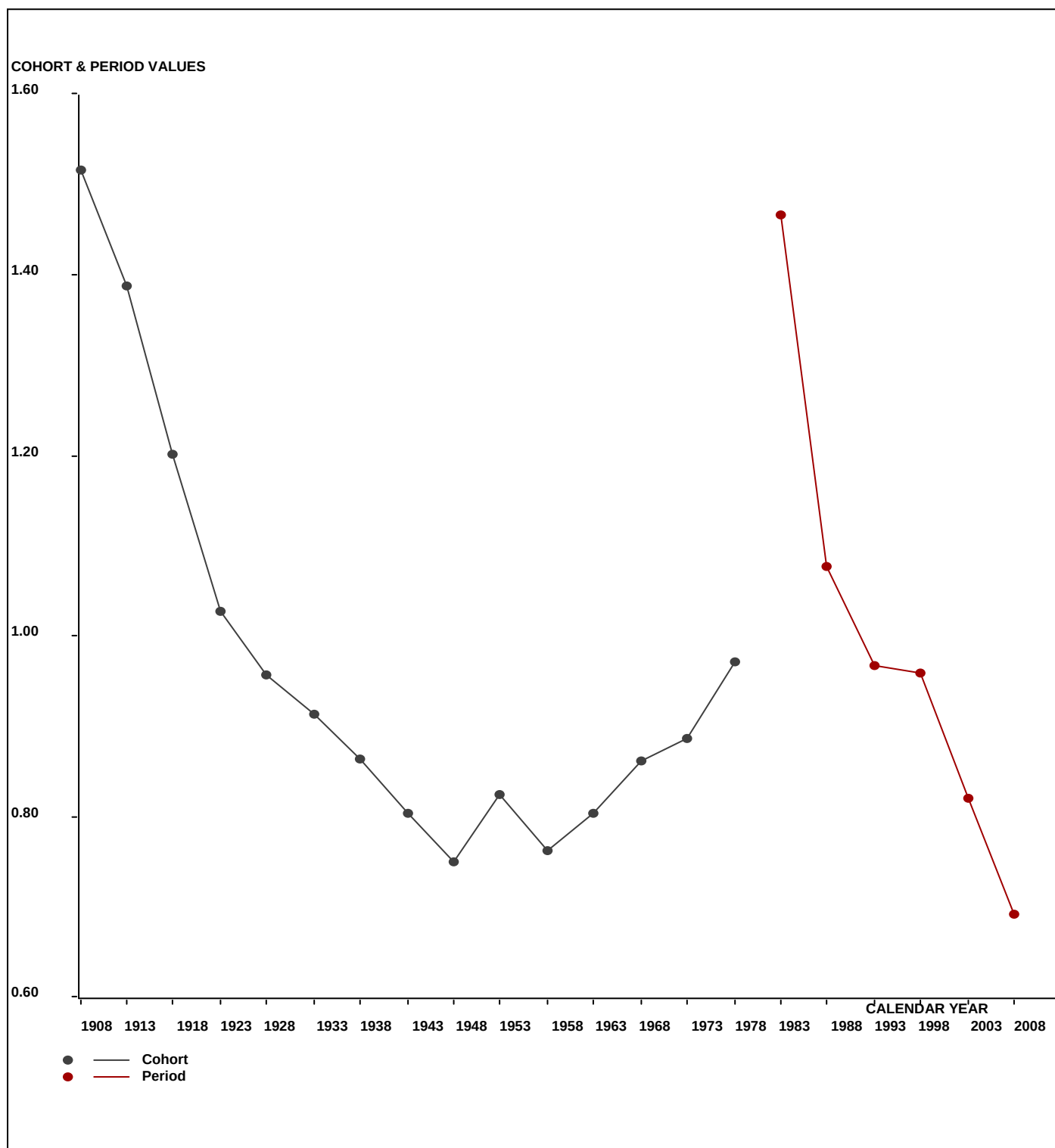
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	1424.0	824.0	778.0	829.0	812.0	740.0	-	-	-	-
	EXP	1441.7	809.2	739.4	843.1	835.3	686.2	511.8*	407.0*	318.2*	260.5*
	CHI	0.218	0.272	2.012	0.235	0.649	4.211	-	-	-	-
35 -	OBS	3190.0	2551.0	1634.0	1651.0	1678.0	1669.0	-	-	-	-
	EXP	3152.9	2465.7	1704.4	1722.3	1686.3	1646.2	1349.0*	1011.9*	804.8*	629.5*
	CHI	0.437	2.948	2.908	2.954	0.041	0.316	-	-	-	-
40 -	OBS	6142.0	5038.0	4490.0	3225.0	2957.0	2971.0	-	-	-	-
	EXP	5962.2	4773.0	4599.0	3514.8	3050.2	2948.9	2879.7*	2361.7*	1772.8*	1410.6*
	CHI	5.425	14.716	2.586	23.888	2.849	0.166	-	-	-	-
45 -	OBS	10917.0	7995.0	7667.0	7498.0	5307.0	4692.0	-	-	-	-
	EXP	10746.5	7714.9	7624.1	8104.7	5345.8	4571.5	4420.1*	4320.7*	3545.6*	2663.4*
	CHI	2.705	10.170	0.242	45.417	0.282	3.175	-	-	-	-
50 -	OBS	16374.0	12734.0	10997.0	10944.0	10620.0	7396.0	-	-	-	-
	EXP	16771.3	12120.7	10747.5	11721.9	10727.5	7035.0	5995.1*	5800.5*	5676.5*	4660.8*
	CHI	9.413	31.037	5.790	51.630	1.077	18.525	-	-	-	-
55 -	OBS	19204.0	17838.0	15763.0	14484.0	13936.0	13532.0	-	-	-	-
	EXP	20286.5	17182.8	15350.9	15083.8	14110.4	12822.3	8426.8*	7176.6*	6954.9*	6816.1*
	CHI	57.766	24.982	11.065	23.851	2.154	39.279	-	-	-	-
60 -	OBS	22078.0	20735.0	22459.0	21636.0	18469.0	17692.0	-	-	-	-
	EXP	22819.8	21027.5	21881.9	21755.6	18486.5	17129.0	15533.6*	10224.4*	8733.1*	8480.1*
	CHI	24.114	4.069	15.222	0.657	0.017	18.506	-	-	-	-
65 -	OBS	34844.0	23741.0	27537.0	31800.0	27354.0	23329.0	-	-	-	-
	EXP	34296.3	24240.0	27519.1	31716.7	27398.8	23444.1	21604.4*	19546.9*	12929.4*	11084.0*
	CHI	8.747	10.274	0.012	0.219	0.073	0.565	-	-	-	-
70 -	OBS	57035.0	37548.0	32301.0	42201.0	41337.0	35186.0	-	-	-	-
	EXP	55799.4	37469.8	32853.8	41656.4	41611.3	36256.0	31194.3*	28717.0*	26120.4*	17393.0*
	CHI	27.359	0.163	9.301	7.121	1.808	31.581	-	-	-	-
75 -	OBS	71217.0	55890.0	47210.0	49672.0	53874.0	52612.0	-	-	-	-
	EXP	71217.0	57153.2	47844.6	47931.6	53102.1	53285.9	46842.7*	40481.4*	37729.4*	34559.7*
	CHI	0.000	27.919	8.417	63.192	11.221	8.523	-	-	-	-
30-79	OBS	242425.0	184894.0	170836.0	183940.0	176344.0	159819.0	-	-	-	-
	EXP	242493.6	184956.8	170864.7	184050.9	176354.1	159825.1	138757.5*	120048.1*	104585.2*	87957.6*
	O/E	1.000	1.000	1.000	0.999	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Japan Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

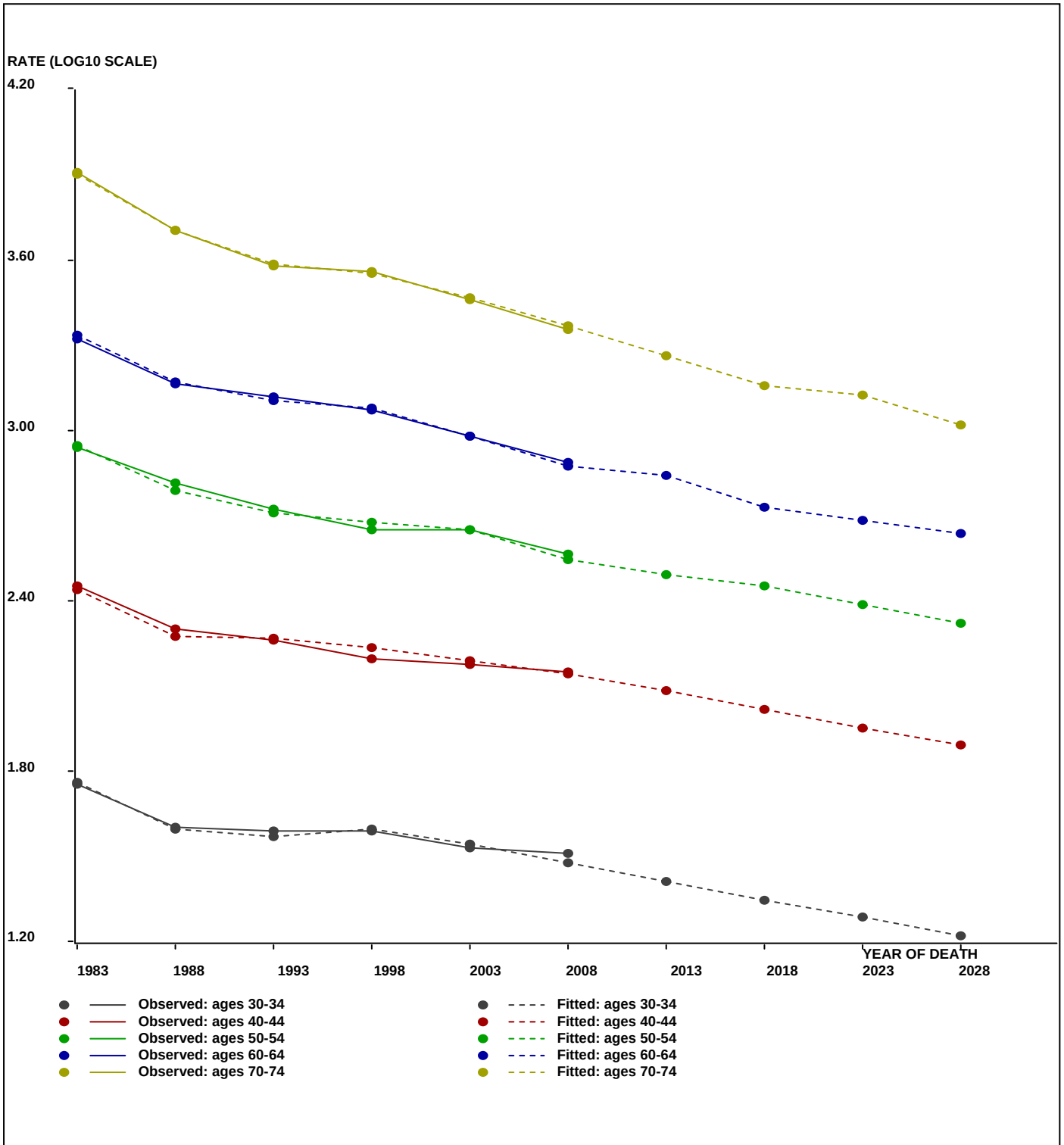


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Japan Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Japan Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	25.9	59.3	121.6	212.0	311.9	429.4	692.5	992.1	1823.8	3483.2
2016	PRE	22.4	51.3	104.2	183.9	282.1	382.1	540.2	920.4	1435.2	2733.9
2021	PRE	19.4	44.3	90.1	157.6	244.7	345.6	480.6	717.9	1331.5	2151.3
2026	PRE	16.8	38.3	77.9	136.3	209.7	299.8	434.7	638.7	1038.6	1995.9

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	511.8	1349.0	2879.7	4420.1	5995.1	8426.8	15533.6	21604.4	31194.3	46842.7
2016	PRE	407.0	1011.9	2361.7	4320.7	5800.5	7176.6	10224.4	19546.9	28717.0	40481.4
2021	PRE	318.2	804.8	1772.8	3545.6	5676.5	6954.9	8733.1	12929.4	26120.4	37729.4
2026	PRE	260.5	629.5	1410.6	2663.4	4660.8	6816.1	8480.1	11084.0	17393.0	34559.7

Osmond and Gardner Modelling

Japan Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	990.94	19.43	51	P, C	98.62	5261.02	0.0000
AGE-PERIOD	534.01	11.87	45	Cohort	97.44	2833.38	0.0000
AGE-COHORT	146.74	4.08	36	Period	90.70	778.31	0.0000
PERIOD-COHORT	21.63	0.54	40	Age	36.90	114.69	0.0000
FULL AGE-PERIOD-COHORT	13.65	0.43	32			72.36	0.0001

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.012213	10.285209
35	1.419023	26.243602
40	1.787459	61.299775
45	2.102515	126.623647
50	2.412568	258.563715
55	2.717980	522.372204
60	2.999797	999.531714
65	3.251970	1786.363618
70	3.464338	2912.980551
75	3.636585	4330.963638

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.007665	0.982505
1986	0.009009	1.020962
1991	0.023192	1.054854
1996	0.017245	1.040507
2001	-0.007040	0.983919
2006	-0.027143	0.939415

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.058791	0.873391
1911	-0.019545	0.955993
1916	0.004621	1.010696
1921	0.007780	1.018076
1926	0.031677	1.075666
1931	0.010997	1.025645
1936	-0.043247	0.905217
1941	-0.028146	0.937246
1946	-0.008017	0.981709
1951	0.054917	1.134795
1956	0.024699	1.058520
1961	-0.017737	0.959982
1966	-0.054140	0.882795
1971	-0.082029	0.827887
1976	-0.132813	0.736524

Osmond and Gardner Modelling

Japan Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	289.0	213.0	210.0	207.0	200.0	163.0
EXP	284.8	228.0	206.3	200.4	200.2	163.0
CHI	0.1	1.0	0.1	0.2	0.0	0.0
35 - OBS	599.0	752.0	609.0	528.0	507.0	486.0
EXP	644.8	749.6	601.7	519.4	482.2	485.8
CHI	3.3	0.0	0.1	0.1	1.3	0.0
40 - OBS	1139.0	1503.0	1836.0	1499.0	1137.0	1037.0
EXP	1217.2	1547.3	1804.0	1381.8	1139.9	1069.7
CHI	5.0	1.3	0.6	9.9	0.0	1.0
45 - OBS	2278.0	2517.0	3282.0	3712.0	2650.0	2218.0
EXP	2271.3	2566.1	3277.9	3638.8	2676.7	2227.6
CHI	0.0	0.9	0.0	1.5	0.3	0.0
50 - OBS	4945.0	4678.0	5275.0	6558.0	6940.0	5071.0
EXP	4920.5	4689.2	5326.4	6480.8	6891.6	5160.1
CHI	0.1	0.0	0.5	0.9	0.3	1.5
55 - OBS	8144.0	10096.0	9582.0	10429.0	11959.0	12808.0
EXP	8291.5	9918.5	9511.1	10332.7	11998.3	12970.5
CHI	2.6	3.2	0.5	0.9	0.1	2.0
60 - OBS	10341.0	15582.0	18909.0	17194.0	17868.0	21198.0
EXP	10542.9	15595.6	18657.2	17184.1	17963.4	21152.7
CHI	3.9	0.0	3.4	0.0	0.5	0.1
65 - OBS	15379.0	18090.0	26602.0	30123.0	27133.0	29422.0
EXP	15265.6	17966.3	26653.2	30478.7	27140.0	29248.7
CHI	0.8	0.9	0.1	4.2	0.0	1.0
70 - OBS	19648.0	22570.0	26641.0	37984.0	41788.0	38581.0
EXP	19333.8	22427.7	26654.4	38115.4	42034.0	38650.7
CHI	5.1	0.9	0.0	0.5	1.4	0.1
75 - OBS	17273.0	23113.0	27325.0	32415.0	45283.0	51115.0
EXP	17273.0	23431.9	27582.7	32326.0	44942.1	50973.3
CHI	0.0	4.3	2.4	0.2	2.6	0.4

Osmond and Gardner Modelling

Japan Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	10.285209
35	26.243602
40	61.299775
45	126.623647
50	258.563715
55	522.372204
60	999.531714
65	1786.363618
70	2912.980551
75	4330.963638

PERIOD	EFFECT	LOWER	UPPER
% Period Change	95.4768	92.4768	98.4768
1981	0.982505		
1986	1.020962		
1991	1.054854		
1996	1.040507		
2001	0.983919		
2006	0.939415		
2011	0.896923	0.868741	0.925106
2016	0.856354	0.803384	0.911014
2021	0.817619	0.742944	0.897138
2026	0.780637	0.687050	0.883473

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.873391	1.000000	
1911	0.955993	2.000000	
1916	1.010696	4.000000	
1921	1.018076	8.000000	
1926	1.075666	16.000000	
1931	1.025645	32.000000	
1936	0.905217	64.000000	
1941	0.937246	128.000000	
1946	0.981709	256.000000	
1951	1.134795	512.000000	
1956	1.058520	1024.000000	
1961	0.959982	2048.000000	
1966	0.882795	4096.000000	
1971	0.827887	8192.000000	
1976	0.796209	EXTRAPOLATION	0.736524
1981	0.755993	EXTRAPOLATION	
1986	0.717808	EXTRAPOLATION	
1991	0.681551	EXTRAPOLATION	
1996	0.647126	EXTRAPOLATION	

Osmond and Gardner Modelling

**Japan Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	11.6	10.4	10.6	9.8	8.4	7.1	-	-	-	-
	EXP	11.5	11.1	10.4	9.4	8.4	7.7	7.0*	6.3*	5.7*	5.2*
	Elow							6.8	5.9	5.2	4.6
	Eup							7.2	6.7	6.3	5.9
35	OBS	23.5	30.5	29.7	26.6	24.0	20.4	-	-	-	-
	EXP	25.3	30.4	29.3	26.2	22.8	20.4	18.7*	17.0*	15.4*	14.0*
	Elow							18.2	15.9	14.0	12.3
	Eup							19.3	18.1	16.9	15.8
40	OBS	52.8	59.7	74.7	73.2	57.8	49.3	-	-	-	-
	EXP	56.4	61.4	73.4	67.5	57.9	50.8	45.5*	41.8*	37.9*	34.3*
	Elow							44.1	39.2	34.4	30.2
	Eup							46.9	44.5	41.6	38.9
45	OBS	112.9	118.8	131.3	152.5	130.6	113.7	-	-	-	-
	EXP	112.6	121.2	131.1	149.5	131.9	114.2	100.3*	89.8*	82.4*	74.7*
	Elow							97.1	84.2	74.9	65.8
	Eup							103.4	95.5	90.4	84.6
50	OBS	261.8	238.4	253.2	267.3	290.7	252.7	-	-	-	-
	EXP	260.6	239.0	255.6	264.1	288.7	257.1	222.6*	195.5*	175.0*	160.7*
	Elow							215.6	183.4	159.0	141.4
	Eup							229.6	207.9	192.0	181.9
55	OBS	542.2	556.8	502.5	514.2	502.9	549.9	-	-	-	-
	EXP	552.1	547.0	498.8	509.4	504.6	556.9	495.9*	429.4*	377.0*	337.6*
	Elow							480.4	402.9	342.6	297.1
	Eup							511.5	456.8	413.7	382.1
60	OBS	980.7	1096.7	1096.0	942.0	916.8	923.8	-	-	-	-
	EXP	999.8	1097.7	1081.4	941.4	921.7	921.8	1017.3*	906.0*	784.5*	688.8*
	Elow							985.4	850.0	712.9	606.2
	Eup							1049.3	963.9	860.8	779.6
65	OBS	1787.1	1869.6	2023.0	1884.1	1590.6	1582.1	-	-	-	-
	EXP	1773.9	1856.8	2026.9	1906.4	1591.0	1572.8	1572.9*	1736.0*	1546.0*	1338.7*
	Elow							1523.5	1628.6	1404.8	1178.2
	Eup							1622.3	1846.8	1696.4	1515.0
70	OBS	2780.5	3024.9	3126.7	3249.1	2922.4	2472.7	-	-	-	-
	EXP	2736.1	3005.9	3128.3	3260.3	2939.6	2477.1	2448.8*	2448.9*	2702.8*	2407.1*
	Elow							2371.8	2297.4	2455.9	2118.5
	Eup							2525.7	2605.2	2965.6	2724.1
75	OBS	3716.4	4169.6	4574.3	4600.5	4618.5	4184.5	-	-	-	-
	EXP	3716.4	4227.2	4617.4	4587.9	4583.8	4172.9	3516.4*	3476.1*	3476.3*	3836.6*
	Elow							3405.9	3261.1	3158.8	3376.7
	Eup							3626.8	3698.0	3814.4	4342.1
30-79	OBS	624.0	671.3	702.0	690.7	646.3	602.5	-	-	-	-
	EXP	623.9	671.1	702.3	690.2	646.4	603.1	572.6*	560.0*	539.0*	504.4*
	Elow							554.6	525.4	489.8	443.9
	Eup							590.6	595.8	591.4	570.8

Osmond and Gardner Modelling

**Japan Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

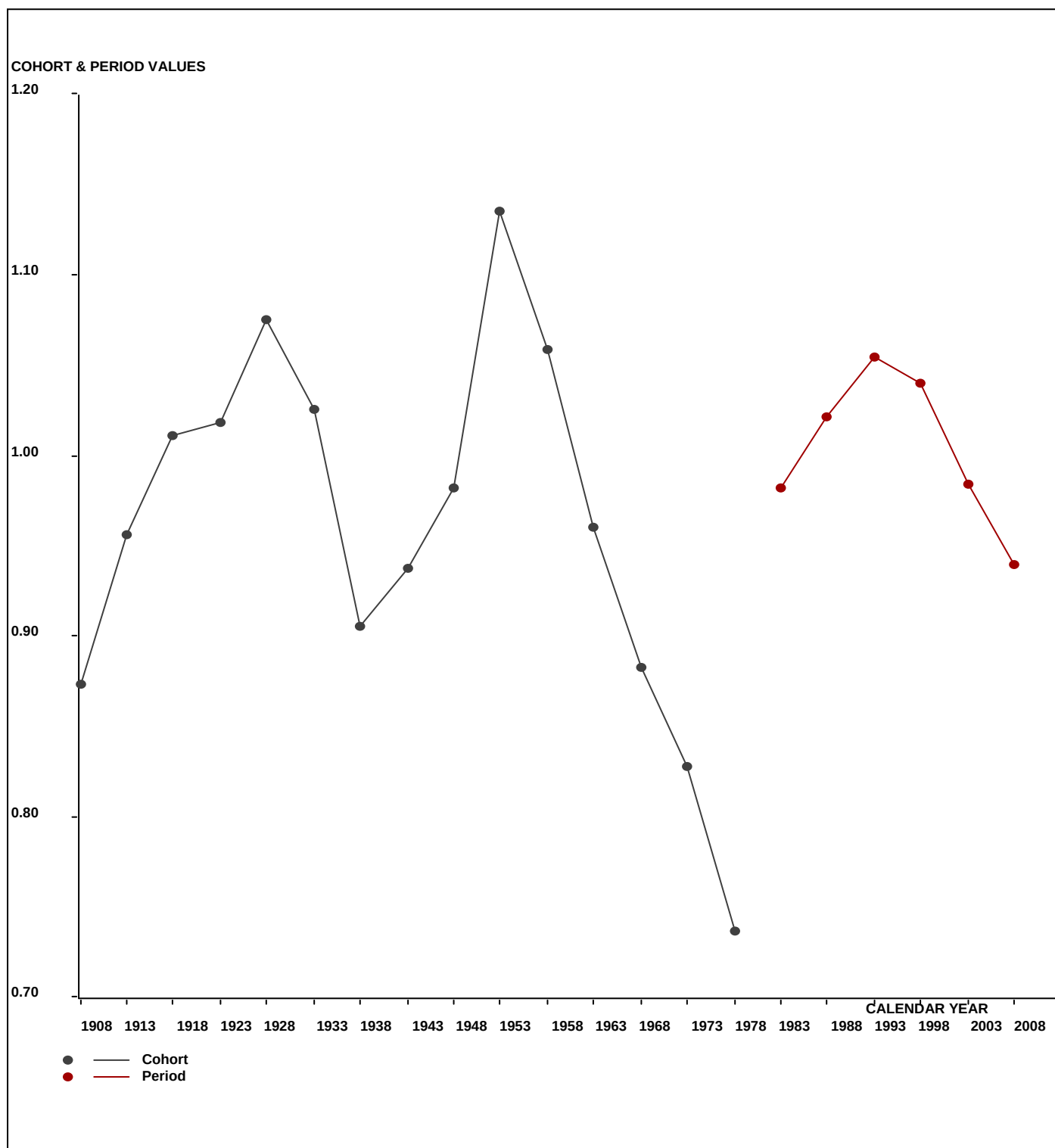
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	289.0	213.0	210.0	207.0	200.0	163.0	-	-	-	-
	EXP	284.8	228.0	206.3	200.4	200.2	176.2	137.8*	114.8*	94.1*	80.8*
	CHI	0.062	0.993	0.068	0.218	0.000	0.990	-	-	-	-
35 -	OBS	599.0	752.0	609.0	528.0	507.0	486.0	-	-	-	-
	EXP	644.8	749.6	601.7	519.4	482.2	485.8	426.6*	335.4*	279.7*	229.3*
	CHI	3.251	0.008	0.089	0.142	1.280	0.000	-	-	-	-
40 -	OBS	1139.0	1503.0	1836.0	1499.0	1137.0	1037.0	-	-	-	-
	EXP	1217.2	1547.3	1804.0	1381.8	1139.9	1069.7	1078.2*	947.5*	745.5*	621.8*
	CHI	5.024	1.270	0.569	9.944	0.007	0.999	-	-	-	-
45 -	OBS	2278.0	2517.0	3282.0	3712.0	2650.0	2218.0	-	-	-	-
	EXP	2271.3	2566.1	3277.9	3638.8	2676.7	2227.6	2090.7*	2109.4*	1854.8*	1460.4*
	CHI	0.020	0.940	0.005	1.473	0.265	0.041	-	-	-	-
50 -	OBS	4945.0	4678.0	5275.0	6558.0	6940.0	5071.0	-	-	-	-
	EXP	4920.5	4689.2	5326.4	6480.8	6891.6	5160.1	4279.4*	4019.2*	4059.8*	3571.8*
	CHI	0.122	0.027	0.496	0.918	0.340	1.540	-	-	-	-
55 -	OBS	8144.0	10096.0	9582.0	10429.0	11959.0	12808.0	-	-	-	-
	EXP	8291.5	9918.5	9511.1	10332.7	11998.3	12970.5	9732.6*	8066.5*	7588.1*	7676.0*
	CHI	2.625	3.176	0.528	0.898	0.129	2.037	-	-	-	-
60 -	OBS	10341.0	15582.0	18909.0	17194.0	17868.0	21198.0	-	-	-	-
	EXP	10542.9	15595.6	18657.2	17184.1	17963.4	21152.7	22820.0*	17149.7*	14255.4*	13436.8*
	CHI	3.866	0.012	3.397	0.006	0.507	0.097	-	-	-	-
65 -	OBS	15379.0	18090.0	26602.0	30123.0	27133.0	29422.0	-	-	-	-
	EXP	15265.6	17966.3	26653.2	30478.7	27140.0	29248.7	34254.5*	36868.8*	27844.3*	23230.0*
	CHI	0.842	0.852	0.098	4.152	0.002	1.027	-	-	-	-
70 -	OBS	19648.0	22570.0	26641.0	37984.0	41788.0	38581.0	-	-	-	-
	EXP	19333.8	22427.7	26654.4	38115.4	42034.0	38650.7	41884.0*	49001.7*	53022.6*	40311.7*
	CHI	5.105	0.902	0.007	0.453	1.440	0.126	-	-	-	-
75 -	OBS	17273.0	23113.0	27325.0	32415.0	45283.0	51115.0	-	-	-	-
	EXP	17273.0	23431.9	27582.7	32326.0	44942.1	50973.3	47288.9*	51471.7*	60966.8*	66434.1*
	CHI	0.000	4.340	2.408	0.245	2.585	0.394	-	-	-	-
30-79	OBS	80035.0	99114.0	120271.0	140649.0	155465.0	162099.0	-	-	-	-
	EXP	80045.6	99120.3	120274.8	140658.1	155468.3	162115.4	163992.6*	170084.8*	170711.2*	157052.6*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Japan Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

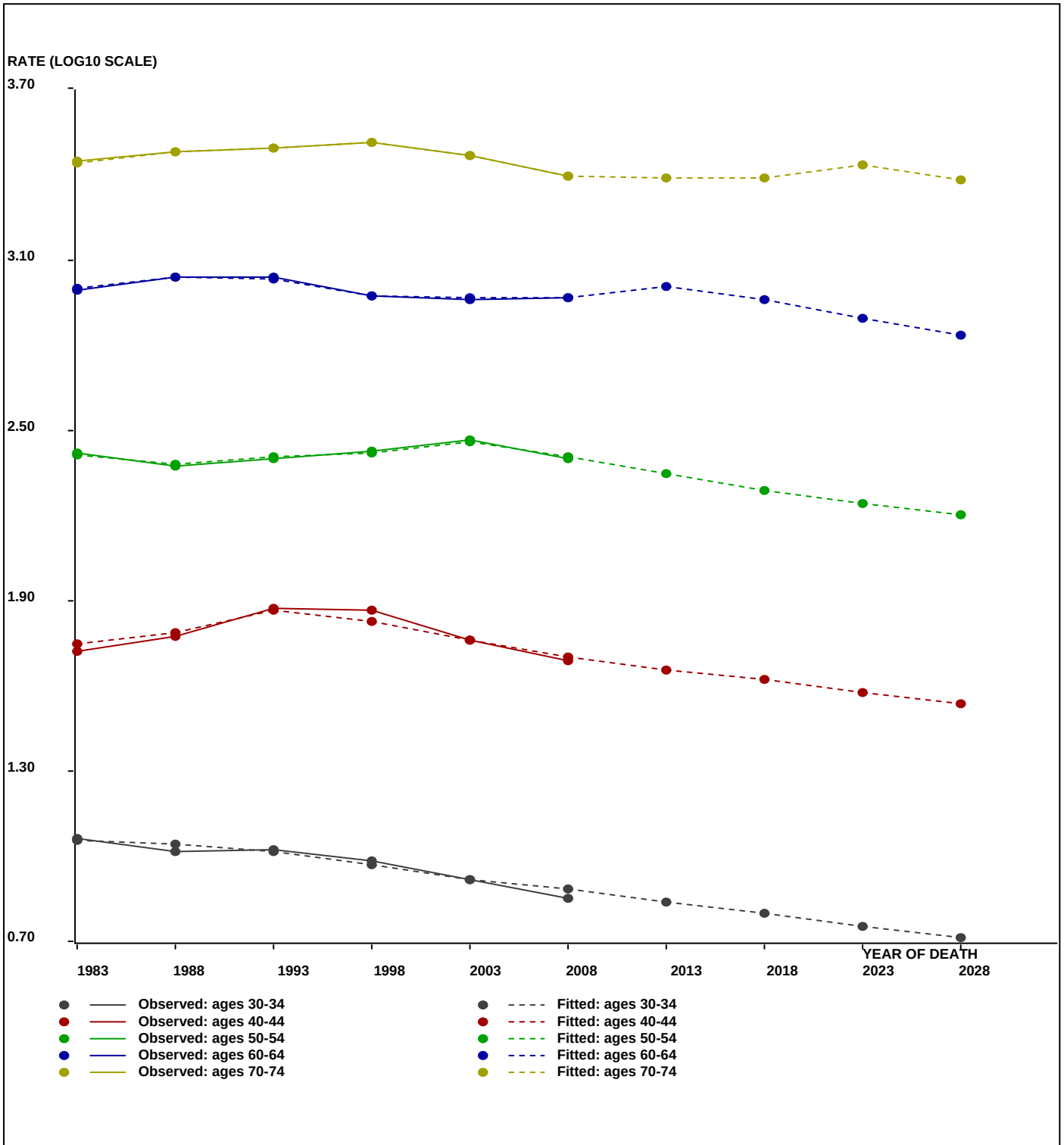


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Japan Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Japan Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	7.0	18.7	45.5	100.3	222.6	495.9	1017.3	1572.9	2448.8	3516.4
2016 PRE	6.3	17.0	41.8	89.8	195.5	429.4	906.0	1736.0	2448.9	3476.1
2021 PRE	5.7	15.4	37.9	82.4	175.0	377.0	784.5	1546.0	2702.8	3476.3
2026 PRE	5.2	14.0	34.3	74.7	160.7	337.6	688.8	1338.7	2407.1	3836.6

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	137.8	426.6	1078.2	2090.7	4279.4	9732.6	22820.0	34254.5	41884.0	47288.9
2016 PRE	114.8	335.4	947.5	2109.4	4019.2	8066.5	17149.7	36868.8	49001.7	51471.7
2021 PRE	94.1	279.7	745.5	1854.8	4059.8	7588.1	14255.4	27844.3	53022.6	60966.8
2026 PRE	80.8	229.3	621.8	1460.4	3571.8	7676.0	13436.8	23230.0	40311.7	66434.1

Osmond and Gardner Modelling

Japan COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	3486.91	68.37	51	P, C	98.69	18875.26	0.0000
AGE-PERIOD	184.21	4.09	45	Cohort	75.29	979.60	0.0000
AGE-COHORT	91.93	2.55	36	Period	50.48	490.03	0.0000
PERIOD-COHORT	60.36	1.51	40	Age	24.58	321.15	0.0000
FULL AGE-PERIOD-COHORT	45.52	1.42	32			243.05	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.108259	12.830967
35	1.149979	14.124686
40	1.228620	16.928551
45	1.390802	24.592462
50	1.581640	38.162818
55	1.835389	68.452514
60	2.149013	140.933073
65	2.503330	318.661544
70	2.871281	743.500612
75	3.212166	1629.919943

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.132784	1.357638
1986	0.069990	1.174870
1991	0.054160	1.132817
1996	-0.010325	0.976506
2001	-0.102784	0.789253
2006	-0.169922	0.676205

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.029716	1.070818
1911	0.049419	1.120518
1916	0.050491	1.123289
1921	0.033589	1.080411
1926	0.030125	1.071827
1931	-0.010432	0.976265
1936	-0.087972	0.816635
1941	-0.136874	0.729669
1946	-0.199688	0.631411
1951	-0.196575	0.635954
1956	-0.234254	0.583104
1961	-0.187713	0.649063
1966	-0.199107	0.632256
1971	-0.237642	0.578573
1976	-0.447009	0.357265

Osmond and Gardner Modelling

Japan COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	162.0	182.0	221.0	195.0	157.0	71.0
EXP	275.1	180.3	186.8	168.0	140.0	71.0
CHI	46.5	0.0	6.2	4.3	2.1	0.0
35 - OBS	211.0	296.0	226.0	204.0	143.0	112.0
EXP	308.4	260.2	191.6	177.4	149.1	131.5
CHI	30.8	4.9	6.2	4.0	0.2	2.9
40 - OBS	292.0	348.0	354.0	216.0	142.0	127.0
EXP	361.6	316.3	299.8	197.3	170.7	152.3
CHI	13.4	3.2	9.8	1.8	4.8	4.2
45 - OBS	510.0	499.0	475.0	389.0	195.0	166.0
EXP	549.9	446.5	439.7	371.7	229.7	210.6
CHI	2.9	6.2	2.8	0.8	5.2	9.4
50 - OBS	901.0	800.0	728.0	534.0	416.0	274.0
EXP	955.2	718.5	657.3	577.4	457.3	302.0
CHI	3.1	9.2	7.6	3.3	3.7	2.6
55 - OBS	1475.0	1437.0	1244.0	967.0	793.0	696.0
EXP	1496.0	1423.7	1207.5	989.3	811.2	685.6
CHI	0.3	0.1	1.1	0.5	0.4	0.2
60 - OBS	2130.0	2491.0	2751.0	2058.0	1521.0	1449.0
EXP	2179.9	2521.4	2689.1	2051.4	1581.7	1380.8
CHI	1.1	0.4	1.4	0.0	2.3	3.4
65 - OBS	4338.0	3950.0	4975.0	4786.0	3476.0	2938.0
EXP	4182.1	3913.9	5087.7	4856.9	3503.5	2923.9
CHI	5.8	0.3	2.5	1.0	0.2	0.1
70 - OBS	8220.0	7318.0	7676.0	9040.0	8162.0	6342.0
EXP	7992.4	7321.2	7753.3	9097.5	8191.7	6406.1
CHI	6.5	0.0	0.8	0.4	0.1	0.6
75 - OBS	11013.0	11661.0	12233.0	12206.0	13737.0	13220.0
EXP	11013.0	11894.1	12389.6	12116.4	13518.8	13143.6
CHI	0.0	4.6	2.0	0.7	3.5	0.4

Osmond and Gardner Modelling

Japan COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	12.830967
35	14.124686
40	16.928551
45	24.592462
50	38.162818
55	68.452514
60	140.933073
65	318.661544
70	743.500612
75	1629.919943

PERIOD	EFFECT	LOWER	UPPER
% Period Change	85.6765	82.6765	88.6765

1981	1.357638		
1986	1.174870		
1991	1.132817		
1996	0.976506		
2001	0.789253		
2006	0.676205		
2011	0.579349	0.559063	0.599635
2016	0.496366	0.462214	0.531735
2021	0.425269	0.382142	0.471524
2026	0.364356	0.315942	0.418132

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.070818	1.000000	
1911	1.120518	2.000000	
1916	1.123289	4.000000	
1921	1.080411	8.000000	
1926	1.071827	16.000000	
1931	0.976265	32.000000	
1936	0.816635	64.000000	
1941	0.729669	128.000000	
1946	0.631411	256.000000	
1951	0.635954	512.000000	
1956	0.583104	1024.000000	
1961	0.649063	2048.000000	
1966	0.632256	4096.000000	
1971	0.578573	8192.000000	
1976	0.568162	EXTRAPOLATION	0.357265
1981	0.550016	EXTRAPOLATION	
1986	0.532450	EXTRAPOLATION	
1991	0.515445	EXTRAPOLATION	
1996	0.498983	EXTRAPOLATION	

Osmond and Gardner Modelling

**Japan COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	6.5	8.9	11.2	9.2	6.6	3.1	-	-	-	-
	EXP	11.1	8.8	9.4	7.9	5.9	4.9	4.1*	3.4*	2.8*	2.3*
	Elow							3.9	3.2	2.5	2.0
	Eup							4.2	3.6	3.1	2.7
35	OBS	8.3	12.0	11.0	10.3	6.8	4.7	-	-	-	-
	EXP	12.1	10.6	9.3	9.0	7.0	5.5	4.6*	3.9*	3.2*	2.7*
	Elow							4.5	3.6	2.9	2.3
	Eup							4.8	4.1	3.5	3.0
40	OBS	13.5	13.8	14.4	10.6	7.2	6.0	-	-	-	-
	EXP	16.8	12.6	12.2	9.6	8.7	7.2	5.7*	4.8*	4.0*	3.3*
	Elow							5.5	4.4	3.6	2.8
	Eup							5.9	5.1	4.4	3.8
45	OBS	25.3	23.6	19.0	16.0	9.6	8.5	-	-	-	-
	EXP	27.3	21.1	17.6	15.3	11.3	10.8	9.0*	7.1*	5.9*	4.9*
	Elow							8.7	6.6	5.3	4.3
	Eup							9.3	7.6	6.6	5.7
50	OBS	47.7	40.8	34.9	21.8	17.4	13.7	-	-	-	-
	EXP	50.6	36.6	31.5	23.5	19.2	15.0	14.4*	12.0*	9.4*	7.9*
	Elow							13.8	11.2	8.4	6.9
	Eup							14.9	12.8	10.4	9.1
55	OBS	98.2	79.2	65.2	47.7	33.3	29.9	-	-	-	-
	EXP	99.6	78.5	63.3	48.8	34.1	29.4	23.1*	22.1*	18.4*	14.4*
	Elow							22.3	20.5	16.5	12.5
	Eup							23.9	23.6	20.4	16.6
60	OBS	202.0	175.3	159.5	112.7	78.0	63.1	-	-	-	-
	EXP	206.7	177.5	155.9	112.4	81.2	60.2	51.9*	40.8*	38.9*	32.5*
	Elow							50.1	38.0	35.0	28.2
	Eup							53.7	43.7	43.1	37.3
65	OBS	504.1	408.2	378.3	299.4	203.8	158.0	-	-	-	-
	EXP	486.0	404.5	386.9	303.8	205.4	157.2	116.6*	100.6*	79.0*	75.4*
	Elow							112.5	93.7	71.0	65.3
	Eup							120.7	107.8	87.6	86.5
70	OBS	1163.3	980.8	900.9	773.3	570.8	406.5	-	-	-	-
	EXP	1131.1	981.2	910.0	778.2	572.9	410.6	314.3*	233.0*	201.1*	158.0*
	Elow							303.3	217.0	180.7	137.0
	Eup							325.3	249.6	223.0	181.3
75	OBS	2369.6	2103.7	2047.8	1732.3	1401.1	1082.3	-	-	-	-
	EXP	2369.6	2145.7	2074.0	1719.6	1378.8	1076.0	771.1*	590.3*	437.7*	377.7*
	Elow							744.1	549.7	393.3	327.5
	Eup							798.1	632.4	485.3	433.4
30-79	OBS	228.3	196.9	184.3	151.0	113.7	86.6	-	-	-	-
	EXP	227.9	197.1	184.5	150.9	114.0	87.2	65.7*	51.6*	41.4*	35.0*
	Elow							63.4	48.0	37.2	30.4
	Eup							68.0	55.2	45.9	40.2

Osmond and Gardner Modelling

**Japan COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

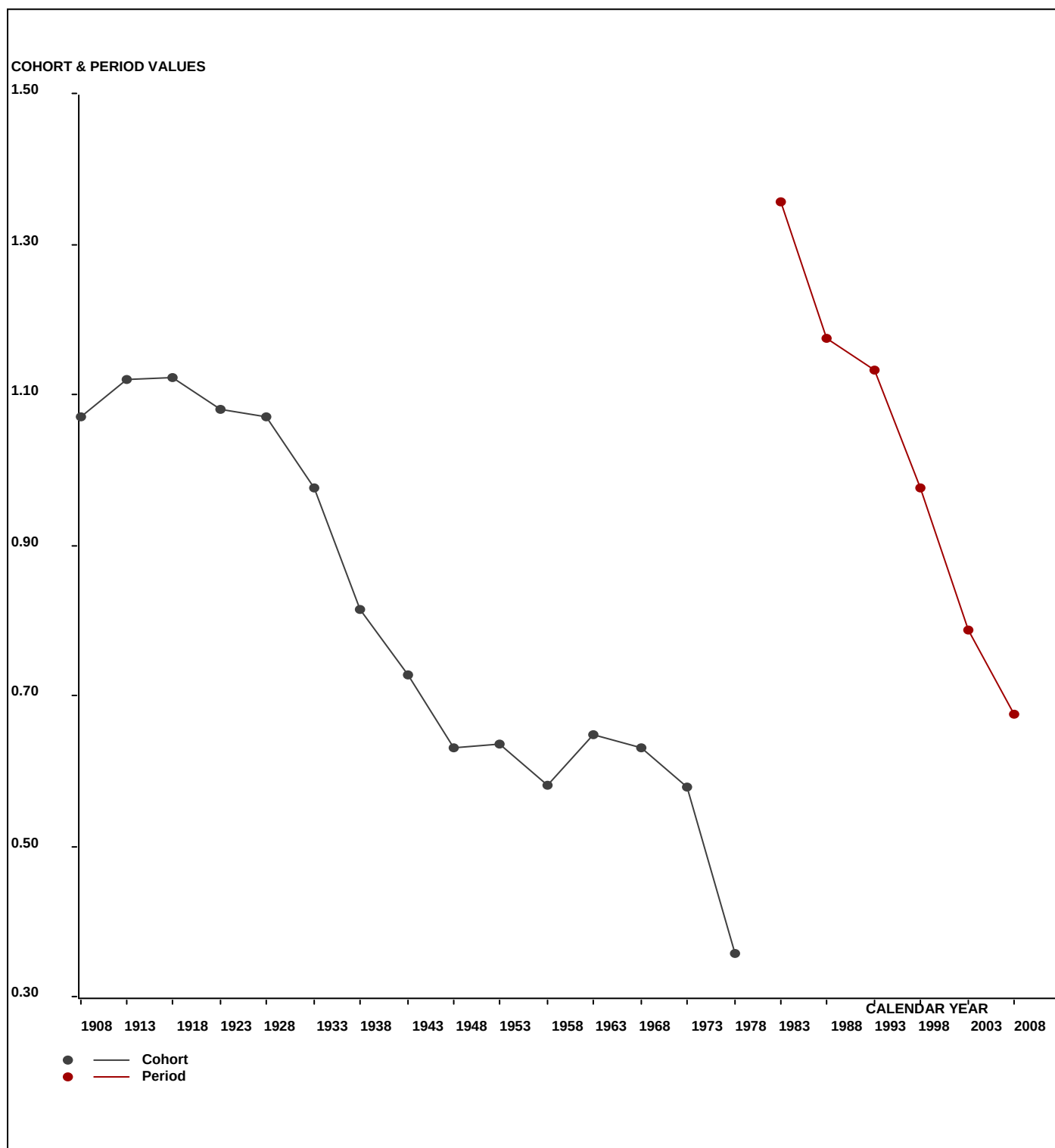
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	162.0	182.0	221.0	195.0	157.0	71.0	-	-	-	-
	EXP	275.1	180.3	186.8	168.0	140.0	112.9	80.8*	61.6*	46.2*	36.3*
	CHI	46.524	0.015	6.246	4.328	2.068	15.557	-	-	-	-
35 -	OBS	211.0	296.0	226.0	204.0	143.0	112.0	-	-	-	-
	EXP	308.4	260.2	191.6	177.4	149.1	131.5	105.8*	76.1*	58.1*	43.6*
	CHI	30.775	4.936	6.187	3.993	0.248	2.902	-	-	-	-
40 -	OBS	292.0	348.0	354.0	216.0	142.0	127.0	-	-	-	-
	EXP	361.6	316.3	299.8	197.3	170.7	152.3	134.4*	108.2*	77.9*	59.5*
	CHI	13.401	3.184	9.789	1.777	4.833	4.200	-	-	-	-
45 -	OBS	510.0	499.0	475.0	389.0	195.0	166.0	-	-	-	-
	EXP	549.9	446.5	439.7	371.7	229.7	210.6	187.8*	166.0*	133.7*	96.3*
	CHI	2.897	6.174	2.830	0.806	5.245	9.428	-	-	-	-
50 -	OBS	901.0	800.0	728.0	534.0	416.0	274.0	-	-	-	-
	EXP	955.2	718.5	657.3	577.4	457.3	302.0	275.8*	246.3*	217.8*	175.6*
	CHI	3.078	9.245	7.610	3.260	3.722	2.595	-	-	-	-
55 -	OBS	1475.0	1437.0	1244.0	967.0	793.0	696.0	-	-	-	-
	EXP	1496.0	1423.7	1207.5	989.3	811.2	685.6	453.8*	414.3*	370.4*	328.1*
	CHI	0.296	0.125	1.104	0.502	0.407	0.157	-	-	-	-
60 -	OBS	2130.0	2491.0	2751.0	2058.0	1521.0	1449.0	-	-	-	-
	EXP	2179.9	2521.4	2689.1	2051.4	1581.7	1380.8	1164.7*	772.1*	706.9*	633.3*
	CHI	1.142	0.367	1.426	0.021	2.332	3.368	-	-	-	-
65 -	OBS	4338.0	3950.0	4975.0	4786.0	3476.0	2938.0	-	-	-	-
	EXP	4182.1	3913.9	5087.7	4856.9	3503.5	2923.9	2538.6*	2136.4*	1423.2*	1307.7*
	CHI	5.812	0.333	2.498	1.034	0.216	0.068	-	-	-	-
70 -	OBS	8220.0	7318.0	7676.0	9040.0	8162.0	6342.0	-	-	-	-
	EXP	7992.4	7321.2	7753.3	9097.5	8191.7	6406.1	5375.9*	4662.7*	3944.8*	2645.4*
	CHI	6.484	0.001	0.771	0.363	0.107	0.642	-	-	-	-
75 -	OBS	11013.0	11661.0	12233.0	12206.0	13737.0	13220.0	-	-	-	-
	EXP	11013.0	11894.1	12389.6	12116.4	13518.8	13143.6	10370.5*	8741.2*	7675.7*	6539.7*
	CHI	0.000	4.570	1.979	0.663	3.520	0.444	-	-	-	-
30-79	OBS	29252.0	28982.0	30883.0	30595.0	28742.0	25395.0	-	-	-	-
	EXP	29313.7	28996.1	30902.4	30603.2	28753.7	25449.4	20688.2*	17384.7*	14654.6*	11865.4*
	O/E	0.998	1.000	0.999	1.000	1.000	0.998	-	-	-	-

Osmond and Gardner Modelling

Japan COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

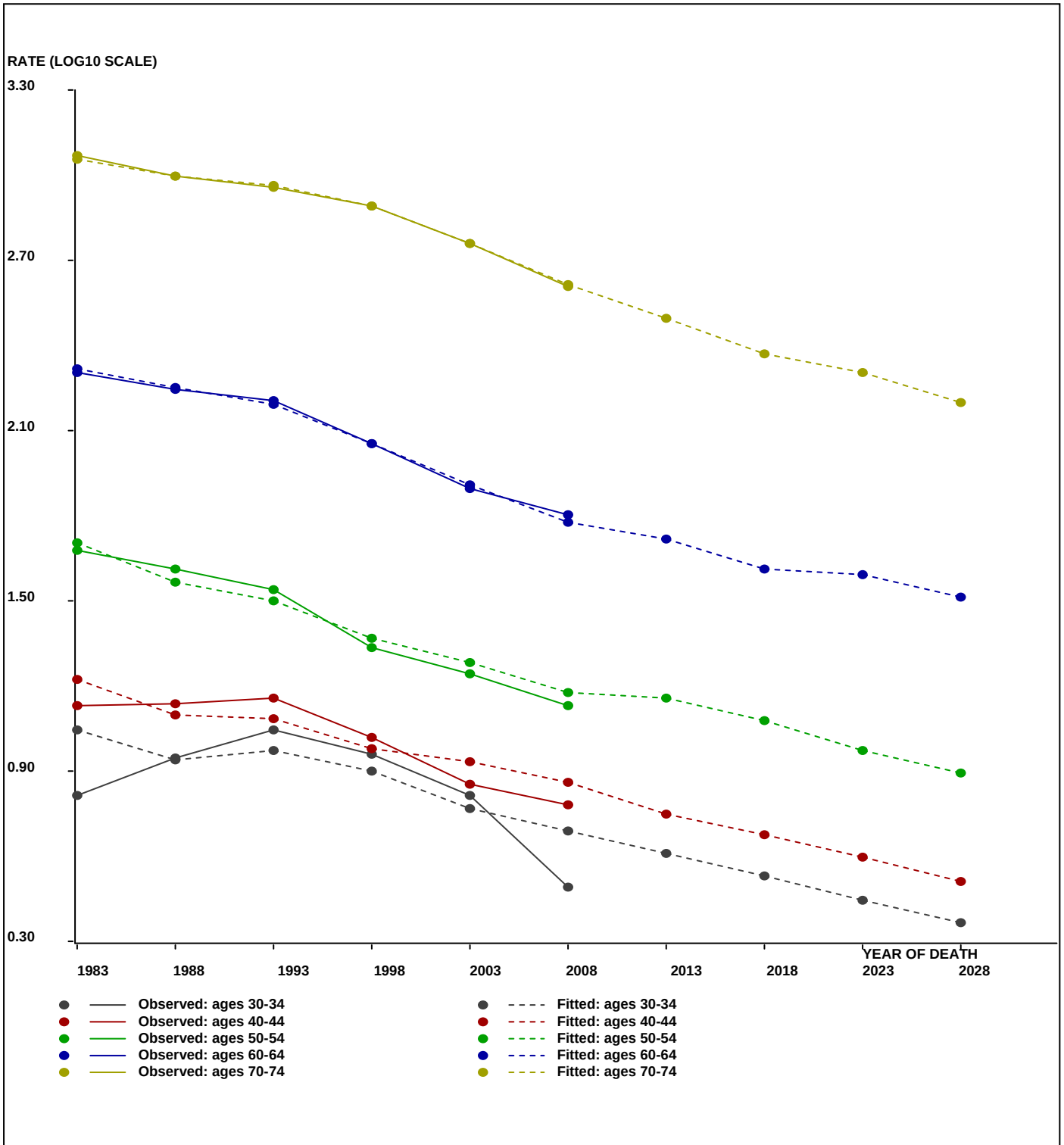


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Japan COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Japan COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	4.1	4.6	5.7	9.0	14.4	23.1	51.9	116.6	314.3	771.1
2016 PRE	3.4	3.9	4.8	7.1	12.0	22.1	40.8	100.6	233.0	590.3
2021 PRE	2.8	3.2	4.0	5.9	9.4	18.4	38.9	79.0	201.1	437.7
2026 PRE	2.3	2.7	3.3	4.9	7.9	14.4	32.5	75.4	158.0	377.7

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	80.8	105.8	134.4	187.8	275.8	453.8	1164.7	2538.6	5375.9	10370.5
2016 PRE	61.6	76.1	108.2	166.0	246.3	414.3	772.1	2136.4	4662.7	8741.2
2021 PRE	46.2	58.1	77.9	133.7	217.8	370.4	706.9	1423.2	3944.8	7675.7
2026 PRE	36.3	43.6	59.5	96.3	175.6	328.1	633.3	1307.7	2645.4	6539.7

Osmond and Gardner Modelling

Japan IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	5124.95	100.49	51	P, C	99.62	27567.86	0.0000
AGE-PERIOD	554.80	12.33	45	Cohort	96.52	2972.05	0.0000
AGE-COHORT	290.04	8.06	36	Period	93.35	1539.31	0.0000
PERIOD-COHORT	162.08	4.05	40	Age	88.09	867.87	0.0000
FULL AGE-PERIOD-COHORT	19.30	0.60	32			102.37	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.724828	5.306744
35	1.062430	11.545952
40	1.397435	24.970922
45	1.713341	51.682177
50	1.971177	93.578728
55	2.225973	168.256922
60	2.510447	323.926807
65	2.774137	594.478998
70	3.042265	1102.211089
75	3.305493	2020.660757

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.063523	1.157505
1986	-0.010833	0.975365
1991	-0.009309	0.978793
1996	0.039404	1.094974
2001	-0.020597	0.953681
2006	-0.078462	0.834715

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.171852	1.485429
1911	0.150644	1.414633
1916	0.097842	1.252686
1921	0.021624	1.051052
1926	-0.049016	0.893272
1931	-0.088838	0.815008
1936	-0.114685	0.767919
1941	-0.143006	0.719438
1946	-0.159154	0.693179
1951	-0.075521	0.840386
1956	-0.059065	0.872841
1961	-0.001499	0.996554
1966	0.111888	1.293861
1971	0.137761	1.373286
1976	0.218505	1.653882

Osmond and Gardner Modelling

Japan IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	123.0	99.0	110.0	156.0	147.0	163.0
EXP	126.6	91.4	100.4	155.8	162.4	163.0
CHI	0.1	0.6	0.9	0.0	1.5	0.0
35 - OBS	256.0	191.0	193.0	241.0	306.0	323.0
EXP	234.7	230.9	199.8	244.9	296.3	308.7
CHI	1.9	6.9	0.2	0.1	0.3	0.7
40 - OBS	500.0	387.0	483.0	473.0	483.0	550.0
EXP	452.1	424.5	500.2	482.9	461.3	560.1
CHI	5.1	3.3	0.6	0.2	1.0	0.2
45 - OBS	979.0	726.0	874.0	1212.0	847.0	804.0
EXP	936.9	779.5	877.2	1151.1	869.7	832.9
CHI	1.9	3.7	0.0	3.2	0.6	1.0
50 - OBS	1676.0	1342.0	1367.0	1810.0	1844.0	1407.0
EXP	1700.3	1409.0	1403.5	1759.5	1801.1	1376.4
CHI	0.3	3.2	0.9	1.4	1.0	0.7
55 - OBS	2925.0	2409.0	2467.0	2858.0	2865.0	2760.0
EXP	2935.9	2528.6	2509.6	2789.8	2718.9	2809.7
CHI	0.0	5.7	0.7	1.7	7.9	0.9
60 - OBS	5495.0	4688.0	4661.0	5360.0	4784.0	4335.0
EXP	5459.2	4638.9	4783.8	5308.9	4618.0	4523.4
CHI	0.2	0.5	3.2	0.5	6.0	7.8
65 - OBS	9844.0	8133.0	8388.0	9568.0	8247.0	7109.0
EXP	9861.3	8088.6	8256.1	9510.0	8264.7	7312.6
CHI	0.0	0.2	2.1	0.4	0.0	5.7
70 - OBS	17047.0	14424.0	14349.0	16219.0	14467.0	12954.0
EXP	17143.1	14316.5	14176.2	16243.3	14660.8	12923.1
CHI	0.5	0.8	2.1	0.0	2.6	0.1
75 - OBS	23095.0	23201.0	23354.0	26115.0	23734.0	22386.0
EXP	23095.0	23105.3	23444.9	26370.6	23881.6	21993.1
CHI	0.0	0.4	0.4	2.5	0.9	7.0

Osmond and Gardner Modelling

Japan IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	5.306744
35	11.545952
40	24.970922
45	51.682177
50	93.578728
55	168.256922
60	323.926807
65	594.478998
70	1102.211089
75	2020.660757

PERIOD	EFFECT	LOWER	UPPER
% Period Change	87.5256	84.5256	90.5256
1981	1.157505		
1986	0.975365		
1991	0.978793		
1996	1.094974		
2001	0.953681		
2006	0.834715		
2011	0.730589	0.705548	0.755631
2016	0.639453	0.596369	0.684039
2021	0.559685	0.504084	0.619231
2026	0.489868	0.426080	0.560562

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.485429	1.000000	
1911	1.414633	2.000000	
1916	1.252686	4.000000	
1921	1.051052	8.000000	
1926	0.893272	16.000000	
1931	0.815008	32.000000	
1936	0.767919	64.000000	
1941	0.719438	128.000000	
1946	0.693179	256.000000	
1951	0.840386	512.000000	
1956	0.872841	1024.000000	
1961	0.996554	2048.000000	
1966	1.293861	4096.000000	
1971	1.373286	8192.000000	
1976	1.547399	EXTRAPOLATION	1.653882
1981	1.742694	EXTRAPOLATION	
1986	1.962638	EXTRAPOLATION	
1991	2.210340	EXTRAPOLATION	
1996	2.489304	EXTRAPOLATION	

Osmond and Gardner Modelling

**Japan IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	5.0	4.9	5.7	7.5	6.3	7.3	-	-	-	-
	EXP	5.2	4.5	5.2	7.5	7.0	6.9	6.8*	6.7*	6.6*	6.5*
	Elow							6.5	6.2	5.9	5.6
	Eup							7.0	7.1	7.3	7.4
35	OBS	10.1	7.8	9.5	12.4	14.7	13.8	-	-	-	-
	EXP	9.3	9.5	9.9	12.6	14.2	13.2	13.1*	12.9*	12.7*	12.5*
	Elow							12.6	12.0	11.4	10.9
	Eup							13.5	13.8	14.0	14.3
40	OBS	23.0	15.4	19.8	23.4	24.8	26.5	-	-	-	-
	EXP	20.8	16.9	20.5	23.9	23.7	27.0	25.1*	24.7*	24.4*	24.0*
	Elow							24.2	23.0	21.9	20.9
	Eup							25.9	26.4	26.9	27.5
45	OBS	48.0	33.8	34.9	50.1	41.9	41.5	-	-	-	-
	EXP	45.9	36.3	35.1	47.6	43.0	43.0	48.9*	45.4*	44.8*	44.1*
	Elow							47.2	42.3	40.3	38.4
	Eup							50.5	48.5	49.5	50.5
50	OBS	87.0	66.8	64.2	73.1	76.8	69.7	-	-	-	-
	EXP	88.3	70.1	65.9	71.0	75.0	68.2	68.1*	77.4*	71.9*	70.9*
	Elow							65.8	72.2	64.8	61.7
	Eup							70.5	82.8	79.6	81.2
55	OBS	173.3	127.4	124.3	135.8	117.2	115.9	-	-	-	-
	EXP	174.0	133.8	126.5	132.5	111.2	118.0	107.3*	107.2*	121.8*	113.2*
	Elow							103.6	100.0	109.7	98.5
	Eup							111.0	114.7	134.8	129.5
60	OBS	396.7	285.2	251.8	275.0	230.2	179.6	-	-	-	-
	EXP	394.1	282.2	258.4	272.4	222.3	187.4	198.9*	180.8*	180.7*	205.3*
	Elow							192.1	168.6	162.7	178.6
	Eup							205.7	193.4	199.9	234.9
65	OBS	860.5	612.8	528.1	533.8	434.4	347.1	-	-	-	-
	EXP	862.0	609.4	519.8	530.5	435.4	357.0	301.1*	319.5*	290.4*	290.2*
	Elow							290.7	297.9	261.6	252.4
	Eup							311.4	341.7	321.3	332.1
70	OBS	1794.7	1356.8	1147.7	1076.5	845.4	708.2	-	-	-	-
	EXP	1804.8	1346.7	1133.9	1078.1	856.7	706.5	579.3*	488.6*	518.4*	471.3*
	Elow							559.5	455.6	466.9	409.9
	Eup							599.2	522.6	573.6	539.3
75	OBS	3474.3	2799.6	2468.0	2303.0	1710.8	1399.2	-	-	-	-
	EXP	3474.3	2788.1	2477.6	2325.5	1721.4	1374.7	1133.7*	929.6*	783.9*	831.9*
	Elow							1094.8	867.0	706.1	723.5
	Eup							1172.5	994.4	867.3	951.9
30-79	OBS	363.8	276.6	244.3	242.3	194.6	163.9	-	-	-	-
	EXP	363.8	276.9	244.4	241.9	194.1	164.5	145.1*	133.1*	128.0*	128.2*
	Elow							140.1	124.1	115.3	111.5
	Eup							150.1	142.4	141.6	146.7

Osmond and Gardner Modelling

**Japan IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

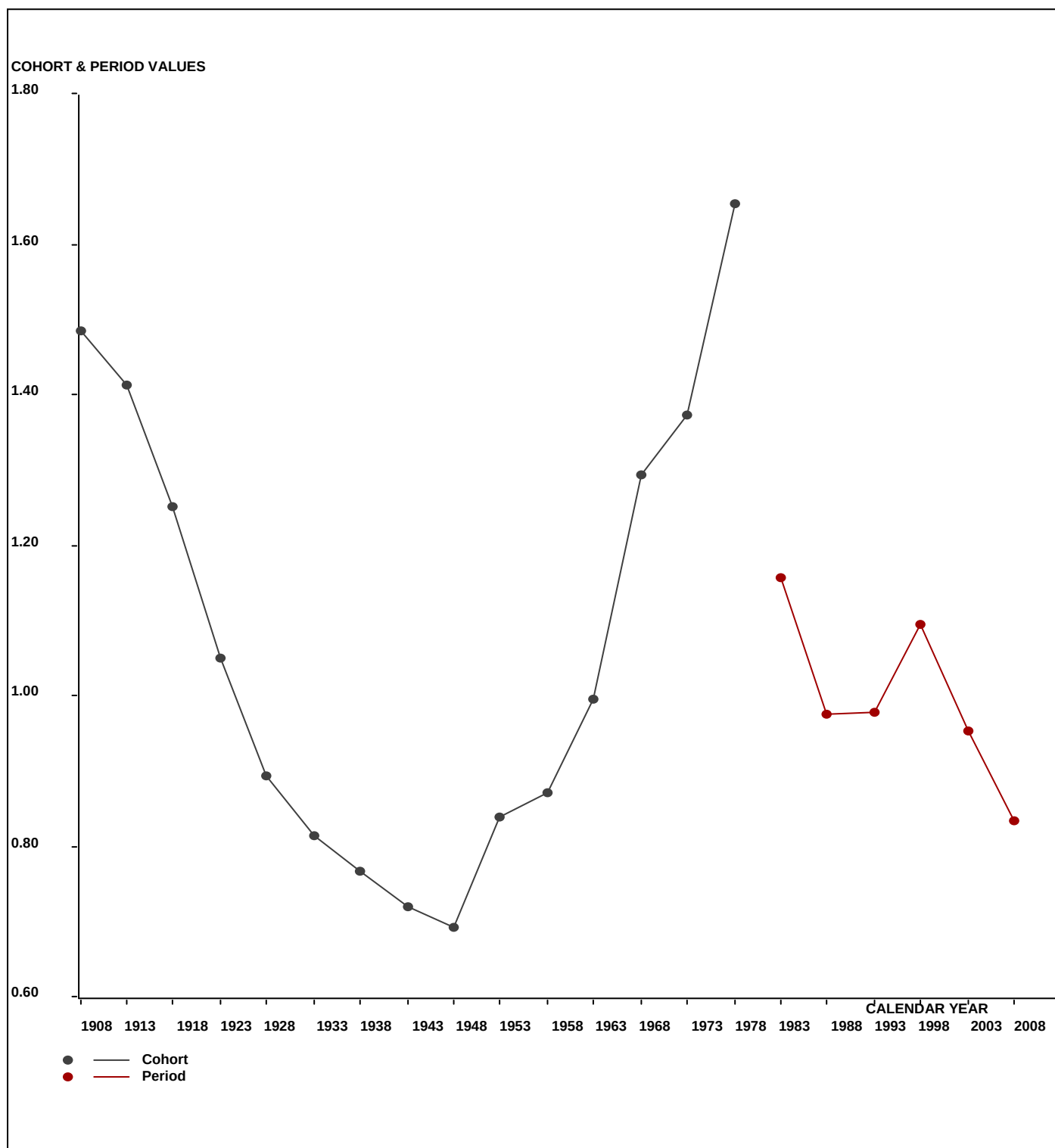
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	123.0	99.0	110.0	156.0	147.0	163.0	-	-	-	-
	EXP	126.6	91.4	100.4	155.8	162.4	152.5	128.6*	115.5*	103.2*	96.3*
	CHI	0.100	0.633	0.925	0.000	1.460	0.722	-	-	-	-
35 -	OBS	256.0	191.0	193.0	241.0	306.0	323.0	-	-	-	-
	EXP	234.7	230.9	199.8	244.9	296.3	308.7	289.6*	245.3*	220.4*	196.8*
	CHI	1.927	6.891	0.229	0.062	0.319	0.664	-	-	-	-
40 -	OBS	500.0	387.0	483.0	473.0	483.0	550.0	-	-	-	-
	EXP	452.1	424.5	500.2	482.9	461.3	560.1	582.6*	547.7*	464.0*	417.1*
	CHI	5.086	3.319	0.591	0.204	1.017	0.183	-	-	-	-
45 -	OBS	979.0	726.0	874.0	1212.0	847.0	804.0	-	-	-	-
	EXP	936.9	779.5	877.2	1151.1	869.7	832.9	1010.0*	1051.9*	989.2*	838.5*
	CHI	1.893	3.666	0.012	3.222	0.591	1.003	-	-	-	-
50 -	OBS	1676.0	1342.0	1367.0	1810.0	1844.0	1407.0	-	-	-	-
	EXP	1700.3	1409.0	1403.5	1759.5	1801.1	1376.4	1311.2*	1590.7*	1657.8*	1559.4*
	CHI	0.347	3.183	0.948	1.448	1.020	0.679	-	-	-	-
55 -	OBS	2925.0	2409.0	2467.0	2858.0	2865.0	2760.0	-	-	-	-
	EXP	2935.9	2528.6	2509.6	2789.8	2718.9	2809.7	2148.5*	2043.1*	2481.0*	2587.2*
	CHI	0.040	5.652	0.723	1.666	7.855	0.878	-	-	-	-
60 -	OBS	5495.0	4688.0	4661.0	5360.0	4784.0	4335.0	-	-	-	-
	EXP	5459.2	4638.9	4783.8	5308.9	4618.0	4523.4	4663.1*	3568.1*	3398.1*	4130.1*
	CHI	0.235	0.520	3.153	0.491	5.968	7.843	-	-	-	-
65 -	OBS	9844.0	8133.0	8388.0	9568.0	8247.0	7109.0	-	-	-	-
	EXP	9861.3	8088.6	8256.1	9510.0	8264.7	7312.6	7123.7*	7329.0*	5622.0*	5362.7*
	CHI	0.030	0.244	2.107	0.354	0.038	5.671	-	-	-	-
70 -	OBS	17047.0	14424.0	14349.0	16219.0	14467.0	12954.0	-	-	-	-
	EXP	17143.1	14316.5	14176.2	16243.3	14660.8	12923.1	11469.3*	11163.4*	11518.8*	8864.1*
	CHI	0.539	0.808	2.107	0.036	2.562	0.074	-	-	-	-
75 -	OBS	23095.0	23201.0	23354.0	26115.0	23734.0	22386.0	-	-	-	-
	EXP	23095.0	23105.3	23444.9	26370.6	23881.6	21993.1	19416.1*	17292.7*	16937.0*	17542.7*
	CHI	0.000	0.396	0.352	2.478	0.912	7.017	-	-	-	-
30-79	OBS	61940.0	55600.0	56246.0	64012.0	57724.0	52791.0	-	-	-	-
	EXP	61945.0	55613.0	56251.6	64016.9	57734.8	52792.6	48142.8*	44947.5*	43391.5*	41594.9*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Japan IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

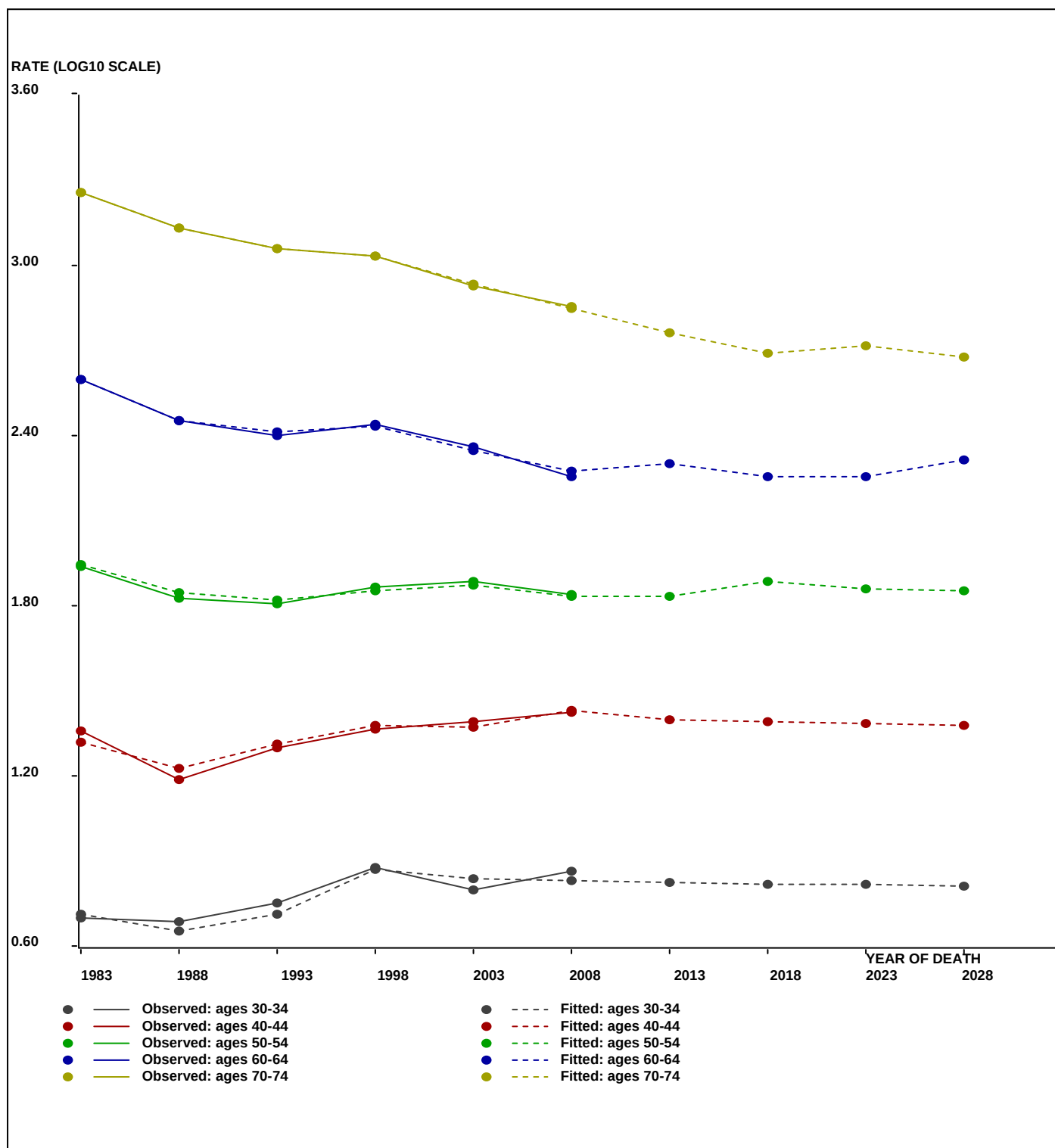


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Japan IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Japan IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	6.8	13.1	25.1	48.9	68.1	107.3	198.9	301.1	579.3	1133.7
2016	PRE	6.7	12.9	24.7	45.4	77.4	107.2	180.8	319.5	488.6	929.6
2021	PRE	6.6	12.7	24.4	44.8	71.9	121.8	180.7	290.4	518.4	783.9
2026	PRE	6.5	12.5	24.0	44.1	70.9	113.2	205.3	290.2	471.3	831.9

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	128.6	289.6	582.6	1010.0	1311.2	2148.5	4663.1	7123.7	11469.3	19416.1
2016	PRE	115.5	245.3	547.7	1051.9	1590.7	2043.1	3568.1	7329.0	11163.4	17292.7
2021	PRE	103.2	220.4	464.0	989.2	1657.8	2481.0	3398.1	5622.0	11518.8	16937.0
2026	PRE	96.3	196.8	417.1	838.5	1559.4	2587.2	4130.1	5362.7	8864.1	17542.7

Osmond and Gardner Modelling

Japan Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	36060.77	707.07	51	P, C	99.82	199270.53	0.0000
AGE-PERIOD	991.54	22.03	45	Cohort	93.46	5279.64	0.0000
AGE-COHORT	380.70	10.57	36	Period	82.98	2019.27	0.0000
PERIOD-COHORT	331.19	8.28	40	Age	80.43	1759.98	0.0000
FULL AGE-PERIOD-COHORT	64.81	2.03	32			343.68	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.535428	34.310584
35	1.849867	70.772830
40	2.187148	153.867847
45	2.448326	280.753864
50	2.635676	432.191586
55	2.759346	574.573718
60	2.924508	840.443155
65	3.130374	1350.124348
70	3.375324	2373.144865
75	3.643869	4404.221768

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.149436	1.410704
1986	0.034395	1.082417
1991	-0.010765	0.975517
1996	-0.032682	0.927508
2001	-0.113030	0.770851
2006	-0.201377	0.628960

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.243394	1.751434
1911	0.181946	1.520360
1916	0.096840	1.249799
1921	0.011620	1.027117
1926	-0.061977	0.867009
1931	-0.111282	0.773960
1936	-0.148752	0.709984
1941	-0.187619	0.649203
1946	-0.216235	0.607806
1951	-0.193720	0.640148
1956	-0.224596	0.596217
1961	-0.215389	0.608991
1966	-0.204611	0.624294
1971	-0.179504	0.661448
1976	-0.174863	0.668555

Osmond and Gardner Modelling

Japan Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	706.0	465.0	432.0	423.0	393.0	321.0
EXP	759.6	447.9	395.2	411.8	408.8	321.0
CHI	3.8	0.7	3.4	0.3	0.6	0.0
35 - OBS	1578.0	1290.0	781.0	700.0	678.0	702.0
EXP	1537.6	1196.4	833.6	777.0	708.3	686.7
CHI	1.1	7.3	3.3	7.6	1.3	0.3
40 - OBS	3078.0	2677.0	2357.0	1620.0	1315.0	1273.0
EXP	3063.4	2545.5	2339.9	1721.7	1404.1	1254.8
CHI	0.1	6.8	0.1	6.0	5.7	0.3
45 - OBS	5593.0	4472.0	4186.0	3881.0	2517.0	2201.0
EXP	5734.8	4240.3	4164.3	4034.7	2608.4	2083.4
CHI	3.5	12.7	0.1	5.9	3.2	6.6
50 - OBS	8755.0	6920.0	6041.0	5716.0	5075.0	3487.0
EXP	9088.5	6676.7	5829.6	6035.7	5121.7	3271.9
CHI	12.2	8.9	7.7	16.9	0.4	14.1
55 - OBS	11199.0	9191.0	8237.0	7194.0	6734.0	5640.0
EXP	11859.5	9099.7	7896.8	7282.0	6580.3	5507.0
CHI	36.8	0.9	14.7	1.1	3.6	3.2
60 - OBS	16451.0	12994.0	12114.0	10805.0	8774.0	7712.0
EXP	16869.3	12964.1	11747.3	10787.4	8739.1	7754.0
CHI	10.4	0.1	11.4	0.0	0.1	0.2
65 - OBS	27786.0	19835.0	18104.0	17424.0	13953.0	10869.0
EXP	27232.1	19922.0	18138.3	17373.4	14027.0	11292.3
CHI	11.3	0.4	0.1	0.1	0.4	15.9
70 - OBS	49296.0	34317.0	29548.0	28716.0	23691.0	18981.0
EXP	48346.6	34128.8	29727.5	28753.3	24229.3	19384.1
CHI	18.6	1.0	1.1	0.0	12.0	8.4
75 - OBS	72335.0	59098.0	50058.0	48252.0	41514.0	34644.0
EXP	72335.0	60064.5	50811.9	47578.0	40836.3	34300.8
CHI	0.0	15.6	11.2	9.5	11.2	3.4

Osmond and Gardner Modelling

Japan Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	34.310584
35	70.772830
40	153.867847
45	280.753864
50	432.191586
55	574.573718
60	840.443155
65	1350.124348
70	2373.144865
75	4404.221768

PERIOD	EFFECT	LOWER	UPPER
% Period Change	81.5930	78.5930	84.5930

1981	1.410704		
1986	1.082417		
1991	0.975517		
1996	0.927508		
2001	0.770851		
2006	0.628960		
2011	0.513188	0.494319	0.532057
2016	0.418726	0.388500	0.450083
2021	0.341651	0.305334	0.380739
2026	0.278763	0.239971	0.322078

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.751434	1.000000	
1911	1.520360	2.000000	
1916	1.249799	4.000000	
1921	1.027117	8.000000	
1926	0.867009	16.000000	
1931	0.773960	32.000000	
1936	0.709984	64.000000	
1941	0.649203	128.000000	
1946	0.607806	256.000000	
1951	0.640148	512.000000	
1956	0.596217	1024.000000	
1961	0.608991	2048.000000	
1966	0.624294	4096.000000	
1971	0.661448	8192.000000	
1976	0.654157	EXTRAPOLATION	0.668555
1981	0.661163	EXTRAPOLATION	
1986	0.668245	EXTRAPOLATION	
1991	0.675403	EXTRAPOLATION	
1996	0.682637	EXTRAPOLATION	

Osmond and Gardner Modelling

**Japan Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	28.8	23.0	22.3	20.4	16.8	14.4	-	-	-	-
	EXP	31.0	22.1	20.4	19.9	17.5	14.1	11.6*	9.6*	7.9*	6.5*
	Elow							11.2	8.9	7.1	5.6
	Eup							12.1	10.3	8.8	7.5
35	OBS	62.3	52.9	38.6	36.0	32.6	30.1	-	-	-	-
	EXP	60.7	49.0	41.2	40.0	34.1	29.4	23.8*	19.6*	16.2*	13.3*
	Elow							22.9	18.2	14.4	11.5
	Eup							24.6	21.1	18.0	15.4
40	OBS	141.6	106.5	96.8	80.1	67.6	61.3	-	-	-	-
	EXP	140.9	101.2	96.1	85.1	72.2	60.4	52.2*	42.1*	34.8*	28.7*
	Elow							50.3	39.1	31.1	24.7
	Eup							54.2	45.3	38.7	33.1
45	OBS	274.2	208.1	167.3	160.3	124.5	113.6	-	-	-	-
	EXP	281.2	197.3	166.5	166.7	129.0	107.5	89.9*	77.8*	62.7*	51.7*
	Elow							86.6	72.1	56.1	44.5
	Eup							93.3	83.6	69.9	59.8
50	OBS	454.6	344.2	283.6	230.7	211.3	172.7	-	-	-	-
	EXP	471.9	332.1	273.7	243.6	213.3	162.1	135.1*	113.0*	97.7*	78.8*
	Elow							130.1	104.8	87.3	67.8
	Eup							140.0	121.4	108.8	91.1
55	OBS	663.6	486.2	415.1	341.8	275.5	236.9	-	-	-	-
	EXP	702.8	481.3	398.0	346.0	269.2	231.3	175.8*	146.5*	122.6*	105.9*
	Elow							169.3	135.9	109.5	91.2
	Eup							182.3	157.5	136.6	122.4
60	OBS	1187.6	790.5	654.4	554.3	422.3	319.5	-	-	-	-
	EXP	1217.8	788.7	634.5	553.4	420.6	321.3	276.1*	209.8*	174.9*	146.3*
	Elow							265.9	194.7	156.3	125.9
	Eup							286.3	225.5	194.9	169.0
65	OBS	2428.8	1494.5	1139.8	972.0	735.0	530.6	-	-	-	-
	EXP	2380.4	1501.0	1141.9	969.2	738.9	551.3	421.1*	361.9*	275.0*	229.2*
	Elow							405.6	335.8	245.8	197.3
	Eup							436.6	389.0	306.5	264.8
70	OBS	5189.8	3228.1	2363.5	1905.9	1384.4	1037.7	-	-	-	-
	EXP	5089.9	3210.4	2377.8	1908.4	1415.8	1059.7	790.6*	604.0*	519.0*	394.4*
	Elow							761.6	560.4	463.9	339.5
	Eup							819.7	649.2	578.4	455.7
75	OBS	10881.8	7131.2	5290.0	4255.2	2992.3	2165.4	-	-	-	-
	EXP	10881.8	7247.9	5369.6	4195.7	2943.5	2143.9	1604.7*	1197.2*	914.6*	785.9*
	Elow							1545.7	1110.8	817.4	676.6
	Eup							1663.7	1286.9	1019.2	908.1
30-79	OBS	1158.1	762.5	586.4	484.2	363.9	278.7	-	-	-	-
	EXP	1159.3	761.4	585.2	485.9	364.9	277.9	216.2*	171.2*	138.7*	114.4*
	Elow							208.2	158.9	124.0	98.5
	Eup							224.1	184.0	154.6	132.2

Osmond and Gardner Modelling

**Japan Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

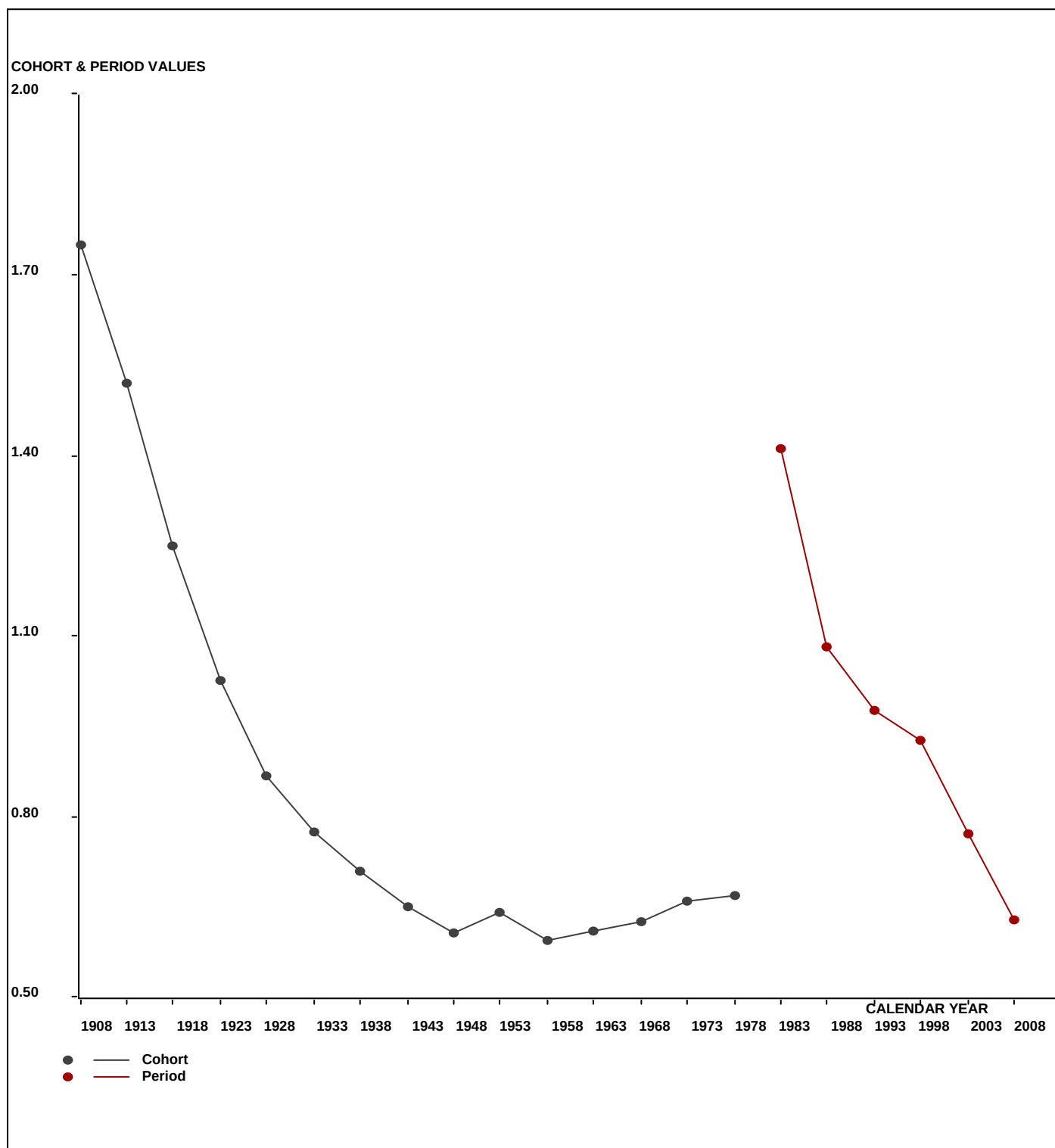
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	706.0	465.0	432.0	423.0	393.0	321.0	-	-	-	-
	EXP	759.6	447.9	395.2	411.8	408.8	314.1	221.6*	166.5*	124.4*	97.2*
	CHI	3.788	0.651	3.425	0.303	0.609	0.152	-	-	-	-
35 -	OBS	1578.0	1290.0	781.0	700.0	678.0	702.0	-	-	-	-
	EXP	1537.6	1196.4	833.6	777.0	708.3	686.7	527.1*	373.5*	280.8*	209.8*
	CHI	1.063	7.326	3.321	7.631	1.295	0.341	-	-	-	-
40 -	OBS	3078.0	2677.0	2357.0	1620.0	1315.0	1273.0	-	-	-	-
	EXP	3063.4	2545.5	2339.9	1721.7	1404.1	1254.8	1214.6*	934.2*	662.2*	497.9*
	CHI	0.070	6.791	0.125	6.013	5.658	0.263	-	-	-	-
45 -	OBS	5593.0	4472.0	4186.0	3881.0	2517.0	2201.0	-	-	-	-
	EXP	5734.8	4240.3	4164.3	4034.7	2608.4	2083.4	1859.6*	1802.3*	1386.7*	983.4*
	CHI	3.507	12.665	0.113	5.857	3.202	6.637	-	-	-	-
50 -	OBS	8755.0	6920.0	6041.0	5716.0	5075.0	3487.0	-	-	-	-
	EXP	9088.5	6676.7	5829.6	6035.7	5121.7	3271.9	2599.4*	2321.3*	2251.2*	1732.5*
	CHI	12.239	8.867	7.670	16.936	0.426	14.135	-	-	-	-
55 -	OBS	11199.0	9191.0	8237.0	7194.0	6734.0	5640.0	-	-	-	-
	EXP	11859.5	9099.7	7896.8	7282.0	6580.3	5507.0	3520.4*	2791.8*	2495.4*	2421.6*
	CHI	36.785	0.915	14.655	1.063	3.589	3.213	-	-	-	-
60 -	OBS	16451.0	12994.0	12114.0	10805.0	8774.0	7712.0	-	-	-	-
	EXP	16869.3	12964.1	11747.3	10787.4	8739.1	7754.0	6473.5*	4140.9*	3288.9*	2942.3*
	CHI	10.370	0.069	11.449	0.029	0.139	0.228	-	-	-	-
65 -	OBS	27786.0	19835.0	18104.0	17424.0	13953.0	10869.0	-	-	-	-
	EXP	27232.1	19922.0	18138.3	17373.4	14027.0	11292.3	9964.7*	8302.4*	5324.0*	4235.3*
	CHI	11.268	0.380	0.065	0.147	0.390	15.871	-	-	-	-
70 -	OBS	49296.0	34317.0	29548.0	28716.0	23691.0	18981.0	-	-	-	-
	EXP	48346.6	34128.8	29727.5	28753.3	24229.3	19384.1	15652.6*	13800.6*	11532.1*	7418.6*
	CHI	18.645	1.038	1.084	0.048	11.961	8.382	-	-	-	-
75 -	OBS	72335.0	59098.0	50058.0	48252.0	41514.0	34644.0	-	-	-	-
	EXP	72335.0	60064.5	50811.9	47578.0	40836.3	34300.8	27483.7*	22271.4*	19759.3*	16574.1*
	CHI	0.000	15.552	11.186	9.549	11.248	3.433	-	-	-	-
30-79	OBS	196777.0	151259.0	131858.0	124731.0	104644.0	85830.0	-	-	-	-
	EXP	196826.3	151285.8	131884.4	124755.2	104663.4	85849.2	69517.2*	56904.8*	47104.9*	37112.7*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Japan Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

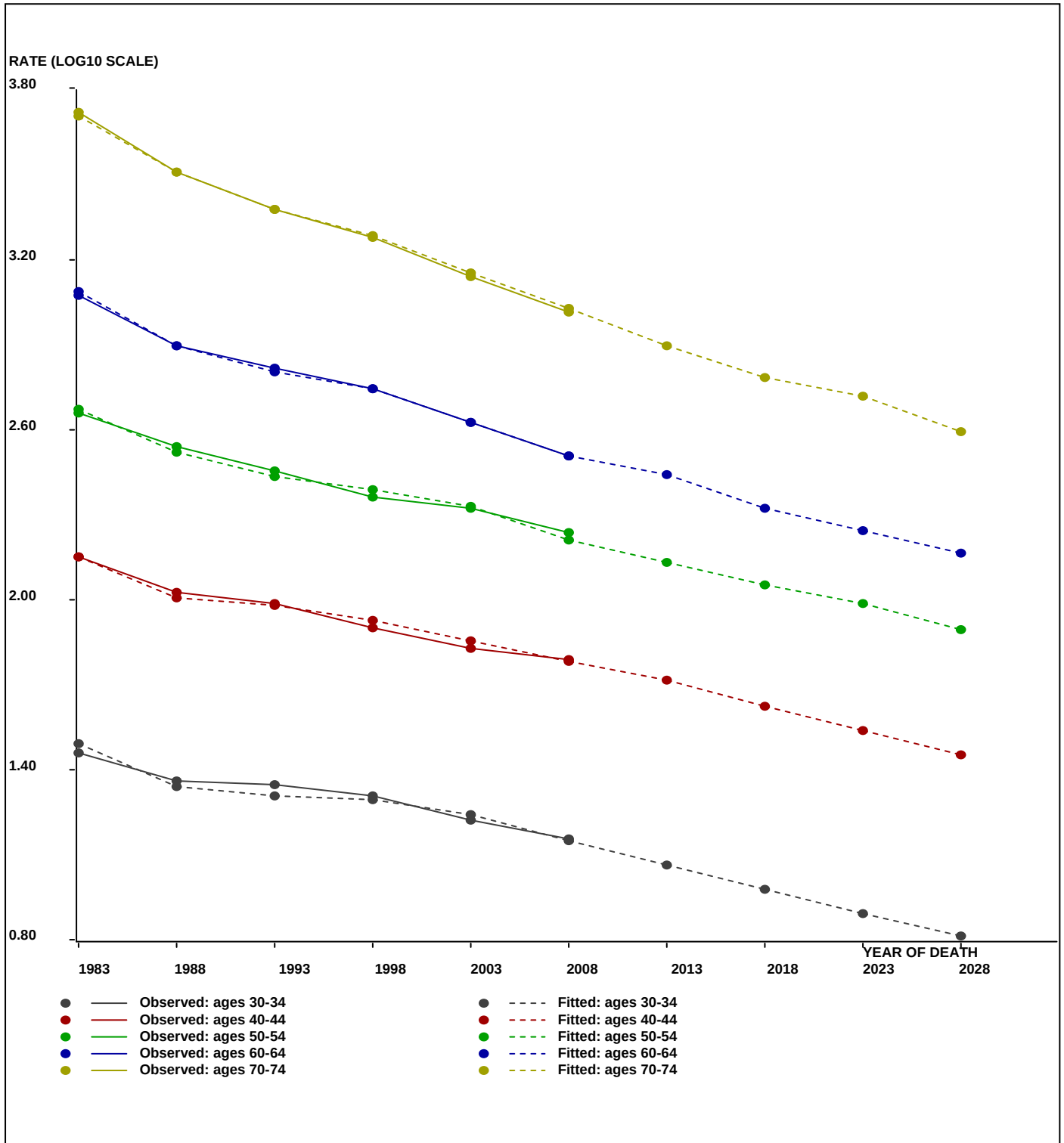


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Japan Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Japan Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	11.6	23.8	52.2	89.9	135.1	175.8	276.1	421.1	790.6	1604.7
2016	PRE	9.6	19.6	42.1	77.8	113.0	146.5	209.8	361.9	604.0	1197.2
2021	PRE	7.9	16.2	34.8	62.7	97.7	122.6	174.9	275.0	519.0	914.6
2026	PRE	6.5	13.3	28.7	51.7	78.8	105.9	146.3	229.2	394.4	785.9

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	221.6	527.1	1214.6	1859.6	2599.4	3520.4	6473.5	9964.7	15652.6	27483.7
2016	PRE	166.5	373.5	934.2	1802.3	2321.3	2791.8	4140.9	8302.4	13800.6	22271.4
2021	PRE	124.4	280.8	662.2	1386.7	2251.2	2495.4	3288.9	5324.0	11532.1	19759.3
2026	PRE	97.2	209.8	497.9	983.4	1732.5	2421.6	2942.3	4235.3	7418.6	16574.1

Osmond and Gardner Modelling

Japan Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	174.08	3.41	51	P, C	93.27	924.45	0.0000
AGE-PERIOD	97.13	2.16	45	Cohort	87.95	515.62	0.0000
AGE-COHORT	49.39	1.37	36	Period	76.29	261.96	0.0000
PERIOD-COHORT	17.90	0.45	40	Age	34.59	94.96	0.0000
FULL AGE-PERIOD-COHORT	11.71	0.37	32			62.09	0.0011

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.889822	7.759295
35	1.236192	17.226292
40	1.518631	33.008866
45	1.761654	57.763607
50	2.009211	102.143495
55	2.219786	165.877005
60	2.425939	266.648572
65	2.628421	425.031043
70	2.820577	661.571209
75	2.997137	993.430037

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.001454	0.996658
1986	0.006243	1.014479
1991	0.018335	1.043123
1996	0.020229	1.047682
2001	-0.016435	0.962863
2006	-0.021381	0.951960

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.037081	0.918162
1911	0.008883	1.020663
1916	0.016661	1.039110
1921	0.006366	1.014767
1926	-0.016499	0.962721
1931	-0.013317	0.969803
1936	-0.005659	0.987054
1941	0.013428	1.031403
1946	0.016829	1.039511
1951	0.057221	1.140829
1956	-0.009304	0.978805
1961	-0.047152	0.897115
1966	-0.097857	0.798257
1971	-0.100310	0.793762
1976	-0.166539	0.681492

Osmond and Gardner Modelling

Japan Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model

Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	202.0	162.0	135.0	142.0	144.0	112.0
EXP	216.3	155.9	140.8	134.5	138.6	112.0
CHI	0.9	0.2	0.2	0.4	0.2	0.0
35 - OBS	424.0	488.0	339.0	349.0	287.0	298.0
EXP	452.2	486.4	356.2	314.7	275.3	303.6
CHI	1.8	0.0	0.8	3.7	0.5	0.1
40 - OBS	769.0	816.0	970.0	738.0	530.0	501.0
EXP	737.6	875.3	956.6	684.9	554.3	521.0
CHI	1.3	4.0	0.2	4.1	1.1	0.8
45 - OBS	1117.0	1240.0	1612.0	1737.0	1093.0	949.0
EXP	1158.9	1299.0	1566.9	1671.1	1100.5	955.7
CHI	1.5	2.7	1.3	2.6	0.1	0.0
50 - OBS	1800.0	2078.0	2354.0	2874.0	2674.0	1884.0
EXP	1901.5	2056.1	2340.6	2755.7	2694.5	1921.4
CHI	5.4	0.2	0.1	5.1	0.2	0.7
55 - OBS	2701.0	3123.0	3446.0	3776.0	3992.0	4240.0
EXP	2685.9	3085.2	3389.1	3772.7	4058.3	4288.3
CHI	0.1	0.5	1.0	0.0	1.1	0.5
60 - OBS	3780.0	4249.0	4956.0	5455.0	5462.0	6352.0
EXP	3735.8	4280.5	4993.8	5374.7	5502.3	6368.2
CHI	0.5	0.2	0.3	1.2	0.3	0.0
65 - OBS	5042.0	5944.0	6814.0	7618.0	7562.0	8597.0
EXP	5035.7	5807.3	6779.9	7741.2	7668.3	8548.2
CHI	0.0	3.2	0.2	2.0	1.5	0.3
70 - OBS	6475.0	7437.0	8680.0	9912.0	10694.0	11357.0
EXP	6392.4	7413.8	8755.0	10053.8	10571.9	11370.7
CHI	1.1	0.1	0.6	2.0	1.4	0.0
75 - OBS	6043.0	8441.0	10160.0	11868.0	12898.0	14771.0
EXP	6043.0	8524.5	10189.6	11976.6	12775.7	14673.5
CHI	0.0	0.8	0.1	1.0	1.2	0.6

Osmond and Gardner Modelling

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 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	7.759295
35	17.226292
40	33.008866
45	57.763607
50	102.143495
55	165.877005
60	266.648572
65	425.031043
70	661.571209
75	993.430037

PERIOD	EFFECT	LOWER	UPPER
% Period Change	98.8676	95.8676	101.8676
1981	0.996658		
1986	1.014479		
1991	1.043123		
1996	1.047682		
2001	0.962863		
2006	0.951960		
2011	0.941180	0.912621	0.969739
2016	0.930522	0.874908	0.987850
2021	0.919985	0.838753	1.006299
2026	0.909567	0.804093	1.025093

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.918162	1.000000	
1911	1.020663	2.000000	
1916	1.039110	4.000000	
1921	1.014767	8.000000	
1926	0.962721	16.000000	
1931	0.969803	32.000000	
1936	0.987054	64.000000	
1941	1.031403	128.000000	
1946	1.039511	256.000000	
1951	1.140829	512.000000	
1956	0.978805	1024.000000	
1961	0.897115	2048.000000	
1966	0.798257	4096.000000	
1971	0.793762	8192.000000	
1976	0.743254	EXTRAPOLATION	0.681492
1981	0.701772	EXTRAPOLATION	
1986	0.662605	EXTRAPOLATION	
1991	0.625624	EXTRAPOLATION	
1996	0.590707	EXTRAPOLATION	

Osmond and Gardner Modelling

**Japan Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	8.2	8.0	7.0	6.9	6.2	5.0	-	-	-	-
	EXP	8.8	7.7	7.3	6.5	5.9	5.5	5.1*	4.8*	4.5*	4.2*
	Elow							5.0	4.5	4.1	3.7
	Eup							5.3	5.1	4.9	4.7
35	OBS	16.7	20.0	16.7	18.0	13.8	12.8	-	-	-	-
	EXP	17.8	19.9	17.6	16.2	13.2	13.0	12.1*	11.2*	10.5*	9.8*
	Elow							11.7	10.6	9.6	8.7
	Eup							12.4	11.9	11.5	11.0
40	OBS	35.4	32.5	39.8	36.5	27.3	24.1	-	-	-	-
	EXP	33.9	34.8	39.3	33.8	28.5	25.1	24.7*	22.8*	21.3*	19.9*
	Elow							23.9	21.5	19.4	17.6
	Eup							25.4	24.2	23.3	22.4
45	OBS	54.8	57.7	64.4	71.8	54.1	49.0	-	-	-	-
	EXP	56.8	60.4	62.6	69.0	54.4	49.3	43.4*	42.7*	39.5*	36.9*
	Elow							42.1	40.1	36.0	32.6
	Eup							44.7	45.3	43.2	41.6
50	OBS	93.5	103.4	110.5	116.0	111.3	93.3	-	-	-	-
	EXP	98.7	102.3	109.9	111.2	112.2	95.2	86.2*	75.9*	74.6*	69.1*
	Elow							83.6	71.3	68.0	61.0
	Eup							88.9	80.5	81.6	77.8
55	OBS	160.1	165.2	173.7	179.4	163.3	178.1	-	-	-	-
	EXP	159.2	163.2	170.8	179.2	166.0	180.1	152.8*	138.5*	121.8*	119.8*
	Elow							148.2	130.2	111.1	105.9
	Eup							157.4	147.0	133.2	135.0
60	OBS	272.9	258.5	267.7	279.9	262.9	263.2	-	-	-	-
	EXP	269.7	260.4	269.7	275.7	264.8	263.9	286.3*	242.9*	220.1*	193.6*
	Elow							277.6	228.3	200.6	171.2
	Eup							295.0	257.8	240.7	218.2
65	OBS	440.7	447.9	429.0	425.0	398.3	419.7	-	-	-	-
	EXP	440.2	437.6	426.8	431.9	403.9	417.3	415.8*	451.2*	382.7*	346.8*
	Elow							403.2	424.2	348.9	306.6
	Eup							428.5	479.0	418.6	390.9
70	OBS	681.7	699.6	694.3	657.9	624.9	620.9	-	-	-	-
	EXP	673.0	697.4	700.3	667.3	617.8	621.6	642.2*	639.9*	694.3*	589.0*
	Elow							622.7	601.7	633.0	520.7
	Eup							661.7	679.4	759.5	663.8
75	OBS	909.1	1018.6	1073.7	1046.6	929.7	923.2	-	-	-	-
	EXP	909.1	1028.6	1076.8	1056.2	920.9	917.1	922.9*	953.4*	950.1*	1030.8*
	Elow							894.9	896.5	866.2	911.3
	Eup							950.9	1012.2	1039.2	1161.8
30-79	OBS	171.1	177.5	181.7	181.6	165.6	164.8	-	-	-	-
	EXP	171.2	177.4	181.7	181.0	166.0	165.2	163.4*	159.6*	152.7*	143.3*
	Elow							158.4	150.1	139.2	126.7
	Eup							168.3	169.4	167.0	161.5

Osmond and Gardner Modelling

**Japan Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

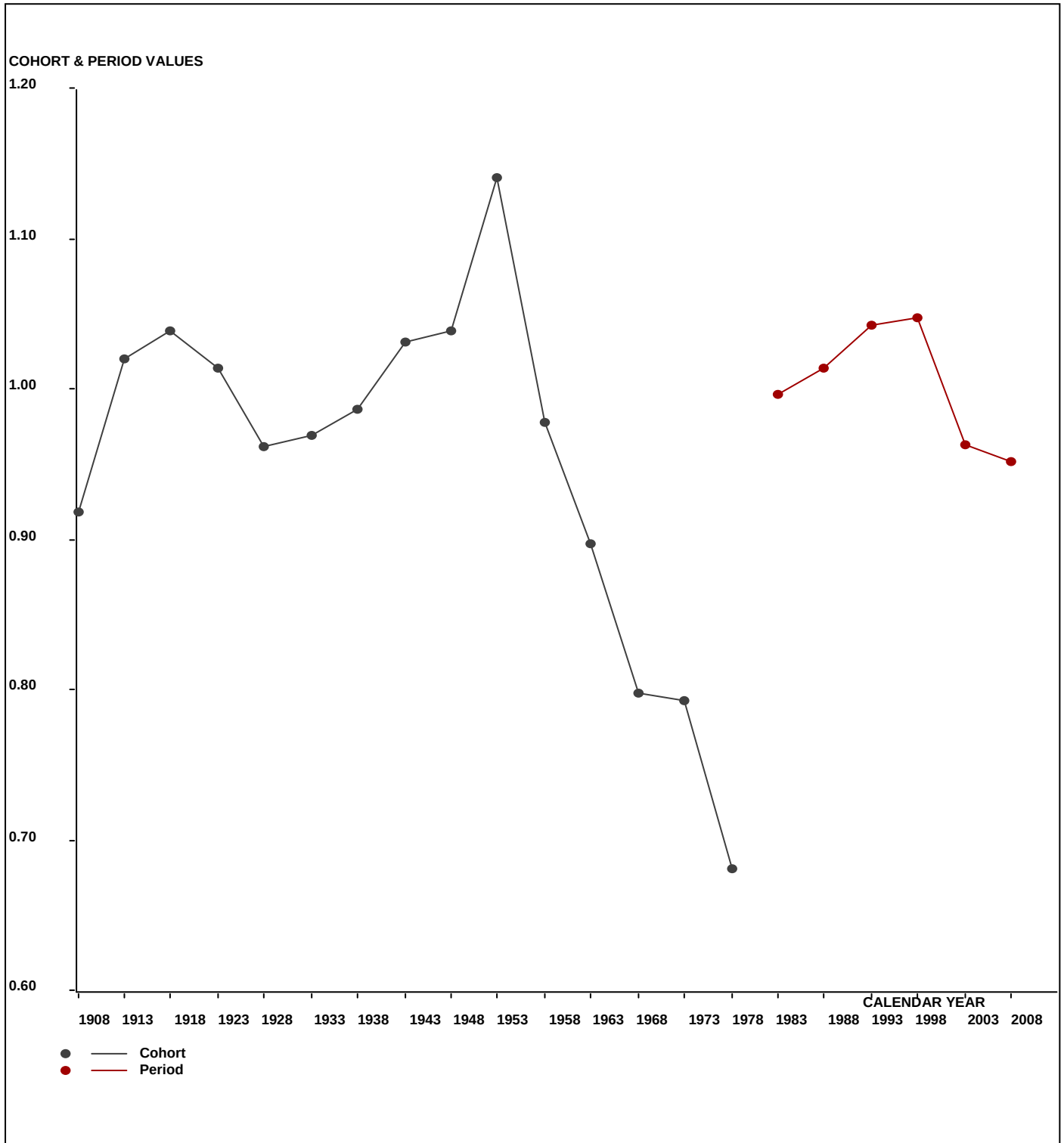
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	202.0	162.0	135.0	142.0	144.0	112.0	-	-	-	-
	EXP	216.3	155.9	140.8	134.5	138.6	122.2	97.5*	83.0*	70.2*	62.1*
	CHI	0.945	0.242	0.238	0.416	0.213	0.843	-	-	-	-
35 -	OBS	424.0	488.0	339.0	349.0	287.0	298.0	-	-	-	-
	EXP	452.2	486.4	356.2	314.7	275.3	303.6	267.4*	214.4*	182.5*	154.3*
	CHI	1.759	0.005	0.830	3.739	0.493	0.103	-	-	-	-
40 -	OBS	769.0	816.0	970.0	738.0	530.0	501.0	-	-	-	-
	EXP	737.6	875.3	956.6	684.9	554.3	521.0	573.5*	506.0*	406.0*	345.6*
	CHI	1.333	4.021	0.188	4.109	1.063	0.766	-	-	-	-
45 -	OBS	1117.0	1240.0	1612.0	1737.0	1093.0	949.0	-	-	-	-
	EXP	1158.9	1299.0	1566.9	1671.1	1100.5	955.7	897.2*	988.9*	872.9*	700.7*
	CHI	1.516	2.682	1.299	2.601	0.051	0.047	-	-	-	-
50 -	OBS	1800.0	2078.0	2354.0	2874.0	2674.0	1884.0	-	-	-	-
	EXP	1901.5	2056.1	2340.6	2755.7	2694.5	1921.4	1659.7*	1558.9*	1719.2*	1518.0*
	CHI	5.421	0.234	0.077	5.074	0.156	0.730	-	-	-	-
55 -	OBS	2701.0	3123.0	3446.0	3776.0	3992.0	4240.0	-	-	-	-
	EXP	2685.9	3085.2	3389.1	3772.7	4058.3	4288.3	3060.0*	2638.5*	2480.5*	2737.3*
	CHI	0.085	0.463	0.955	0.003	1.083	0.545	-	-	-	-
60 -	OBS	3780.0	4249.0	4956.0	5455.0	5462.0	6352.0	-	-	-	-
	EXP	3735.8	4280.5	4993.8	5374.7	5502.3	6368.2	6712.9*	4793.1*	4139.2*	3894.6*
	CHI	0.523	0.232	0.287	1.201	0.295	0.041	-	-	-	-
65 -	OBS	5042.0	5944.0	6814.0	7618.0	7562.0	8597.0	-	-	-	-
	EXP	5035.7	5807.3	6779.9	7741.2	7668.3	8548.2	9839.5*	10351.1*	7409.2*	6408.7*
	CHI	0.008	3.218	0.172	1.961	1.473	0.279	-	-	-	-
70 -	OBS	6475.0	7437.0	8680.0	9912.0	10694.0	11357.0	-	-	-	-
	EXP	6392.4	7413.8	8755.0	10053.8	10571.9	11370.7	12714.0*	14622.1*	15427.6*	11078.1*
	CHI	1.067	0.072	0.643	1.999	1.410	0.016	-	-	-	-
75 -	OBS	6043.0	8441.0	10160.0	11868.0	12898.0	14771.0	-	-	-	-
	EXP	6043.0	8524.5	10189.6	11976.6	12775.7	14673.5	15806.4*	17736.2*	20525.9*	21738.9*
	CHI	0.000	0.819	0.086	0.984	1.170	0.648	-	-	-	-
30-79	OBS	28353.0	33978.0	39466.0	44469.0	45336.0	49061.0	-	-	-	-
	EXP	28359.4	33984.0	39468.4	44479.9	45339.7	49072.7	51628.0*	53492.2*	53233.1*	48638.4*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Japan Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

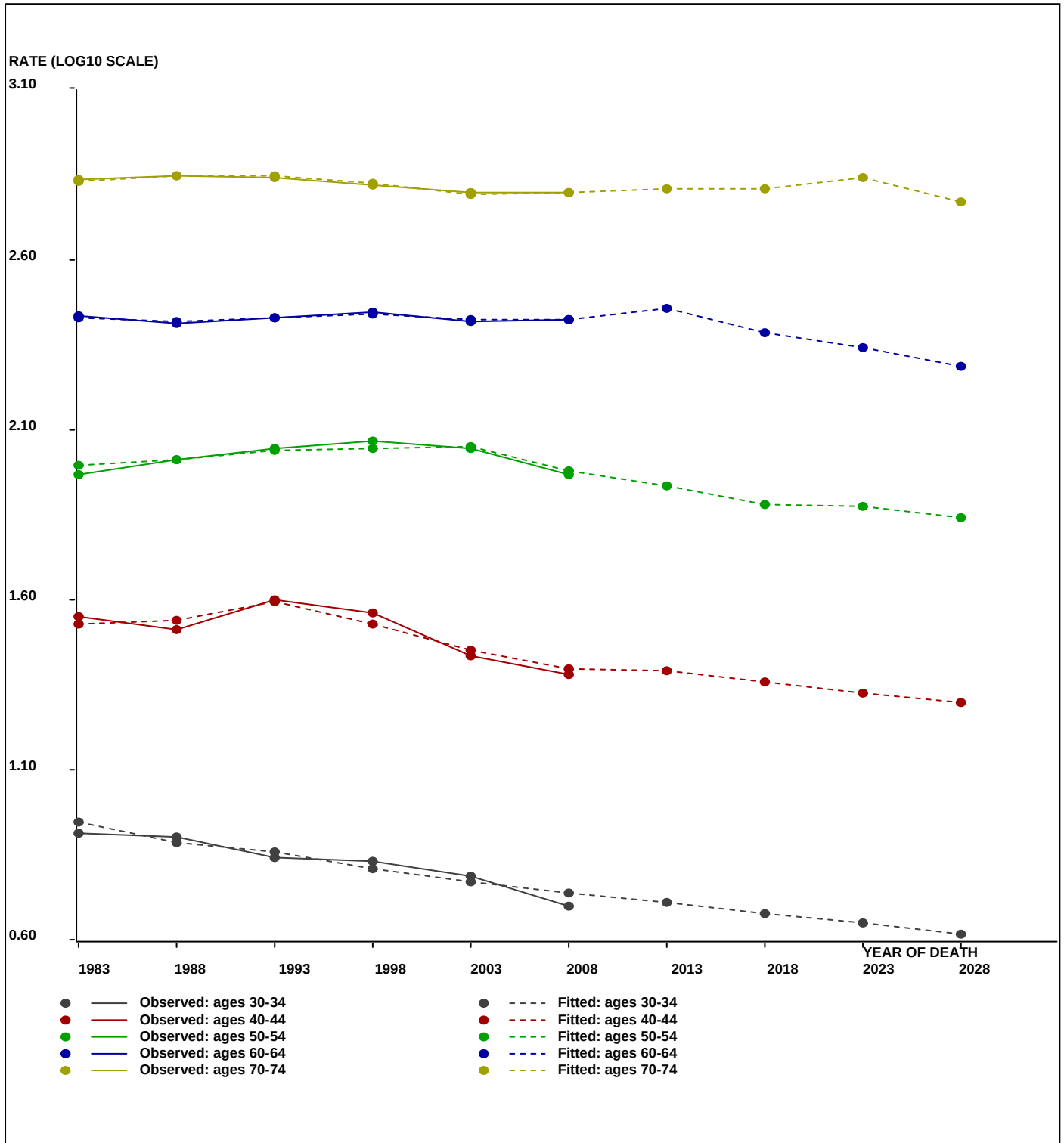


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Japan Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Japan Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	5.1	12.1	24.7	43.4	86.2	152.8	286.3	415.8	642.2	922.9
2016	PRE	4.8	11.2	22.8	42.7	75.9	138.5	242.9	451.2	639.9	953.4
2021	PRE	4.5	10.5	21.3	39.5	74.6	121.8	220.1	382.7	694.3	950.1
2026	PRE	4.2	9.8	19.9	36.9	69.1	119.8	193.6	346.8	589.0	1030.8

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	97.5	267.4	573.5	897.2	1659.7	3060.0	6712.9	9839.5	12714.0	15806.4
2016	PRE	83.0	214.4	506.0	988.9	1558.9	2638.5	4793.1	10351.1	14622.1	17736.2
2021	PRE	70.2	182.5	406.0	872.9	1719.2	2480.5	4139.2	7409.2	15427.6	20525.9
2026	PRE	62.1	154.3	345.6	700.7	1518.0	2737.3	3894.6	6408.7	11078.1	21738.9

Osmond and Gardner Modelling

Japan COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	2609.79	51.17	51	P, C	99.21	14394.20	0.0000
AGE-PERIOD	49.02	1.09	45	Cohort	57.99	260.34	0.0000
AGE-COHORT	70.84	1.97	36	Period	70.93	376.33	0.0000
PERIOD-COHORT	29.02	0.73	40	Age	29.02	153.96	0.0000
FULL AGE-PERIOD-COHORT	20.60	0.64	32			109.30	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.827268	6.718433
35	0.936092	8.631609
40	1.074094	11.860248
45	1.244857	17.573452
50	1.405662	25.448496
55	1.581053	38.111270
60	1.781152	60.415949
65	2.055877	113.730533
70	2.357208	227.618974
75	2.663001	460.257169

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.158568	1.440682
1986	0.098709	1.255190
1991	0.051433	1.125728
1996	-0.044460	0.902693
2001	-0.194265	0.639345
2006	-0.293232	0.509059

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.057867	1.142529
1911	0.061397	1.151852
1916	0.057868	1.142530
1921	0.041856	1.101173
1926	0.005988	1.013884
1931	-0.047176	0.897066
1936	-0.074426	0.842508
1941	-0.122073	0.754965
1946	-0.172198	0.672670
1951	-0.135575	0.731855
1956	-0.182374	0.657092
1961	-0.142224	0.720735
1966	-0.133869	0.734735
1971	-0.119276	0.759843
1976	-0.268569	0.538804

Osmond and Gardner Modelling

Japan COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	150.0	113.0	120.0	101.0	73.0	41.0
EXP	173.7	112.1	105.7	92.4	76.3	41.0
CHI	3.2	0.0	1.9	0.8	0.1	0.0
35 - OBS	183.0	211.0	143.0	108.0	76.0	81.0
EXP	211.9	193.4	129.3	109.2	84.3	77.9
CHI	4.0	1.6	1.5	0.0	0.8	0.1
40 - OBS	231.0	285.0	241.0	149.0	107.0	91.0
EXP	280.4	251.8	238.0	142.4	106.2	92.1
CHI	8.7	4.4	0.0	0.3	0.0	0.0
45 - OBS	374.0	400.0	356.0	290.0	143.0	109.0
EXP	435.0	357.9	332.9	281.0	149.2	124.9
CHI	8.6	4.9	1.6	0.3	0.3	2.0
50 - OBS	569.0	600.0	495.0	355.0	292.0	155.0
EXP	633.5	541.0	460.6	382.8	286.0	171.9
CHI	6.6	6.4	2.6	2.0	0.1	1.7
55 - OBS	892.0	816.0	784.0	522.0	411.0	323.0
EXP	939.4	811.3	717.3	546.7	400.6	338.0
CHI	2.4	0.0	6.2	1.1	0.3	0.7
60 - OBS	1305.0	1288.0	1172.0	876.0	596.0	483.0
EXP	1327.7	1263.8	1129.5	895.6	605.9	499.3
CHI	0.4	0.5	1.6	0.4	0.2	0.5
65 - OBS	2250.0	2085.0	2013.0	1624.0	1129.0	894.0
EXP	2141.6	2086.3	2061.9	1650.9	1162.9	895.3
CHI	5.5	0.0	1.2	0.4	1.0	0.0
70 - OBS	3753.0	3450.0	3461.0	3122.0	2190.0	1763.0
EXP	3587.8	3470.1	3527.6	3138.8	2234.1	1785.7
CHI	7.6	0.1	1.3	0.1	0.9	0.3
75 - OBS	5036.0	5343.0	5510.0	5277.0	4225.0	3445.0
EXP	5036.0	5514.6	5601.7	5187.9	4139.1	3362.7
CHI	0.0	5.3	1.5	1.5	1.8	2.0

Osmond and Gardner Modelling

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 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	6.718433
35	8.631609
40	11.860248
45	17.573452
50	25.448496
55	38.111270
60	60.415949
65	113.730533
70	227.618974
75	460.257169

PERIOD	EFFECT	LOWER	UPPER
% Period Change	79.6220	76.6220	82.6220
1981	1.440682		
1986	1.255190		
1991	1.125728		
1996	0.902693		
2001	0.639345		
2006	0.509059		
2011	0.405323	0.390051	0.420595
2016	0.322726	0.298865	0.347504
2021	0.256961	0.228996	0.287114
2026	0.204597	0.175461	0.237219

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.142529	1.000000	
1911	1.151852	2.000000	
1916	1.142530	4.000000	
1921	1.101173	8.000000	
1926	1.013884	16.000000	
1931	0.897066	32.000000	
1936	0.842508	64.000000	
1941	0.754965	128.000000	
1946	0.672670	256.000000	
1951	0.731855	512.000000	
1956	0.657092	1024.000000	
1961	0.720735	2048.000000	
1966	0.734735	4096.000000	
1971	0.759843	8192.000000	
1976	0.759876	EXTRAPOLATION	0.538804
1981	0.769782	EXTRAPOLATION	
1986	0.779817	EXTRAPOLATION	
1991	0.789983	EXTRAPOLATION	
1996	0.800281	EXTRAPOLATION	

Osmond and Gardner Modelling

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Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	6.1	5.6	6.2	4.9	3.1	1.8	-	-	-	-
	EXP	7.1	5.5	5.5	4.5	3.3	2.6	2.1*	1.7*	1.4*	1.1*
	Elow							2.0	1.6	1.2	0.9
	Eup							2.2	1.8	1.5	1.3
35	OBS	7.2	8.6	7.1	5.6	3.7	3.5	-	-	-	-
	EXP	8.4	7.9	6.4	5.6	4.1	3.3	2.7*	2.1*	1.7*	1.4*
	Elow							2.6	2.0	1.5	1.2
	Eup							2.8	2.3	1.9	1.6
40	OBS	10.6	11.3	9.9	7.4	5.5	4.4	-	-	-	-
	EXP	12.9	10.0	9.8	7.0	5.5	4.4	3.7*	2.9*	2.3*	1.9*
	Elow							3.5	2.7	2.1	1.6
	Eup							3.8	3.1	2.6	2.2
45	OBS	18.3	18.6	14.2	12.0	7.1	5.6	-	-	-	-
	EXP	21.3	16.7	13.3	11.6	7.4	6.4	5.2*	4.3*	3.4*	2.8*
	Elow							5.0	4.0	3.1	2.4
	Eup							5.4	4.6	3.8	3.2
50	OBS	29.5	29.8	23.2	14.3	12.2	7.7	-	-	-	-
	EXP	32.9	26.9	21.6	15.5	11.9	8.5	7.4*	6.0*	5.0*	4.0*
	Elow							7.2	5.6	4.4	3.4
	Eup							7.7	6.5	5.6	4.6
55	OBS	52.9	43.2	39.5	24.8	16.8	13.6	-	-	-	-
	EXP	55.7	42.9	36.1	26.0	16.4	14.2	10.2*	8.9*	7.2*	5.9*
	Elow							9.8	8.2	6.4	5.1
	Eup							10.5	9.5	8.0	6.9
60	OBS	94.2	78.4	63.3	44.9	28.7	20.0	-	-	-	-
	EXP	95.8	76.9	61.0	45.9	29.2	20.7	17.9*	12.8*	11.2*	9.1*
	Elow							17.2	11.9	10.0	7.8
	Eup							18.6	13.8	12.5	10.5
65	OBS	196.7	157.1	126.7	90.6	59.5	43.6	-	-	-	-
	EXP	187.2	157.2	129.8	92.1	61.3	43.7	31.0*	26.9*	19.2*	16.8*
	Elow							29.8	24.9	17.1	14.4
	Eup							32.2	28.9	21.5	19.4
70	OBS	395.1	324.5	276.8	207.2	128.0	96.4	-	-	-	-
	EXP	377.7	326.4	282.2	208.3	130.5	97.6	69.7*	49.4*	42.8*	30.6*
	Elow							67.0	45.8	38.1	26.2
	Eup							72.3	53.2	47.8	35.5
75	OBS	757.6	644.7	582.3	465.4	304.5	215.3	-	-	-	-
	EXP	757.6	665.4	592.0	457.5	298.3	210.2	157.2*	112.1*	79.6*	68.9*
	Elow							151.3	103.8	70.9	59.1
	Eup							163.1	120.7	88.9	79.9
30-79	OBS	86.9	73.8	63.3	47.2	30.8	22.5	-	-	-	-
	EXP	87.1	73.6	63.0	47.3	30.9	22.8	17.2*	13.0*	10.2*	8.3*
	Elow							16.5	12.1	9.1	7.1
	Eup							17.8	14.0	11.4	9.6

Osmond and Gardner Modelling

**Japan COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

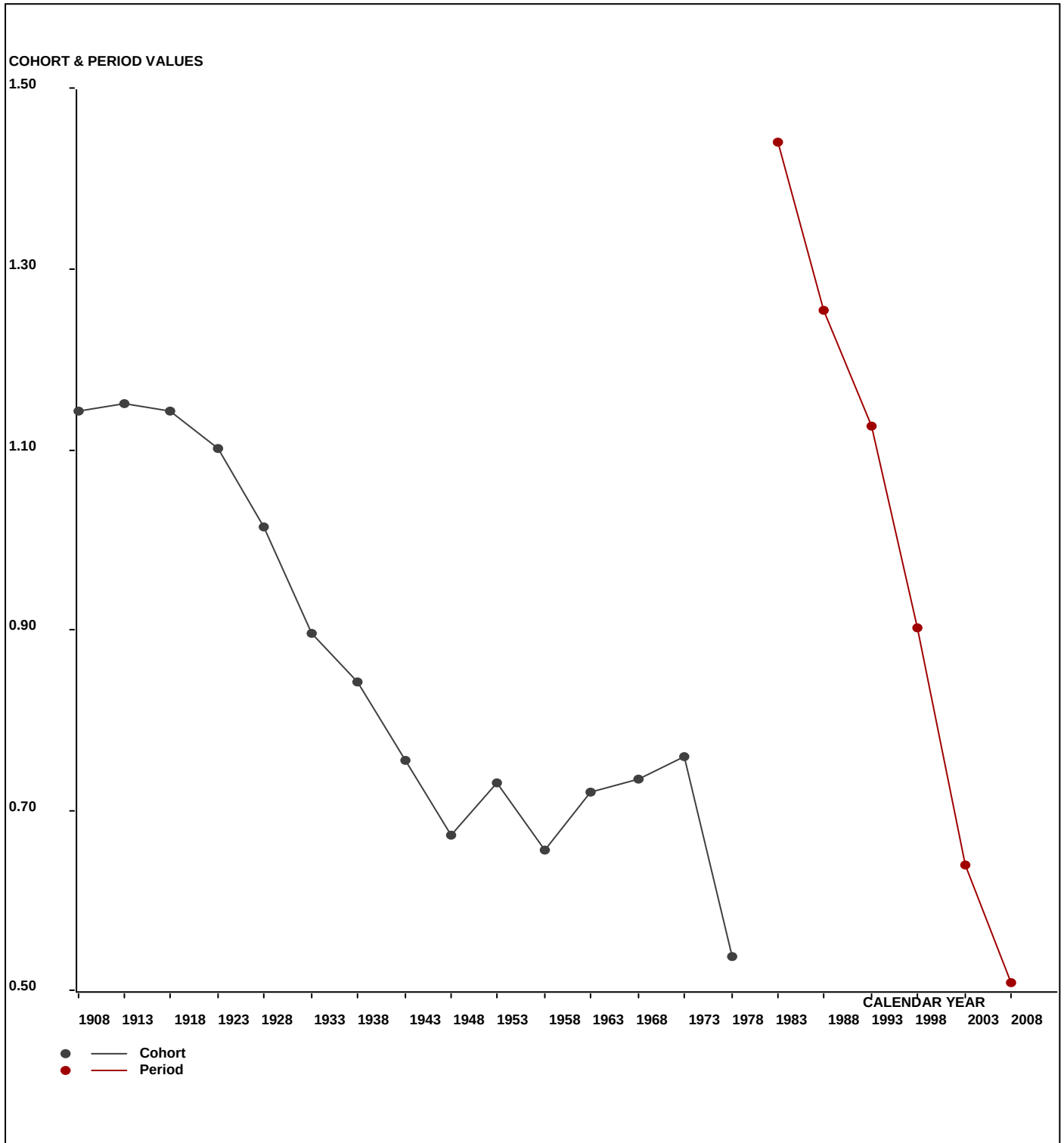
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	150.0	113.0	120.0	101.0	73.0	41.0	-	-	-	-
	EXP	173.7	112.1	105.7	92.4	76.3	57.8	39.9*	29.3*	21.4*	16.4*
	CHI	3.226	0.007	1.938	0.807	0.140	4.894	-	-	-	-
35 -	OBS	183.0	211.0	143.0	108.0	76.0	81.0	-	-	-	-
	EXP	211.9	193.4	129.3	109.2	84.3	77.9	59.0*	40.9*	30.1*	22.0*
	CHI	3.954	1.593	1.451	0.012	0.821	0.126	-	-	-	-
40 -	OBS	231.0	285.0	241.0	149.0	107.0	91.0	-	-	-	-
	EXP	280.4	251.8	238.0	142.4	106.2	92.1	84.9*	64.5*	44.7*	32.9*
	CHI	8.713	4.374	0.039	0.311	0.005	0.014	-	-	-	-
45 -	OBS	374.0	400.0	356.0	290.0	143.0	109.0	-	-	-	-
	EXP	435.0	357.9	332.9	281.0	149.2	124.9	108.2*	99.9*	75.8*	52.6*
	CHI	8.559	4.948	1.603	0.288	0.261	2.028	-	-	-	-
50 -	OBS	569.0	600.0	495.0	355.0	292.0	155.0	-	-	-	-
	EXP	633.5	541.0	460.6	382.8	286.0	171.9	143.1*	124.0*	114.5*	87.0*
	CHI	6.559	6.437	2.562	2.019	0.127	1.653	-	-	-	-
55 -	OBS	892.0	816.0	784.0	522.0	411.0	323.0	-	-	-	-
	EXP	939.4	811.3	717.3	546.7	400.6	338.0	203.3*	168.9*	146.5*	135.4*
	CHI	2.396	0.028	6.208	1.113	0.268	0.665	-	-	-	-
60 -	OBS	1305.0	1288.0	1172.0	876.0	596.0	483.0	-	-	-	-
	EXP	1327.7	1263.8	1129.5	895.6	605.9	499.3	420.2*	252.8*	210.4*	182.7*
	CHI	0.389	0.465	1.599	0.428	0.163	0.531	-	-	-	-
65 -	OBS	2250.0	2085.0	2013.0	1624.0	1129.0	894.0	-	-	-	-
	EXP	2141.6	2086.3	2061.9	1650.9	1162.9	895.3	733.7*	616.2*	371.7*	309.9*
	CHI	5.484	0.001	1.159	0.438	0.991	0.002	-	-	-	-
70 -	OBS	3753.0	3450.0	3461.0	3122.0	2190.0	1763.0	-	-	-	-
	EXP	3587.8	3470.1	3527.6	3138.8	2234.1	1785.7	1378.9*	1129.1*	951.1*	575.6*
	CHI	7.603	0.117	1.257	0.090	0.869	0.288	-	-	-	-
75 -	OBS	5036.0	5343.0	5510.0	5277.0	4225.0	3445.0	-	-	-	-
	EXP	5036.0	5514.6	5601.7	5187.9	4139.1	3362.7	2691.9*	2086.1*	1718.8*	1453.4*
	CHI	0.000	5.340	1.503	1.529	1.782	2.015	-	-	-	-
30-79	OBS	14743.0	14591.0	14295.0	12424.0	9242.0	7385.0	-	-	-	-
	EXP	14767.2	14602.4	14304.5	12427.5	9244.7	7405.6	5863.1*	4611.7*	3685.1*	2867.7*
	O/E	0.998	0.999	0.999	1.000	1.000	0.997	-	-	-	-

Osmond and Gardner Modelling

Japan COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

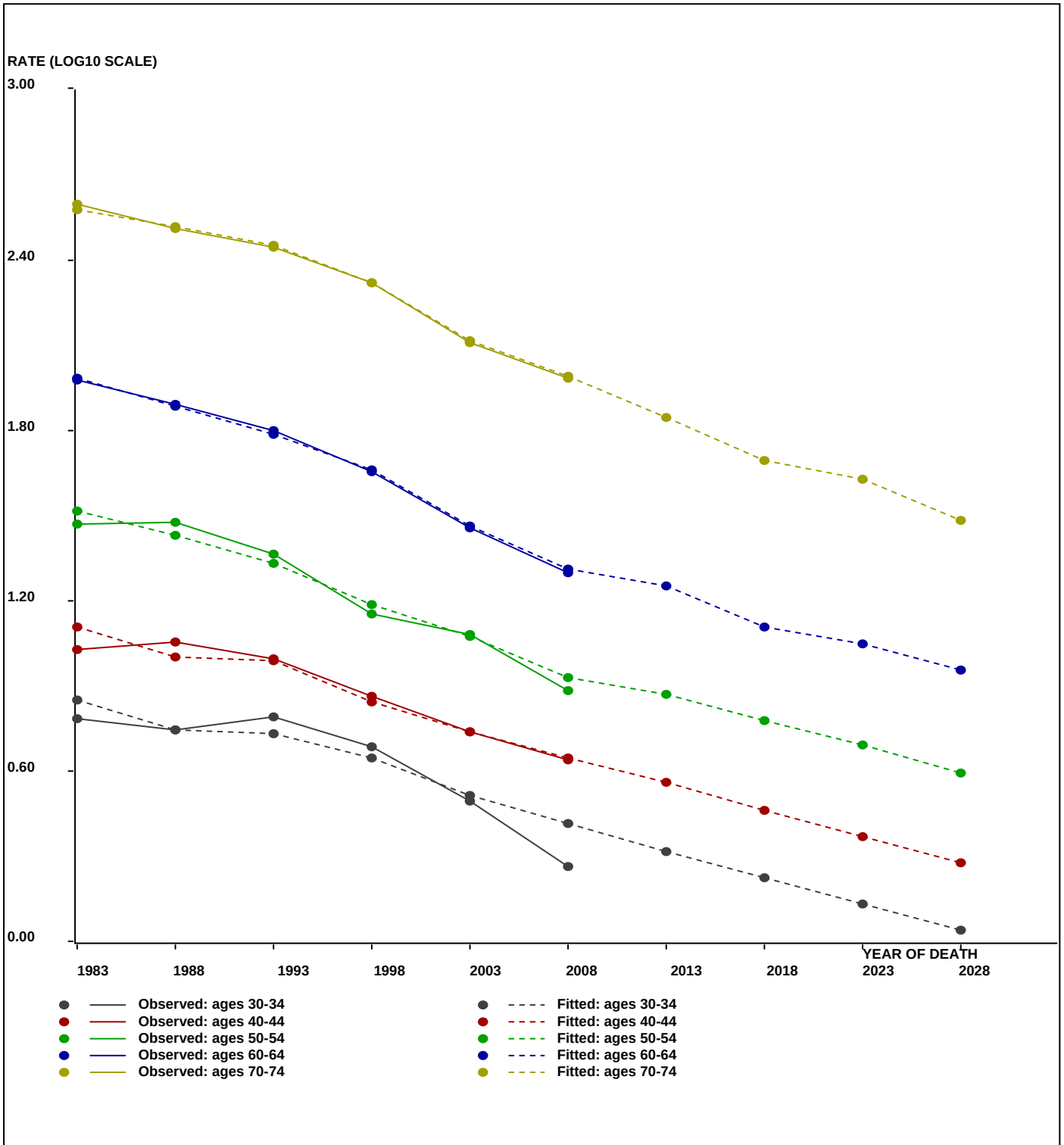


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Japan COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Japan COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	2.1	2.7	3.7	5.2	7.4	10.2	17.9	31.0	69.7	157.2
2016 PRE	1.7	2.1	2.9	4.3	6.0	8.9	12.8	26.9	49.4	112.1
2021 PRE	1.4	1.7	2.3	3.4	5.0	7.2	11.2	19.2	42.8	79.6
2026 PRE	1.1	1.4	1.9	2.8	4.0	5.9	9.1	16.8	30.6	68.9

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	39.9	59.0	84.9	108.2	143.1	203.3	420.2	733.7	1378.9	2691.9
2016 PRE	29.3	40.9	64.5	99.9	124.0	168.9	252.8	616.2	1129.1	2086.1
2021 PRE	21.4	30.1	44.7	75.8	114.5	146.5	210.4	371.7	951.1	1718.8
2026 PRE	16.4	22.0	32.9	52.6	87.0	135.4	182.7	309.9	575.6	1453.4

Osmond and Gardner Modelling

Poland IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	5853.72	114.78	51	P, C	95.77	31758.12	0.0000
AGE-PERIOD	2821.07	62.69	45	Cohort	91.22	15125.66	0.0000
AGE-COHORT	760.74	21.13	36	Period	67.45	4040.83	0.0000
PERIOD-COHORT	923.64	23.09	40	Age	73.19	4908.26	0.0000
FULL AGE-PERIOD-COHORT	247.61	7.74	32			1313.51	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	2.371654	235.317160
35	2.702946	504.598833
40	2.961711	915.611025
45	3.158439	1440.254759
50	3.341538	2195.521306
55	3.488455	3079.323151
60	3.623741	4204.753176
65	3.755352	5693.144129
70	3.894407	7841.641721
75	4.040383	10974.461910

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.013974	1.032699
1986	0.058276	1.143605
1991	0.038423	1.092505
1996	0.010504	1.024480
2001	-0.040388	0.911197
2006	-0.101134	0.792256

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.128200	0.744388
1911	-0.096235	0.801244
1916	-0.036705	0.918957
1921	0.027232	1.064712
1926	0.047649	1.115962
1931	0.063828	1.158320
1936	0.033944	1.081294
1941	0.033312	1.079723
1946	-0.032958	0.926919
1951	-0.077216	0.837112
1956	-0.157629	0.695619
1961	-0.261591	0.547531
1966	-0.417774	0.382143
1971	-0.589596	0.257279
1976	-0.706187	0.196704

Osmond and Gardner Modelling

Poland IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	1415.0	1772.0	1081.0	575.0	304.0	272.0
EXP	1622.9	1600.2	1032.1	563.9	356.0	272.0
CHI	26.6	18.5	2.3	0.2	7.6	0.0
35 - OBS	2478.0	4014.0	3416.0	1922.2	912.0	700.0
EXP	2798.3	3765.2	3194.5	2022.0	1057.9	653.6
CHI	36.7	16.4	15.4	4.9	20.1	3.3
40 - OBS	4406.0	5824.0	6866.0	4824.4	2852.0	1754.0
EXP	4726.2	5487.2	6326.1	5251.2	3185.4	1634.1
CHI	21.7	20.7	46.1	34.7	34.9	8.8
45 - OBS	7906.0	8256.0	8343.0	8584.0	6712.0	4569.0
EXP	8399.2	7895.9	7918.9	8912.1	7087.9	4220.4
CHI	29.0	16.4	22.7	12.1	19.9	28.8
50 - OBS	12662.0	13641.0	10968.0	11018.4	10998.0	9308.0
EXP	13373.4	13381.6	10822.1	10660.3	11452.7	8950.2
CHI	37.8	5.0	2.0	12.0	18.1	14.3
55 - OBS	15121.0	19376.0	17172.0	13256.0	11748.0	13148.0
EXP	15849.2	19137.1	16463.7	13065.4	12349.8	13006.3
CHI	33.5	3.0	30.5	2.8	29.3	1.5
60 - OBS	14160.0	21336.0	22293.0	18685.2	14094.0	13020.0
EXP	13989.3	21333.7	22069.7	18685.8	14234.5	13280.7
CHI	2.1	0.0	2.3	0.0	1.4	5.1
65 - OBS	12589.0	17971.0	22483.0	23160.2	19375.0	14271.0
EXP	11545.3	17921.5	23088.8	23524.6	19296.7	14531.5
CHI	94.3	0.1	15.9	5.6	0.3	4.7
70 - OBS	16009.0	13374.0	17436.0	22956.0	23597.0	18345.0
EXP	14645.8	13659.2	18429.5	23077.9	23072.9	18939.2
CHI	126.9	6.0	53.6	0.6	11.9	18.6
75 - OBS	12087.0	13961.0	11514.0	17631.4	22007.0	21098.0
EXP	12087.0	15461.0	12350.3	16902.1	20624.1	21039.1
CHI	0.0	145.5	56.6	31.5	92.7	0.2

Osmond and Gardner Modelling

Poland IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	235.317160
35	504.598833
40	915.611025
45	1440.254759
50	2195.521306
55	3079.323151
60	4204.753176
65	5693.144129
70	7841.641721
75	10974.461910

PERIOD	EFFECT	LOWER	UPPER
% Period Change	86.9467	83.9467	89.9467
1981	1.032699		
1986	1.143605		
1991	1.092505		
1996	1.024480		
2001	0.911197		
2006	0.792256		
2011	0.688841	0.665073	0.712608
2016	0.598924	0.558307	0.640968
2021	0.520745	0.468680	0.576529
2026	0.452771	0.393442	0.518569

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.744388	1.000000	
1911	0.801244	2.000000	
1916	0.918957	4.000000	
1921	1.064712	8.000000	
1926	1.115962	16.000000	
1931	1.158320	32.000000	
1936	1.081294	64.000000	
1941	1.079723	128.000000	
1946	0.926919	256.000000	
1951	0.837112	512.000000	
1956	0.695619	1024.000000	
1961	0.547531	2048.000000	
1966	0.382143	4096.000000	
1971	0.257279	8192.000000	
1976	0.208259	EXTRAPOLATION	0.196704
1981	0.158472	EXTRAPOLATION	
1986	0.120588	EXTRAPOLATION	
1991	0.091760	EXTRAPOLATION	
1996	0.069824	EXTRAPOLATION	

Osmond and Gardner Modelling

**Poland IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	177.4	207.3	147.4	93.9	47.1	36.7	-	-	-	-
	EXP	203.4	187.2	140.8	92.1	55.2	38.8	25.7*	17.0*	11.2*	7.4*
	Elow							24.8	15.8	10.1	6.5
	Eup							26.6	18.2	12.4	8.5
35	OBS	427.7	515.0	410.1	269.1	151.5	110.2	-	-	-	-
	EXP	483.0	483.1	383.5	283.0	175.7	102.9	72.4*	47.9*	31.7*	21.0*
	Elow							69.9	44.6	28.5	18.2
	Eup							74.9	51.3	35.1	24.0
40	OBS	951.8	1030.2	908.8	599.5	409.0	297.5	-	-	-	-
	EXP	1020.9	970.6	837.4	652.5	456.8	277.2	162.3*	114.2*	75.6*	50.0*
	Elow							156.7	106.5	68.0	43.4
	Eup							167.9	122.2	83.7	57.3
45	OBS	1513.8	1859.5	1536.6	1189.7	864.5	676.4	-	-	-	-
	EXP	1608.3	1778.4	1458.5	1235.2	912.9	624.8	379.1*	221.9*	156.2*	103.3*
	Elow							366.0	206.9	140.6	89.8
	Eup							392.2	237.5	172.9	118.4
50	OBS	2486.6	2767.6	2624.8	2154.9	1608.2	1258.3	-	-	-	-
	EXP	2626.3	2714.9	2589.8	2084.9	1674.7	1210.0	828.1*	502.5*	294.1*	207.0*
	Elow							799.5	468.4	264.7	179.9
	Eup							856.6	537.8	325.7	237.1
55	OBS	3385.7	4130.0	3794.2	3455.9	2474.1	2064.5	-	-	-	-
	EXP	3548.8	4079.1	3637.7	3406.2	2600.8	2042.2	1475.5*	1009.8*	612.8*	358.7*
	Elow							1424.6	941.3	551.5	311.7
	Eup							1526.4	1080.7	678.4	410.8
60	OBS	4679.7	5366.8	5374.8	4657.7	4096.0	3027.2	-	-	-	-
	EXP	4623.2	5366.2	5321.0	4657.9	4136.8	3087.8	2424.6*	1751.8*	1198.9*	727.5*
	Elow							2341.0	1633.0	1079.0	632.2
	Eup							2508.3	1874.8	1327.3	833.2
65	OBS	5891.2	6951.2	6758.9	6651.3	5632.1	4782.7	-	-	-	-
	EXP	5402.8	6932.0	6941.0	6755.9	5609.3	4870.0	3635.1*	2854.4*	2062.3*	1411.4*
	Elow							3509.6	2660.8	1856.1	1226.4
	Eup							3760.5	3054.7	2283.2	1616.5
70	OBS	7092.4	8068.9	8629.7	8917.9	8464.5	6506.9	-	-	-	-
	EXP	6488.5	8241.0	9121.4	8965.2	8276.5	6717.6	5832.3*	4353.3*	3418.3*	2469.8*
	Elow							5631.0	4058.1	3076.6	2146.1
	Eup							6033.5	4658.9	3784.5	2828.7
75	OBS	8436.4	9080.4	10271.9	12487.2	11907.8	10099.3	-	-	-	-
	EXP	8436.4	10056.0	11018.0	11970.7	11159.5	10071.1	8174.2*	7096.9*	5297.2*	4159.5*
	Elow							7892.2	6615.6	4767.6	3614.5
	Eup							8456.3	7595.1	5864.7	4764.0
30-79	OBS	2624.2	3026.2	2954.6	2772.9	2338.6	1873.2	-	-	-	-
	EXP	2617.3	3032.9	2972.1	2764.0	2341.8	1877.1	1447.9*	1087.5*	777.3*	543.4*
	Elow							1397.9	1013.8	699.6	472.2
	Eup							1497.9	1163.9	860.6	622.3

Osmond and Gardner Modelling

**Poland IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

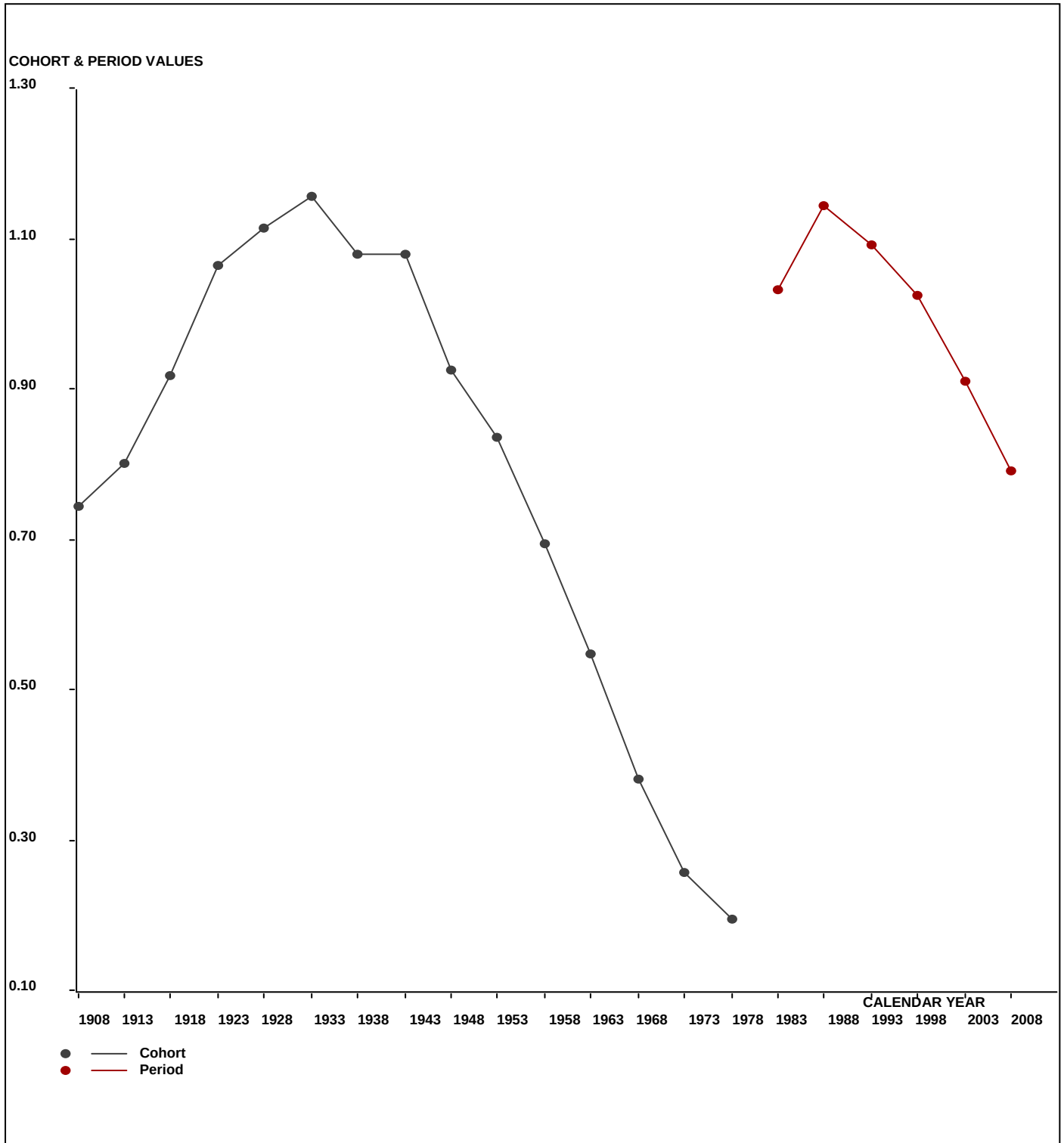
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	1415.0	1772.0	1081.0	575.0	304.0	272.0	-	-	-	-
	EXP	1622.9	1600.2	1032.1	563.9	356.0	288.0	210.0*	132.2*	74.9*	40.5*
	CHI	26.635	18.456	2.319	0.217	7.601	0.886	-	-	-	-
35 -	OBS	2478.0	4014.0	3416.0	1922.2	912.0	700.0	-	-	-	-
	EXP	2798.3	3765.2	3194.5	2022.0	1057.9	653.6	530.4*	387.7*	244.0*	138.3*
	CHI	36.657	16.437	15.361	4.930	20.117	3.296	-	-	-	-
40 -	OBS	4406.0	5824.0	6866.0	4824.4	2852.0	1754.0	-	-	-	-
	EXP	4726.2	5487.2	6326.1	5251.2	3185.4	1634.1	1012.6*	824.1*	602.6*	380.0*
	CHI	21.699	20.678	46.079	34.685	34.905	8.790	-	-	-	-
45 -	OBS	7906.0	8256.0	8343.0	8584.0	6712.0	4569.0	-	-	-	-
	EXP	8399.2	7895.9	7918.9	8912.1	7087.9	4220.4	2171.3*	1351.2*	1101.1*	807.5*
	CHI	28.955	16.424	22.717	12.082	19.933	28.796	-	-	-	-
50 -	OBS	12662.0	13641.0	10968.0	11018.4	10998.0	9308.0	-	-	-	-
	EXP	13373.4	13381.6	10822.1	10660.3	11452.7	8950.2	5348.4*	2767.8*	1727.3*	1413.3*
	CHI	37.843	5.030	1.966	12.027	18.053	14.305	-	-	-	-
55 -	OBS	15121.0	19376.0	17172.0	13256.0	11748.0	13148.0	-	-	-	-
	EXP	15849.2	19137.1	16463.7	13065.4	12349.8	13006.3	10225.4*	6150.6*	3198.7*	2008.0*
	CHI	33.454	2.982	30.475	2.780	29.329	1.543	-	-	-	-
60 -	OBS	14160.0	21336.0	22293.0	18685.2	14094.0	13020.0	-	-	-	-
	EXP	13989.3	21333.7	22069.7	18685.8	14234.5	13280.7	14068.4*	11166.3*	6757.8*	3543.6*
	CHI	2.084	0.000	2.259	0.000	1.386	5.118	-	-	-	-
65 -	OBS	12589.0	17971.0	22483.0	23160.2	19375.0	14271.0	-	-	-	-
	EXP	11545.3	17921.5	23088.8	23524.6	19296.7	14531.5	13748.0*	14705.7*	11787.0*	7199.7*
	CHI	94.343	0.137	15.895	5.646	0.318	4.669	-	-	-	-
70 -	OBS	16009.0	13374.0	17436.0	22956.0	23597.0	18345.0	-	-	-	-
	EXP	14645.8	13659.2	18429.5	23077.9	23072.9	18939.2	14433.5*	13921.7*	15043.8*	12219.9*
	CHI	126.883	5.955	53.562	0.643	11.905	18.642	-	-	-	-
75 -	OBS	12087.0	13961.0	11514.0	17631.4	22007.0	21098.0	-	-	-	-
	EXP	12087.0	15461.0	12350.3	16902.1	20624.1	21039.1	17615.0*	13597.0*	13442.3*	14717.0*
	CHI	0.000	145.526	56.624	31.472	92.722	0.165	-	-	-	-
30-79	OBS	98833.0	119525.0	121572.0	122612.8	112599.0	96485.0	-	-	-	-
	EXP	99036.5	119642.5	121695.6	122665.4	112718.0	96543.2	79363.0*	65004.4*	53979.6*	42467.8*
	O/E	0.998	0.999	0.999	1.000	0.999	0.999	-	-	-	-

Osmond and Gardner Modelling

Poland IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

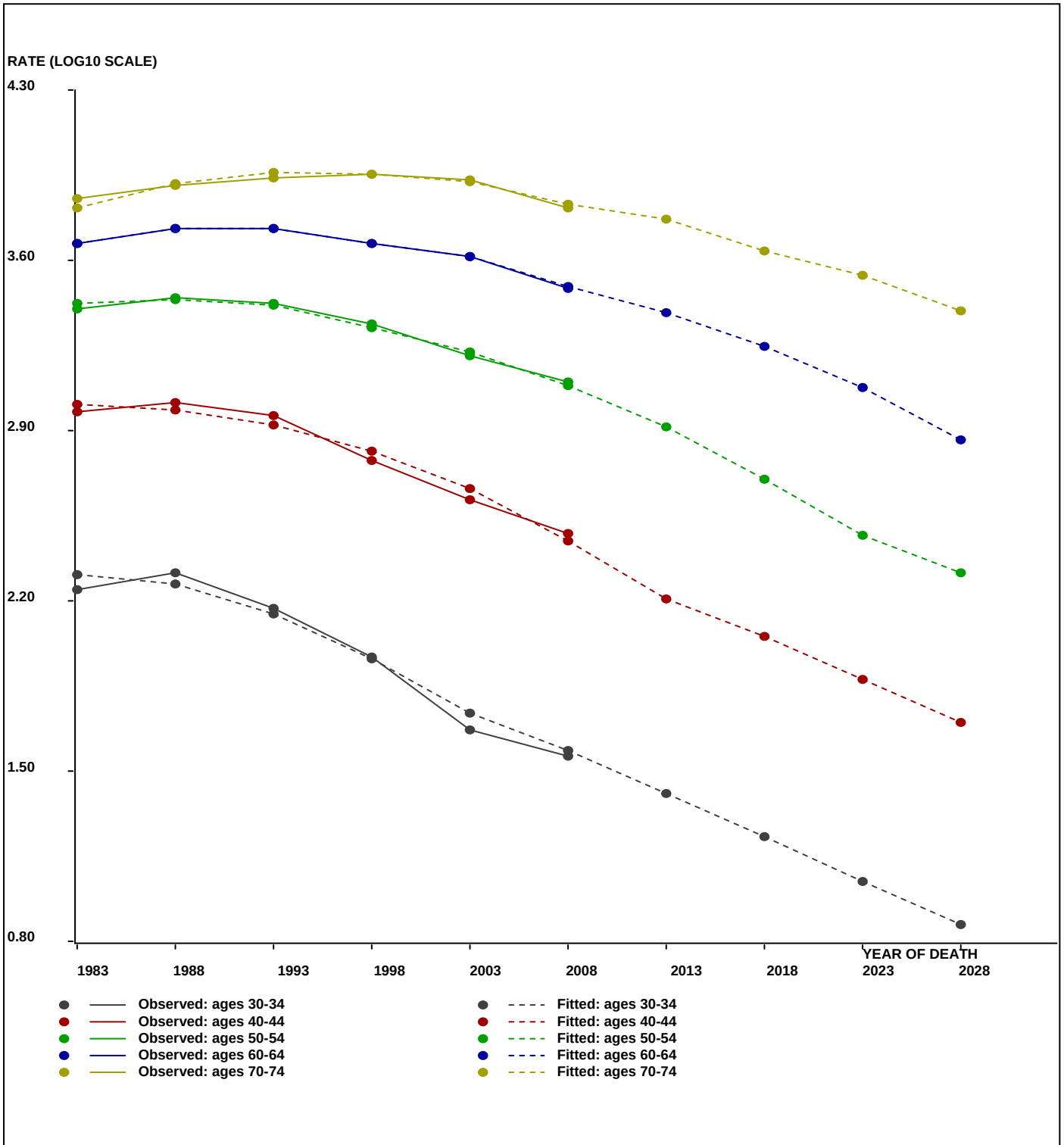


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Poland IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Poland IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	25.7	72.4	162.3	379.1	828.1	1475.5	2424.6	3635.1	5832.3	8174.2
2016	PRE	17.0	47.9	114.2	221.9	502.5	1009.8	1751.8	2854.4	4353.3	7096.9
2021	PRE	11.2	31.7	75.6	156.2	294.1	612.8	1198.9	2062.3	3418.3	5297.2
2026	PRE	7.4	21.0	50.0	103.3	207.0	358.7	727.5	1411.4	2469.8	4159.5

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	210.0	530.4	1012.6	2171.3	5348.4	10225.4	14068.4	13748.0	14433.5	17615.0
2016	PRE	132.2	387.7	824.1	1351.2	2767.8	6150.6	11166.3	14705.7	13921.7	13597.0
2021	PRE	74.9	244.0	602.6	1101.1	1727.3	3198.7	6757.8	11787.0	15043.8	13442.3
2026	PRE	40.5	138.3	380.0	807.5	1413.3	2008.0	3543.6	7199.7	12219.9	14717.0

Osmond and Gardner Modelling

Poland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	864.51	16.95	51	P, C	92.69	4594.67	0.0000
AGE-PERIOD	229.96	5.11	45	Cohort	72.51	1221.24	0.0000
AGE-COHORT	420.18	11.67	36	Period	84.95	2230.84	0.0000
PERIOD-COHORT	107.56	2.69	40	Age	41.22	570.69	0.0000
FULL AGE-PERIOD-COHORT	63.22	1.98	32			335.30	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.806528	64.051241
35	2.067372	116.781010
40	2.322464	210.118234
45	2.568741	370.459529
50	2.809598	645.057310
55	3.022599	1053.413477
60	3.239835	1737.139837
65	3.457758	2869.178591
70	3.683944	4829.960520
75	3.901762	7975.583340

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.034401	0.923845
1986	-0.005044	0.988452
1991	0.013820	1.032334
1996	0.046544	1.113125
2001	0.021854	1.051608
2006	-0.059925	0.871114

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.094411	0.804616
1911	-0.079569	0.832590
1916	-0.033513	0.925736
1921	0.004563	1.010562
1926	-0.000490	0.998871
1931	0.023029	1.054458
1936	0.012081	1.028209
1941	0.039056	1.094097
1946	0.015303	1.035864
1951	0.018917	1.044520
1956	-0.020700	0.953454
1961	-0.036677	0.919015
1966	-0.056563	0.877884
1971	-0.116082	0.765452
1976	-0.129701	0.741821

Osmond and Gardner Modelling

Poland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	509.0	535.0	477.0	350.0	294.0	307.0
EXP	493.1	516.0	445.6	383.1	332.7	307.0
CHI	0.5	0.7	2.2	2.9	4.5	0.0
35 - OBS	636.0	1003.0	1006.0	774.0	581.0	530.0
EXP	647.4	939.8	957.5	853.4	649.1	494.8
CHI	0.2	4.3	2.5	7.4	7.1	2.5
40 - OBS	966.0	1302.0	1767.0	1680.0	1298.0	1039.0
EXP	983.2	1216.3	1711.7	1794.6	1416.1	947.3
CHI	0.3	6.0	1.8	7.3	9.8	8.9
45 - OBS	1806.0	1884.0	2263.0	2895.8	2737.0	2154.0
EXP	1837.8	1778.8	2150.9	3107.8	2883.9	2003.4
CHI	0.6	6.2	5.8	14.5	7.5	11.3
50 - OBS	3014.0	3342.0	3169.0	3791.4	4607.0	4144.0
EXP	3199.8	3231.4	3044.5	3803.1	4845.5	3963.1
CHI	10.8	3.8	5.1	0.0	11.7	8.3
55 - OBS	4098.0	5344.0	5159.0	4806.8	5197.0	6397.0
EXP	4341.5	5151.1	5060.6	4921.0	5448.9	6104.4
CHI	13.7	7.2	1.9	2.6	11.6	14.0
60 - OBS	4781.0	6683.0	7960.0	7975.8	6953.0	6807.0
EXP	4907.3	6818.7	7843.1	7976.0	6877.3	6742.0
CHI	3.3	2.7	1.7	0.0	0.8	0.6
65 - OBS	5393.0	7338.0	9781.0	11726.4	10833.0	7976.0
EXP	5243.6	7409.5	9841.6	11726.5	10672.5	8159.6
CHI	4.3	0.7	0.4	0.0	2.4	4.1
70 - OBS	8809.0	7374.0	9838.0	13838.8	15111.0	11850.0
EXP	8385.7	7325.4	10180.7	13824.0	14930.7	12196.8
CHI	21.4	0.3	11.5	0.0	2.2	9.9
75 - OBS	8494.0	9648.0	8341.0	13189.6	15894.0	14986.0
EXP	8494.0	10091.7	8543.7	12667.5	15483.0	15304.4
CHI	0.0	19.5	4.8	21.5	10.9	6.6

Osmond and Gardner Modelling

Poland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	64.051241
35	116.781010
40	210.118234
45	370.459529
50	645.057310
55	1053.413477
60	1737.139837
65	2869.178591
70	4829.960520
75	7975.583340

PERIOD	EFFECT	LOWER	UPPER
% Period Change	82.8364	79.8364	85.8364
1981	0.923845		
1986	0.988452		
1991	1.032334		
1996	1.113125		
2001	1.051608		
2006	0.871114		
2011	0.721600	0.695467	0.747733
2016	0.597748	0.555236	0.641828
2021	0.495153	0.443280	0.550922
2026	0.410167	0.353899	0.472892

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.804616	1.000000	
1911	0.832590	2.000000	
1916	0.925736	4.000000	
1921	1.010562	8.000000	
1926	0.998871	16.000000	
1931	1.054458	32.000000	
1936	1.028209	64.000000	
1941	1.094097	128.000000	
1946	1.035864	256.000000	
1951	1.044520	512.000000	
1956	0.953454	1024.000000	
1961	0.919015	2048.000000	
1966	0.877884	4096.000000	
1971	0.765452	8192.000000	
1976	0.736907	EXTRAPOLATION	0.741821
1981	0.691093	EXTRAPOLATION	
1986	0.648128	EXTRAPOLATION	
1991	0.607834	EXTRAPOLATION	
1996	0.570045	EXTRAPOLATION	

Osmond and Gardner Modelling

**Poland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	63.8	62.6	65.1	57.2	45.6	41.4	-	-	-	-
	EXP	61.8	60.4	60.8	62.6	51.6	41.1	31.9*	24.8*	19.3*	15.0*
	Elow							30.8	23.0	17.3	12.9
	Eup							33.1	26.6	21.4	17.3
35	OBS	109.8	128.7	120.8	108.3	96.5	83.4	-	-	-	-
	EXP	111.8	120.6	114.9	119.5	107.8	77.9	62.1*	48.2*	37.5*	29.1*
	Elow							59.8	44.8	33.6	25.1
	Eup							64.3	51.8	41.7	33.6
40	OBS	208.7	230.3	233.9	208.8	186.1	176.2	-	-	-	-
	EXP	212.4	215.1	226.6	223.0	203.1	160.7	116.1*	92.6*	71.9*	55.9*
	Elow							111.9	86.0	64.4	48.2
	Eup							120.3	99.4	80.0	64.4
45	OBS	345.8	424.3	416.8	401.3	352.5	318.9	-	-	-	-
	EXP	351.9	400.6	396.2	430.7	371.4	296.6	234.7*	169.5*	135.2*	105.0*
	Elow							226.2	157.4	121.0	90.6
	Eup							243.2	182.0	150.4	121.1
50	OBS	591.9	678.0	758.4	741.5	673.7	560.2	-	-	-	-
	EXP	628.4	655.6	728.6	743.8	708.5	535.8	427.8*	338.5*	244.5*	195.0*
	Elow							412.3	314.4	218.9	168.2
	Eup							443.3	363.5	272.0	224.8
55	OBS	917.6	1139.1	1139.9	1253.2	1094.5	1004.4	-	-	-	-
	EXP	972.1	1098.0	1118.2	1282.9	1147.5	958.5	724.8*	578.7*	457.9*	330.7*
	Elow							698.5	537.5	409.9	285.4
	Eup							751.0	621.4	509.5	381.3
60	OBS	1580.0	1681.0	1919.2	1988.2	2020.7	1582.6	-	-	-	-
	EXP	1621.8	1715.1	1891.0	1988.2	1998.7	1567.5	1309.3*	990.0*	790.5*	625.5*
	Elow							1261.9	919.6	707.7	539.7
	Eup							1356.7	1063.0	879.5	721.2
65	OBS	2523.7	2838.3	2940.4	3367.6	3149.0	2673.0	-	-	-	-
	EXP	2453.8	2866.0	2958.6	3367.7	3102.4	2734.6	2144.7*	1791.4*	1354.6*	1081.5*
	Elow							2067.0	1664.0	1212.7	933.2
	Eup							2222.3	1923.5	1507.1	1246.9
70	OBS	3902.6	4448.9	4869.2	5376.0	5420.5	4203.1	-	-	-	-
	EXP	3715.1	4419.6	5038.8	5370.3	5355.8	4326.1	3813.3*	2990.6*	2498.0*	1888.9*
	Elow							3675.2	2777.9	2236.3	1629.8
	Eup							3951.4	3211.2	2779.4	2177.7
75	OBS	5928.6	6275.1	7441.2	9341.4	8600.1	7173.6	-	-	-	-
	EXP	5928.6	6563.7	7622.0	8971.6	8377.7	7326.0	5917.5*	5216.0*	4090.8*	3417.0*
	Elow							5703.2	4845.0	3662.2	2948.2
	Eup							6131.8	5600.6	4551.5	3939.5
30-79	OBS	1023.7	1148.3	1251.8	1388.4	1312.9	1088.2	-	-	-	-
	EXP	1024.1	1148.7	1255.4	1385.8	1312.9	1089.8	888.3*	721.9*	570.0*	449.8*
	Elow							856.1	670.6	510.3	388.1
	Eup							920.5	775.2	634.2	518.6

Osmond and Gardner Modelling

**Poland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

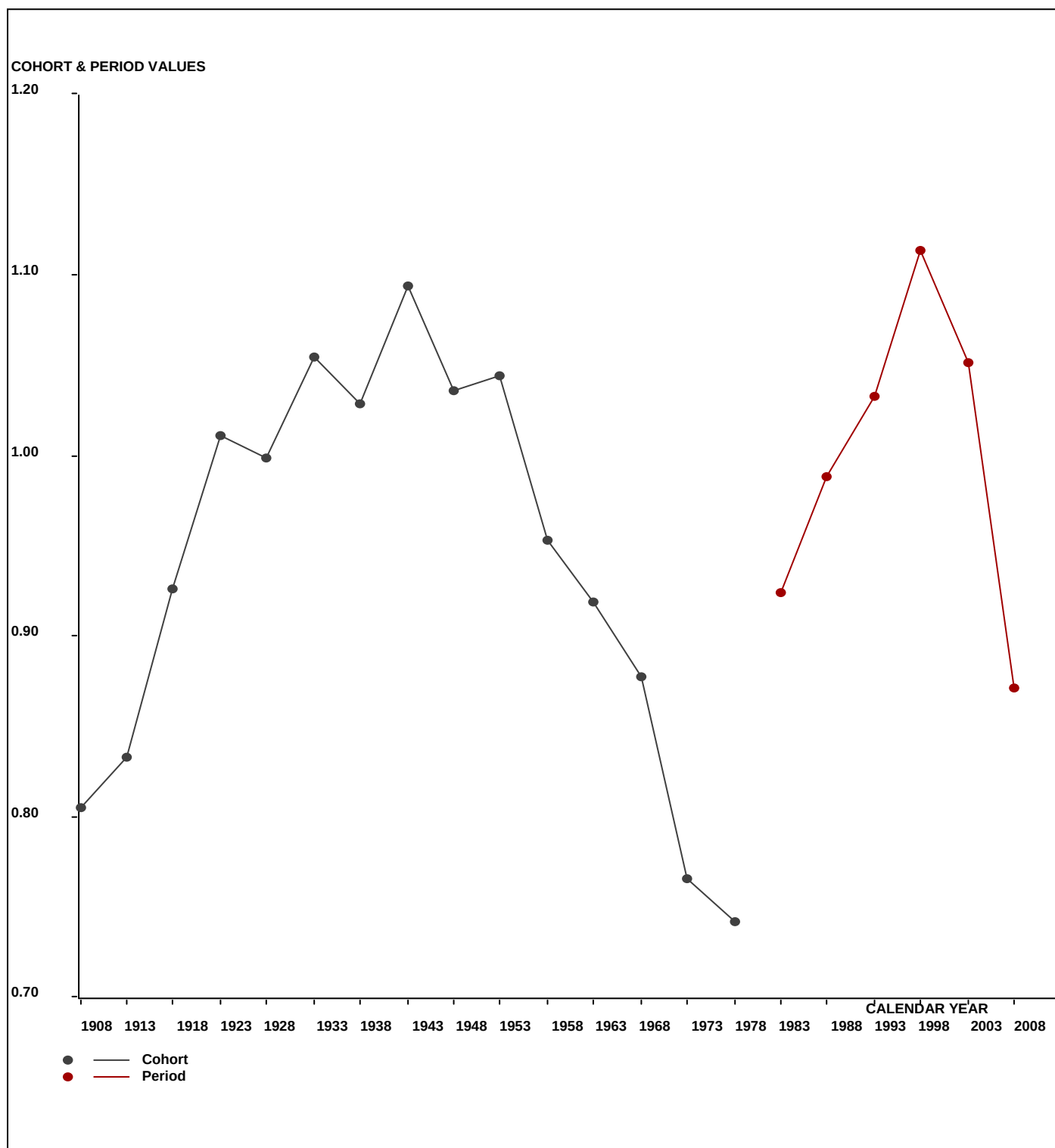
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	509.0	535.0	477.0	350.0	294.0	307.0	-	-	-	-
	EXP	493.1	516.0	445.6	383.1	332.7	305.0	261.1*	193.1*	128.3*	81.6*
	CHI	0.513	0.700	2.220	2.865	4.511	0.014	-	-	-	-
35 -	OBS	636.0	1003.0	1006.0	774.0	581.0	530.0	-	-	-	-
	EXP	647.4	939.8	957.5	853.4	649.1	494.8	455.0*	390.5*	288.6*	192.1*
	CHI	0.202	4.252	2.454	7.394	7.146	2.500	-	-	-	-
40 -	OBS	966.0	1302.0	1767.0	1680.0	1298.0	1039.0	-	-	-	-
	EXP	983.2	1216.3	1711.7	1794.6	1416.1	947.3	724.2*	667.9*	573.4*	424.6*
	CHI	0.301	6.038	1.789	7.324	9.841	8.887	-	-	-	-
45 -	OBS	1806.0	1884.0	2263.0	2895.8	2737.0	2154.0	-	-	-	-
	EXP	1837.8	1778.8	2150.9	3107.8	2883.9	2003.4	1344.0*	1032.0*	952.9*	820.6*
	CHI	0.550	6.222	5.841	14.465	7.488	11.314	-	-	-	-
50 -	OBS	3014.0	3342.0	3169.0	3791.4	4607.0	4144.0	-	-	-	-
	EXP	3199.8	3231.4	3044.5	3803.1	4845.5	3963.1	2762.9*	1864.5*	1435.7*	1331.0*
	CHI	10.793	3.789	5.093	0.036	11.744	8.261	-	-	-	-
55 -	OBS	4098.0	5344.0	5159.0	4806.8	5197.0	6397.0	-	-	-	-
	EXP	4341.5	5151.1	5060.6	4921.0	5448.9	6104.4	5022.6*	3524.7*	2390.2*	1851.4*
	CHI	13.652	7.223	1.912	2.649	11.644	14.027	-	-	-	-
60 -	OBS	4781.0	6683.0	7960.0	7975.8	6953.0	6807.0	-	-	-	-
	EXP	4907.3	6818.7	7843.1	7976.0	6877.3	6742.0	7597.1*	6310.7*	4455.8*	3046.7*
	CHI	3.252	2.700	1.742	0.000	0.833	0.627	-	-	-	-
65 -	OBS	5393.0	7338.0	9781.0	11726.4	10833.0	7976.0	-	-	-	-
	EXP	5243.6	7409.5	9841.6	11726.5	10672.5	8159.6	8111.2*	9229.3*	7742.0*	5517.2*
	CHI	4.257	0.690	0.373	0.000	2.413	4.130	-	-	-	-
70 -	OBS	8809.0	7374.0	9838.0	13838.8	15111.0	11850.0	-	-	-	-
	EXP	8385.7	7325.4	10180.7	13824.0	14930.7	12196.8	9436.9*	9563.9*	10993.6*	9345.8*
	CHI	21.363	0.322	11.538	0.016	2.177	9.860	-	-	-	-
75 -	OBS	8494.0	9648.0	8341.0	13189.6	15894.0	14986.0	-	-	-	-
	EXP	8494.0	10091.7	8543.7	12667.5	15483.0	15304.4	12751.9*	9993.3*	10380.8*	12089.7*
	CHI	0.000	19.505	4.807	21.521	10.907	6.626	-	-	-	-
30-79	OBS	38506.0	44453.0	49761.0	61028.6	63505.0	56190.0	-	-	-	-
	EXP	38533.5	44478.6	49779.8	61057.0	63539.9	56220.7	48467.2*	42770.0*	39341.5*	34700.6*
	O/E	0.999	0.999	1.000	1.000	0.999	0.999	-	-	-	-

Osmond and Gardner Modelling

Poland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

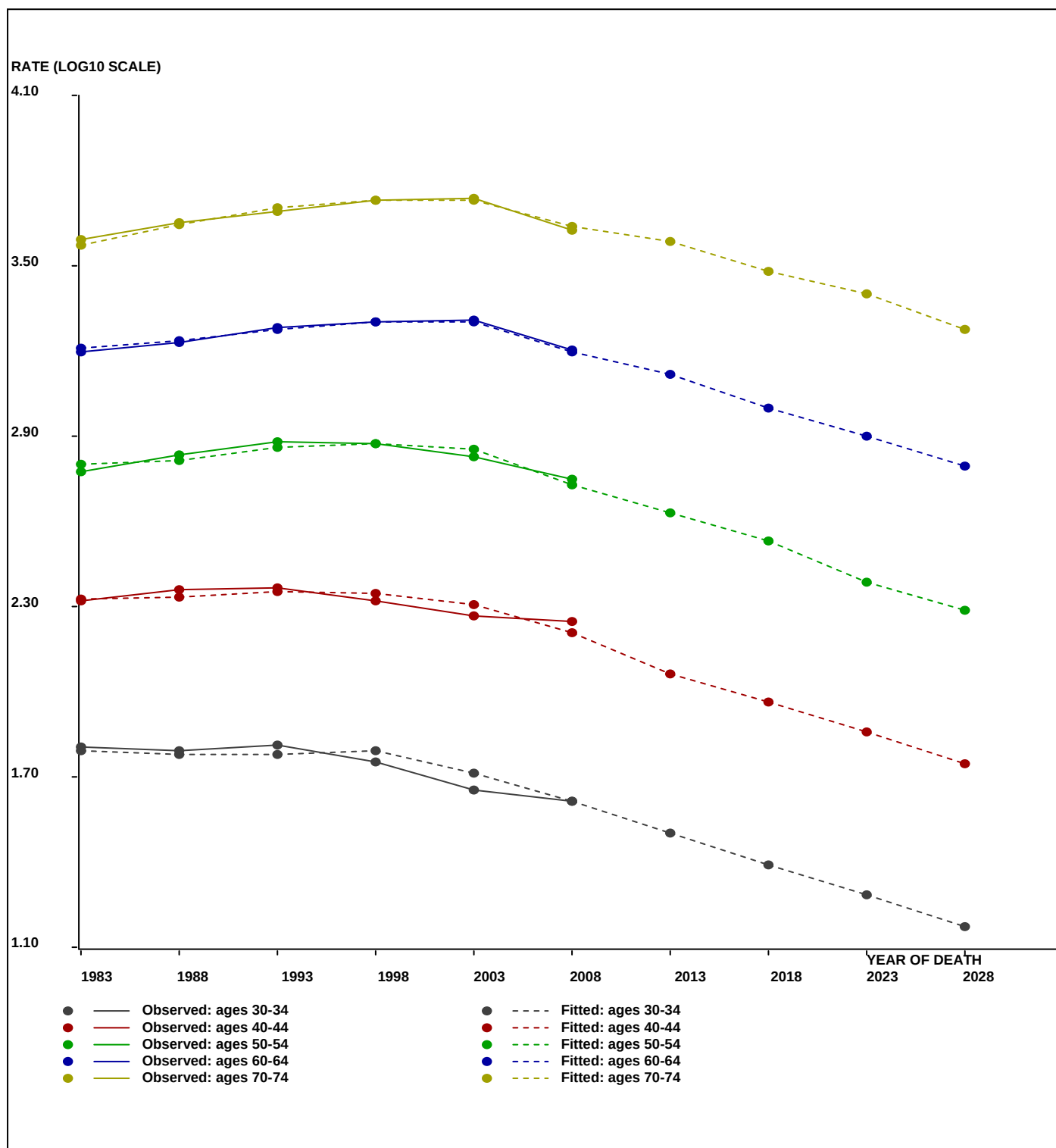


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Poland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Poland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	31.9	62.1	116.1	234.7	427.8	724.8	1309.3	2144.7	3813.3	5917.5
2016 PRE	24.8	48.2	92.6	169.5	338.5	578.7	990.0	1791.4	2990.6	5216.0
2021 PRE	19.3	37.5	71.9	135.2	244.5	457.9	790.5	1354.6	2498.0	4090.8
2026 PRE	15.0	29.1	55.9	105.0	195.0	330.7	625.5	1081.5	1888.9	3417.0

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	261.1	455.0	724.2	1344.0	2762.9	5022.6	7597.1	8111.2	9436.9	12751.9
2016 PRE	193.1	390.5	667.9	1032.0	1864.5	3524.7	6310.7	9229.3	9563.9	9993.3
2021 PRE	128.3	288.6	573.4	952.9	1435.7	2390.2	4455.8	7742.0	10993.6	10380.8
2026 PRE	81.6	192.1	424.6	820.6	1331.0	1851.4	3046.7	5517.2	9345.8	12089.7

Osmond and Gardner Modelling

Poland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	1355.70	26.58	51	P, C	98.64	7244.01	0.0000
AGE-PERIOD	1054.91	23.44	45	Cohort	98.25	5627.45	0.0000
AGE-COHORT	71.01	1.97	36	Period	74.03	376.62	0.0000
PERIOD-COHORT	224.85	5.62	40	Age	91.80	1194.40	0.0000
FULL AGE-PERIOD-COHORT	18.44	0.58	32			97.78	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.399503	25.090109
35	1.922865	83.726852
40	2.398101	250.092559
45	2.782558	606.119694
50	3.100079	1259.155410
55	3.339575	2185.619342
60	3.514461	3269.348422
65	3.637009	4335.200231
70	3.717413	5216.902699
75	3.745574	5566.388565

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.004434	0.989843
1986	0.019119	1.045007
1991	0.020887	1.049269
1996	-0.000271	0.999377
2001	-0.007007	0.983995
2006	-0.026016	0.941856

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.124247	0.751195
1911	-0.112415	0.771943
1916	-0.065098	0.860799
1921	-0.009092	0.979283
1926	0.022845	1.054011
1931	0.052485	1.128456
1936	0.036442	1.087532
1941	0.033246	1.079557
1946	-0.036711	0.918945
1951	-0.058696	0.873582
1956	-0.115109	0.767169
1961	-0.207831	0.619682
1966	-0.356404	0.440145
1971	-0.556209	0.277838
1976	-0.544754	0.285264

Osmond and Gardner Modelling

Poland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	153.0	189.0	116.0	66.0	50.0	50.0
EXP	173.1	171.9	119.6	67.6	44.3	50.0
CHI	2.3	1.7	0.1	0.0	0.7	0.0
35 - OBS	437.0	567.0	583.0	389.6	215.0	133.0
EXP	441.2	595.8	561.4	370.4	218.3	139.2
CHI	0.0	1.4	0.8	1.0	0.1	0.3
40 - OBS	1206.0	1305.0	1785.0	1569.0	1061.0	616.0
EXP	1237.2	1357.8	1731.8	1543.1	1063.4	611.2
CHI	0.8	2.1	1.6	0.4	0.0	0.0
45 - OBS	3347.0	3172.0	3196.0	3673.2	3606.0	2376.0
EXP	3407.6	3036.0	3173.2	3818.1	3552.5	2389.7
CHI	1.1	6.1	0.2	5.5	0.8	0.1
50 - OBS	7088.0	7043.0	6036.0	6050.4	7390.0	6609.0
EXP	7162.0	7053.3	5960.1	5912.7	7402.0	6730.0
CHI	0.8	0.0	1.0	3.2	0.0	2.2
55 - OBS	10002.0	12132.0	11449.0	9043.4	9215.0	11599.0
EXP	10183.9	12091.9	11287.8	9044.8	9384.5	11452.8
CHI	3.2	0.1	2.3	0.0	3.1	1.9
60 - OBS	9586.0	14157.0	16055.0	14402.8	11902.0	12232.0
EXP	9589.2	14316.1	16056.0	14254.6	11950.2	12170.5
CHI	0.0	1.8	0.0	1.5	0.2	0.3
65 - OBS	8038.0	11671.0	16071.0	16797.6	15847.0	13017.0
EXP	7893.4	11469.6	15948.4	17024.0	15959.5	13152.8
CHI	2.6	3.5	0.9	3.0	0.8	1.4
70 - OBS	9220.0	7851.0	10591.0	14144.4	16218.0	14936.0
EXP	8997.7	7778.2	10830.8	14145.6	16149.0	15065.5
CHI	5.5	0.7	5.3	0.0	0.3	1.1
75 - OBS	5930.0	6675.0	5412.0	7729.0	10884.0	12548.0
EXP	5930.0	6903.8	5635.5	7691.9	10669.5	12359.3
CHI	0.0	7.6	8.9	0.2	4.3	2.9

Osmond and Gardner Modelling

Poland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	25.090109
35	83.726852
40	250.092559
45	606.119694
50	1259.155410
55	2185.619342
60	3269.348422
65	4335.200231
70	5216.902699
75	5566.388565

PERIOD	EFFECT	LOWER	UPPER
% Period Change	95.7175	92.7175	98.7175
1981	0.989843		
1986	1.045007		
1991	1.049269		
1996	0.999377		
2001	0.983995		
2006	0.941856		
2011	0.901521	0.873265	0.929776
2016	0.862913	0.809669	0.917852
2021	0.825958	0.750705	0.906080
2026	0.790587	0.696035	0.894460

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.751195	1.000000	
1911	0.771943	2.000000	
1916	0.860799	4.000000	
1921	0.979283	8.000000	
1926	1.054011	16.000000	
1931	1.128456	32.000000	
1936	1.087532	64.000000	
1941	1.079557	128.000000	
1946	0.918945	256.000000	
1951	0.873582	512.000000	
1956	0.767169	1024.000000	
1961	0.619682	2048.000000	
1966	0.440145	4096.000000	
1971	0.277838	8192.000000	
1976	0.231291	EXTRAPOLATION	0.285264
1981	0.176746	EXTRAPOLATION	
1986	0.135065	EXTRAPOLATION	
1991	0.103213	EXTRAPOLATION	
1996	0.078873	EXTRAPOLATION	

Osmond and Gardner Modelling

**Poland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	19.2	22.1	15.8	10.8	7.7	6.7	-	-	-	-
	EXP	21.7	20.1	16.3	11.0	6.9	5.5	4.0*	2.9*	2.1*	1.6*
	Elow							3.9	2.7	1.9	1.4
	Eup							4.1	3.1	2.3	1.8
35	OBS	75.4	72.7	70.0	54.5	35.7	20.9	-	-	-	-
	EXP	76.2	76.4	67.4	51.9	36.3	21.9	17.5*	12.8*	9.3*	6.8*
	Elow							16.9	12.0	8.5	6.0
	Eup							18.0	13.6	10.2	7.7
40	OBS	260.5	230.8	236.3	195.0	152.2	104.5	-	-	-	-
	EXP	267.2	240.2	229.2	191.7	152.5	103.7	62.6*	49.9*	36.5*	26.7*
	Elow							60.7	46.8	33.2	23.5
	Eup							64.6	53.1	40.1	30.2
45	OBS	640.9	714.4	588.6	509.1	464.4	351.7	-	-	-	-
	EXP	652.5	683.8	584.4	529.2	457.6	353.8	240.5*	145.3*	115.8*	84.7*
	Elow							233.0	136.4	105.2	74.6
	Eup							248.0	154.6	127.0	95.8
50	OBS	1391.9	1428.9	1444.5	1183.3	1080.6	893.5	-	-	-	-
	EXP	1406.5	1431.0	1426.3	1156.4	1082.4	909.8	703.4*	478.2*	289.0*	230.2*
	Elow							681.4	448.7	262.6	202.7
	Eup							725.5	508.7	317.0	260.5
55	OBS	2239.5	2585.9	2529.7	2357.7	1940.6	1821.3	-	-	-	-
	EXP	2280.3	2577.4	2494.0	2358.0	1976.3	1798.3	1511.6*	1168.7*	794.6*	480.1*
	Elow							1464.2	1096.6	722.2	422.7
	Eup							1559.0	1243.1	871.6	543.2
60	OBS	3168.0	3561.0	3870.8	3590.2	3459.0	2844.0	-	-	-	-
	EXP	3169.1	3601.0	3871.1	3553.3	3473.0	2829.7	2574.8*	2164.3*	1673.4*	1137.6*
	Elow							2494.1	2030.8	1520.9	1001.6
	Eup							2655.5	2302.1	1835.7	1287.1
65	OBS	3761.5	4514.3	4831.3	4824.0	4606.5	4362.5	-	-	-	-
	EXP	3693.8	4436.5	4794.5	4889.0	4639.2	4408.0	3591.5*	3268.0*	2747.0*	2123.9*
	Elow							3478.9	3066.3	2496.7	1869.9
	Eup							3704.1	3476.0	3013.5	2402.9
70	OBS	4084.7	4736.7	5241.9	5494.8	5817.6	5297.7	-	-	-	-
	EXP	3986.2	4692.8	5360.5	5495.2	5792.8	5343.7	5077.3*	4136.8*	3764.2*	3164.1*
	Elow							4918.2	3881.6	3421.3	2785.7
	Eup							5236.4	4400.2	4129.4	3579.8
75	OBS	4139.0	4341.5	4828.2	5474.0	5889.2	6006.5	-	-	-	-
	EXP	4139.0	4490.3	5027.6	5447.7	5773.1	5916.2	5457.5*	5185.4*	4224.9*	3844.4*
	Elow							5286.4	4865.5	3840.0	3384.6
	Eup							5628.5	5515.6	4634.8	4349.5
30-79	OBS	1483.1	1664.6	1740.5	1681.7	1614.2	1457.2	-	-	-	-
	EXP	1482.0	1662.5	1743.6	1680.6	1615.5	1458.1	1266.4*	1063.8*	855.2*	667.2*
	Elow							1226.7	998.2	777.2	587.4
	Eup							1306.1	1131.6	938.1	754.9

Osmond and Gardner Modelling

**Poland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

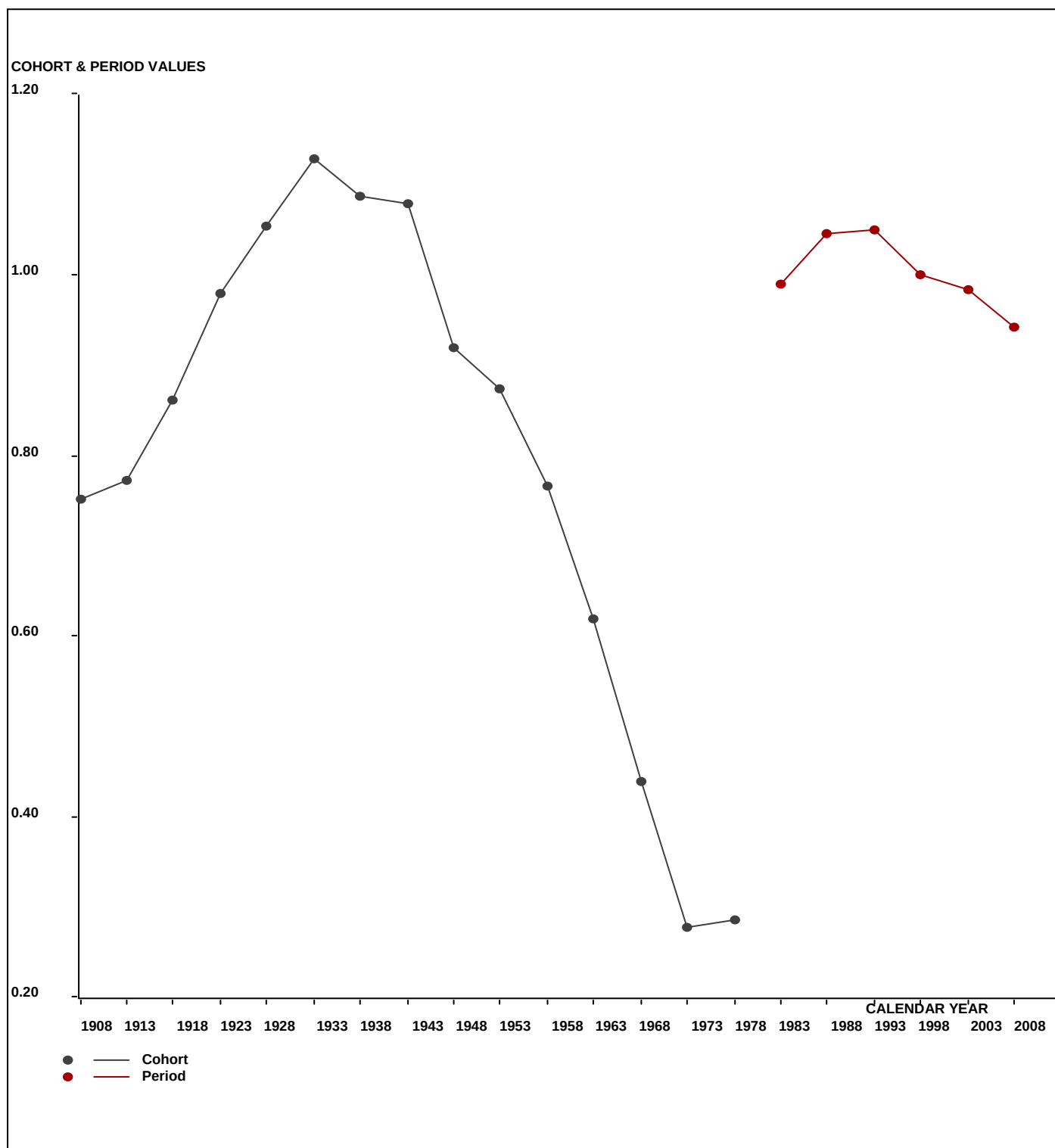
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	153.0	189.0	116.0	66.0	50.0	50.0	-	-	-	-
	EXP	173.1	171.9	119.6	67.6	44.3	40.5	32.7*	22.8*	14.2*	8.5*
	CHI	2.330	1.693	0.109	0.036	0.742	2.208	-	-	-	-
35 -	OBS	437.0	567.0	583.0	389.6	215.0	133.0	-	-	-	-
	EXP	441.2	595.8	561.4	370.4	218.3	139.2	127.9*	103.4*	71.9*	45.1*
	CHI	0.040	1.389	0.828	0.993	0.051	0.279	-	-	-	-
40 -	OBS	1206.0	1305.0	1785.0	1569.0	1061.0	616.0	-	-	-	-
	EXP	1237.2	1357.8	1731.8	1543.1	1063.4	611.2	390.9*	360.2*	291.2*	203.0*
	CHI	0.786	2.051	1.631	0.435	0.005	0.038	-	-	-	-
45 -	OBS	3347.0	3172.0	3196.0	3673.2	3606.0	2376.0	-	-	-	-
	EXP	3407.6	3036.0	3173.2	3818.1	3552.5	2389.7	1377.4*	884.8*	816.3*	661.8*
	CHI	1.077	6.096	0.164	5.499	0.805	0.079	-	-	-	-
50 -	OBS	7088.0	7043.0	6036.0	6050.4	7390.0	6609.0	-	-	-	-
	EXP	7162.0	7053.3	5960.1	5912.7	7402.0	6730.0	4543.4*	2634.2*	1696.8*	1571.8*
	CHI	0.764	0.015	0.967	3.207	0.020	2.174	-	-	-	-
55 -	OBS	10002.0	12132.0	11449.0	9043.4	9215.0	11599.0	-	-	-	-
	EXP	10183.9	12091.9	11287.8	9044.8	9384.5	11452.8	10475.6*	7118.5*	4147.6*	2687.4*
	CHI	3.249	0.133	2.303	0.000	3.060	1.865	-	-	-	-
60 -	OBS	9586.0	14157.0	16055.0	14402.8	11902.0	12232.0	-	-	-	-
	EXP	9589.2	14316.1	16056.0	14254.6	11950.2	12170.5	14939.7*	13795.8*	9432.3*	5541.2*
	CHI	0.001	1.769	0.000	1.540	0.195	0.311	-	-	-	-
65 -	OBS	8038.0	11671.0	16071.0	16797.6	15847.0	13017.0	-	-	-	-
	EXP	7893.4	11469.6	15948.4	17024.0	15959.5	13152.8	13583.2*	16836.7*	15700.5*	10834.3*
	CHI	2.650	3.535	0.942	3.011	0.793	1.402	-	-	-	-
70 -	OBS	9220.0	7851.0	10591.0	14144.4	16218.0	14936.0	-	-	-	-
	EXP	8997.7	7778.2	10830.8	14145.6	16149.0	15065.5	12565.2*	13229.5*	16566.0*	15655.5*
	CHI	5.492	0.681	5.309	0.000	0.295	1.113	-	-	-	-
75 -	OBS	5930.0	6675.0	5412.0	7729.0	10884.0	12548.0	-	-	-	-
	EXP	5930.0	6903.8	5635.5	7691.9	10669.5	12359.3	11760.5*	9934.8*	10721.3*	13602.0*
	CHI	0.000	7.586	8.868	0.179	4.314	2.882	-	-	-	-
30-79	OBS	55007.0	64762.0	71294.0	73865.4	76388.0	74116.0	-	-	-	-
	EXP	55015.2	64774.5	71304.6	73872.9	76393.1	74111.6	69796.5*	64920.6*	59458.1*	50810.6*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Poland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

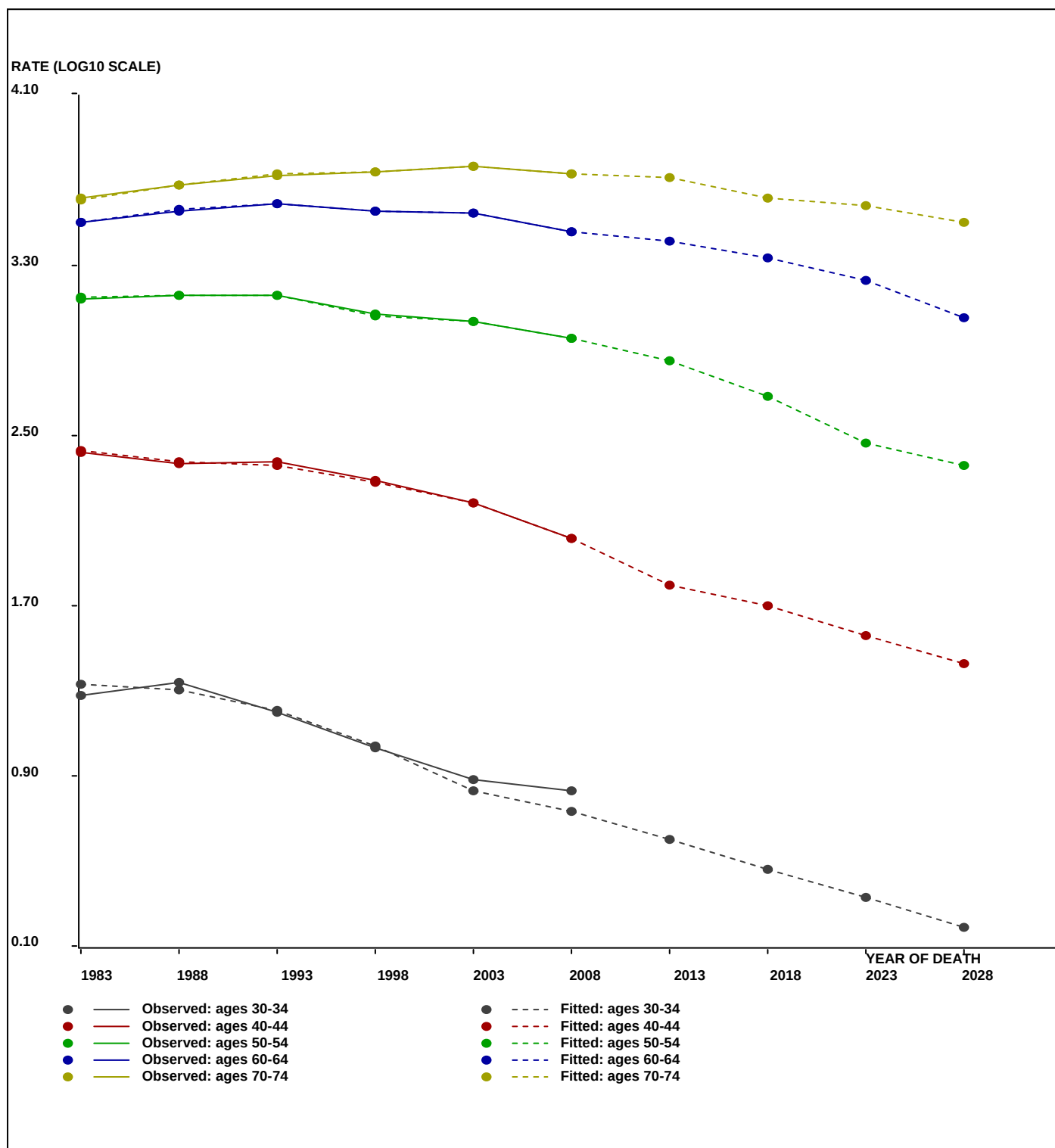


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Poland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

**Poland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	4.0	17.5	62.6	240.5	703.4	1511.6	2574.8	3591.5	5077.3	5457.5
2016	PRE	2.9	12.8	49.9	145.3	478.2	1168.7	2164.3	3268.0	4136.8	5185.4
2021	PRE	2.1	9.3	36.5	115.8	289.0	794.6	1673.4	2747.0	3764.2	4224.9
2026	PRE	1.6	6.8	26.7	84.7	230.2	480.1	1137.6	2123.9	3164.1	3844.4

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	32.7	127.9	390.9	1377.4	4543.4	10475.6	14939.7	13583.2	12565.2	11760.5
2016	PRE	22.8	103.4	360.2	884.8	2634.2	7118.5	13795.8	16836.7	13229.5	9934.8
2021	PRE	14.2	71.9	291.2	816.3	1696.8	4147.6	9432.3	15700.5	16566.0	10721.3
2026	PRE	8.5	45.1	203.0	661.8	1571.8	2687.4	5541.2	10834.3	15655.5	13602.0

Osmond and Gardner Modelling

Poland COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	2535.41	49.71	51	P, C	99.46	13645.07	0.0000
AGE-PERIOD	168.48	3.74	45	Cohort	91.90	895.92	0.0000
AGE-COHORT	158.26	4.40	36	Period	91.38	840.00	0.0000
PERIOD-COHORT	36.52	0.91	40	Age	62.63	194.07	0.0000
FULL AGE-PERIOD-COHORT	13.65	0.43	32			72.41	0.0001

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.926506	8.443169
35	1.145054	13.965425
40	1.513592	32.628149
45	1.884138	76.583983
50	2.269300	185.908800
55	2.600474	398.541593
60	2.907726	808.585612
65	3.180353	1514.792815
70	3.425243	2662.216165
75	3.624662	4213.679468

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.180524	1.515389
1986	0.115960	1.306052
1991	-0.042712	0.906334
1996	-0.097386	0.799124
2001	-0.144955	0.716217
2006	-0.162184	0.688361

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.025136	0.943766
1911	-0.034738	0.923128
1916	-0.004041	0.990738
1921	0.002584	1.005968
1926	0.031505	1.075240
1931	0.043011	1.104106
1936	0.001319	1.003042
1941	-0.009613	0.978109
1946	-0.091391	0.810232
1951	-0.107793	0.780201
1956	-0.143888	0.717980
1961	-0.140573	0.723480
1966	-0.171829	0.673242
1971	-0.370580	0.426010
1976	-0.254347	0.556740

Osmond and Gardner Modelling

Poland COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	75.0	61.0	44.0	31.2	20.0	24.0
EXP	79.6	67.7	40.6	27.8	16.6	24.0
CHI	0.3	0.7	0.3	0.4	0.7	0.0
35 - OBS	92.0	112.0	81.0	64.0	38.0	22.0
EXP	99.3	110.9	75.7	57.7	40.5	26.0
CHI	0.5	0.0	0.4	0.7	0.2	0.6
40 - OBS	239.0	187.0	171.0	166.4	96.0	88.0
EXP	223.9	195.2	174.3	150.7	117.9	89.1
CHI	1.0	0.3	0.1	1.6	4.1	0.0
45 - OBS	580.0	488.0	323.0	305.0	285.0	267.0
EXP	607.9	434.4	305.3	344.5	305.8	257.6
CHI	1.3	6.6	1.0	4.5	1.4	0.3
50 - OBS	1562.0	1276.0	657.0	602.0	694.0	684.0
EXP	1583.9	1200.4	688.7	615.5	710.4	679.7
CHI	0.3	4.8	1.5	0.3	0.4	0.0
55 - OBS	2887.0	2741.0	1628.0	1175.8	1035.0	1422.0
EXP	2900.2	2696.3	1639.8	1194.9	1098.2	1363.2
CHI	0.1	0.7	0.1	0.3	3.6	2.5
60 - OBS	3679.0	4442.0	3402.0	2675.0	1876.0	2010.0
EXP	3729.8	4514.3	3356.1	2600.1	1949.1	1939.7
CHI	0.7	1.2	0.6	2.2	2.7	2.6
65 - OBS	4813.0	5141.0	4942.0	4639.6	3728.0	3092.0
EXP	4859.8	5145.3	4910.5	4653.9	3743.6	3043.2
CHI	0.5	0.0	0.2	0.0	0.1	0.8
70 - OBS	8560.0	5774.0	4863.0	5772.4	5904.0	5082.0
EXP	8406.2	5709.6	4904.2	5888.4	5868.8	5182.3
CHI	2.8	0.7	0.3	2.3	0.2	1.9
75 - OBS	8634.0	7654.0	4223.0	4877.6	6163.0	6599.0
EXP	8634.0	7810.8	4241.1	4782.8	5997.1	6690.2
CHI	0.0	3.1	0.1	1.9	4.6	1.2

Osmond and Gardner Modelling

Poland COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	8.443169
35	13.965425
40	32.628149
45	76.583983
50	185.908800
55	398.541593
60	808.585612
65	1514.792815
70	2662.216165
75	4213.679468

PERIOD	EFFECT	LOWER	UPPER
% Period Change	96.1106	93.1106	99.1106
1981	1.515389		
1986	1.306052		
1991	0.906334		
1996	0.799124		
2001	0.716217		
2006	0.688361		
2011	0.661588	0.640937	0.682239
2016	0.635856	0.596780	0.676171
2021	0.611125	0.555666	0.670157
2026	0.587356	0.517384	0.664197

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.943766	1.000000	
1911	0.923128	2.000000	
1916	0.990738	4.000000	
1921	1.005968	8.000000	
1926	1.075240	16.000000	
1931	1.104106	32.000000	
1936	1.003042	64.000000	
1941	0.978109	128.000000	
1946	0.810232	256.000000	
1951	0.780201	512.000000	
1956	0.717980	1024.000000	
1961	0.723480	2048.000000	
1966	0.673242	4096.000000	
1971	0.426010	8192.000000	
1976	0.403217	EXTRAPOLATION	0.556740
1981	0.345200	EXTRAPOLATION	
1986	0.295532	EXTRAPOLATION	
1991	0.253009	EXTRAPOLATION	
1996	0.216606	EXTRAPOLATION	

Osmond and Gardner Modelling

**Poland COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	9.4	7.1	6.0	5.1	3.1	3.2	-	-	-	-
	EXP	10.0	7.9	5.5	4.5	2.6	2.3	1.9*	1.6*	1.3*	1.1*
	Elow							1.9	1.5	1.2	0.9
	Eup							2.0	1.7	1.4	1.2
35	OBS	15.9	14.4	9.7	9.0	6.3	3.5	-	-	-	-
	EXP	17.1	14.2	9.1	8.1	6.7	4.1	3.7*	3.1*	2.5*	2.1*
	Elow							3.6	2.9	2.3	1.8
	Eup							3.8	3.3	2.8	2.3
40	OBS	51.6	33.1	22.6	20.7	13.8	14.9	-	-	-	-
	EXP	48.4	34.5	23.1	18.7	16.9	15.1	9.2*	8.4*	6.9*	5.7*
	Elow							8.9	7.9	6.3	5.0
	Eup							9.5	8.9	7.5	6.4
45	OBS	111.1	109.9	59.5	42.3	36.7	39.5	-	-	-	-
	EXP	116.4	97.8	56.2	47.7	39.4	38.1	34.1*	20.7*	18.9*	15.5*
	Elow							33.0	19.5	17.2	13.7
	Eup							35.2	22.1	20.7	17.6
50	OBS	306.7	258.9	157.2	117.7	101.5	92.5	-	-	-	-
	EXP	311.1	243.5	164.8	120.4	103.9	91.9	89.0*	79.6*	48.4*	44.0*
	Elow							86.2	74.7	44.0	38.8
	Eup							91.8	84.6	53.1	49.8
55	OBS	646.4	584.2	359.7	306.5	218.0	223.3	-	-	-	-
	EXP	649.4	574.7	362.3	311.5	231.3	214.0	189.3*	183.3*	164.0*	99.7*
	Elow							183.4	172.1	149.1	87.8
	Eup							195.2	195.0	179.8	112.8
60	OBS	1215.9	1117.3	820.2	666.8	545.2	467.3	-	-	-	-
	EXP	1232.6	1135.5	809.1	648.1	566.4	451.0	417.4*	369.1*	357.5*	319.7*
	Elow							404.3	346.5	325.1	281.7
	Eup							430.4	392.5	392.0	361.6
65	OBS	2252.3	1988.5	1485.7	1332.4	1083.7	1036.2	-	-	-	-
	EXP	2274.2	1990.2	1476.2	1336.5	1088.2	1019.9	812.0*	751.5*	664.7*	643.7*
	Elow							786.6	705.3	604.3	567.0
	Eup							837.3	799.1	728.9	727.9
70	OBS	3792.3	3483.6	2406.9	2242.4	2117.8	1802.6	-	-	-	-
	EXP	3724.2	3444.8	2427.3	2287.5	2105.2	1838.1	1722.7*	1371.5*	1269.3*	1122.7*
	Elow							1669.0	1287.3	1154.2	988.9
	Eup							1776.5	1458.5	1392.0	1269.6
75	OBS	6026.3	4978.2	3767.4	3454.5	3334.7	3158.8	-	-	-	-
	EXP	6026.3	5080.2	3783.6	3387.3	3245.0	3202.5	2796.2*	2620.6*	2086.4*	1930.9*
	Elow							2708.9	2459.6	1897.1	1700.9
	Eup							2883.5	2786.8	2288.0	2183.6
30-79	OBS	833.8	734.9	522.6	463.7	409.5	374.9	-	-	-	-
	EXP	834.6	734.0	523.4	463.4	410.3	374.5	330.9*	292.7*	253.8*	226.9*
	Elow							320.5	274.8	230.7	199.9
	Eup							341.2	311.3	278.3	256.6

Osmond and Gardner Modelling

**Poland COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

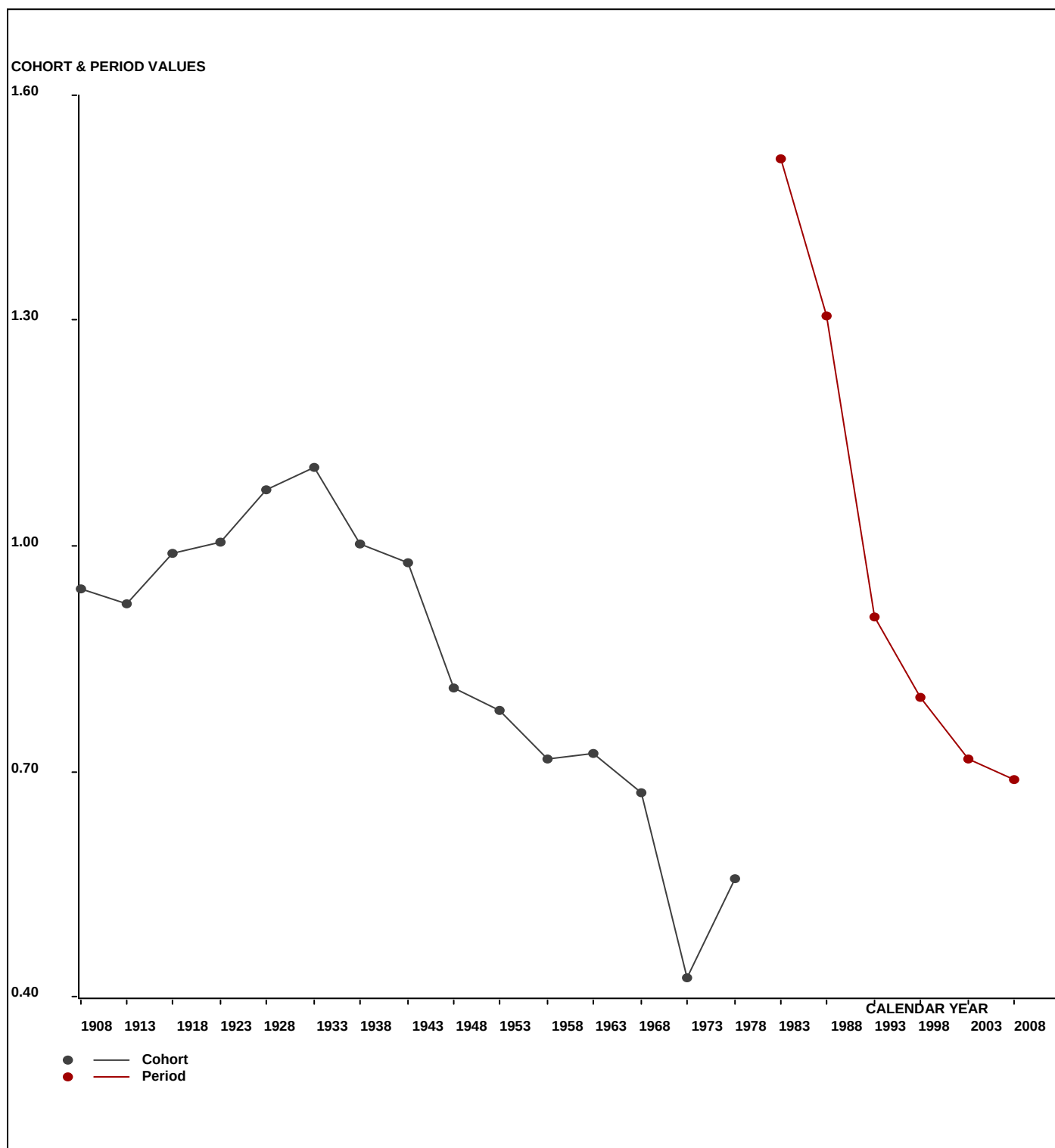
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	75.0	61.0	44.0	31.2	20.0	24.0	-	-	-	-
	EXP	79.6	67.7	40.6	27.8	16.6	17.4	15.8*	12.3*	8.7*	5.9*
	CHI	0.270	0.659	0.286	0.414	0.685	2.520	-	-	-	-
35 -	OBS	92.0	112.0	81.0	64.0	38.0	22.0	-	-	-	-
	EXP	99.3	110.9	75.7	57.7	40.5	26.0	27.3*	24.8*	19.4*	13.7*
	CHI	0.542	0.011	0.371	0.692	0.160	0.622	-	-	-	-
40 -	OBS	239.0	187.0	171.0	166.4	96.0	88.0	-	-	-	-
	EXP	223.9	195.2	174.3	150.7	117.9	89.1	57.4*	60.4*	54.9*	43.0*
	CHI	1.021	0.345	0.063	1.645	4.067	0.015	-	-	-	-
45 -	OBS	580.0	488.0	323.0	305.0	285.0	267.0	-	-	-	-
	EXP	607.9	434.4	305.3	344.5	305.8	257.6	195.4*	126.3*	133.0*	121.3*
	CHI	1.284	6.622	1.021	4.533	1.410	0.340	-	-	-	-
50 -	OBS	1562.0	1276.0	657.0	602.0	694.0	684.0	-	-	-	-
	EXP	1583.9	1200.4	688.7	615.5	710.4	679.7	574.7*	438.4*	284.2*	300.6*
	CHI	0.304	4.760	1.457	0.295	0.380	0.028	-	-	-	-
55 -	OBS	2887.0	2741.0	1628.0	1175.8	1035.0	1422.0	-	-	-	-
	EXP	2900.2	2696.3	1639.8	1194.9	1098.2	1363.2	1311.9*	1116.7*	855.9*	558.2*
	CHI	0.060	0.742	0.085	0.305	3.637	2.540	-	-	-	-
60 -	OBS	3679.0	4442.0	3402.0	2675.0	1876.0	2010.0	-	-	-	-
	EXP	3729.8	4514.3	3356.1	2600.1	1949.1	1939.7	2421.7*	2353.0*	2015.2*	1557.4*
	CHI	0.691	1.159	0.629	2.160	2.741	2.551	-	-	-	-
65 -	OBS	4813.0	5141.0	4942.0	4639.6	3728.0	3092.0	-	-	-	-
	EXP	4859.8	5145.3	4910.5	4653.9	3743.6	3043.2	3071.0*	3871.6*	3798.8*	3283.7*
	CHI	0.451	0.004	0.202	0.044	0.065	0.781	-	-	-	-
70 -	OBS	8560.0	5774.0	4863.0	5772.4	5904.0	5082.0	-	-	-	-
	EXP	8406.2	5709.6	4904.2	5888.4	5868.8	5182.3	4263.4*	4386.2*	5586.3*	5554.8*
	CHI	2.816	0.725	0.346	2.286	0.211	1.942	-	-	-	-
75 -	OBS	8634.0	7654.0	4223.0	4877.6	6163.0	6599.0	-	-	-	-
	EXP	8634.0	7810.8	4241.1	4782.8	5997.1	6690.2	6025.7*	5020.9*	5294.5*	6832.0*
	CHI	0.000	3.149	0.078	1.880	4.589	1.243	-	-	-	-
30-79	OBS	31121.0	27876.0	20334.0	20309.0	19839.0	19290.0	-	-	-	-
	EXP	31124.7	27884.9	20336.3	20316.2	19848.1	19288.4	17964.2*	17410.6*	18051.0*	18270.5*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Poland COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

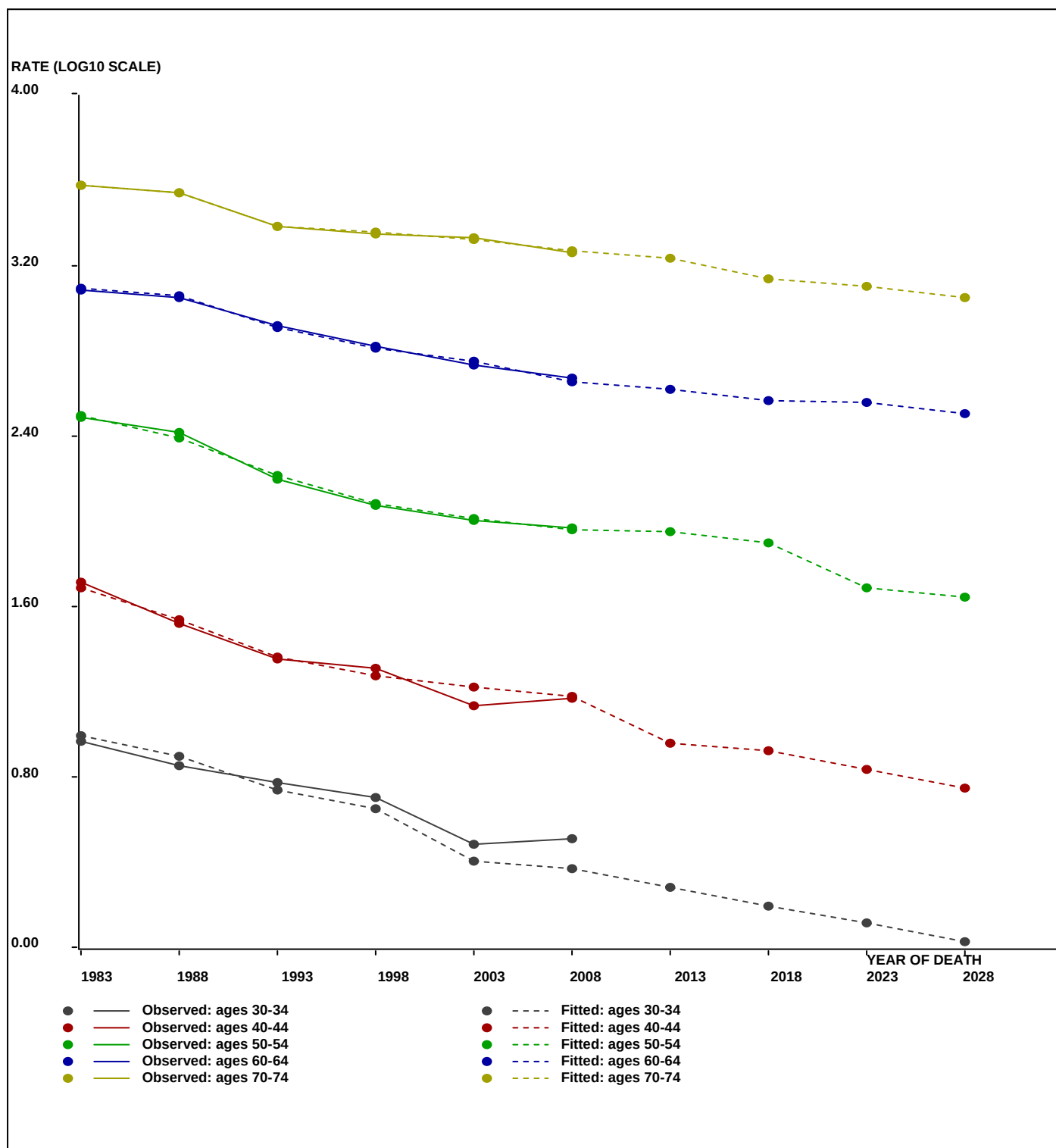


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Poland COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Poland COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	1.9	3.7	9.2	34.1	89.0	189.3	417.4	812.0	1722.7	2796.2
2016	PRE	1.6	3.1	8.4	20.7	79.6	183.3	369.1	751.5	1371.5	2620.6
2021	PRE	1.3	2.5	6.9	18.9	48.4	164.0	357.5	664.7	1269.3	2086.4
2026	PRE	1.1	2.1	5.7	15.5	44.0	99.7	319.7	643.7	1122.7	1930.9

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	15.8	27.3	57.4	195.4	574.7	1311.9	2421.7	3071.0	4263.4	6025.7
2016	PRE	12.3	24.8	60.4	126.3	438.4	1116.7	2353.0	3871.6	4386.2	5020.9
2021	PRE	8.7	19.4	54.9	133.0	284.2	855.9	2015.2	3798.8	5586.3	5294.5
2026	PRE	5.9	13.7	43.0	121.3	300.6	558.2	1557.4	3283.7	5554.8	6832.0

Osmond and Gardner Modelling

Poland IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	2255.49	44.23	51	P, C	91.14	12098.42	0.0000
AGE-PERIOD	1306.19	29.03	45	Cohort	84.70	6970.76	0.0000
AGE-COHORT	435.85	12.11	36	Period	54.14	2319.13	0.0000
PERIOD-COHORT	420.38	10.51	40	Age	52.45	2235.21	0.0000
FULL AGE-PERIOD-COHORT	199.90	6.25	32			1061.32	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.469661	29.489037
35	1.854610	71.550104
40	2.158454	144.030290
45	2.388459	244.601669
50	2.603953	401.746890
55	2.830965	677.587410
60	3.071012	1177.639836
65	3.304121	2014.285197
70	3.535048	3428.057850
75	3.781226	6042.629836

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.024353	1.057676
1986	0.043598	1.105601
1991	0.032929	1.078771
1996	0.026203	1.062191
2001	-0.020598	0.953678
2006	-0.110937	0.774575

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.170899	0.674685
1911	-0.135126	0.732612
1916	-0.052069	0.887015
1921	0.032206	1.076976
1926	0.059596	1.147086
1931	0.060240	1.148788
1936	0.012112	1.028281
1941	-0.013316	0.969803
1946	-0.061288	0.868384
1951	-0.091111	0.810754
1956	-0.165243	0.683529
1961	-0.248169	0.564717
1966	-0.419608	0.380533
1971	-0.522390	0.300338
1976	-0.469957	0.338878

Osmond and Gardner Modelling

Poland IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	180.0	196.0	139.0	72.2	47.0	56.0
EXP	197.6	185.9	128.7	70.8	53.0	56.0
CHI	1.6	0.5	0.8	0.0	0.7	0.0
35 - OBS	284.0	543.0	492.0	287.4	134.0	109.0
EXP	379.6	496.0	435.3	302.6	153.1	103.5
CHI	24.1	4.5	7.4	0.8	2.4	0.3
40 - OBS	550.0	842.0	1116.0	817.2	464.0	264.0
EXP	702.6	790.8	961.3	848.0	540.6	248.0
CHI	33.1	3.3	24.9	1.1	10.9	1.0
45 - OBS	1149.0	1326.0	1513.0	1506.6	1169.0	808.0
EXP	1441.6	1221.1	1288.7	1574.2	1273.7	736.3
CHI	59.4	9.0	39.0	2.9	8.6	7.0
50 - OBS	2231.0	2556.0	2137.0	2102.6	2162.0	1727.0
EXP	2687.8	2411.1	1909.1	2032.5	2270.4	1668.1
CHI	77.6	8.7	27.2	2.4	5.2	2.1
55 - OBS	3856.0	4627.0	4263.0	3224.4	2871.0	2999.0
EXP	4411.3	4572.8	3838.4	3069.7	2987.8	3026.1
CHI	69.9	0.6	47.0	7.8	4.6	0.2
60 - OBS	5130.0	7719.0	7642.0	6434.0	4359.0	3883.0
EXP	5306.1	7594.0	7368.7	6266.9	4595.7	4056.8
CHI	5.8	2.1	10.1	4.5	12.2	7.4
65 - OBS	6164.0	8960.0	11762.0	11193.0	8732.0	5878.0
EXP	5719.5	8777.8	11665.6	11496.4	9036.4	6023.4
CHI	34.5	3.8	0.8	8.0	10.3	3.5
70 - OBS	10151.0	9174.0	12140.0	16507.8	15804.0	11174.0
EXP	9072.0	8777.5	12836.1	17177.0	15811.4	11381.8
CHI	128.3	17.9	37.8	26.1	0.0	3.8
75 - OBS	10575.0	11927.0	10920.0	18821.8	23506.0	19626.0
EXP	10575.0	13124.1	11822.0	18167.4	22573.1	19240.4
CHI	0.0	109.2	68.8	23.6	38.6	7.7

Osmond and Gardner Modelling

Poland IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
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 Projections using parameters Log Transformed

AGE	EFFECT
30	29.489037
35	71.550104
40	144.030290
45	244.601669
50	401.746890
55	677.587410
60	1177.639836
65	2014.285197
70	3428.057850
75	6042.629836

PERIOD	EFFECT	LOWER	UPPER
% Period Change	81.2198	78.2198	84.2198
1981	1.057676		
1986	1.105601		
1991	1.078771		
1996	1.062191		
2001	0.953678		
2006	0.774575		
2011	0.629108	0.605870	0.652345
2016	0.510960	0.473910	0.549403
2021	0.415000	0.370691	0.462706
2026	0.337062	0.289954	0.389690

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.674685	1.000000	
1911	0.732612	2.000000	
1916	0.887015	4.000000	
1921	1.076976	8.000000	
1926	1.147086	16.000000	
1931	1.148788	32.000000	
1936	1.028281	64.000000	
1941	0.969803	128.000000	
1946	0.868384	256.000000	
1951	0.810754	512.000000	
1956	0.683529	1024.000000	
1961	0.564717	2048.000000	
1966	0.380533	4096.000000	
1971	0.300338	8192.000000	
1976	0.245555	EXTRAPOLATION	0.338878
1981	0.195330	EXTRAPOLATION	
1986	0.155379	EXTRAPOLATION	
1991	0.123599	EXTRAPOLATION	
1996	0.098318	EXTRAPOLATION	

Osmond and Gardner Modelling

**Poland IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	23.0	23.5	19.4	12.2	7.5	7.7	-	-	-	-
	EXP	25.3	22.3	18.0	11.9	8.4	5.6	3.6*	2.3*	1.5*	1.0*
	Elow							3.5	2.2	1.4	0.8
	Eup							3.8	2.5	1.7	1.1
35	OBS	49.2	70.2	59.6	40.8	22.7	17.5	-	-	-	-
	EXP	65.7	64.1	52.8	42.9	26.0	16.6	11.1*	7.1*	4.6*	3.0*
	Elow							10.6	6.6	4.1	2.6
	Eup							11.5	7.7	5.1	3.4
40	OBS	115.7	147.2	146.2	100.8	66.6	45.2	-	-	-	-
	EXP	147.7	138.3	126.0	104.6	77.6	42.5	27.2*	18.1*	11.7*	7.5*
	Elow							26.2	16.8	10.4	6.5
	Eup							28.2	19.4	13.0	8.7
45	OBS	212.0	284.8	269.0	201.6	146.3	117.4	-	-	-	-
	EXP	266.0	262.3	229.1	210.6	159.4	107.0	58.6*	37.5*	24.9*	16.1*
	Elow							56.4	34.8	22.3	13.9
	Eup							60.7	40.4	27.8	18.6
50	OBS	405.2	484.2	470.5	383.3	295.8	220.2	-	-	-	-
	EXP	488.1	456.7	420.3	370.6	310.6	212.7	142.7*	78.1*	50.1*	33.3*
	Elow							137.5	72.5	44.7	28.6
	Eup							148.0	84.0	55.8	38.4
55	OBS	718.6	870.8	834.8	733.2	539.2	421.7	-	-	-	-
	EXP	822.1	860.6	751.6	698.0	561.1	425.5	291.4*	195.5*	107.0*	68.6*
	Elow							280.6	181.3	95.6	59.0
	Eup							302.1	210.2	119.3	79.3
60	OBS	1296.9	1518.1	1513.6	1320.6	1033.1	758.2	-	-	-	-
	EXP	1341.4	1493.5	1459.4	1286.3	1089.2	792.1	600.7*	411.3*	276.0*	151.0*
	Elow							578.5	381.5	246.5	129.9
	Eup							622.8	442.2	307.7	174.6
65	OBS	2036.6	2448.2	2513.2	2393.0	1908.8	1476.6	-	-	-	-
	EXP	1889.8	2398.4	2492.6	2457.9	1975.3	1513.1	1100.4*	834.4*	571.4*	383.4*
	Elow							1059.8	773.9	510.4	329.8
	Eup							1141.1	897.2	637.1	443.3
70	OBS	2972.2	3513.7	3766.8	4014.1	3753.9	2680.5	-	-	-	-
	EXP	2656.3	3361.8	3982.8	4176.8	3755.7	2730.4	2091.5*	1521.1*	1153.4*	789.8*
	Elow							2014.2	1410.8	1030.3	679.4
	Eup							2168.7	1635.5	1286.0	913.1
75	OBS	4312.0	4448.0	5341.0	7161.5	6883.5	5484.6	-	-	-	-
	EXP	4312.0	4894.4	5782.1	6912.5	6610.3	5376.9	3909.0*	2994.3*	2177.6*	1651.3*
	Elow							3764.6	2777.2	1945.1	1420.5
	Eup							4053.4	3219.6	2428.0	1909.1
30-79	OBS	765.8	893.0	933.9	947.4	815.2	619.9	-	-	-	-
	EXP	777.1	885.5	931.1	945.3	823.2	621.9	453.6*	329.5*	232.2*	160.0*
	Elow							436.8	305.6	207.4	137.6
	Eup							470.4	354.3	258.9	184.9

Osmond and Gardner Modelling

**Poland IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

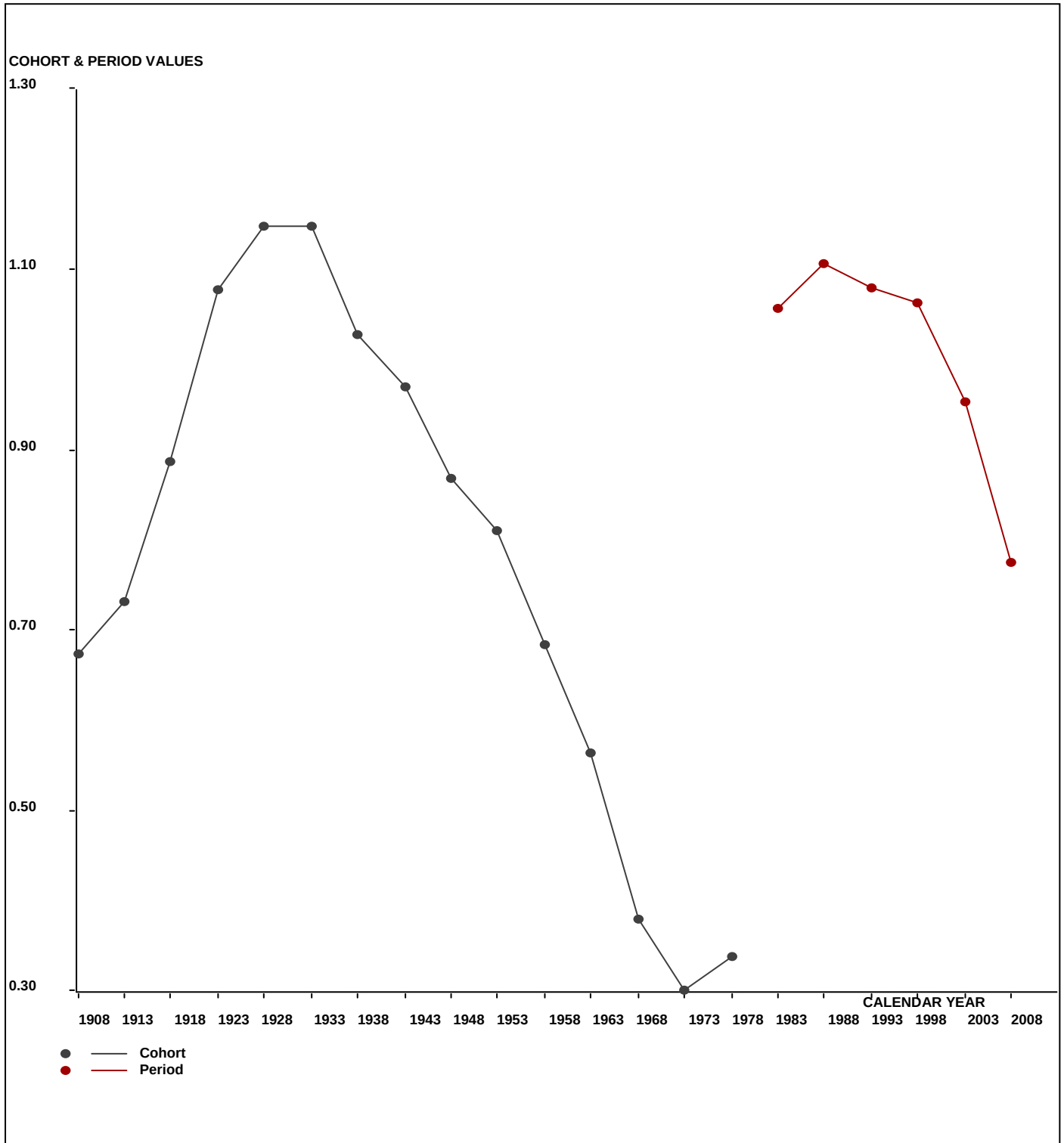
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	180.0	196.0	139.0	72.2	47.0	56.0	-	-	-	-
	EXP	197.6	185.9	128.7	70.8	53.0	40.6	28.9*	17.8*	9.8*	5.1*
	CHI	1.573	0.547	0.824	0.027	0.674	5.861	-	-	-	-
35 -	OBS	284.0	543.0	492.0	287.4	134.0	109.0	-	-	-	-
	EXP	379.6	496.0	435.3	302.6	153.1	103.5	79.5*	56.9*	34.9*	19.2*
	CHI	24.073	4.461	7.388	0.765	2.384	0.290	-	-	-	-
40 -	OBS	550.0	842.0	1116.0	817.2	464.0	264.0	-	-	-	-
	EXP	702.6	790.8	961.3	848.0	540.6	248.0	168.1*	129.4*	92.5*	56.7*
	CHI	33.127	3.317	24.880	1.118	10.860	1.028	-	-	-	-
45 -	OBS	1149.0	1326.0	1513.0	1506.6	1169.0	808.0	-	-	-	-
	EXP	1441.6	1221.1	1288.7	1574.2	1273.7	736.3	338.5*	229.9*	177.0*	126.6*
	CHI	59.398	9.011	39.043	2.905	8.605	6.975	-	-	-	-
50 -	OBS	2231.0	2556.0	2137.0	2102.6	2162.0	1727.0	-	-	-	-
	EXP	2687.8	2411.1	1909.1	2032.5	2270.4	1668.1	966.5*	445.5*	302.6*	233.3*
	CHI	77.625	8.711	27.197	2.415	5.173	2.076	-	-	-	-
55 -	OBS	3856.0	4627.0	4263.0	3224.4	2871.0	2999.0	-	-	-	-
	EXP	4411.3	4572.8	3838.4	3069.7	2987.8	3026.1	2232.5*	1296.6*	598.0*	407.0*
	CHI	69.906	0.642	46.962	7.792	4.566	0.242	-	-	-	-
60 -	OBS	5130.0	7719.0	7642.0	6434.0	4359.0	3883.0	-	-	-	-
	EXP	5306.1	7594.0	7368.7	6266.9	4595.7	4056.8	4127.0*	3056.7*	1777.2*	822.0*
	CHI	5.847	2.057	10.138	4.456	12.187	7.444	-	-	-	-
65 -	OBS	6164.0	8960.0	11762.0	11193.0	8732.0	5878.0	-	-	-	-
	EXP	5719.5	8777.8	11665.6	11496.4	9036.4	6023.4	5354.4*	5468.2*	4060.9*	2368.9*
	CHI	34.543	3.780	0.797	8.007	10.253	3.509	-	-	-	-
70 -	OBS	10151.0	9174.0	12140.0	16507.8	15804.0	11174.0	-	-	-	-
	EXP	9072.0	8777.5	12836.1	17177.0	15811.4	11381.8	7627.1*	6847.9*	7011.5*	5237.5*
	CHI	128.330	17.911	37.752	26.068	0.003	3.793	-	-	-	-
75 -	OBS	10575.0	11927.0	10920.0	18821.8	23506.0	19626.0	-	-	-	-
	EXP	10575.0	13124.1	11822.0	18167.4	22573.1	19240.4	14001.9*	9447.9*	8609.1*	8866.7*
	CHI	0.000	109.189	68.817	23.572	38.554	7.728	-	-	-	-
30-79	OBS	40270.0	47870.0	52124.0	60967.0	59248.0	46524.0	-	-	-	-
	EXP	40493.2	47951.1	52253.9	61005.6	59295.1	46525.0	34924.5*	26996.9*	22673.5*	18143.0*
	O/E	0.994	0.998	0.998	0.999	0.999	1.000	-	-	-	-

Osmond and Gardner Modelling

Poland IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

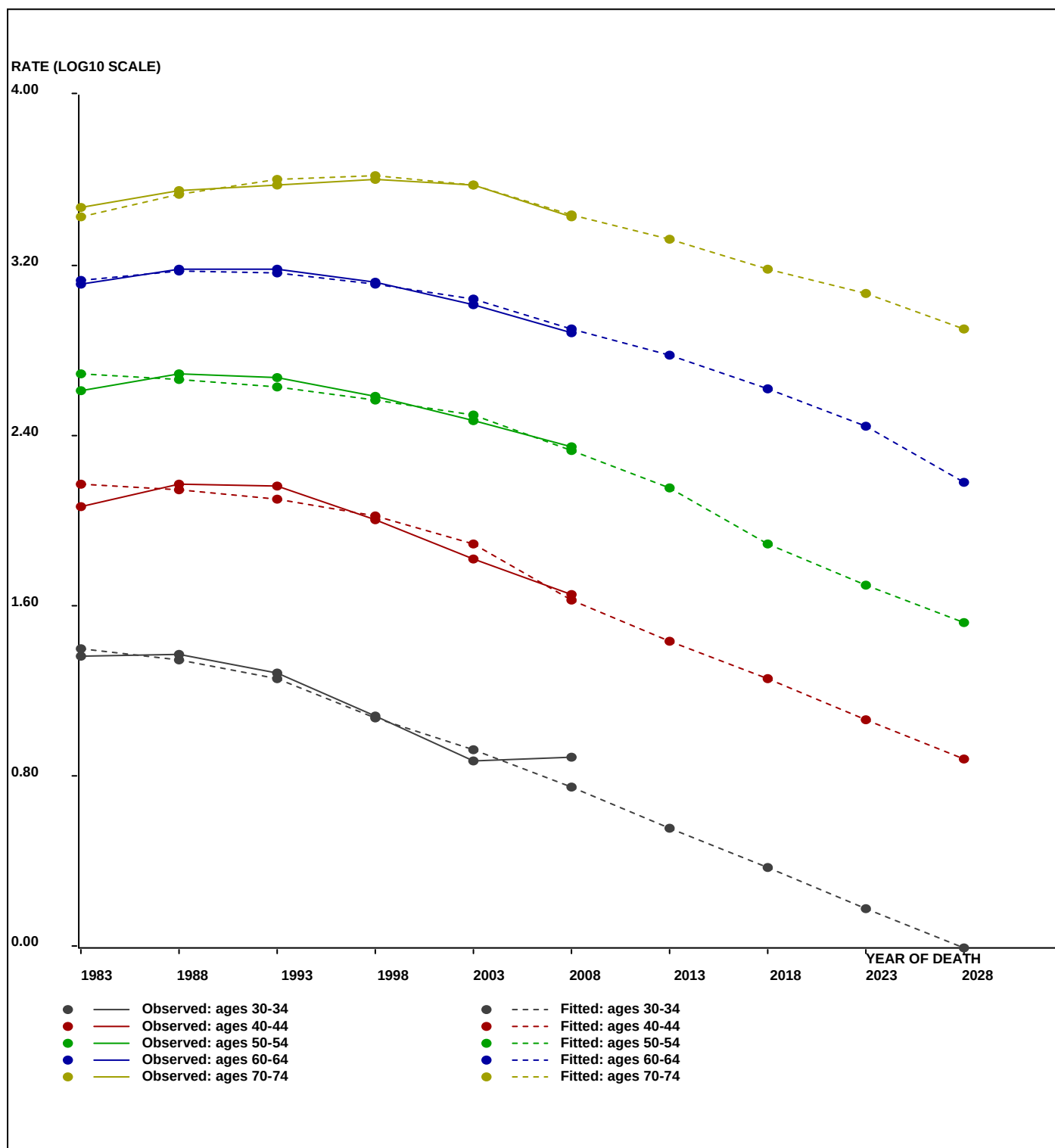


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Poland IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Poland IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	3.6	11.1	27.2	58.6	142.7	291.4	600.7	1100.4	2091.5	3909.0
2016	PRE	2.3	7.1	18.1	37.5	78.1	195.5	411.3	834.4	1521.1	2994.3
2021	PRE	1.5	4.6	11.7	24.9	50.1	107.0	276.0	571.4	1153.4	2177.6
2026	PRE	1.0	3.0	7.5	16.1	33.3	68.6	151.0	383.4	789.8	1651.3

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	28.9	79.5	168.1	338.5	966.5	2232.5	4127.0	5354.4	7627.1	14001.9
2016	PRE	17.8	56.9	129.4	229.9	445.5	1296.6	3056.7	5468.2	6847.9	9447.9
2021	PRE	9.8	34.9	92.5	177.0	302.6	598.0	1777.2	4060.9	7011.5	8609.1
2026	PRE	5.1	19.2	56.7	126.6	233.3	407.0	822.0	2368.9	5237.5	8866.7

Osmond and Gardner Modelling

Poland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	1073.16	21.04	51	P, C	96.77	5718.35	0.0000
AGE-PERIOD	301.51	6.70	45	Cohort	88.51	1600.45	0.0000
AGE-COHORT	353.64	9.82	36	Period	90.20	1877.14	0.0000
PERIOD-COHORT	66.95	1.67	40	Age	48.24	355.13	0.0000
FULL AGE-PERIOD-COHORT	34.65	1.08	32			183.83	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.590145	38.917469
35	1.846720	70.261929
40	2.105207	127.411160
45	2.335651	216.596058
50	2.534247	342.173996
55	2.733731	541.664913
60	2.969045	931.204363
65	3.248222	1771.014326
70	3.537238	3445.389915
75	3.828174	6732.462871

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.035862	1.086081
1986	0.022421	1.052983
1991	0.002371	1.005475
1996	0.038855	1.093591
2001	0.002117	1.004888
2006	-0.110576	0.775218

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.105837	0.783723
1911	-0.069346	0.852420
1916	-0.004701	0.989234
1921	0.029962	1.071425
1926	0.029391	1.070019
1931	0.026566	1.063079
1936	-0.010052	0.977120
1941	-0.010448	0.976229
1946	-0.006028	0.986215
1951	-0.009111	0.979239
1956	-0.024278	0.945631
1961	-0.046950	0.897532
1966	-0.082832	0.826357
1971	-0.169781	0.676424
1976	-0.137592	0.728463

Osmond and Gardner Modelling

Poland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	319.0	344.0	256.0	182.8	169.0	159.0
EXP	323.5	323.3	251.6	209.0	165.9	159.0
CHI	0.1	1.3	0.1	3.3	0.1	0.0
35 - OBS	420.0	564.0	573.0	468.4	353.0	226.0
EXP	434.7	560.2	551.2	486.3	344.0	229.1
CHI	0.5	0.0	0.9	0.7	0.2	0.0
40 - OBS	558.0	806.0	1059.0	998.0	774.0	492.0
EXP	642.4	756.6	957.4	1068.5	800.9	476.9
CHI	11.1	3.2	10.8	4.6	0.9	0.5
45 - OBS	1081.0	1083.0	1318.0	1710.6	1618.0	1076.0
EXP	1245.6	1036.7	1207.9	1733.4	1644.1	1037.2
CHI	21.8	2.1	10.0	0.3	0.4	1.5
50 - OBS	1973.0	1927.0	1558.0	2109.6	2413.0	2017.0
EXP	2175.3	1858.5	1525.6	2024.2	2461.0	1967.2
CHI	18.8	2.5	0.7	3.6	0.9	1.3
55 - OBS	3262.0	3237.0	2830.0	2648.8	2769.0	2888.0
EXP	3377.8	3221.8	2717.7	2543.2	2858.2	2924.2
CHI	4.0	0.1	4.6	4.4	2.8	0.4
60 - OBS	4292.0	5458.0	5061.0	4890.0	3797.0	3492.0
EXP	4286.2	5334.9	5025.6	4848.1	3854.5	3646.1
CHI	0.0	2.8	0.2	0.4	0.9	6.5
65 - OBS	5838.0	7386.0	8908.0	9560.4	7933.0	5283.0
EXP	5758.9	7312.5	8917.5	9630.3	7955.1	5335.4
CHI	1.1	0.7	0.0	0.5	0.1	0.5
70 - OBS	11356.0	9435.0	11682.0	16346.2	15519.0	10828.0
EXP	10893.9	9370.3	11962.5	16580.0	15495.3	10879.2
CHI	19.6	0.4	6.6	3.3	0.0	0.2
75 - OBS	14054.0	15725.0	13546.0	20929.0	24950.0	20041.0
EXP	14054.0	16203.9	13691.4	20732.4	24720.1	19854.0
CHI	0.0	14.2	1.5	1.9	2.1	1.8

Osmond and Gardner Modelling

Poland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	38.917469
35	70.261929
40	127.411160
45	216.596058
50	342.173996
55	541.664913
60	931.204363
65	1771.014326
70	3445.389915
75	6732.462871

PERIOD	EFFECT	LOWER	UPPER
% Period Change	77.1447	74.1447	80.1447

1981	1.086081		
1986	1.052983		
1991	1.005475		
1996	1.093591		
2001	1.004888		
2006	0.775218		
2011	0.598039	0.574783	0.621296
2016	0.461356	0.426171	0.497936
2021	0.355911	0.315983	0.399069
2026	0.274567	0.234285	0.319833

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.783723	1.000000	
1911	0.852420	2.000000	
1916	0.989234	4.000000	
1921	1.071425	8.000000	
1926	1.070019	16.000000	
1931	1.063079	32.000000	
1936	0.977120	64.000000	
1941	0.976229	128.000000	
1946	0.986215	256.000000	
1951	0.979239	512.000000	
1956	0.945631	1024.000000	
1961	0.897532	2048.000000	
1966	0.826357	4096.000000	
1971	0.676424	8192.000000	
1976	0.648051	EXTRAPOLATION	0.728463
1981	0.594434	EXTRAPOLATION	
1986	0.545253	EXTRAPOLATION	
1991	0.500141	EXTRAPOLATION	
1996	0.458762	EXTRAPOLATION	

Osmond and Gardner Modelling

**Poland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	40.8	41.2	35.7	30.8	26.9	22.0	-	-	-	-
	EXP	41.4	38.8	35.1	35.2	26.5	19.6	13.8*	9.8*	6.9*	4.9*
	Elow							13.3	9.0	6.2	4.2
	Eup							14.4	10.6	7.8	5.7
35	OBS	72.7	72.9	69.5	66.4	59.9	36.3	-	-	-	-
	EXP	75.3	72.4	66.8	69.0	58.3	36.8	27.2*	19.3*	13.6*	9.6*
	Elow							26.2	17.8	12.1	8.2
	Eup							28.3	20.8	15.3	11.2
40	OBS	117.3	140.9	138.8	123.1	111.1	84.2	-	-	-	-
	EXP	135.1	132.3	125.4	131.8	114.9	81.6	51.5*	38.1*	27.0*	19.1*
	Elow							49.5	35.2	23.9	16.3
	Eup							53.5	41.1	30.2	22.2
45	OBS	199.5	232.6	234.4	228.9	202.5	156.3	-	-	-	-
	EXP	229.9	222.7	214.8	231.9	205.8	150.7	107.0*	67.6*	50.0*	35.4*
	Elow							102.9	62.4	44.4	30.2
	Eup							111.2	73.0	56.0	41.2
50	OBS	358.3	365.0	343.0	384.6	330.1	257.2	-	-	-	-
	EXP	395.1	352.1	335.9	369.0	336.7	250.8	183.7*	130.5*	82.4*	60.9*
	Elow							176.5	120.5	73.1	52.0
	Eup							190.8	140.8	92.4	70.9
55	OBS	607.9	609.2	554.2	602.3	520.1	406.1	-	-	-	-
	EXP	629.5	606.3	532.2	578.3	536.8	411.2	306.3*	224.3*	159.3*	100.6*
	Elow							294.4	207.2	141.4	85.8
	Eup							318.2	242.1	178.6	117.2
60	OBS	1085.1	1073.4	1002.4	1003.7	899.9	681.8	-	-	-	-
	EXP	1083.6	1049.2	995.4	995.1	913.5	711.9	545.3*	406.3*	297.5*	211.3*
	Elow							524.1	375.3	264.1	180.3
	Eup							566.5	438.5	333.5	246.1
65	OBS	1928.9	2018.1	1903.4	2044.0	1734.1	1327.1	-	-	-	-
	EXP	1902.8	1998.0	1905.4	2058.9	1739.0	1340.3	1044.5*	800.1*	596.1*	436.4*
	Elow							1003.9	739.1	529.2	372.4
	Eup							1085.2	863.5	668.3	508.4
70	OBS	3325.0	3613.7	3624.7	3974.8	3686.2	2597.5	-	-	-	-
	EXP	3189.7	3588.9	3711.7	4031.7	3680.6	2609.8	2011.5*	1567.6*	1200.8*	894.6*
	Elow							1933.3	1448.1	1066.1	763.3
	Eup							2089.7	1691.9	1346.4	1042.0
75	OBS	5730.6	5864.3	6625.3	7963.3	7306.4	5600.6	-	-	-	-
	EXP	5730.6	6042.9	6696.4	7888.4	7239.1	5548.3	3934.2*	3032.2*	2363.1*	1810.1*
	Elow							3781.2	2801.0	2098.0	1544.6
	Eup							4087.1	3272.6	2649.7	2108.6
30-79	OBS	795.4	829.7	833.2	918.1	824.4	618.9	-	-	-	-
	EXP	799.5	826.5	832.1	916.6	826.5	619.8	460.5*	349.1*	262.1*	193.1*
	Elow							442.6	322.5	232.7	164.7
	Eup							478.4	376.8	293.9	224.9

Osmond and Gardner Modelling

**Poland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

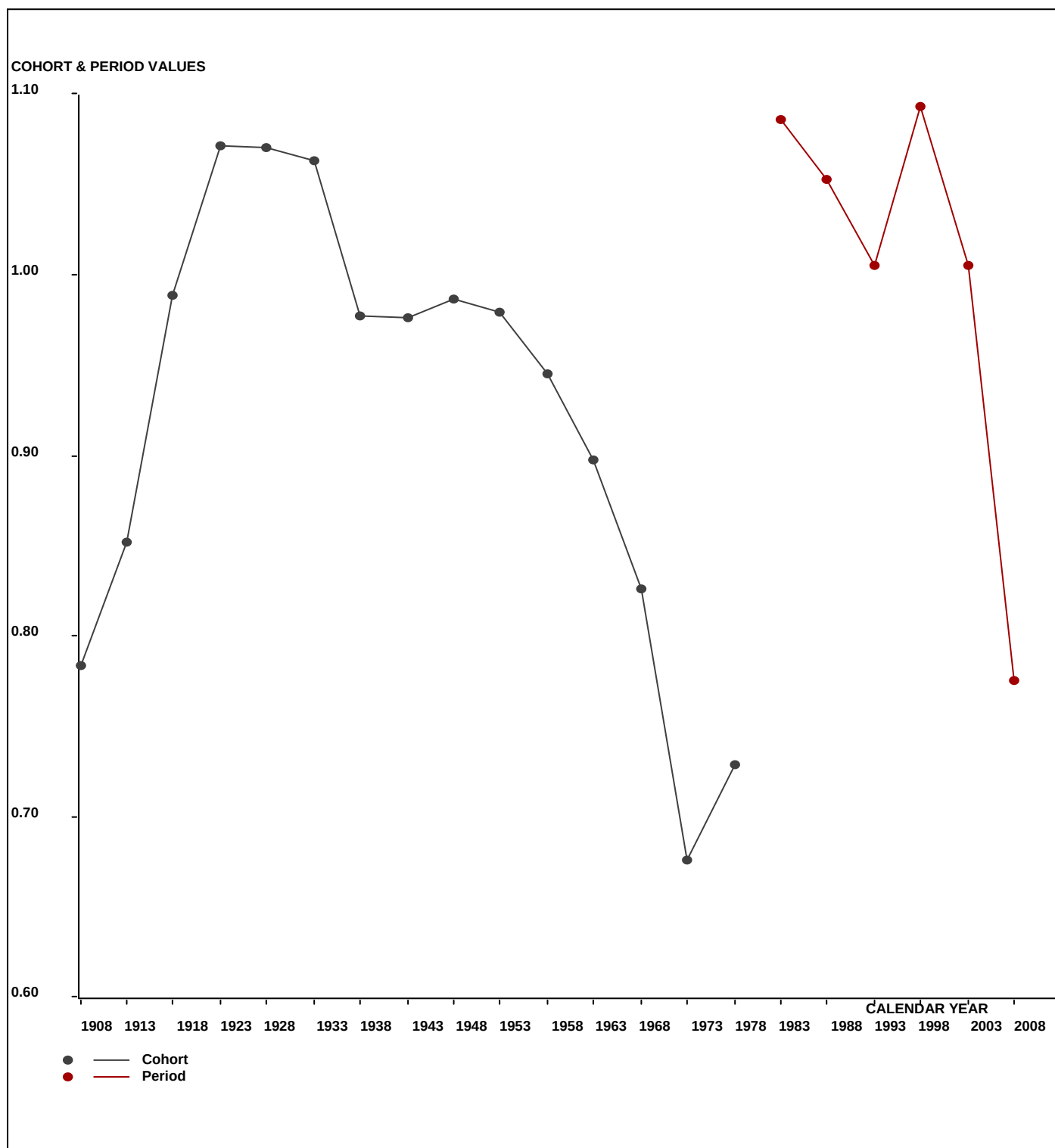
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	319.0	344.0	256.0	182.8	169.0	159.0	-	-	-	-
	EXP	323.5	323.3	251.6	209.0	165.9	141.4	110.5*	74.2*	44.7*	25.8*
	CHI	0.062	1.328	0.076	3.277	0.057	2.178	-	-	-	-
35 -	OBS	420.0	564.0	573.0	468.4	353.0	226.0	-	-	-	-
	EXP	434.7	560.2	551.2	486.3	344.0	229.1	196.0*	153.5*	103.0*	62.1*
	CHI	0.498	0.025	0.864	0.656	0.234	0.043	-	-	-	-
40 -	OBS	558.0	806.0	1059.0	998.0	774.0	492.0	-	-	-	-
	EXP	642.4	756.6	957.4	1068.5	800.9	476.9	318.3*	272.8*	213.6*	143.4*
	CHI	11.091	3.219	10.791	4.647	0.904	0.480	-	-	-	-
45 -	OBS	1081.0	1083.0	1318.0	1710.6	1618.0	1076.0	-	-	-	-
	EXP	1245.6	1036.7	1207.9	1733.4	1644.1	1037.2	618.8*	414.0*	354.8*	278.0*
	CHI	21.759	2.072	10.030	0.301	0.415	1.454	-	-	-	-
50 -	OBS	1973.0	1927.0	1558.0	2109.6	2413.0	2017.0	-	-	-	-
	EXP	2175.3	1858.5	1525.6	2024.2	2461.0	1967.2	1243.8*	744.0*	497.8*	427.1*
	CHI	18.816	2.524	0.688	3.607	0.935	1.259	-	-	-	-
55 -	OBS	3262.0	3237.0	2830.0	2648.8	2769.0	2888.0	-	-	-	-
	EXP	3377.8	3221.8	2717.7	2543.2	2858.2	2924.2	2347.1*	1487.5*	890.4*	596.9*
	CHI	3.973	0.072	4.643	4.381	2.784	0.448	-	-	-	-
60 -	OBS	4292.0	5458.0	5061.0	4890.0	3797.0	3492.0	-	-	-	-
	EXP	4286.2	5334.9	5025.6	4848.1	3854.5	3646.1	3746.9*	3019.2*	1915.5*	1149.7*
	CHI	0.008	2.843	0.249	0.362	0.857	6.517	-	-	-	-
65 -	OBS	5838.0	7386.0	8908.0	9560.4	7933.0	5283.0	-	-	-	-
	EXP	5758.9	7312.5	8917.5	9630.3	7955.1	5335.4	5082.5*	5243.2*	4236.2*	2696.5*
	CHI	1.087	0.738	0.010	0.508	0.062	0.515	-	-	-	-
70 -	OBS	11356.0	9435.0	11682.0	16346.2	15519.0	10828.0	-	-	-	-
	EXP	10893.9	9370.3	11962.5	16580.0	15495.3	10879.2	7335.4*	7057.6*	7299.6*	5932.2*
	CHI	19.601	0.447	6.577	3.297	0.036	0.241	-	-	-	-
75 -	OBS	14054.0	15725.0	13546.0	20929.0	24950.0	20041.0	-	-	-	-
	EXP	14054.0	16203.9	13691.4	20732.4	24720.1	19854.0	14092.1*	9567.6*	9342.4*	9719.6*
	CHI	0.000	14.154	1.544	1.865	2.138	1.761	-	-	-	-
30-79	OBS	43153.0	45965.0	46791.0	59843.8	60295.0	46502.0	-	-	-	-
	EXP	43192.4	45978.7	46808.4	59855.3	60299.2	46490.8	35091.3*	28033.7*	24897.9*	21031.4*
	O/E	0.999	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Poland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

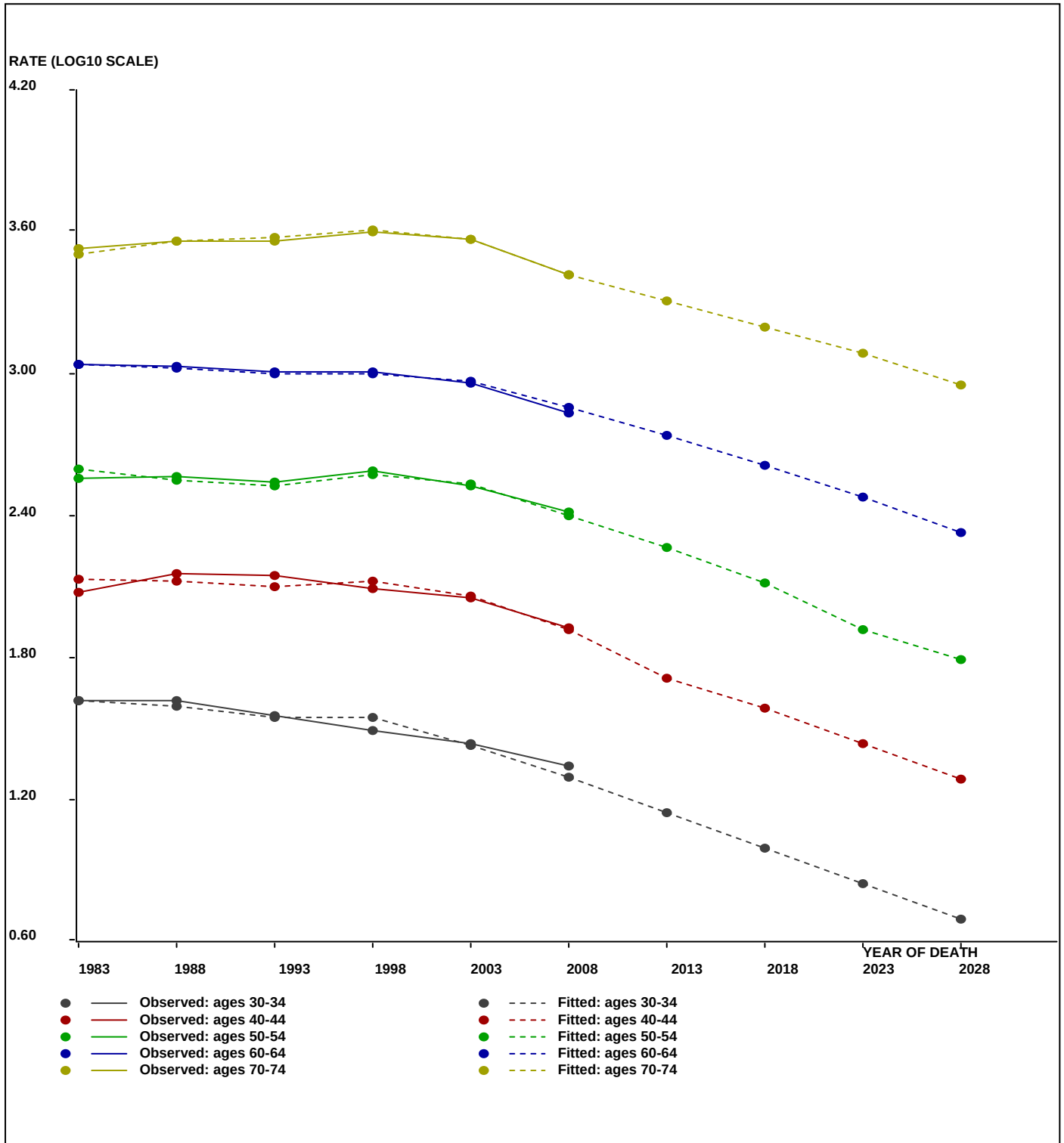


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Poland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Poland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	13.8	27.2	51.5	107.0	183.7	306.3	545.3	1044.5	2011.5	3934.2
2016	PRE	9.8	19.3	38.1	67.6	130.5	224.3	406.3	800.1	1567.6	3032.2
2021	PRE	6.9	13.6	27.0	50.0	82.4	159.3	297.5	596.1	1200.8	2363.1
2026	PRE	4.9	9.6	19.1	35.4	60.9	100.6	211.3	436.4	894.6	1810.1

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	110.5	196.0	318.3	618.8	1243.8	2347.1	3746.9	5082.5	7335.4	14092.1
2016	PRE	74.2	153.5	272.8	414.0	744.0	1487.5	3019.2	5243.2	7057.6	9567.6
2021	PRE	44.7	103.0	213.6	354.8	497.8	890.4	1915.5	4236.2	7299.6	9342.4
2026	PRE	25.8	62.1	143.4	278.0	427.1	596.9	1149.7	2696.5	5932.2	9719.6

Osmond and Gardner Modelling

Poland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	1089.85	21.37	51	P, C	99.24	5852.79	0.0000
AGE-PERIOD	167.91	3.73	45	Cohort	95.06	901.71	0.0000
AGE-COHORT	12.77	0.35	36	Period	35.05	67.74	0.0011
PERIOD-COHORT	55.06	1.38	40	Age	84.93	293.32	0.0000
FULL AGE-PERIOD-COHORT	8.29	0.26	32			43.99	0.0771

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.690109	4.899022
35	1.164237	14.596103
40	1.634862	43.138149
45	1.996854	99.278254
50	2.307868	203.174098
55	2.539369	346.233212
60	2.739023	548.306229
65	2.883688	765.046546
70	2.988377	973.592615
75	3.061384	1151.819463

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.054069	0.882940
1986	-0.019013	0.957165
1991	-0.000668	0.998462
1996	-0.002488	0.994287
2001	0.009850	1.022940
2006	0.022636	1.053504

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.240974	0.574151
1911	-0.230068	0.588751
1916	-0.179222	0.661878
1921	-0.118950	0.760415
1926	-0.089742	0.813314
1931	-0.062742	0.865481
1936	-0.043614	0.904452
1941	0.061564	1.152296
1946	0.159553	1.443953
1951	0.226419	1.684298
1956	0.215339	1.641869
1961	0.176299	1.500718
1966	0.041661	1.100679
1971	-0.086930	0.818597
1976	-0.229744	0.589190

Osmond and Gardner Modelling

Poland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	53.0	61.0	57.0	34.8	25.0	22.0
EXP	56.9	64.2	52.6	31.9	25.7	22.0
CHI	0.3	0.2	0.4	0.3	0.0	0.0
35 - OBS	120.0	172.0	187.0	163.0	93.0	79.0
EXP	107.5	182.0	197.4	153.6	96.9	78.3
CHI	1.5	0.5	0.5	0.6	0.2	0.0
40 - OBS	223.0	308.0	563.0	565.8	473.0	293.0
EXP	208.7	341.0	553.6	571.1	461.6	292.3
CHI	1.0	3.2	0.2	0.0	0.3	0.0
45 - OBS	393.0	487.0	814.0	1276.6	1371.0	1054.0
EXP	429.6	509.8	805.0	1242.5	1332.0	1080.2
CHI	3.1	1.0	0.1	0.9	1.1	0.6
50 - OBS	862.0	973.0	1014.0	1631.2	2542.0	2735.0
EXP	854.9	928.5	1061.8	1599.9	2558.5	2756.2
CHI	0.1	2.1	2.2	0.6	0.1	0.2
55 - OBS	1363.0	1482.0	1579.0	1818.8	2691.0	4355.0
EXP	1334.2	1524.0	1596.7	1744.6	2723.0	4369.1
CHI	0.6	1.2	0.2	3.2	0.4	0.0
60 - OBS	1463.0	2182.0	2482.0	2360.8	2648.0	4281.0
EXP	1456.2	2170.4	2392.3	2402.4	2727.0	4271.8
CHI	0.0	0.1	3.4	0.7	2.3	0.0
65 - OBS	1321.0	2048.0	2914.0	3052.2	3224.0	3753.0
EXP	1353.2	2037.9	2907.6	3079.3	3238.0	3697.1
CHI	0.8	0.0	0.0	0.2	0.1	0.8
70 - OBS	1728.0	1650.0	2344.0	3133.8	3667.0	3929.0
EXP	1728.5	1610.4	2382.4	3237.8	3628.8	3867.1
CHI	0.0	1.0	0.6	3.3	0.4	1.0
75 - OBS	1432.0	1741.0	1548.0	2309.8	3327.0	3689.0
EXP	1432.0	1740.5	1556.3	2288.8	3272.4	3758.1
CHI	0.0	0.0	0.0	0.2	0.9	1.3

Osmond and Gardner Modelling

Poland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	4.899022
35	14.596103
40	43.138149
45	99.278254
50	203.174098
55	346.233212
60	548.306229
65	765.046546
70	973.592615
75	1151.819463

PERIOD	EFFECT	LOWER	UPPER
% Period Change	102.9879	99.9879	105.9879

1981	0.882940		
1986	0.957165		
1991	0.998462		
1996	0.994287		
2001	1.022940		
2006	1.053504		
2011	1.084982	1.053377	1.116587
2016	1.117400	1.053249	1.183447
2021	1.150787	1.053122	1.254311
2026	1.185171	1.052994	1.329417

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.574151	1.000000	
1911	0.588751	2.000000	
1916	0.661878	4.000000	
1921	0.760415	8.000000	
1926	0.813314	16.000000	
1931	0.865481	32.000000	
1936	0.904452	64.000000	
1941	1.152296	128.000000	
1946	1.443953	256.000000	
1951	1.684298	512.000000	
1956	1.641869	1024.000000	
1961	1.500718	2048.000000	
1966	1.100679	4096.000000	
1971	0.818597	8192.000000	
1976	0.774953	EXTRAPOLATION	0.589190
1981	0.672824	EXTRAPOLATION	
1986	0.584154	EXTRAPOLATION	
1991	0.507169	EXTRAPOLATION	
1996	0.440330	EXTRAPOLATION	

Osmond and Gardner Modelling

**Poland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	6.8	7.3	8.0	5.9	4.0	3.0	-	-	-	-
	EXP	7.3	7.7	7.3	5.4	4.1	4.0	3.6*	3.2*	2.9*	2.6*
	Elow							3.5	3.0	2.6	2.3
	Eup							3.7	3.4	3.1	2.9
35	OBS	20.8	22.2	22.7	23.1	15.8	12.7	-	-	-	-
	EXP	18.6	23.5	23.9	21.8	16.4	12.6	12.3*	11.0*	9.8*	8.8*
	Elow							11.9	10.3	9.0	7.8
	Eup							12.6	11.6	10.7	9.8
40	OBS	46.9	53.9	73.8	69.8	67.9	50.1	-	-	-	-
	EXP	43.9	59.6	72.5	70.4	66.2	50.0	38.3*	37.4*	33.4*	29.9*
	Elow							37.2	35.2	30.6	26.5
	Eup							39.4	39.6	36.4	33.5
45	OBS	72.5	104.6	144.7	170.8	171.6	153.2	-	-	-	-
	EXP	79.3	109.5	143.1	166.3	166.7	157.0	118.6*	90.8*	88.5*	79.2*
	Elow							115.1	85.6	81.0	70.3
	Eup							122.0	96.2	96.5	88.8
50	OBS	156.6	184.3	223.2	297.4	347.8	348.7	-	-	-	-
	EXP	155.3	175.9	233.8	291.7	350.1	351.4	330.8*	249.9*	191.4*	186.6*
	Elow							321.2	235.5	175.2	165.8
	Eup							340.5	264.7	208.6	209.3
55	OBS	254.0	278.9	309.2	413.6	505.4	612.4	-	-	-	-
	EXP	248.6	286.8	312.7	396.7	511.4	614.4	616.8*	580.6*	438.6*	335.9*
	Elow							598.8	547.3	401.3	298.4
	Eup							634.7	614.9	478.0	376.8
60	OBS	369.9	429.1	491.6	484.5	627.6	835.9	-	-	-	-
	EXP	368.1	426.8	473.8	493.1	646.3	834.1	1002.0*	1005.9*	946.9*	715.3*
	Elow							972.8	948.2	866.6	635.5
	Eup							1031.2	1065.4	1032.1	802.3
65	OBS	436.5	559.6	622.6	652.6	704.7	942.8	-	-	-	-
	EXP	447.1	556.8	621.3	658.4	707.8	928.7	1198.6*	1439.8*	1445.5*	1360.7*
	Elow							1163.7	1357.2	1322.8	1209.0
	Eup							1233.5	1525.0	1575.5	1526.3
70	OBS	506.0	632.0	727.3	762.0	871.0	942.5	-	-	-	-
	EXP	506.1	616.8	739.2	787.3	862.0	927.7	1217.2*	1570.9*	1887.1*	1894.5*
	Elow							1181.7	1480.7	1726.9	1683.2
	Eup							1252.7	1663.7	2056.8	2125.1
75	OBS	583.9	649.3	757.1	878.9	974.3	1030.9	-	-	-	-
	EXP	583.9	649.1	761.2	870.9	958.3	1050.2	1130.3*	1483.1*	1914.0*	2299.2*
	Elow							1097.4	1397.9	1751.5	2042.8
	Eup							1163.2	1570.7	2086.1	2579.1
30-79	OBS	180.5	215.6	251.0	282.3	323.6	372.5	-	-	-	-
	EXP	180.7	215.7	251.5	281.3	324.7	372.4	417.1*	449.0*	453.1*	426.6*
	Elow							405.0	423.3	414.6	379.1
	Eup							429.3	475.6	493.8	478.6

Osmond and Gardner Modelling

**Poland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

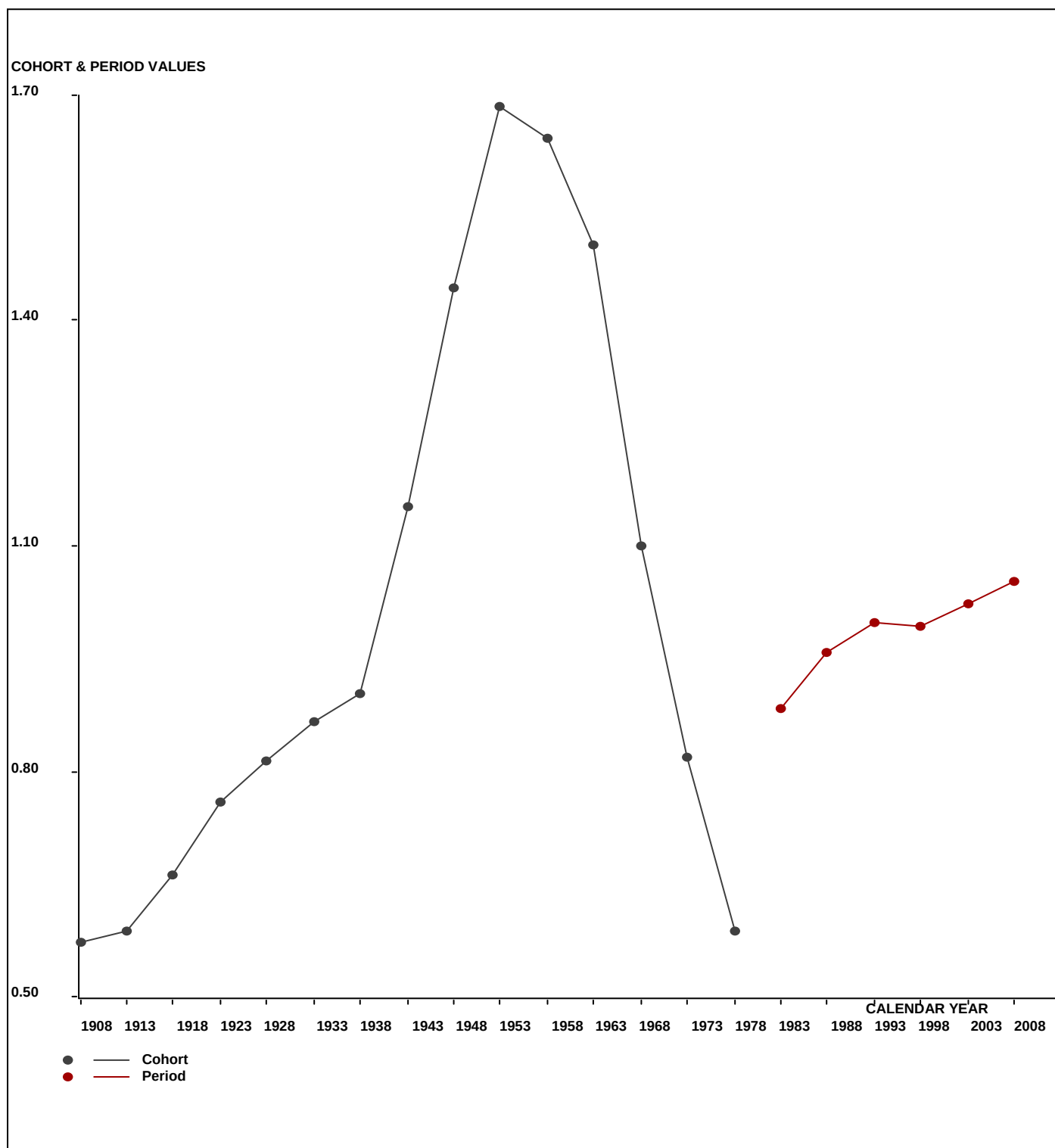
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	53.0	61.0	57.0	34.8	25.0	22.0	-	-	-	-
	EXP	56.9	64.2	52.6	31.9	25.7	28.9	28.6*	24.3*	18.5*	13.4*
	CHI	0.273	0.162	0.370	0.272	0.021	1.663	-	-	-	-
35 -	OBS	120.0	172.0	187.0	163.0	93.0	79.0	-	-	-	-
	EXP	107.5	182.0	197.4	153.6	96.9	78.3	88.3*	87.4*	74.1*	56.5*
	CHI	1.456	0.546	0.550	0.580	0.157	0.007	-	-	-	-
40 -	OBS	223.0	308.0	563.0	565.8	473.0	293.0	-	-	-	-
	EXP	208.7	341.0	553.6	571.1	461.6	292.3	236.6*	267.5*	264.6*	224.6*
	CHI	0.978	3.185	0.159	0.049	0.284	0.002	-	-	-	-
45 -	OBS	393.0	487.0	814.0	1276.6	1371.0	1054.0	-	-	-	-
	EXP	429.6	509.8	805.0	1242.5	1332.0	1080.2	685.4*	556.2*	628.7*	622.6*
	CHI	3.124	1.021	0.101	0.935	1.145	0.636	-	-	-	-
50 -	OBS	862.0	973.0	1014.0	1631.2	2542.0	2735.0	-	-	-	-
	EXP	854.9	928.5	1061.8	1599.9	2558.5	2756.2	2240.3*	1425.2*	1156.6*	1309.2*
	CHI	0.059	2.131	2.150	0.611	0.107	0.162	-	-	-	-
55 -	OBS	1363.0	1482.0	1579.0	1818.8	2691.0	4355.0	-	-	-	-
	EXP	1334.2	1524.0	1596.7	1744.6	2723.0	4369.1	4725.7*	3850.5*	2451.0*	1993.0*
	CHI	0.623	1.159	0.197	3.156	0.376	0.045	-	-	-	-
60 -	OBS	1463.0	2182.0	2482.0	2360.8	2648.0	4281.0	-	-	-	-
	EXP	1456.2	2170.4	2392.3	2402.4	2727.0	4271.8	6884.5*	7475.9*	6097.7*	3892.2*
	CHI	0.032	0.062	3.361	0.720	2.289	0.020	-	-	-	-
65 -	OBS	1321.0	2048.0	2914.0	3052.2	3224.0	3753.0	-	-	-	-
	EXP	1353.2	2037.9	2907.6	3079.3	3238.0	3697.1	5832.0*	9435.5*	10273.4*	8407.1*
	CHI	0.765	0.050	0.014	0.239	0.061	0.845	-	-	-	-
70 -	OBS	1728.0	1650.0	2344.0	3133.8	3667.0	3929.0	-	-	-	-
	EXP	1728.5	1610.4	2382.4	3237.8	3628.8	3867.1	4438.8*	7072.1*	11471.5*	12563.4*
	CHI	0.000	0.973	0.618	3.339	0.402	0.991	-	-	-	-
75 -	OBS	1432.0	1741.0	1548.0	2309.8	3327.0	3689.0	-	-	-	-
	EXP	1432.0	1740.5	1556.3	2288.8	3272.4	3758.1	4048.7*	4679.5*	7566.6*	12345.8*
	CHI	0.000	0.000	0.044	0.193	0.913	1.269	-	-	-	-
30-79	OBS	8958.0	11104.0	13502.0	16346.8	20061.0	24190.0	-	-	-	-
	EXP	8961.7	11108.7	13505.8	16351.8	20063.9	24198.9	29209.0*	34874.1*	40002.8*	41427.9*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Poland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

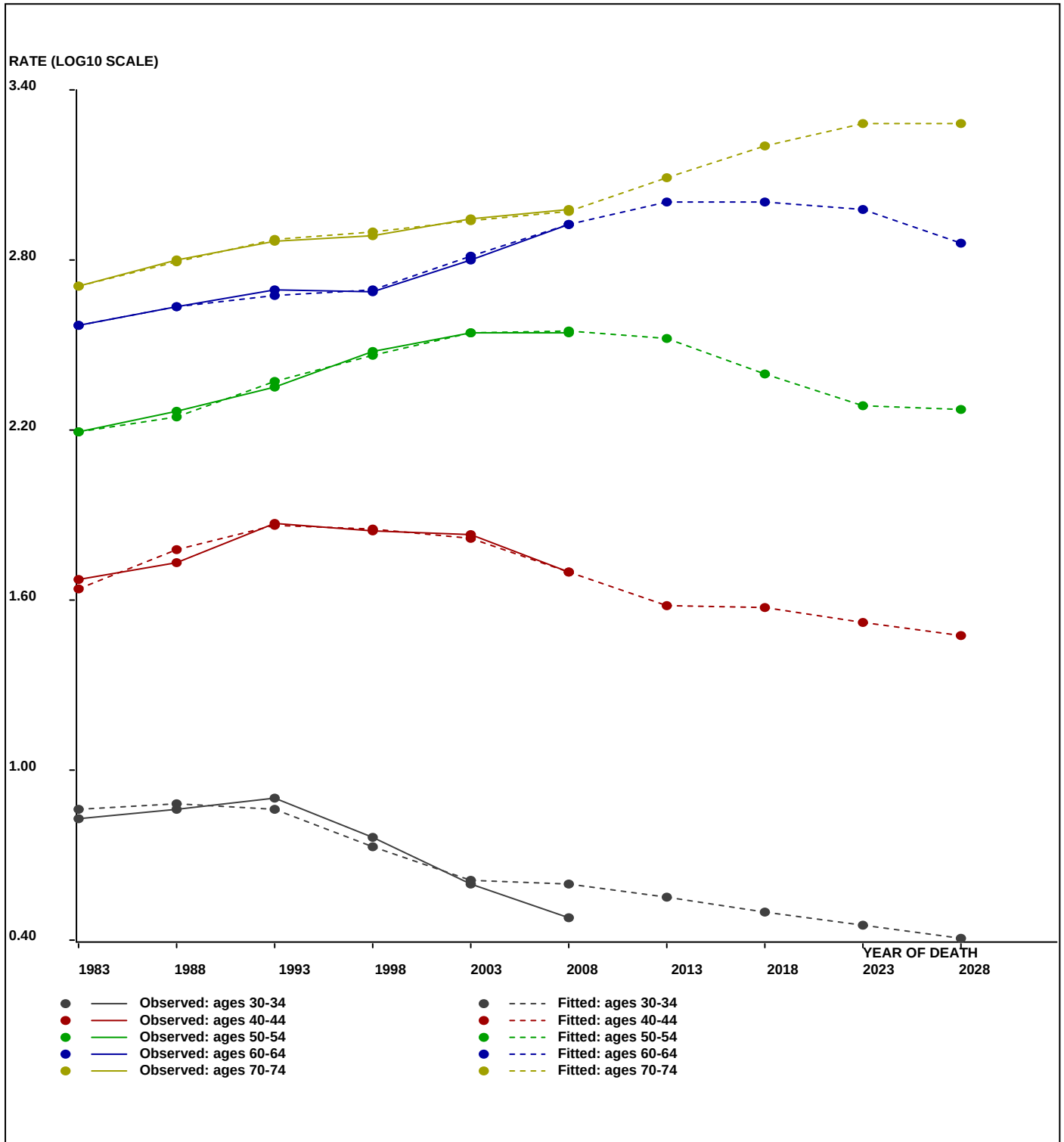


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Poland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Poland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	3.6	12.3	38.3	118.6	330.8	616.8	1002.0	1198.6	1217.2	1130.3
2016	PRE	3.2	11.0	37.4	90.8	249.9	580.6	1005.9	1439.8	1570.9	1483.1
2021	PRE	2.9	9.8	33.4	88.5	191.4	438.6	946.9	1445.5	1887.1	1914.0
2026	PRE	2.6	8.8	29.9	79.2	186.6	335.9	715.3	1360.7	1894.5	2299.2

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	28.6	88.3	236.6	685.4	2240.3	4725.7	6884.5	5832.0	4438.8	4048.7
2016	PRE	24.3	87.4	267.5	556.2	1425.2	3850.5	7475.9	9435.5	7072.1	4679.5
2021	PRE	18.5	74.1	264.6	628.7	1156.6	2451.0	6097.7	10273.4	11471.5	7566.6
2026	PRE	13.4	56.5	224.6	622.6	1309.2	1993.0	3892.2	8407.1	12563.4	12345.8

Osmond and Gardner Modelling

Poland COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	563.76	11.05	51	P, C	97.73	3036.55	0.0000
AGE-PERIOD	44.85	1.00	45	Cohort	71.43	245.97	0.0000
AGE-COHORT	70.39	1.96	36	Period	81.80	373.78	0.0000
PERIOD-COHORT	17.08	0.43	40	Age	24.96	90.67	0.0000
FULL AGE-PERIOD-COHORT	12.81	0.40	32			68.02	0.0002

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.832419	6.798594
35	0.970504	9.343386
40	1.240825	17.411065
45	1.472300	29.668794
50	1.748303	56.014768
55	2.042099	110.179098
60	2.277947	189.647440
65	2.532049	340.446643
70	2.761841	577.884175
75	2.967433	927.753594

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.166679	1.467840
1986	0.094758	1.243822
1991	-0.038198	0.915804
1996	-0.081216	0.829437
2001	-0.125553	0.748940
2006	-0.107072	0.781498

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.011829	0.973130
1911	-0.037393	0.917501
1916	-0.015725	0.964439
1921	-0.004135	0.990524
1926	0.012893	1.030133
1931	0.019542	1.046024
1936	-0.003738	0.991430
1941	0.032347	1.077326
1946	0.031563	1.075382
1951	0.037433	1.090017
1956	-0.034799	0.922998
1961	-0.179254	0.661830
1966	-0.265912	0.542110
1971	-0.490350	0.323333
1976	-0.806617	0.156093

Osmond and Gardner Modelling

Poland COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	66.0	77.0	33.0	18.6	10.0	6.0
EXP	85.0	65.1	29.5	18.2	10.3	6.0
CHI	4.3	2.2	0.4	0.0	0.0	0.0
35 - OBS	81.0	81.0	74.0	44.4	23.0	15.0
EXP	85.2	98.0	65.2	36.2	22.4	14.7
CHI	0.2	2.9	1.2	1.9	0.0	0.0
40 - OBS	139.0	124.0	143.0	108.2	50.0	42.0
EXP	130.9	133.2	132.6	108.1	60.1	43.1
CHI	0.5	0.6	0.8	0.0	1.7	0.0
45 - OBS	262.0	193.0	171.0	176.6	144.0	102.0
EXP	234.0	185.1	164.3	200.5	163.8	105.6
CHI	3.4	0.3	0.3	2.8	2.4	0.1
50 - OBS	514.0	358.0	256.0	268.8	301.0	313.0
EXP	473.6	364.6	251.0	274.0	334.2	316.9
CHI	3.5	0.1	0.1	0.1	3.3	0.0
55 - OBS	859.0	738.0	496.0	459.6	441.0	739.0
EXP	894.0	761.7	510.9	433.0	472.5	667.5
CHI	1.4	0.7	0.4	1.6	2.1	7.7
60 - OBS	1102.0	1214.0	906.0	768.2	616.0	857.0
EXP	1090.7	1235.6	917.3	759.8	645.6	816.3
CHI	0.1	0.4	0.1	0.1	1.4	2.0
65 - OBS	1430.0	1534.0	1495.0	1448.8	1145.0	1121.0
EXP	1458.7	1535.1	1503.2	1381.6	1156.4	1141.0
CHI	0.6	0.0	0.0	3.3	0.1	0.4
70 - OBS	2650.0	1857.0	1707.0	1970.8	1913.0	1861.0
EXP	2658.0	1810.0	1689.5	2030.6	1905.9	1866.5
CHI	0.0	1.2	0.2	1.8	0.0	0.0
75 - OBS	3250.0	2847.0	1656.0	1975.2	2564.0	2629.0
EXP	3250.0	2839.0	1675.4	2003.3	2444.2	2713.9
CHI	0.0	0.0	0.2	0.4	5.9	2.7

Osmond and Gardner Modelling

Poland COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	6.798594
35	9.343386
40	17.411065
45	29.668794
50	56.014768
55	110.179098
60	189.647440
65	340.446643
70	577.884175
75	927.753594

PERIOD	EFFECT	LOWER	UPPER
% Period Change	104.3472	101.3472	107.3472
1981	1.467840		
1986	1.243822		
1991	0.915804		
1996	0.829437		
2001	0.748940		
2006	0.781498		
2011	0.815472	0.792027	0.838916
2016	0.850922	0.802697	0.900553
2021	0.887913	0.813511	0.966719
2026	0.926513	0.824471	1.037746

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.973130	1.000000	
1911	0.917501	2.000000	
1916	0.964439	4.000000	
1921	0.990524	8.000000	
1926	1.030133	16.000000	
1931	1.046024	32.000000	
1936	0.991430	64.000000	
1941	1.077326	128.000000	
1946	1.075382	256.000000	
1951	1.090017	512.000000	
1956	0.922998	1024.000000	
1961	0.661830	2048.000000	
1966	0.542110	4096.000000	
1971	0.323333	8192.000000	
1976	0.275024	EXTRAPOLATION	0.156093
1981	0.211917	EXTRAPOLATION	
1986	0.163290	EXTRAPOLATION	
1991	0.125821	EXTRAPOLATION	
1996	0.096950	EXTRAPOLATION	

Osmond and Gardner Modelling

**Poland COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	8.4	9.2	4.6	3.1	1.6	0.8	-	-	-	-
	EXP	10.9	7.8	4.1	3.1	1.6	1.5	1.2*	0.9*	0.8*	0.6*
	Elow							1.1	0.9	0.7	0.5
	Eup							1.2	1.0	0.8	0.7
35	OBS	14.0	10.5	9.0	6.3	3.9	2.4	-	-	-	-
	EXP	14.7	12.7	7.9	5.1	3.8	2.4	2.1*	1.7*	1.4*	1.1*
	Elow							2.0	1.6	1.2	1.0
	Eup							2.2	1.8	1.5	1.2
40	OBS	29.2	21.7	18.7	13.3	7.2	7.2	-	-	-	-
	EXP	27.5	23.3	17.4	13.3	8.6	7.4	4.6*	4.1*	3.3*	2.6*
	Elow							4.5	3.8	3.0	2.3
	Eup							4.7	4.3	3.6	3.0
45	OBS	48.3	41.5	30.4	23.6	18.0	14.8	-	-	-	-
	EXP	43.2	39.8	29.2	26.8	20.5	15.3	13.1*	8.2*	7.2*	5.8*
	Elow							12.7	7.7	6.6	5.2
	Eup							13.5	8.6	7.9	6.5
50	OBS	93.4	67.8	56.4	49.0	41.2	39.9	-	-	-	-
	EXP	86.0	69.1	55.3	50.0	45.7	40.4	30.2*	25.8*	16.1*	14.3*
	Elow							29.4	24.4	14.7	12.7
	Eup							31.1	27.3	17.5	16.0
55	OBS	160.1	138.9	97.1	104.5	82.8	103.9	-	-	-	-
	EXP	166.6	143.4	100.0	98.5	88.7	93.9	82.9*	62.0*	53.0*	33.0*
	Elow							80.5	58.5	48.6	29.4
	Eup							85.3	65.7	57.7	37.0
60	OBS	278.6	238.8	179.4	157.7	146.0	167.3	-	-	-	-
	EXP	275.7	243.0	181.7	156.0	153.0	159.4	168.6*	148.9*	111.4*	95.3*
	Elow							163.7	140.5	102.1	84.8
	Eup							173.4	157.6	121.3	106.7
65	OBS	472.5	419.1	319.4	309.7	250.3	281.6	-	-	-	-
	EXP	482.0	419.4	321.2	295.4	252.8	286.6	298.6*	315.8*	279.0*	208.8*
	Elow							290.0	297.9	255.6	185.8
	Eup							307.1	334.2	303.8	233.8
70	OBS	775.9	711.2	529.6	479.2	454.4	446.4	-	-	-	-
	EXP	778.3	693.2	524.2	493.8	452.7	447.7	507.7*	528.8*	559.3*	494.2*
	Elow							493.1	498.8	512.4	439.8
	Eup							522.3	559.6	608.9	553.5
75	OBS	1325.2	1061.7	809.9	751.5	750.8	734.7	-	-	-	-
	EXP	1325.2	1058.8	819.4	762.2	715.8	758.4	750.1*	850.5*	885.9*	937.0*
	Elow							728.5	802.3	811.6	833.8
	Eup							771.6	900.1	964.5	1049.4
30-79	OBS	192.3	163.9	123.6	113.9	101.7	106.4	-	-	-	-
	EXP	192.1	164.0	123.7	113.6	102.9	106.1	107.6*	108.2*	102.6*	91.6*
	Elow							104.5	102.1	94.0	81.5
	Eup							110.7	114.5	111.7	102.6

Osmond and Gardner Modelling

**Poland COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

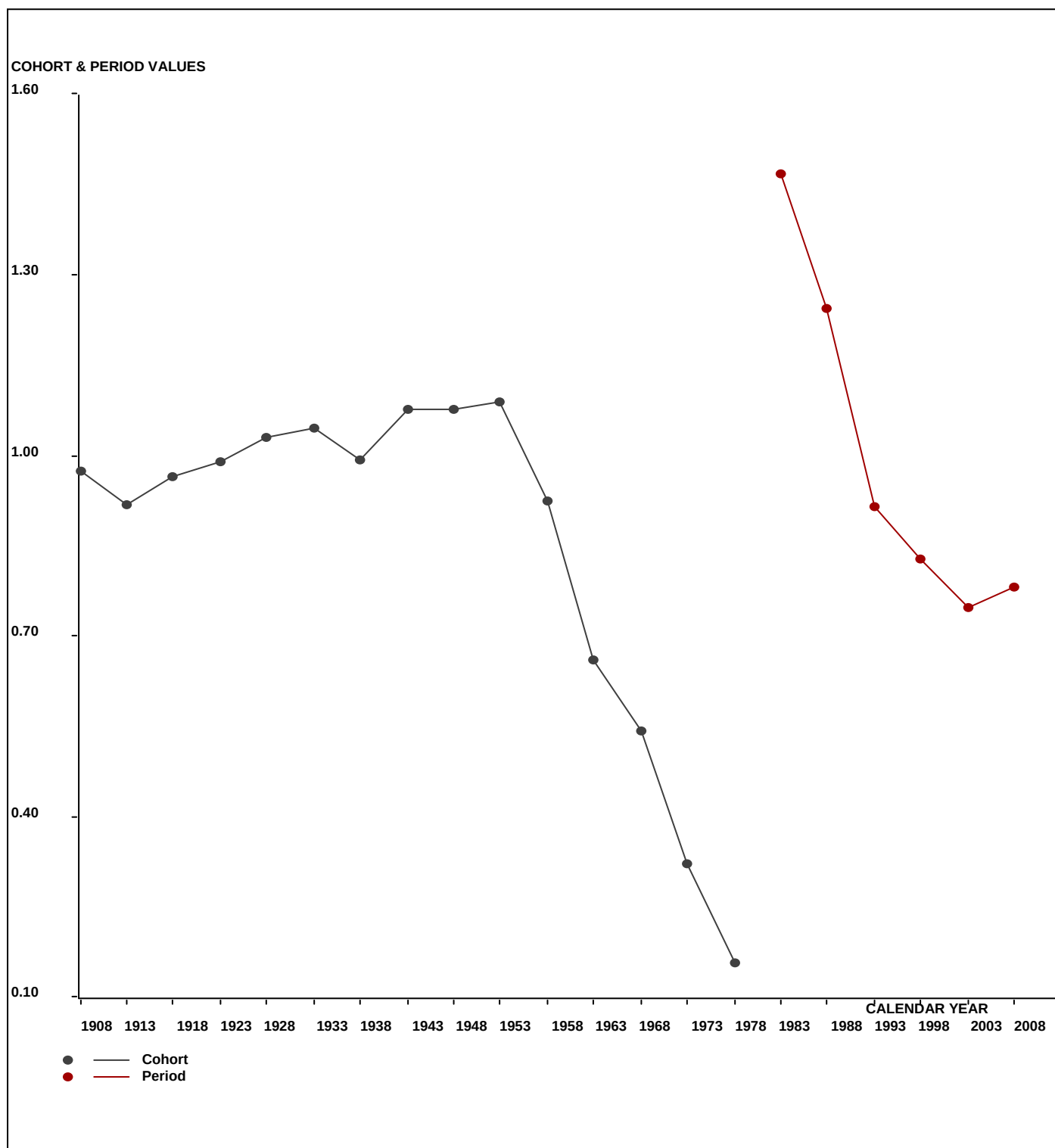
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	66.0	77.0	33.0	18.6	10.0	6.0	-	-	-	-
	EXP	85.0	65.1	29.5	18.2	10.3	10.6	9.4*	7.2*	4.9*	3.2*
	CHI	4.252	2.170	0.410	0.010	0.010	1.977	-	-	-	-
35 -	OBS	81.0	81.0	74.0	44.4	23.0	15.0	-	-	-	-
	EXP	85.2	98.0	65.2	36.2	22.4	14.7	15.1*	13.4*	10.2*	7.0*
	CHI	0.206	2.936	1.199	1.876	0.018	0.007	-	-	-	-
40 -	OBS	139.0	124.0	143.0	108.2	50.0	42.0	-	-	-	-
	EXP	130.9	133.2	132.6	108.1	60.1	43.1	28.4*	29.2*	26.0*	19.8*
	CHI	0.497	0.633	0.810	0.000	1.712	0.028	-	-	-	-
45 -	OBS	262.0	193.0	171.0	176.6	144.0	102.0	-	-	-	-
	EXP	234.0	185.1	164.3	200.5	163.8	105.6	75.8*	50.0*	51.4*	45.8*
	CHI	3.357	0.337	0.271	2.840	2.400	0.123	-	-	-	-
50 -	OBS	514.0	358.0	256.0	268.8	301.0	313.0	-	-	-	-
	EXP	473.6	364.6	251.0	274.0	334.2	316.9	204.7*	147.4*	97.2*	100.1*
	CHI	3.454	0.121	0.098	0.100	3.302	0.047	-	-	-	-
55 -	OBS	859.0	738.0	496.0	459.6	441.0	739.0	-	-	-	-
	EXP	894.0	761.7	510.9	433.0	472.5	667.5	635.4*	411.5*	296.4*	195.8*
	CHI	1.368	0.737	0.433	1.635	2.097	7.668	-	-	-	-
60 -	OBS	1102.0	1214.0	906.0	768.2	616.0	857.0	-	-	-	-
	EXP	1090.7	1235.6	917.3	759.8	645.6	816.3	1158.2*	1107.0*	717.7*	518.3*
	CHI	0.117	0.376	0.139	0.092	1.361	2.033	-	-	-	-
65 -	OBS	1430.0	1534.0	1495.0	1448.8	1145.0	1121.0	-	-	-	-
	EXP	1458.7	1535.1	1503.2	1381.6	1156.4	1141.0	1452.7*	2069.3*	1983.0*	1289.8*
	CHI	0.564	0.001	0.044	3.272	0.113	0.352	-	-	-	-
70 -	OBS	2650.0	1857.0	1707.0	1970.8	1913.0	1861.0	-	-	-	-
	EXP	2658.0	1810.0	1689.5	2030.6	1905.9	1866.5	1851.4*	2380.7*	3400.0*	3277.2*
	CHI	0.024	1.223	0.181	1.759	0.026	0.016	-	-	-	-
75 -	OBS	3250.0	2847.0	1656.0	1975.2	2564.0	2629.0	-	-	-	-
	EXP	3250.0	2839.0	1675.4	2003.3	2444.2	2713.9	2686.8*	2683.6*	3502.2*	5031.0*
	CHI	0.000	0.022	0.224	0.393	5.870	2.653	-	-	-	-
30-79	OBS	10353.0	9023.0	6937.0	7239.2	7207.0	7685.0	-	-	-	-
	EXP	10360.0	9027.3	6938.9	7245.2	7215.6	7695.9	8117.9*	8899.1*	10088.8*	10488.2*
	O/E	0.999	1.000	1.000	0.999	0.999	0.999	-	-	-	-

Osmond and Gardner Modelling

Poland COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

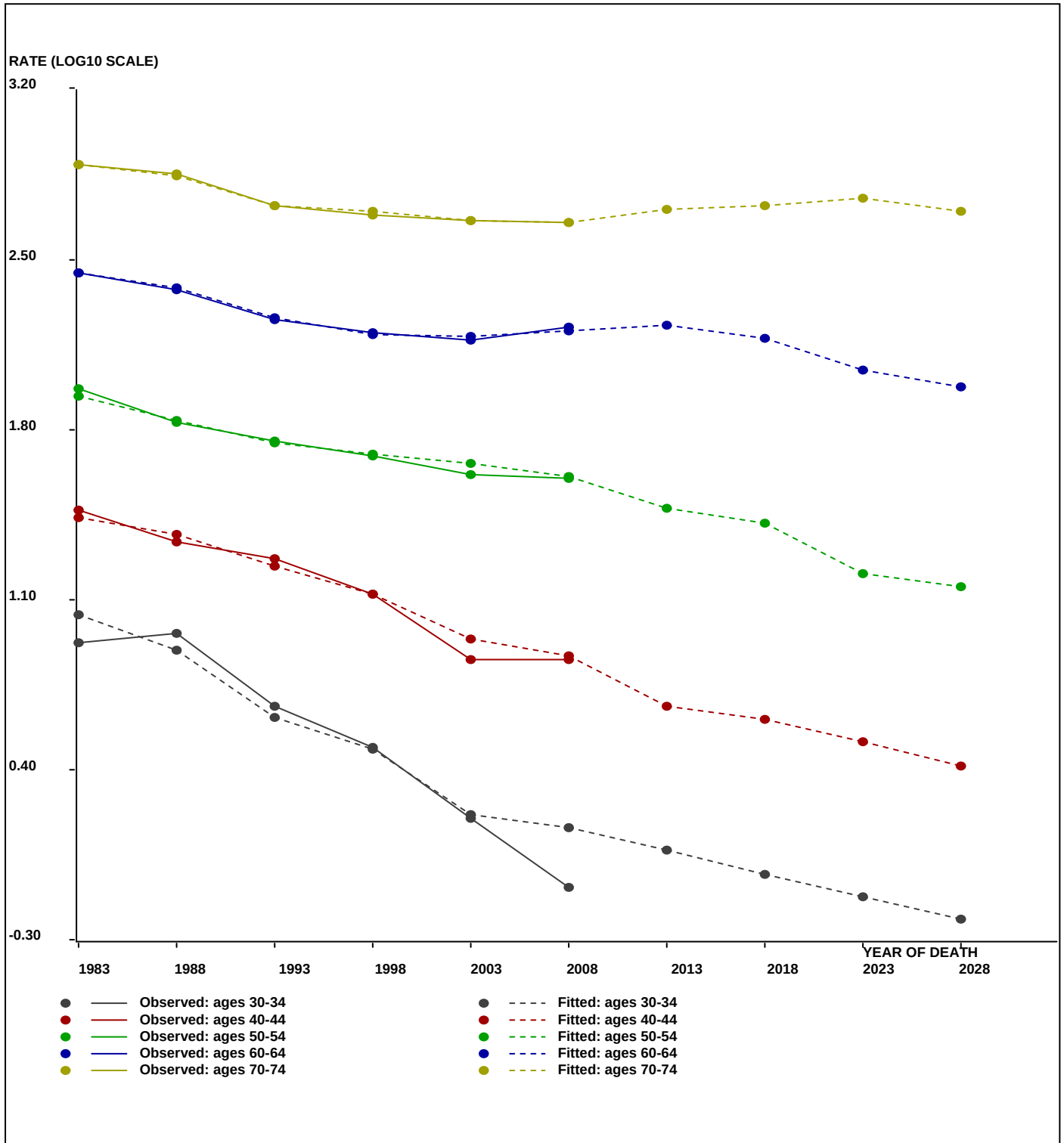


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Poland COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Poland COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	1.2	2.1	4.6	13.1	30.2	82.9	168.6	298.6	507.7	750.1
2016 PRE	0.9	1.7	4.1	8.2	25.8	62.0	148.9	315.8	528.8	850.5
2021 PRE	0.8	1.4	3.3	7.2	16.1	53.0	111.4	279.0	559.3	885.9
2026 PRE	0.6	1.1	2.6	5.8	14.3	33.0	95.3	208.8	494.2	937.0

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	9.4	15.1	28.4	75.8	204.7	635.4	1158.2	1452.7	1851.4	2686.8
2016 PRE	7.2	13.4	29.2	50.0	147.4	411.5	1107.0	2069.3	2380.7	2683.6
2021 PRE	4.9	10.2	26.0	51.4	97.2	296.4	717.7	1983.0	3400.0	3502.2
2026 PRE	3.2	7.0	19.8	45.8	100.1	195.8	518.3	1289.8	3277.2	5031.0

Osmond and Gardner Modelling

Sweden IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	7282.46	142.79	51	P, C	99.89	39927.99	0.0000
AGE-PERIOD	75.63	1.68	45	Cohort	89.08	401.19	0.0000
AGE-COHORT	15.81	0.44	36	Period	47.76	83.84	0.0000
PERIOD-COHORT	47.25	1.18	40	Age	82.52	250.61	0.0000
FULL AGE-PERIOD-COHORT	8.26	0.26	32			43.80	0.0798

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.938789	86.853775
35	2.372184	235.604488
40	2.742240	552.382438
45	3.060141	1148.526377
50	3.319678	2087.749137
55	3.535867	3434.528515
60	3.722524	5278.662867
65	3.893200	7819.878026
70	4.047047	11144.143686
75	4.197314	15751.207127

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.069210	1.172763
1986	0.041815	1.101070
1991	-0.000005	0.999988
1996	-0.044899	0.901781
2001	-0.091123	0.810732
2006	-0.141059	0.722672

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.199378	1.582624
1911	0.155639	1.430997
1916	0.108118	1.282678
1921	0.050268	1.122711
1926	-0.021765	0.951120
1931	-0.093080	0.807087
1936	-0.186530	0.650834
1941	-0.286370	0.517166
1946	-0.325313	0.472810
1951	-0.392985	0.404589
1956	-0.434633	0.367593
1961	-0.499829	0.316352
1966	-0.558228	0.276549
1971	-0.638833	0.229703
1976	-0.630056	0.234393

Osmond and Gardner Modelling

Sweden IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	61.0	46.0	45.0	37.0	30.0	22.0
EXP	65.2	51.4	42.5	35.1	25.7	22.0
CHI	0.3	0.6	0.1	0.1	0.7	0.0
35 - OBS	212.0	187.0	123.0	93.0	90.0	59.0
EXP	217.7	165.8	128.5	104.5	86.1	63.8
CHI	0.1	2.7	0.2	1.3	0.2	0.4
40 - OBS	475.0	477.0	328.0	276.0	237.0	177.0
EXP	469.9	474.8	353.3	270.9	219.8	183.0
CHI	0.1	0.0	1.8	0.1	1.3	0.2
45 - OBS	1021.0	908.0	857.0	661.0	503.0	396.0
EXP	990.3	904.6	889.1	655.2	502.3	405.7
CHI	1.0	0.0	1.2	0.1	0.0	0.2
50 - OBS	2169.0	1678.0	1433.0	1417.0	1036.0	811.0
EXP	2136.6	1650.7	1468.3	1429.6	1053.6	806.3
CHI	0.5	0.5	0.8	0.1	0.3	0.0
55 - OBS	4406.0	3208.0	2447.0	2064.0	2043.0	1531.0
EXP	4444.9	3174.3	2393.8	2114.7	2059.5	1513.5
CHI	0.3	0.4	1.2	1.2	0.1	0.2
60 - OBS	8020.0	6017.0	4185.0	3129.0	2855.0	2812.0
EXP	8093.1	6012.5	4202.5	3160.7	2802.0	2748.9
CHI	0.7	0.0	0.1	0.3	1.0	1.5
65 - OBS	12080.0	10145.0	7264.0	5223.0	3995.0	3487.0
EXP	12113.9	10148.6	7387.1	5167.6	3914.9	3464.2
CHI	0.1	0.0	2.1	0.6	1.6	0.2
70 - OBS	16423.0	13665.0	11448.0	8364.0	5675.0	4303.0
EXP	16337.1	13664.2	11302.6	8258.4	5855.6	4468.0
CHI	0.5	0.0	1.9	1.4	5.6	6.1
75 - OBS	17823.0	16339.0	13629.0	11375.0	8562.0	6217.0
EXP	17823.0	16425.4	13596.1	11445.1	8512.1	6144.4
CHI	0.0	0.5	0.1	0.4	0.3	0.9

Osmond and Gardner Modelling

Sweden IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	86.853775
35	235.604488
40	552.382438
45	1148.526377
50	2087.749137
55	3434.528515
60	5278.662867
65	7819.878026
70	11144.143686
75	15751.207127

PERIOD	EFFECT	LOWER	UPPER
% Period Change	89.1383	86.1383	92.1383

1981	1.172763		
1986	1.101070		
1991	0.999988		
1996	0.901781		
2001	0.810732		
2006	0.722672		
2011	0.644178	0.622497	0.665858
2016	0.574209	0.536208	0.613510
2021	0.511840	0.461881	0.565277
2026	0.456245	0.397856	0.520837

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.582624	1.000000	
1911	1.430997	2.000000	
1916	1.282678	4.000000	
1921	1.122711	8.000000	
1926	0.951120	16.000000	
1931	0.807087	32.000000	
1936	0.650834	64.000000	
1941	0.517166	128.000000	
1946	0.472810	256.000000	
1951	0.404589	512.000000	
1956	0.367593	1024.000000	
1961	0.316352	2048.000000	
1966	0.276549	4096.000000	
1971	0.229703	8192.000000	
1976	0.200162	EXTRAPOLATION	0.234393
1981	0.172424	EXTRAPOLATION	
1986	0.148529	EXTRAPOLATION	
1991	0.127946	EXTRAPOLATION	
1996	0.110215	EXTRAPOLATION	

Osmond and Gardner Modelling

**Sweden IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	38.5	31.5	29.1	22.8	18.9	14.7	-	-	-	-
	EXP	41.2	35.2	27.5	21.7	16.2	12.6	9.6*	7.4*	5.7*	4.4*
	Elow							9.3	6.9	5.1	3.8
	Eup							10.0	7.9	6.3	5.0
35	OBS	127.2	118.4	82.9	59.8	55.2	36.1	-	-	-	-
	EXP	130.6	105.0	86.6	67.2	52.8	39.1	30.4*	23.3*	17.9*	13.8*
	Elow							29.4	21.8	16.2	12.0
	Eup							31.4	24.9	19.8	15.7
40	OBS	338.7	288.9	207.5	186.5	152.8	106.8	-	-	-	-
	EXP	335.0	287.6	223.5	183.1	141.7	110.4	81.7*	63.5*	48.7*	37.4*
	Elow							79.0	59.3	44.0	32.6
	Eup							84.5	67.8	53.8	42.7
45	OBS	903.9	656.5	523.4	422.7	342.7	256.3	-	-	-	-
	EXP	876.6	654.0	543.0	419.0	342.3	262.6	204.6*	151.5*	117.7*	90.4*
	Elow							197.7	141.5	106.2	78.8
	Eup							211.5	161.9	130.0	103.1
50	OBS	2006.0	1520.8	1053.8	882.3	673.4	557.9	-	-	-	-
	EXP	1976.1	1496.1	1079.7	890.2	684.8	554.6	425.5*	331.5*	245.5*	190.7*
	Elow							411.1	309.6	221.5	166.3
	Eup							439.8	354.2	271.1	217.7
55	OBS	3797.5	3084.5	2285.0	1563.4	1306.0	1015.8	-	-	-	-
	EXP	3831.0	3052.1	2235.3	1601.8	1316.5	1004.2	813.3*	623.9*	486.2*	359.9*
	Elow							785.9	582.6	438.7	313.9
	Eup							840.7	666.6	536.9	410.9
60	OBS	6887.5	5532.2	4242.5	3067.0	2255.1	1845.1	-	-	-	-
	EXP	6950.3	5528.1	4260.3	3098.1	2213.3	1803.6	1375.8*	1114.2*	854.7*	666.0*
	Elow							1329.5	1040.5	771.3	580.8
	Eup							1422.1	1190.5	944.0	760.3
65	OBS	11730.4	9663.4	7313.6	5752.4	4210.6	2941.9	-	-	-	-
	EXP	11763.3	9666.8	7437.6	5691.4	4126.2	2922.6	2381.7*	1816.7*	1471.3*	1128.7*
	Elow							2301.6	1696.5	1327.7	984.2
	Eup							2461.9	1941.0	1624.9	1288.5
70	OBS	18800.7	15740.1	12672.5	9680.6	7067.1	5048.0	-	-	-	-
	EXP	18702.3	15739.1	12511.5	9558.4	7292.0	5241.5	3712.6*	3025.5*	2307.8*	1869.0*
	Elow							3587.7	2825.3	2082.5	1629.8
	Eup							3837.6	3232.6	2548.7	2133.6
75	OBS	29234.9	24687.6	20252.4	15849.4	12217.0	9295.6	-	-	-	-
	EXP	29234.9	24818.1	20203.5	15947.2	12145.8	9187.0	6603.7*	4677.5*	3811.8*	2907.5*
	Elow							6381.5	4367.9	3439.8	2535.4
	Eup							6826.0	4997.6	4209.8	3319.2
30-79	OBS	4416.6	3631.4	2835.9	2172.5	1641.6	1229.5	-	-	-	-
	EXP	4416.1	3627.6	2838.7	2172.8	1641.9	1230.7	925.3*	710.1*	557.7*	432.4*
	Elow							894.2	663.1	503.2	377.1
	Eup							956.5	758.7	615.9	493.6

Osmond and Gardner Modelling

**Sweden IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

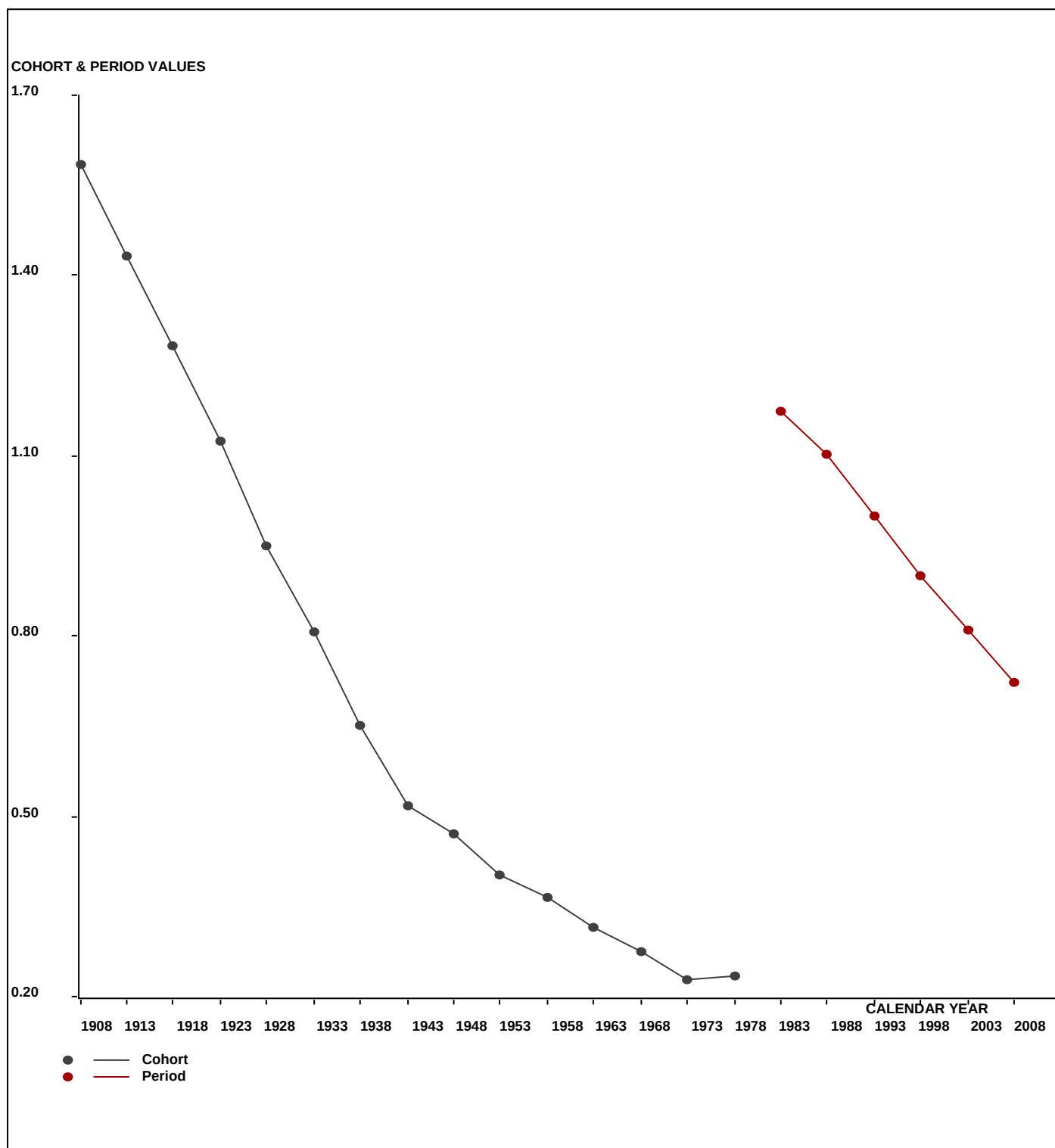
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	61.0	46.0	45.0	37.0	30.0	22.0	-	-	-	-
	EXP	65.2	51.4	42.5	35.1	25.7	18.8	14.4*	12.0*	10.3*	7.1*
	CHI	0.276	0.567	0.148	0.104	0.725	0.549	-	-	-	-
35 -	OBS	212.0	187.0	123.0	93.0	90.0	59.0	-	-	-	-
	EXP	217.7	165.8	128.5	104.5	86.1	63.8	46.8*	35.5*	29.5*	25.3*
	CHI	0.147	2.721	0.239	1.265	0.175	0.368	-	-	-	-
40 -	OBS	475.0	477.0	328.0	276.0	237.0	177.0	-	-	-	-
	EXP	469.9	474.8	353.3	270.9	219.8	183.0	136.0*	98.5*	74.9*	62.3*
	CHI	0.055	0.010	1.812	0.095	1.346	0.199	-	-	-	-
45 -	OBS	1021.0	908.0	857.0	661.0	503.0	396.0	-	-	-	-
	EXP	990.3	904.6	889.1	655.2	502.3	405.7	340.1*	251.1*	182.2*	138.8*
	CHI	0.954	0.013	1.160	0.051	0.001	0.233	-	-	-	-
50 -	OBS	2169.0	1678.0	1433.0	1417.0	1036.0	811.0	-	-	-	-
	EXP	2136.6	1650.7	1468.3	1429.6	1053.6	806.3	652.6*	545.4*	403.4*	293.0*
	CHI	0.490	0.451	0.848	0.111	0.294	0.028	-	-	-	-
55 -	OBS	4406.0	3208.0	2447.0	2064.0	2043.0	1531.0	-	-	-	-
	EXP	4444.9	3174.3	2393.8	2114.7	2059.5	1513.5	1161.3*	940.0*	787.2*	583.1*
	CHI	0.341	0.357	1.183	1.213	0.132	0.201	-	-	-	-
60 -	OBS	8020.0	6017.0	4185.0	3129.0	2855.0	2812.0	-	-	-	-
	EXP	8093.1	6012.5	4202.5	3160.7	2802.0	2748.9	2021.4*	1544.2*	1253.2*	1052.0*
	CHI	0.661	0.003	0.073	0.318	1.001	1.450	-	-	-	-
65 -	OBS	12080.0	10145.0	7264.0	5223.0	3995.0	3487.0	-	-	-	-
	EXP	12113.9	10148.6	7387.1	5167.6	3914.9	3464.2	3445.9*	2529.1*	1943.1*	1582.4*
	CHI	0.095	0.001	2.052	0.594	1.640	0.150	-	-	-	-
70 -	OBS	16423.0	13665.0	11448.0	8364.0	5675.0	4303.0	-	-	-	-
	EXP	16337.1	13664.2	11302.6	8258.4	5855.6	4468.0	4000.9*	4004.8*	2956.4*	2289.7*
	CHI	0.452	0.000	1.871	1.351	5.567	6.093	-	-	-	-
75 -	OBS	17823.0	16339.0	13629.0	11375.0	8562.0	6217.0	-	-	-	-
	EXP	17823.0	16425.4	13596.1	11445.1	8512.1	6144.4	4790.6*	4336.2*	4381.7*	3259.0*
	CHI	0.000	0.454	0.080	0.430	0.292	0.859	-	-	-	-
30-79	OBS	62690.0	52670.0	41759.0	32639.0	25026.0	19815.0	-	-	-	-
	EXP	62691.7	52672.2	41763.8	32641.8	25031.6	19816.6	16609.9*	14296.9*	12021.8*	9292.7*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Sweden IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

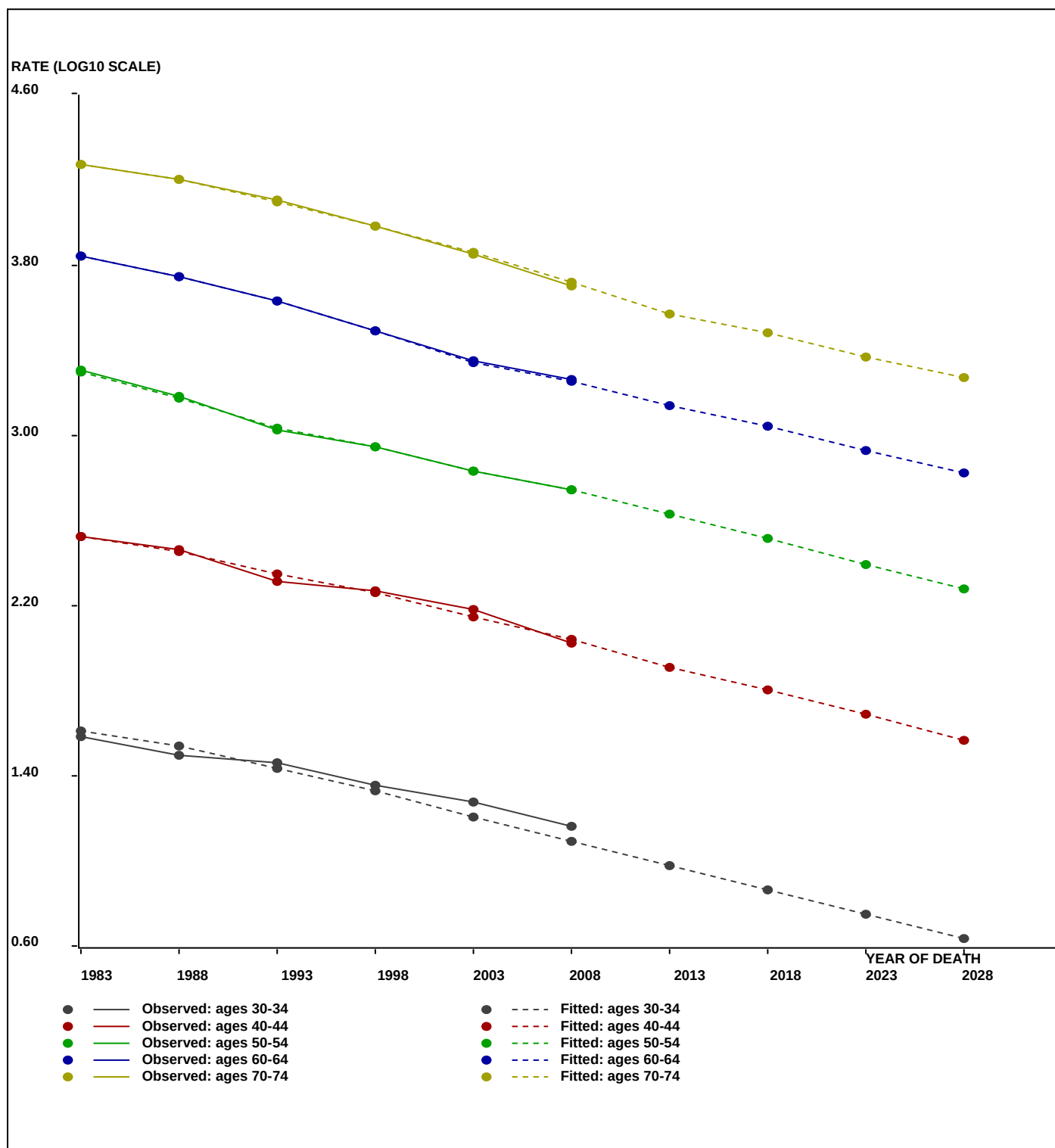


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Sweden IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Sweden IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	9.6	30.4	81.7	204.6	425.5	813.3	1375.8	2381.7	3712.6	6603.7
2016	PRE	7.4	23.3	63.5	151.5	331.5	623.9	1114.2	1816.7	3025.5	4677.5
2021	PRE	5.7	17.9	48.7	117.7	245.5	486.2	854.7	1471.3	2307.8	3811.8
2026	PRE	4.4	13.8	37.4	90.4	190.7	359.9	666.0	1128.7	1869.0	2907.5

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	14.4	46.8	136.0	340.1	652.6	1161.3	2021.4	3445.9	4000.9	4790.6
2016	PRE	12.0	35.5	98.5	251.1	545.4	940.0	1544.2	2529.1	4004.8	4336.2
2021	PRE	10.3	29.5	74.9	182.2	403.4	787.2	1253.2	1943.1	2956.4	4381.7
2026	PRE	7.1	25.3	62.3	138.8	293.0	583.1	1052.0	1582.4	2289.7	3259.0

Osmond and Gardner Modelling

Sweden Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	614.97	12.06	51	P, C	98.72	3311.40	0.0000
AGE-PERIOD	18.78	0.42	45	Cohort	58.00	100.10	0.0000
AGE-COHORT	41.25	1.15	36	Period	80.88	218.93	0.0000
PERIOD-COHORT	10.22	0.26	40	Age	22.84	54.33	0.0648
FULL AGE-PERIOD-COHORT	7.89	0.25	32			41.94	0.1123

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.268691	18.564830
35	1.563552	36.605979
40	1.863869	73.091844
45	2.110245	128.897726
50	2.333709	215.630059
55	2.593192	391.914792
60	2.856319	718.322298
65	3.152560	1420.888407
70	3.462047	2897.658099
75	3.771555	5909.562407

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.102060	1.264911
1986	0.050150	1.122407
1991	0.037143	1.089289
1996	-0.009150	0.979152
2001	-0.100027	0.794278
2006	-0.210768	0.615506

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.011214	0.974510
1911	0.022214	1.052480
1916	0.007139	1.016573
1921	0.004791	1.011093
1926	-0.000537	0.998764
1931	0.005085	1.011777
1936	-0.008072	0.981585
1941	-0.060600	0.869760
1946	-0.014396	0.967396
1951	-0.013266	0.969915
1956	-0.020451	0.954001
1961	-0.063735	0.863506
1966	-0.061341	0.868279
1971	-0.184542	0.653820
1976	-0.387574	0.409663

Osmond and Gardner Modelling

Sweden Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	46.0	28.0	26.0	20.0	10.0	7.0
EXP	36.1	29.1	27.0	25.6	15.3	7.0
CHI	2.7	0.0	0.0	1.2	1.8	0.0
35 - OBS	84.0	64.0	54.0	46.0	28.0	28.0
EXP	74.6	62.9	56.5	48.1	41.2	24.0
CHI	1.2	0.0	0.1	0.1	4.2	0.6
40 - OBS	124.0	126.0	119.0	87.0	71.0	79.0
EXP	112.8	131.0	122.1	101.0	77.8	64.8
CHI	1.1	0.2	0.1	1.9	0.6	3.1
45 - OBS	176.0	191.0	209.0	184.0	141.0	115.0
EXP	180.8	174.0	222.4	191.4	143.3	105.9
CHI	0.1	1.7	0.8	0.3	0.0	0.8
50 - OBS	311.0	239.0	258.0	330.0	263.0	202.0
EXP	298.4	262.1	277.8	328.0	255.6	184.1
CHI	0.5	2.0	1.4	0.0	0.2	1.7
55 - OBS	552.0	475.0	451.0	432.0	496.0	343.0
EXP	574.5	462.9	448.8	440.6	471.1	352.6
CHI	0.9	0.3	0.0	0.2	1.3	0.3
60 - OBS	1062.0	845.0	817.0	724.0	629.0	632.0
EXP	1069.8	875.8	780.9	704.3	628.3	651.9
CHI	0.1	1.1	1.7	0.5	0.0	0.6
65 - OBS	1881.0	1660.0	1549.0	1299.0	1052.0	899.0
EXP	1881.5	1692.9	1535.4	1278.1	1051.1	901.6
CHI	0.0	0.6	0.1	0.3	0.0	0.0
70 - OBS	3359.0	2919.0	2917.0	2435.0	1806.0	1496.0
EXP	3369.8	2870.4	2883.0	2448.3	1869.9	1492.3
CHI	0.0	0.8	0.4	0.1	2.2	0.0
75 - OBS	4441.0	4631.0	4355.0	4205.0	3337.0	2441.0
EXP	4441.0	4620.3	4403.8	4198.9	3285.5	2461.4
CHI	0.0	0.0	0.5	0.0	0.8	0.2

Osmond and Gardner Modelling

Sweden Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	18.564830
35	36.605979
40	73.091844
45	128.897726
50	215.630059
55	391.914792
60	718.322298
65	1420.888407
70	2897.658099
75	5909.562407

PERIOD	EFFECT	LOWER	UPPER
% Period Change	77.4925	74.4925	80.4925
1981	1.264911		
1986	1.122407		
1991	1.089289		
1996	0.979152		
2001	0.794278		
2006	0.615506		
2011	0.476971	0.458505	0.495436
2016	0.369616	0.341552	0.398788
2021	0.286425	0.254431	0.320995
2026	0.221958	0.189532	0.258377

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.974510	1.000000	
1911	1.052480	2.000000	
1916	1.016573	4.000000	
1921	1.011093	8.000000	
1926	0.998764	16.000000	
1931	1.011777	32.000000	
1936	0.981585	64.000000	
1941	0.869760	128.000000	
1946	0.967396	256.000000	
1951	0.969915	512.000000	
1956	0.954001	1024.000000	
1961	0.863506	2048.000000	
1966	0.868279	4096.000000	
1971	0.653820	8192.000000	
1976	0.637536	EXTRAPOLATION	0.409663
1981	0.583088	EXTRAPOLATION	
1986	0.533290	EXTRAPOLATION	
1991	0.487745	EXTRAPOLATION	
1996	0.446090	EXTRAPOLATION	

Osmond and Gardner Modelling

**Sweden Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	29.1	19.1	16.8	12.3	6.3	4.7	-	-	-	-
	EXP	22.8	19.9	17.5	15.8	9.6	7.3	5.2*	3.7*	2.6*	1.8*
	Elow							5.0	3.4	2.3	1.6
	Eup							5.4	3.9	2.9	2.1
35	OBS	50.4	40.5	36.4	29.6	17.2	17.2	-	-	-	-
	EXP	44.8	39.9	38.0	31.0	25.2	14.7	11.1*	7.9*	5.6*	4.0*
	Elow							10.7	7.3	5.0	3.4
	Eup							11.6	8.5	6.3	4.6
40	OBS	88.4	76.3	75.3	58.8	45.8	47.6	-	-	-	-
	EXP	80.4	79.4	77.2	68.3	50.1	39.1	22.8*	17.2*	12.2*	8.7*
	Elow							21.9	15.9	10.8	7.4
	Eup							23.7	18.6	13.7	10.1
45	OBS	155.8	138.1	127.6	117.7	96.1	74.4	-	-	-	-
	EXP	160.0	125.8	135.8	122.4	97.7	68.5	53.4*	31.1*	23.5*	16.7*
	Elow							51.3	28.8	20.9	14.2
	Eup							55.4	33.6	26.4	19.4
50	OBS	287.6	216.6	189.7	205.5	170.9	138.9	-	-	-	-
	EXP	276.0	237.6	204.3	204.3	166.1	126.6	88.8*	69.2*	40.4*	30.5*
	Elow							85.4	63.9	35.9	26.1
	Eup							92.2	74.7	45.3	35.5
55	OBS	475.8	456.7	421.1	327.2	317.1	227.6	-	-	-	-
	EXP	495.1	445.1	419.0	333.8	301.1	234.0	178.3*	125.1*	97.5*	56.9*
	Elow							171.4	115.6	86.6	48.6
	Eup							185.2	135.0	109.2	66.2
60	OBS	912.0	776.9	828.2	709.7	496.8	414.7	-	-	-	-
	EXP	918.7	805.3	791.7	690.4	496.2	427.7	332.3*	253.3*	177.7*	138.4*
	Elow							319.4	234.1	157.8	118.2
	Eup							345.2	273.3	199.1	161.2
65	OBS	1826.6	1581.2	1559.6	1430.7	1108.8	758.5	-	-	-	-
	EXP	1827.1	1612.5	1545.8	1407.7	1107.8	760.7	655.6*	509.4*	388.3*	272.3*
	Elow							630.2	470.7	344.9	232.5
	Eup							681.0	549.6	435.1	317.0
70	OBS	3845.3	3362.3	3229.0	2818.3	2249.0	1755.0	-	-	-	-
	EXP	3857.6	3306.3	3191.4	2833.7	2328.7	1750.7	1202.1*	1036.1*	805.0*	613.6*
	Elow							1155.6	957.4	715.1	523.9
	Eup							1248.6	1117.9	902.1	714.2
75	OBS	7284.5	6997.3	6471.4	5859.1	4761.5	3649.8	-	-	-	-
	EXP	7284.5	6981.0	6543.9	5850.5	4688.0	3680.2	2766.8*	1899.8*	1637.5*	1272.2*
	Elow							2659.7	1755.5	1454.6	1086.4
	Eup							2873.9	2049.7	1835.1	1481.0
30-79	OBS	820.1	735.7	702.9	625.0	499.0	382.1	-	-	-	-
	EXP	820.0	737.2	702.3	625.1	500.4	381.7	286.6*	215.8*	169.2*	126.2*
	Elow							275.5	199.4	150.3	107.7
	Eup							297.7	232.8	189.6	146.9

Osmond and Gardner Modelling

**Sweden Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

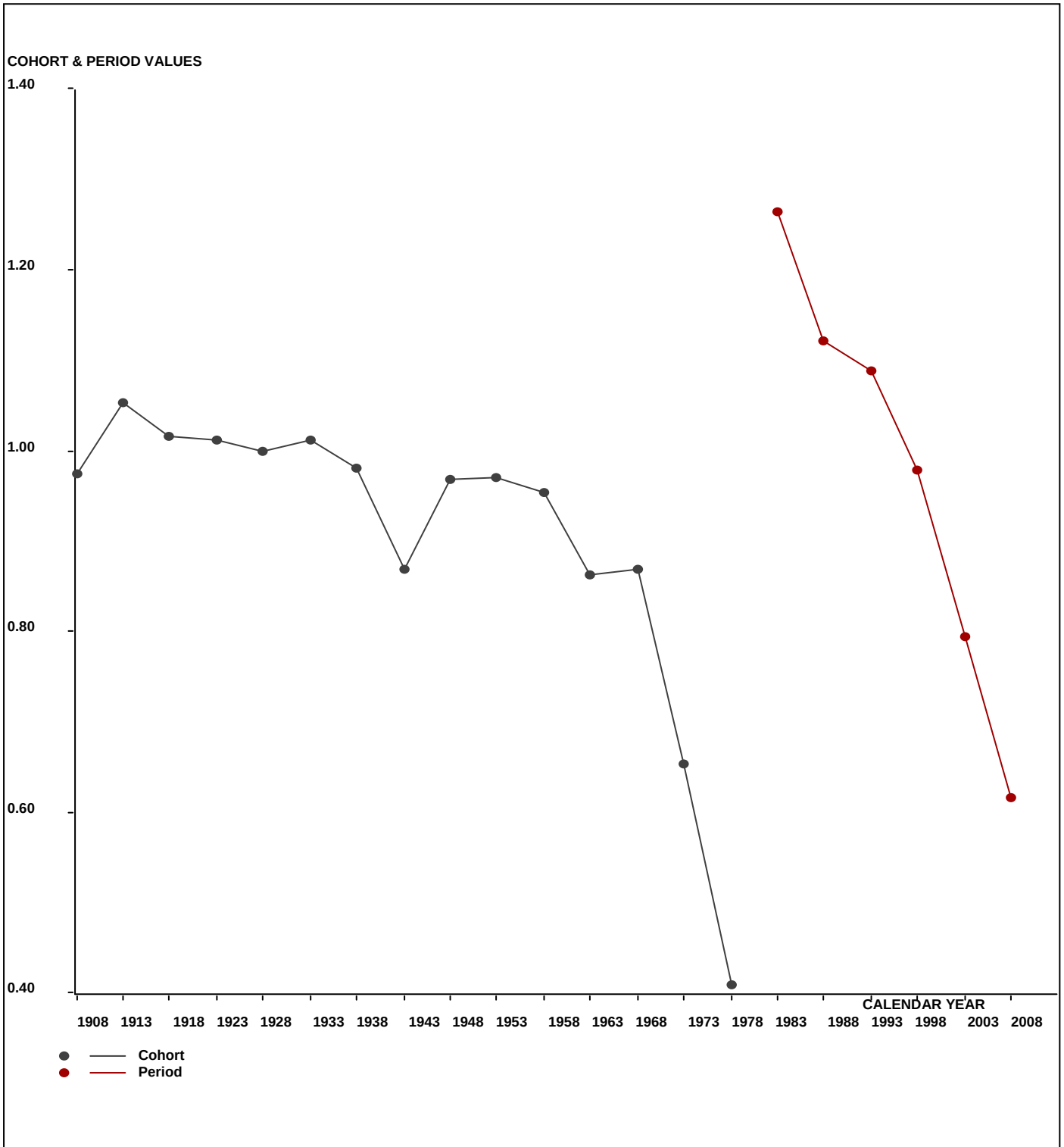
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	46.0	28.0	26.0	20.0	10.0	7.0	-	-	-	-
	EXP	36.1	29.1	27.0	25.6	15.3	10.9	7.7*	5.9*	4.7*	3.0*
	CHI	2.741	0.039	0.037	1.212	1.841	1.392	-	-	-	-
35 -	OBS	84.0	64.0	54.0	46.0	28.0	28.0	-	-	-	-
	EXP	74.6	62.9	56.5	48.1	41.2	24.0	17.1*	12.0*	9.2*	7.3*
	CHI	1.177	0.018	0.107	0.093	4.207	0.649	-	-	-	-
40 -	OBS	124.0	126.0	119.0	87.0	71.0	79.0	-	-	-	-
	EXP	112.8	131.0	122.1	101.0	77.8	64.8	37.9*	26.7*	18.8*	14.4*
	CHI	1.114	0.194	0.078	1.945	0.590	3.129	-	-	-	-
45 -	OBS	176.0	191.0	209.0	184.0	141.0	115.0	-	-	-	-
	EXP	180.8	174.0	222.4	191.4	143.3	105.9	88.7*	51.6*	36.4*	25.6*
	CHI	0.127	1.652	0.807	0.287	0.038	0.790	-	-	-	-
50 -	OBS	311.0	239.0	258.0	330.0	263.0	202.0	-	-	-	-
	EXP	298.4	262.1	277.8	328.0	255.6	184.1	136.2*	113.8*	66.4*	46.9*
	CHI	0.533	2.039	1.413	0.012	0.216	1.746	-	-	-	-
55 -	OBS	552.0	475.0	451.0	432.0	496.0	343.0	-	-	-	-
	EXP	574.5	462.9	448.8	440.6	471.1	352.6	254.6*	188.5*	157.8*	92.1*
	CHI	0.879	0.317	0.011	0.169	1.319	0.263	-	-	-	-
60 -	OBS	1062.0	845.0	817.0	724.0	629.0	632.0	-	-	-	-
	EXP	1069.8	875.8	780.9	704.3	628.3	651.9	488.3*	351.0*	260.5*	218.7*
	CHI	0.056	1.084	1.665	0.548	0.001	0.605	-	-	-	-
65 -	OBS	1881.0	1660.0	1549.0	1299.0	1052.0	899.0	-	-	-	-
	EXP	1881.5	1692.9	1535.4	1278.1	1051.1	901.6	948.6*	709.1*	512.8*	381.8*
	CHI	0.000	0.639	0.121	0.342	0.001	0.008	-	-	-	-
70 -	OBS	3359.0	2919.0	2917.0	2435.0	1806.0	1496.0	-	-	-	-
	EXP	3369.8	2870.4	2883.0	2448.3	1869.9	1492.3	1295.4*	1371.5*	1031.2*	751.7*
	CHI	0.034	0.824	0.400	0.073	2.187	0.009	-	-	-	-
75 -	OBS	4441.0	4631.0	4355.0	4205.0	3337.0	2441.0	-	-	-	-
	EXP	4441.0	4620.3	4403.8	4198.9	3285.5	2461.4	2007.1*	1761.2*	1882.2*	1426.0*
	CHI	0.000	0.025	0.540	0.009	0.807	0.168	-	-	-	-
30-79	OBS	12036.0	11178.0	10755.0	9762.0	7833.0	6242.0	-	-	-	-
	EXP	12039.2	11181.4	10757.6	9764.4	7839.0	6249.4	5281.7*	4591.4*	3980.0*	2967.5*
	O/E	1.000	1.000	1.000	1.000	0.999	0.999	-	-	-	-

Osmond and Gardner Modelling

Sweden Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

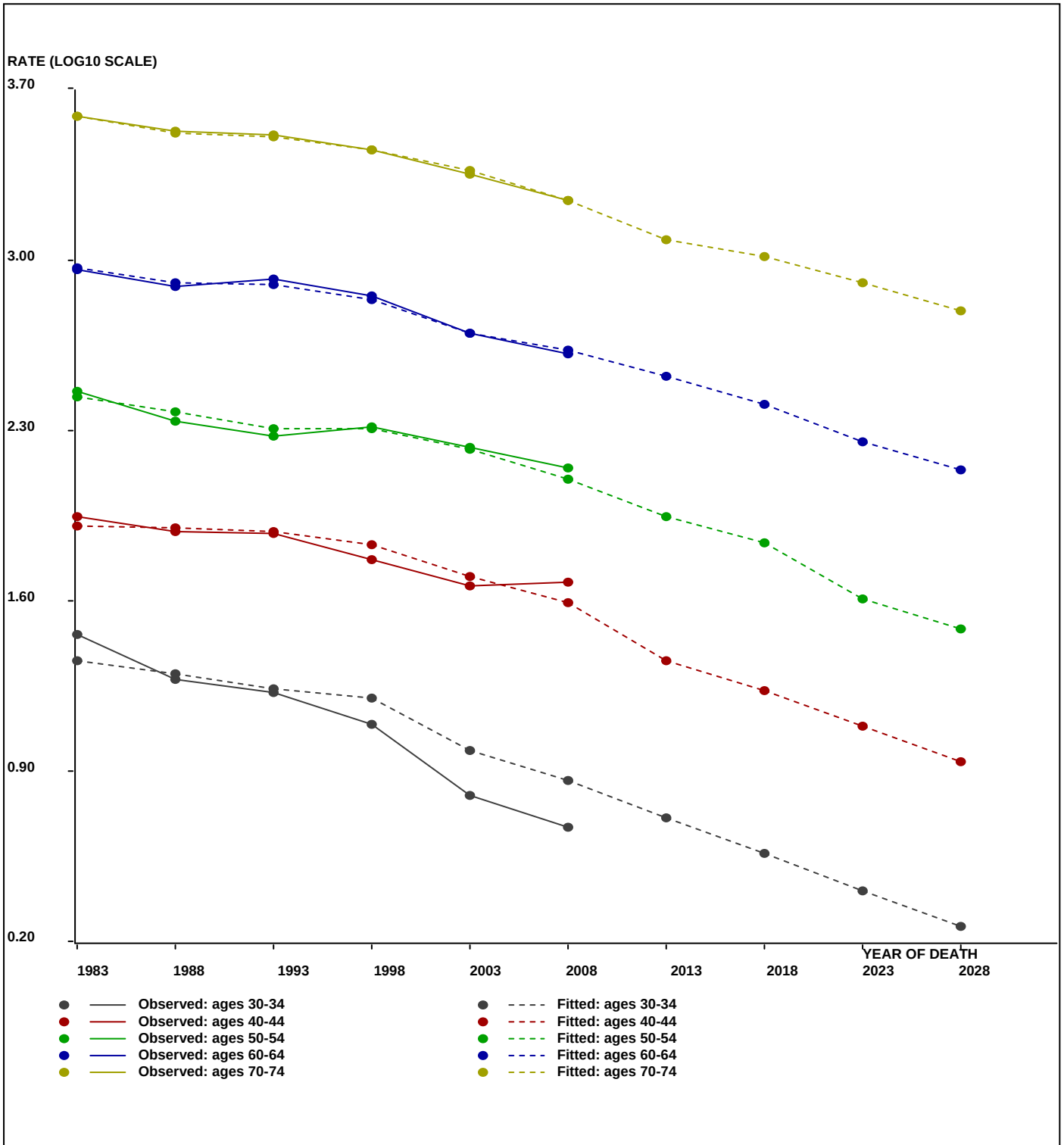


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Sweden Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Sweden Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	5.2	11.1	22.8	53.4	88.8	178.3	332.3	655.6	1202.1	2766.8
2016	PRE	3.7	7.9	17.2	31.1	69.2	125.1	253.3	509.4	1036.1	1899.8
2021	PRE	2.6	5.6	12.2	23.5	40.4	97.5	177.7	388.3	805.0	1637.5
2026	PRE	1.8	4.0	8.7	16.7	30.5	56.9	138.4	272.3	613.6	1272.2

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	7.7	17.1	37.9	88.7	136.2	254.6	488.3	948.6	1295.4	2007.1
2016	PRE	5.9	12.0	26.7	51.6	113.8	188.5	351.0	709.1	1371.5	1761.2
2021	PRE	4.7	9.2	18.8	36.4	66.4	157.8	260.5	512.8	1031.2	1882.2
2026	PRE	3.0	7.3	14.4	25.6	46.9	92.1	218.7	381.8	751.7	1426.0

Osmond and Gardner Modelling

Sweden Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	114.29	2.24	51	P, C	94.47	612.68	0.0000
AGE-PERIOD	63.11	1.40	45	Cohort	89.99	337.46	0.0000
AGE-COHORT	6.44	0.18	36	Period	1.88	34.30	0.5497
PERIOD-COHORT	13.33	0.33	40	Age	52.61	70.92	0.0019
FULL AGE-PERIOD-COHORT	6.32	0.20	32			33.65	0.3876

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.931438	8.539601
35	1.357014	22.751733
40	1.793737	62.192327
45	2.174204	149.349470
50	2.471414	296.083437
55	2.731379	538.739855
60	2.972293	938.193887
65	3.167616	1471.011570
70	3.300375	1996.983906
75	3.392657	2469.771903

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.034542	1.082785
1986	0.022941	1.054244
1991	0.007580	1.017606
1996	-0.011216	0.974506
2001	-0.021492	0.951717
2006	-0.037902	0.916427

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.014579	1.034140
1911	-0.020164	0.954631
1916	-0.009195	0.979051
1921	0.015839	1.037144
1926	0.018776	1.044181
1931	0.051074	1.124797
1936	0.006218	1.014420
1941	-0.029760	0.933770
1946	-0.041021	0.909870
1951	-0.111715	0.773189
1956	-0.172782	0.671766
1961	-0.325239	0.472891
1966	-0.403044	0.395326
1971	-0.556496	0.277654
1976	-0.165194	0.683606

Osmond and Gardner Modelling

Sweden Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	14.0	9.0	4.0	3.0	4.0	8.0
EXP	11.3	8.8	6.4	5.3	3.6	8.0
CHI	0.6	0.0	0.9	1.0	0.0	0.0
35 - OBS	36.0	32.0	27.0	9.0	14.0	9.0
EXP	37.3	29.3	23.1	16.3	14.0	9.5
CHI	0.0	0.3	0.7	3.3	0.0	0.0
40 - OBS	95.0	92.0	76.0	50.0	51.0	39.0
EXP	88.2	98.5	77.4	60.2	43.4	37.4
CHI	0.5	0.4	0.0	1.7	1.3	0.1
45 - OBS	186.0	201.0	233.0	172.0	140.0	99.0
EXP	185.3	203.4	226.4	176.0	140.1	100.0
CHI	0.0	0.0	0.2	0.1	0.0	0.0
50 - OBS	379.0	336.0	393.0	430.0	335.0	270.0
EXP	389.9	349.4	382.6	421.6	335.2	265.0
CHI	0.3	0.5	0.3	0.2	0.0	0.1
55 - OBS	709.0	693.0	588.0	647.0	706.0	575.0
EXP	706.7	664.4	595.6	647.2	729.8	575.4
CHI	0.0	1.2	0.1	0.0	0.8	0.0
60 - OBS	1249.0	1058.0	1057.0	955.0	1074.0	1208.0
EXP	1226.8	1123.3	1059.3	946.2	1055.6	1192.3
CHI	0.4	3.8	0.0	0.1	0.3	0.2
65 - OBS	1628.0	1666.0	1626.0	1411.0	1358.0	1458.0
EXP	1605.9	1688.6	1552.4	1464.0	1347.4	1492.0
CHI	0.3	0.3	3.5	1.9	0.1	0.8
70 - OBS	1757.0	1819.0	1872.0	1779.0	1740.0	1583.0
EXP	1803.1	1789.5	1904.0	1755.7	1716.6	1582.5
CHI	1.2	0.5	0.5	0.3	0.3	0.0
75 - OBS	1686.0	1690.0	1603.0	1823.0	1682.0	1715.0
EXP	1686.0	1645.1	1655.9	1791.5	1720.1	1702.7
CHI	0.0	1.2	1.7	0.6	0.8	0.1

Osmond and Gardner Modelling

Sweden Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	8.539601
35	22.751733
40	62.192327
45	149.349470
50	296.083437
55	538.739855
60	938.193887
65	1471.011570
70	1996.983906
75	2469.771903

PERIOD	EFFECT	LOWER	UPPER
% Period Change	96.2919	93.2919	99.2919

1981	1.082785		
1986	1.054244		
1991	1.017606		
1996	0.974506		
2001	0.951717		
2006	0.916427		
2011	0.882444	0.854952	0.909937
2016	0.849722	0.797600	0.903494
2021	0.818214	0.744096	0.897096
2026	0.787873	0.694182	0.890743

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.034140	1.000000	
1911	0.954631	2.000000	
1916	0.979051	4.000000	
1921	1.037144	8.000000	
1926	1.044181	16.000000	
1931	1.124797	32.000000	
1936	1.014420	64.000000	
1941	0.933770	128.000000	
1946	0.909870	256.000000	
1951	0.773189	512.000000	
1956	0.671766	1024.000000	
1961	0.472891	2048.000000	
1966	0.395326	4096.000000	
1971	0.277654	8192.000000	
1976	0.229987	EXTRAPOLATION	0.683606
1981	0.181913	EXTRAPOLATION	
1986	0.143889	EXTRAPOLATION	
1991	0.113812	EXTRAPOLATION	
1996	0.090022	EXTRAPOLATION	

Osmond and Gardner Modelling

**Sweden Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	8.8	6.2	2.6	1.9	2.5	5.3	-	-	-	-
	EXP	7.1	6.0	4.1	3.3	2.3	1.8	1.4*	1.0*	0.8*	0.6*
	Elow							1.3	1.0	0.7	0.5
	Eup							1.4	1.1	0.9	0.7
35	OBS	21.6	20.3	18.2	5.8	8.6	5.5	-	-	-	-
	EXP	22.4	18.5	15.6	10.5	8.6	5.8	4.6*	3.5*	2.7*	2.0*
	Elow							4.5	3.3	2.4	1.8
	Eup							4.8	3.7	2.9	2.3
40	OBS	67.7	55.7	48.1	33.8	32.9	23.5	-	-	-	-
	EXP	62.9	59.7	48.9	40.7	28.0	22.5	15.2*	12.2*	9.3*	7.1*
	Elow							14.8	11.4	8.4	6.2
	Eup							15.7	12.9	10.1	8.0
45	OBS	164.7	145.3	142.3	110.0	95.4	64.1	-	-	-	-
	EXP	164.0	147.0	138.3	112.5	95.5	64.7	52.1*	35.2*	28.1*	21.4*
	Elow							50.5	33.1	25.6	18.9
	Eup							53.7	37.5	30.8	24.2
50	OBS	350.5	304.5	289.0	267.7	217.7	185.7	-	-	-	-
	EXP	360.6	316.6	281.3	262.5	217.9	182.3	123.6*	99.5*	67.3*	53.7*
	Elow							119.7	93.4	61.2	47.3
	Eup							127.4	105.8	73.7	60.7
55	OBS	611.1	666.3	549.1	490.1	451.3	381.5	-	-	-	-
	EXP	609.1	638.8	556.1	490.2	466.5	381.7	319.4*	216.5*	174.3*	117.9*
	Elow							309.4	203.2	158.5	103.8
	Eup							329.3	230.2	191.1	133.2
60	OBS	1072.6	972.8	1071.5	936.1	848.3	792.6	-	-	-	-
	EXP	1053.6	1032.8	1073.9	927.5	833.8	782.3	640.1*	535.5*	363.0*	292.2*
	Elow							620.2	502.7	330.1	257.5
	Eup							660.1	569.4	398.0	330.4
65	OBS	1580.9	1586.9	1637.1	1554.0	1431.3	1230.1	-	-	-	-
	EXP	1559.4	1608.4	1563.0	1612.4	1420.2	1258.8	1181.1*	966.4*	808.5*	548.1*
	Elow							1144.3	907.2	735.3	482.9
	Eup							1217.9	1027.6	886.5	619.6
70	OBS	2011.4	2095.2	2072.2	2059.0	2166.8	1857.1	-	-	-	-
	EXP	2064.2	2061.2	2107.6	2032.1	2137.7	1856.5	1645.5*	1543.9*	1263.4*	1056.9*
	Elow							1594.2	1449.2	1148.9	931.2
	Eup							1696.8	1641.6	1385.2	1194.9
75	OBS	2765.5	2553.5	2382.0	2540.1	2400.0	2564.3	-	-	-	-
	EXP	2765.5	2485.6	2460.6	2496.2	2454.4	2545.8	2210.9*	1959.6*	1838.7*	1504.5*
	Elow							2142.0	1839.4	1672.1	1325.6
	Eup							2279.7	2083.6	2015.9	1701.0
30-79	OBS	567.5	551.4	539.7	509.6	481.4	433.8	-	-	-	-
	EXP	567.3	553.1	538.5	511.3	480.6	433.4	374.1*	317.3*	260.3*	202.4*
	Elow							362.5	297.9	236.8	178.4
	Eup							385.8	337.4	285.4	228.9

Osmond and Gardner Modelling

**Sweden Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

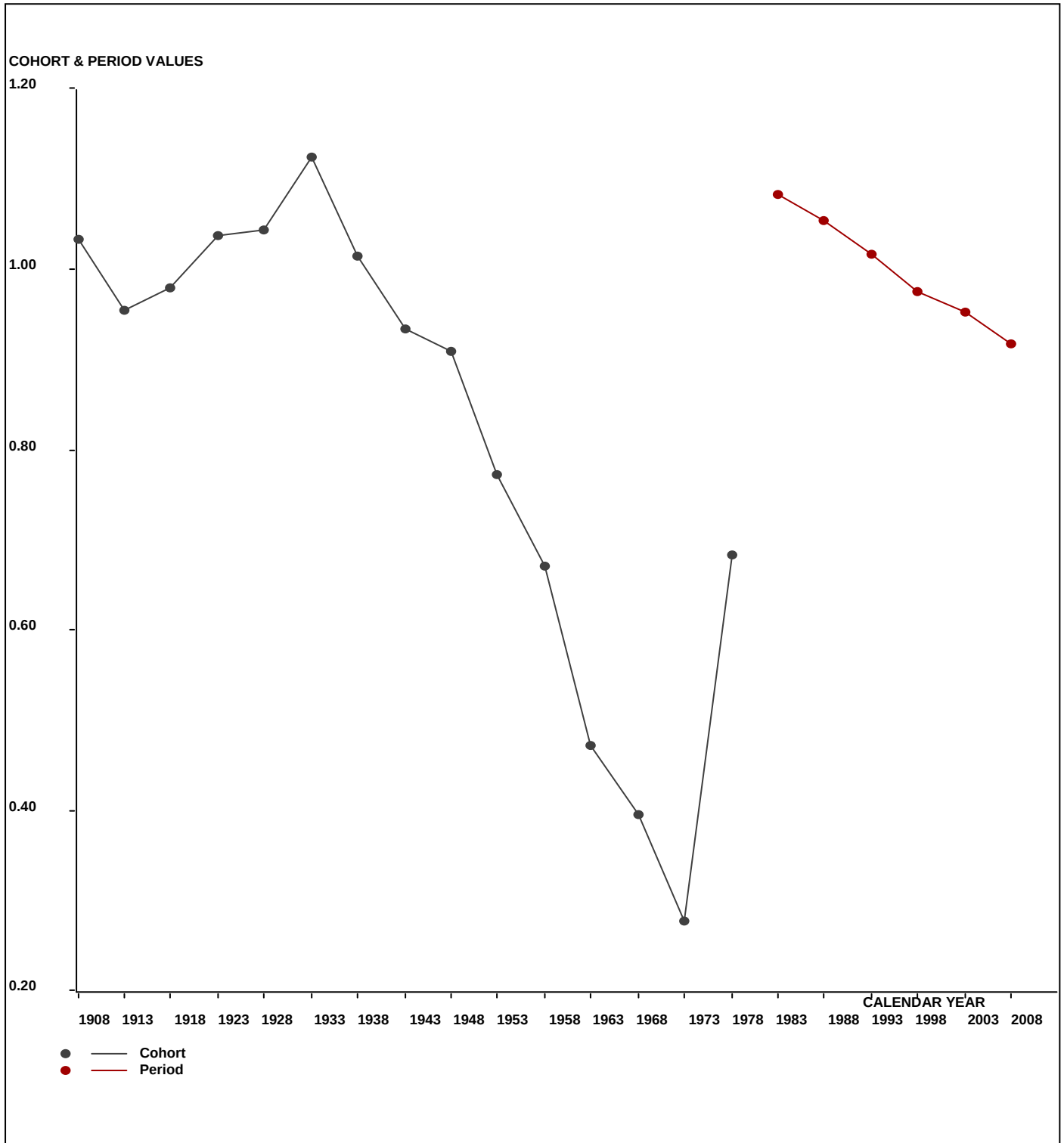
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	14.0	9.0	4.0	3.0	4.0	8.0	-	-	-	-
	EXP	11.3	8.8	6.4	5.3	3.6	2.7	2.0*	1.7*	1.4*	1.0*
	CHI	0.635	0.003	0.873	1.018	0.048	10.470	-	-	-	-
35 -	OBS	36.0	32.0	27.0	9.0	14.0	9.0	-	-	-	-
	EXP	37.3	29.3	23.1	16.3	14.0	9.5	7.1*	5.4*	4.4*	3.8*
	CHI	0.048	0.251	0.664	3.270	0.000	0.022	-	-	-	-
40 -	OBS	95.0	92.0	76.0	50.0	51.0	39.0	-	-	-	-
	EXP	88.2	98.5	77.4	60.2	43.4	37.4	25.3*	18.9*	14.2*	11.7*
	CHI	0.525	0.429	0.024	1.740	1.321	0.072	-	-	-	-
45 -	OBS	186.0	201.0	233.0	172.0	140.0	99.0	-	-	-	-
	EXP	185.3	203.4	226.4	176.0	140.1	100.0	86.6*	58.4*	43.5*	32.9*
	CHI	0.003	0.027	0.192	0.089	0.000	0.010	-	-	-	-
50 -	OBS	379.0	336.0	393.0	430.0	335.0	270.0	-	-	-	-
	EXP	389.9	349.4	382.6	421.6	335.2	265.0	189.5*	163.6*	110.5*	82.5*
	CHI	0.305	0.512	0.283	0.166	0.000	0.095	-	-	-	-
55 -	OBS	709.0	693.0	588.0	647.0	706.0	575.0	-	-	-	-
	EXP	706.7	664.4	595.6	647.2	729.8	575.4	456.0*	326.2*	282.2*	190.9*
	CHI	0.007	1.229	0.096	0.000	0.775	0.000	-	-	-	-
60 -	OBS	1249.0	1058.0	1057.0	955.0	1074.0	1208.0	-	-	-	-
	EXP	1226.8	1123.3	1059.3	946.2	1055.6	1192.3	940.5*	742.2*	532.2*	461.5*
	CHI	0.400	3.794	0.005	0.082	0.322	0.208	-	-	-	-
65 -	OBS	1628.0	1666.0	1626.0	1411.0	1358.0	1458.0	-	-	-	-
	EXP	1605.9	1688.6	1552.4	1464.0	1347.4	1492.0	1708.8*	1345.4*	1067.8*	768.4*
	CHI	0.304	0.302	3.485	1.919	0.083	0.777	-	-	-	-
70 -	OBS	1757.0	1819.0	1872.0	1779.0	1740.0	1583.0	-	-	-	-
	EXP	1803.1	1789.5	1904.0	1755.7	1716.6	1582.5	1773.3*	2043.7*	1618.4*	1294.9*
	CHI	1.181	0.487	0.537	0.310	0.318	0.000	-	-	-	-
75 -	OBS	1686.0	1690.0	1603.0	1823.0	1682.0	1715.0	-	-	-	-
	EXP	1686.0	1645.1	1655.9	1791.5	1720.1	1702.7	1603.8*	1816.6*	2113.5*	1686.4*
	CHI	0.000	1.228	1.689	0.554	0.844	0.089	-	-	-	-
30-79	OBS	7739.0	7596.0	7479.0	7279.0	7104.0	6964.0	-	-	-	-
	EXP	7740.7	7600.2	7483.0	7284.1	7105.8	6959.3	6793.1*	6522.1*	5788.3*	4533.9*
	O/E	1.000	0.999	0.999	0.999	1.000	1.001	-	-	-	-

Osmond and Gardner Modelling

Sweden Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

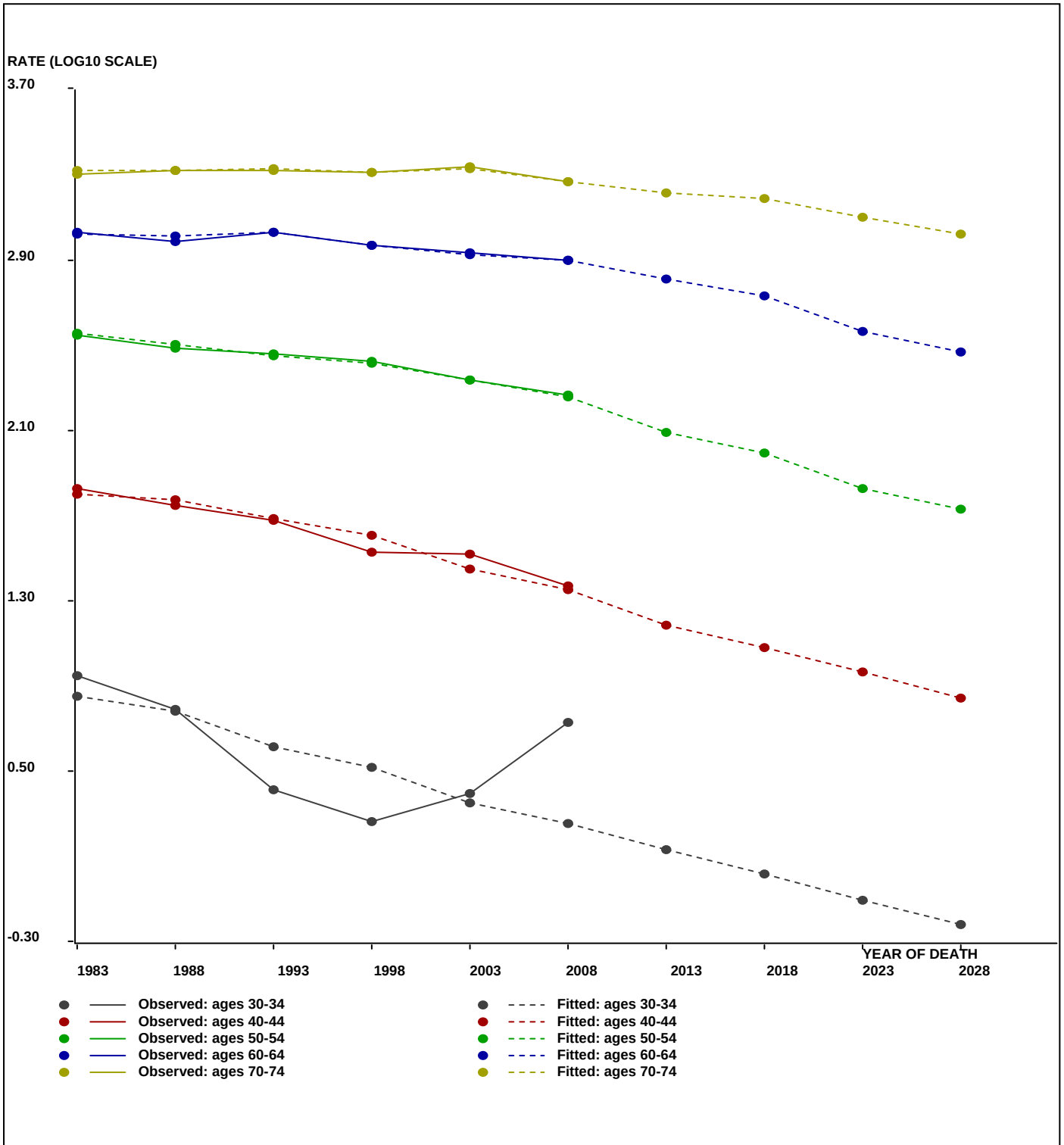


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Sweden Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Sweden Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	1.4	4.6	15.2	52.1	123.6	319.4	640.1	1181.1	1645.5	2210.9
2016	PRE	1.0	3.5	12.2	35.2	99.5	216.5	535.5	966.4	1543.9	1959.6
2021	PRE	0.8	2.7	9.3	28.1	67.3	174.3	363.0	808.5	1263.4	1838.7
2026	PRE	0.6	2.0	7.1	21.4	53.7	117.9	292.2	548.1	1056.9	1504.5

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	2.0	7.1	25.3	86.6	189.5	456.0	940.5	1708.8	1773.3	1603.8
2016	PRE	1.7	5.4	18.9	58.4	163.6	326.2	742.2	1345.4	2043.7	1816.6
2021	PRE	1.4	4.4	14.2	43.5	110.5	282.2	532.2	1067.8	1618.4	2113.5
2026	PRE	1.0	3.8	11.7	32.9	82.5	190.9	461.5	768.4	1294.9	1686.4

Osmond and Gardner Modelling

Sweden COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	142.51	2.79	51	P, C	92.45	773.12	0.0000
AGE-PERIOD	60.80	1.35	45	Cohort	82.30	327.81	0.0000
AGE-COHORT	19.97	0.55	36	Period	46.11	106.35	0.0000
PERIOD-COHORT	18.84	0.47	40	Age	42.88	100.73	0.0000
FULL AGE-PERIOD-COHORT	10.76	0.34	32			57.35	0.0039

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.975806	9.458144
35	1.176311	15.007577
40	1.269567	18.602330
45	1.528113	33.737512
50	1.835432	68.459240
55	2.113480	129.861369
60	2.437662	273.944372
65	2.739541	548.960754
70	3.054509	1133.728324
75	3.307074	2028.027611

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.136139	1.368168
1986	0.031897	1.076211
1991	-0.016647	0.962394
1996	-0.038271	0.915649
2001	-0.068068	0.854932
2006	-0.096026	0.801630

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.096674	0.800435
1911	-0.059964	0.871035
1916	-0.012033	0.972674
1921	0.042513	1.102841
1926	0.050506	1.123327
1931	0.051790	1.126652
1936	0.005605	1.012990
1941	-0.049443	0.892396
1946	-0.091433	0.810153
1951	-0.161006	0.690230
1956	-0.224769	0.595979
1961	-0.457919	0.348402
1966	-0.267686	0.539901
1971	-0.598797	0.251886
1976	-1.054529	0.088201

Osmond and Gardner Modelling

Sweden COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	11.0	11.0	5.0	7.0	4.0	1.0
EXP	14.1	8.9	4.9	7.6	3.2	1.0
CHI	0.7	0.5	0.0	0.0	0.2	0.0
35 - OBS	29.0	12.0	16.0	6.0	13.0	4.0
EXP	27.7	17.6	12.8	7.4	11.3	4.9
CHI	0.1	1.8	0.8	0.3	0.3	0.2
40 - OBS	42.0	22.0	20.0	8.0	7.0	12.0
EXP	31.9	26.8	19.5	15.0	8.6	13.3
CHI	3.2	0.9	0.0	3.3	0.3	0.1
45 - OBS	53.0	50.0	48.0	27.0	15.0	17.0
EXP	52.8	44.8	43.1	33.3	25.2	14.6
CHI	0.0	0.6	0.6	1.2	4.1	0.4
50 - OBS	121.0	90.0	74.0	67.0	59.0	54.0
EXP	114.1	82.3	80.0	81.6	62.2	47.5
CHI	0.4	0.7	0.4	2.6	0.2	0.9
55 - OBS	251.0	173.0	121.0	126.0	121.0	123.0
EXP	231.6	163.8	135.6	140.1	140.7	108.3
CHI	1.6	0.5	1.6	1.4	2.8	2.0
60 - OBS	494.0	324.0	289.0	260.0	260.0	299.0
EXP	481.3	360.2	293.0	259.2	264.6	271.1
CHI	0.3	3.6	0.1	0.0	0.1	2.9
65 - OBS	766.0	650.0	587.0	508.0	472.0	472.0
EXP	752.3	684.0	589.4	514.2	451.1	465.5
CHI	0.2	1.7	0.0	0.1	1.0	0.1
70 - OBS	1114.0	1017.0	1104.0	1048.0	912.0	768.0
EXP	1180.2	1030.3	1087.0	1007.5	876.9	784.8
CHI	3.7	0.2	0.3	1.6	1.4	0.4
75 - OBS	1354.0	1321.0	1277.0	1473.0	1340.0	1182.0
EXP	1354.0	1258.2	1277.6	1469.8	1365.0	1225.0
CHI	0.0	3.1	0.0	0.0	0.5	1.5

Osmond and Gardner Modelling

Sweden COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	9.458144
35	15.007577
40	18.602330
45	33.737512
50	68.459240
55	129.861369
60	273.944372
65	548.960754
70	1133.728324
75	2028.027611

PERIOD	EFFECT	LOWER	UPPER
% Period Change	93.7654	90.7654	96.7654

1981	1.368168		
1986	1.076211		
1991	0.962394		
1996	0.915649		
2001	0.854932		
2006	0.801630		
2011	0.751652	0.727603	0.775701
2016	0.704789	0.660412	0.750610
2021	0.660848	0.599425	0.726330
2026	0.619647	0.544070	0.702836

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.800435	1.000000	
1911	0.871035	2.000000	
1916	0.972674	4.000000	
1921	1.102841	8.000000	
1926	1.123327	16.000000	
1931	1.126652	32.000000	
1936	1.012990	64.000000	
1941	0.892396	128.000000	
1946	0.810153	256.000000	
1951	0.690230	512.000000	
1956	0.595979	1024.000000	
1961	0.348402	2048.000000	
1966	0.539901	4096.000000	
1971	0.251886	8192.000000	
1976	0.230371	EXTRAPOLATION	0.088201
1981	0.184396	EXTRAPOLATION	
1986	0.147597	EXTRAPOLATION	
1991	0.118141	EXTRAPOLATION	
1996	0.094564	EXTRAPOLATION	

Osmond and Gardner Modelling

**Sweden COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	6.9	7.5	3.2	4.3	2.5	0.7	-	-	-	-
	EXP	8.9	6.1	3.2	4.7	2.0	1.7	1.3*	1.0*	0.7*	0.6*
	Elow							1.3	0.9	0.7	0.5
	Eup							1.4	1.0	0.8	0.6
35	OBS	17.4	7.6	10.8	3.9	8.0	2.5	-	-	-	-
	EXP	16.6	11.1	8.6	4.8	6.9	3.0	2.6*	2.0*	1.5*	1.1*
	Elow							2.5	1.8	1.3	1.0
	Eup							2.7	2.1	1.6	1.2
40	OBS	29.9	13.3	12.7	5.4	4.5	7.2	-	-	-	-
	EXP	22.7	16.2	12.4	10.2	5.5	8.1	3.5*	3.0*	2.3*	1.7*
	Elow							3.4	2.8	2.1	1.5
	Eup							3.6	3.2	2.5	1.9
45	OBS	46.9	36.2	29.3	17.3	10.2	11.0	-	-	-	-
	EXP	46.8	32.4	26.3	21.3	17.2	9.4	13.7*	6.0*	5.1*	3.9*
	Elow							13.3	5.6	4.7	3.4
	Eup							14.1	6.4	5.6	4.4
50	OBS	111.9	81.6	54.4	41.7	38.3	37.1	-	-	-	-
	EXP	105.5	74.6	58.8	50.8	40.4	32.7	17.9*	26.0*	11.4*	9.8*
	Elow							17.4	24.4	10.3	8.6
	Eup							18.5	27.7	12.5	11.1
55	OBS	216.3	166.3	113.0	95.4	77.4	81.6	-	-	-	-
	EXP	199.6	157.5	126.6	106.1	89.9	71.9	58.2*	31.9*	46.3*	20.3*
	Elow							56.3	29.9	42.0	17.8
	Eup							60.0	34.0	50.9	23.0
60	OBS	424.2	297.9	293.0	254.8	205.4	196.2	-	-	-	-
	EXP	413.3	331.2	297.0	254.1	209.0	177.9	142.1*	115.1*	63.1*	91.6*
	Elow							137.6	107.8	57.2	80.5
	Eup							146.7	122.5	69.3	104.0
65	OBS	743.8	619.1	591.0	559.5	497.5	398.2	-	-	-	-
	EXP	730.5	651.6	593.5	566.3	475.4	392.7	334.3*	267.1*	216.2*	118.5*
	Elow							323.6	250.2	196.1	104.1
	Eup							345.0	284.4	237.6	134.4
70	OBS	1275.3	1171.4	1222.1	1213.0	1135.7	901.0	-	-	-	-
	EXP	1351.1	1186.8	1203.3	1166.1	1092.0	920.6	760.5*	647.3*	517.1*	418.7*
	Elow							736.1	606.6	469.1	367.6
	Eup							784.8	689.4	568.4	474.9
75	OBS	2221.0	1996.0	1897.6	2052.4	1912.0	1767.3	-	-	-	-
	EXP	2221.0	1901.1	1898.4	2047.9	1947.7	1831.6	1544.2*	1275.5*	1085.8*	867.4*
	Elow							1494.8	1195.2	984.9	761.6
	Eup							1593.6	1358.5	1193.4	983.8
30-79	OBS	293.7	245.3	231.7	224.3	202.9	176.6	-	-	-	-
	EXP	292.5	246.4	232.5	225.6	203.0	176.4	146.2*	119.9*	96.9*	75.7*
	Elow							141.5	112.3	87.9	66.5
	Eup							150.9	127.7	106.5	85.9

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Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

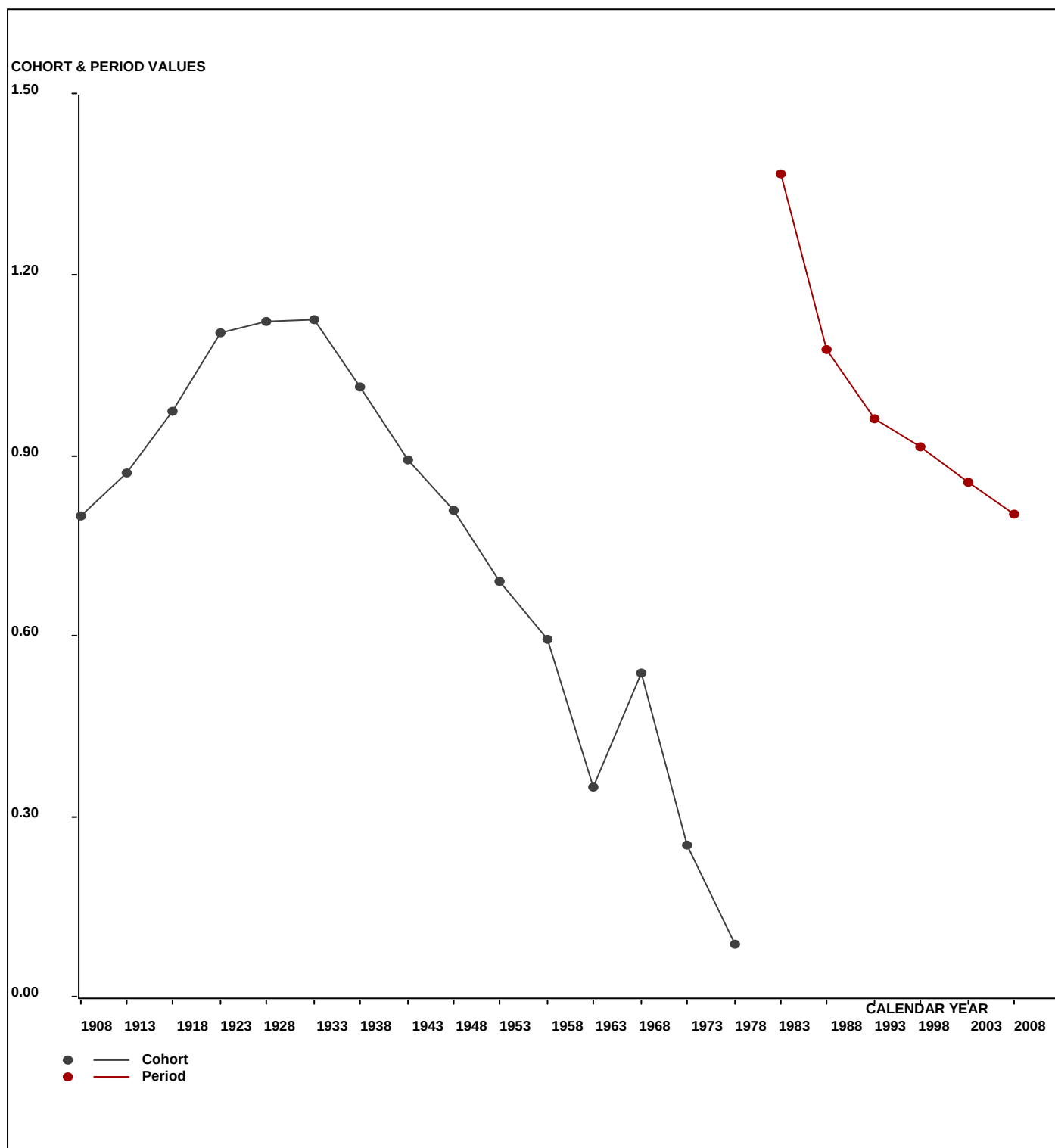
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	11.0	11.0	5.0	7.0	4.0	1.0	-	-	-	-
	EXP	14.1	8.9	4.9	7.6	3.2	2.6	2.0*	1.6*	1.3*	0.9*
	CHI	0.697	0.511	0.002	0.043	0.181	0.995	-	-	-	-
35 -	OBS	29.0	12.0	16.0	6.0	13.0	4.0	-	-	-	-
	EXP	27.7	17.6	12.8	7.4	11.3	4.9	4.0*	3.0*	2.4*	2.0*
	CHI	0.060	1.785	0.813	0.280	0.258	0.181	-	-	-	-
40 -	OBS	42.0	22.0	20.0	8.0	7.0	12.0	-	-	-	-
	EXP	31.9	26.8	19.5	15.0	8.6	13.3	5.9*	4.7*	3.5*	2.8*
	CHI	3.230	0.853	0.011	3.281	0.296	0.136	-	-	-	-
45 -	OBS	53.0	50.0	48.0	27.0	15.0	17.0	-	-	-	-
	EXP	52.8	44.8	43.1	33.3	25.2	14.6	22.8*	9.9*	8.0*	5.9*
	CHI	0.001	0.600	0.564	1.206	4.147	0.409	-	-	-	-
50 -	OBS	121.0	90.0	74.0	67.0	59.0	54.0	-	-	-	-
	EXP	114.1	82.3	80.0	81.6	62.2	47.5	27.5*	42.9*	18.7*	15.0*
	CHI	0.417	0.711	0.444	2.599	0.160	0.875	-	-	-	-
55 -	OBS	251.0	173.0	121.0	126.0	121.0	123.0	-	-	-	-
	EXP	231.6	163.8	135.6	140.1	140.7	108.3	83.1*	48.0*	75.0*	32.8*
	CHI	1.631	0.521	1.568	1.417	2.759	1.996	-	-	-	-
60 -	OBS	494.0	324.0	289.0	260.0	260.0	299.0	-	-	-	-
	EXP	481.3	360.2	293.0	259.2	264.6	271.1	208.8*	159.5*	92.5*	144.8*
	CHI	0.334	3.639	0.055	0.002	0.080	2.861	-	-	-	-
65 -	OBS	766.0	650.0	587.0	508.0	472.0	472.0	-	-	-	-
	EXP	752.3	684.0	589.4	514.2	451.1	465.5	483.7*	371.8*	285.5*	166.2*
	CHI	0.249	1.693	0.010	0.075	0.971	0.091	-	-	-	-
70 -	OBS	1114.0	1017.0	1104.0	1048.0	912.0	768.0	-	-	-	-
	EXP	1180.2	1030.3	1087.0	1007.5	876.9	784.8	819.5*	856.9*	662.5*	512.9*
	CHI	3.716	0.172	0.265	1.626	1.404	0.358	-	-	-	-
75 -	OBS	1354.0	1321.0	1277.0	1473.0	1340.0	1182.0	-	-	-	-
	EXP	1354.0	1258.2	1277.6	1469.8	1365.0	1225.0	1120.2*	1182.5*	1248.1*	972.2*
	CHI	0.000	3.133	0.000	0.007	0.457	1.510	-	-	-	-
30-79	OBS	4235.0	3670.0	3541.0	3530.0	3203.0	2932.0	-	-	-	-
	EXP	4240.1	3677.0	3542.9	3535.8	3208.8	2937.7	2777.3*	2680.6*	2397.5*	1855.6*
	O/E	0.999	0.998	0.999	0.998	0.998	0.998	-	-	-	-

Osmond and Gardner Modelling

Sweden COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

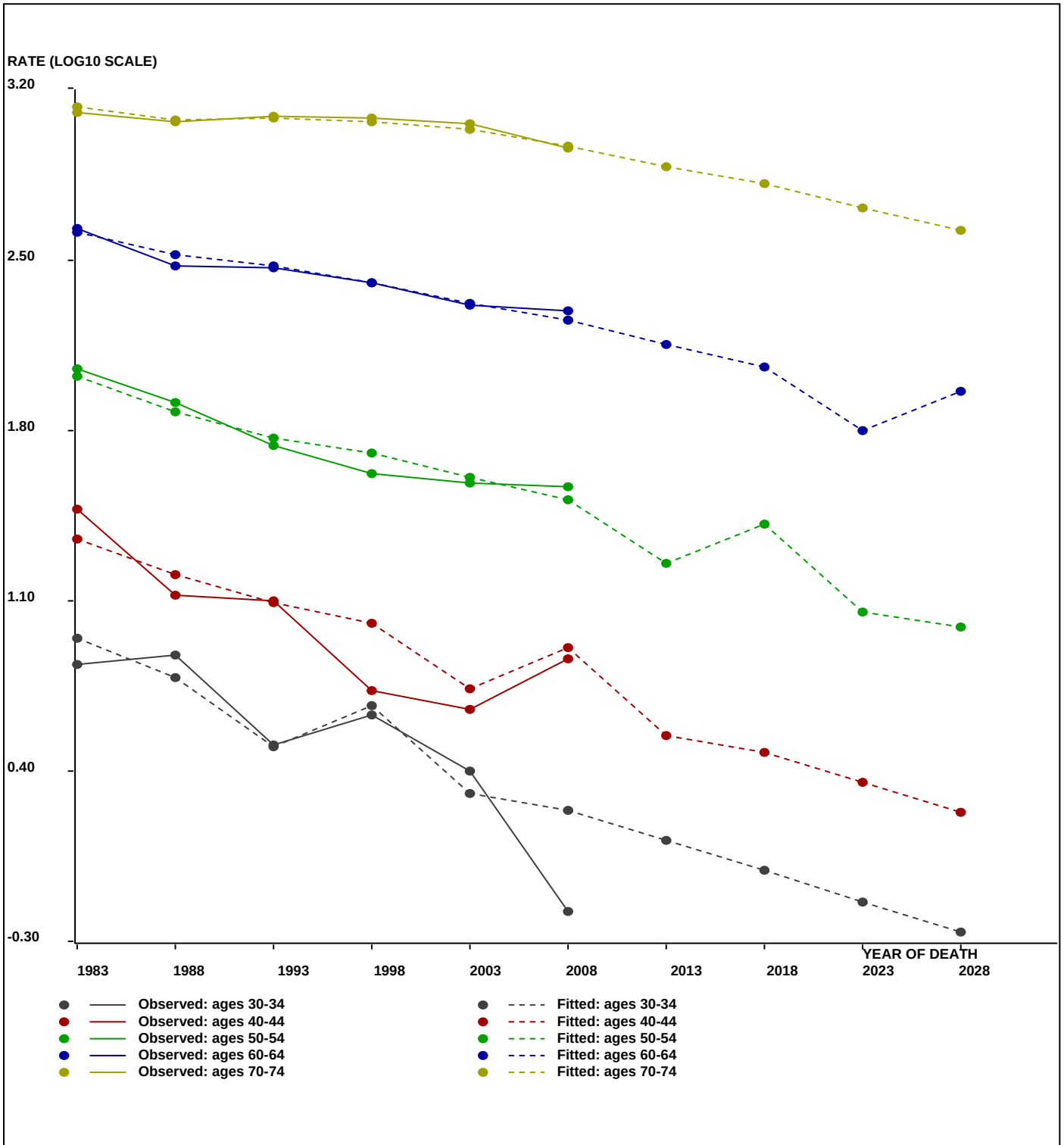


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Sweden COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Sweden COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	1.3	2.6	3.5	13.7	17.9	58.2	142.1	334.3	760.5	1544.2
2016 PRE	1.0	2.0	3.0	6.0	26.0	31.9	115.1	267.1	647.3	1275.5
2021 PRE	0.7	1.5	2.3	5.1	11.4	46.3	63.1	216.2	517.1	1085.8
2026 PRE	0.6	1.1	1.7	3.9	9.8	20.3	91.6	118.5	418.7	867.4

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	2.0	4.0	5.9	22.8	27.5	83.1	208.8	483.7	819.5	1120.2
2016 PRE	1.6	3.0	4.7	9.9	42.9	48.0	159.5	371.8	856.9	1182.5
2021 PRE	1.3	2.4	3.5	8.0	18.7	75.0	92.5	285.5	662.5	1248.1
2026 PRE	0.9	2.0	2.8	5.9	15.0	32.8	144.8	166.2	512.9	972.2

Osmond and Gardner Modelling

Sweden IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	2858.44	56.05	51	P, C	99.70	15623.79	0.0000
AGE-PERIOD	34.34	0.76	45	Cohort	74.68	183.00	0.0000
AGE-COHORT	20.25	0.56	36	Period	57.06	107.48	0.0000
PERIOD-COHORT	17.05	0.43	40	Age	49.01	90.86	0.0000
FULL AGE-PERIOD-COHORT	8.69	0.27	32			46.21	0.0498

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.082434	12.090222
35	1.468323	29.398365
40	1.843420	69.730072
45	2.217587	165.039217
50	2.503001	318.420562
55	2.819160	659.417258
60	3.138709	1376.286672
65	3.416128	2606.921685
70	3.676233	4744.959620
75	3.925593	8425.447223

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.092372	1.237005
1986	0.053987	1.132366
1991	0.005674	1.013150
1996	-0.054487	0.882091
2001	-0.127709	0.745230
2006	-0.209766	0.616927

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.141437	1.384959
1911	0.091445	1.234368
1916	0.036603	1.087936
1921	-0.009069	0.979334
1926	-0.062799	0.865369
1931	-0.099198	0.795797
1936	-0.159610	0.692452
1941	-0.205795	0.622594
1946	-0.192419	0.642067
1951	-0.180648	0.659708
1956	-0.142197	0.720781
1961	-0.201359	0.628986
1966	-0.219373	0.603430
1971	-0.174583	0.668986
1976	-0.077370	0.836817

Osmond and Gardner Modelling

Sweden IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	17.0	12.0	15.0	8.0	5.0	9.0
EXP	14.9	13.8	11.3	9.9	9.2	9.0
CHI	0.3	0.2	1.2	0.4	1.9	0.0
35 - OBS	45.0	33.0	25.0	23.0	14.0	22.0
EXP	37.0	33.4	30.5	24.2	20.6	19.1
CHI	1.7	0.0	1.0	0.1	2.1	0.4
40 - OBS	61.0	86.0	76.0	60.0	43.0	48.0
EXP	71.4	80.1	71.2	63.3	48.7	41.4
CHI	1.5	0.4	0.3	0.2	0.7	1.1
45 - OBS	151.0	162.0	174.0	130.0	132.0	98.0
EXP	156.6	153.8	169.3	146.4	126.6	95.8
CHI	0.2	0.4	0.1	1.8	0.2	0.1
50 - OBS	328.0	273.0	281.0	278.0	235.0	206.0
EXP	343.9	273.7	264.0	281.8	236.9	201.7
CHI	0.7	0.0	1.1	0.1	0.0	0.1
55 - OBS	827.0	631.0	517.0	464.0	497.0	412.0
EXP	850.8	640.5	501.5	468.9	485.6	401.6
CHI	0.7	0.1	0.5	0.1	0.3	0.3
60 - OBS	1978.0	1602.0	1236.0	899.0	821.0	801.0
EXP	2067.4	1577.7	1170.8	890.2	806.6	828.9
CHI	3.9	0.4	3.6	0.1	0.3	0.9
65 - OBS	4054.0	3443.0	2528.0	1818.0	1414.0	1184.0
EXP	4035.6	3411.3	2564.0	1854.4	1367.4	1210.3
CHI	0.1	0.3	0.5	0.7	1.6	0.6
70 - OBS	7807.0	6226.0	5152.0	3780.0	2561.0	1863.0
EXP	7695.8	6172.9	5153.7	3779.8	2660.8	1930.1
CHI	1.6	0.5	0.0	0.0	3.7	2.3
75 - OBS	12265.0	10624.0	8475.0	7064.0	5054.0	3591.0
EXP	12265.0	10736.6	8547.0	7007.0	5019.5	3500.2
CHI	0.0	1.2	0.6	0.5	0.2	2.4

Osmond and Gardner Modelling

Sweden IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	12.090222
35	29.398365
40	69.730072
45	165.039217
50	318.420562
55	659.417258
60	1376.286672
65	2606.921685
70	4744.959620
75	8425.447223

PERIOD	EFFECT	LOWER	UPPER
% Period Change	82.7834	79.7834	85.7834

1981	1.237005		
1986	1.132366		
1991	1.013150		
1996	0.882091		
2001	0.745230		
2006	0.616927		
2011	0.510713	0.492205	0.529221
2016	0.422785	0.392698	0.453983
2021	0.349996	0.313307	0.389442
2026	0.289738	0.249967	0.334077

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.384959	1.000000	
1911	1.234368	2.000000	
1916	1.087936	4.000000	
1921	0.979334	8.000000	
1926	0.865369	16.000000	
1931	0.795797	32.000000	
1936	0.692452	64.000000	
1941	0.622594	128.000000	
1946	0.642067	256.000000	
1951	0.659708	512.000000	
1956	0.720781	1024.000000	
1961	0.628986	2048.000000	
1966	0.603430	4096.000000	
1971	0.668986	8192.000000	
1976	0.646842	EXTRAPOLATION	0.836817
1981	0.645439	EXTRAPOLATION	
1986	0.644039	EXTRAPOLATION	
1991	0.642643	EXTRAPOLATION	
1996	0.641249	EXTRAPOLATION	

Osmond and Gardner Modelling

**Sweden IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	11.2	8.6	10.2	5.2	3.3	6.2	-	-	-	-
	EXP	9.9	9.9	7.7	6.4	6.0	4.8	4.0*	3.3*	2.7*	2.2*
	Elow							3.8	3.1	2.4	1.9
	Eup							4.1	3.5	3.0	2.6
35	OBS	28.4	21.7	17.6	15.5	9.0	13.9	-	-	-	-
	EXP	23.3	22.0	21.5	16.3	13.2	12.1	9.7*	8.0*	6.6*	5.5*
	Elow							9.4	7.5	5.9	4.7
	Eup							10.1	8.6	7.4	6.3
40	OBS	45.9	54.4	49.7	42.0	28.8	30.1	-	-	-	-
	EXP	53.7	50.7	46.6	44.3	32.7	26.0	23.8*	19.1*	15.8*	13.0*
	Elow							23.0	17.7	14.1	11.2
	Eup							24.7	20.5	17.5	15.0
45	OBS	136.3	122.5	110.3	85.3	92.5	65.5	-	-	-	-
	EXP	141.4	116.4	107.4	96.0	88.7	64.0	50.9*	46.7*	37.4*	30.9*
	Elow							49.0	43.4	33.4	26.6
	Eup							52.7	50.1	41.6	35.6
50	OBS	299.0	249.1	213.8	177.9	155.3	144.6	-	-	-	-
	EXP	313.5	249.7	200.9	180.3	156.5	141.6	102.3*	81.2*	74.6*	59.7*
	Elow							98.6	75.5	66.7	51.5
	Eup							106.0	87.2	83.0	68.8
55	OBS	686.1	585.4	476.9	358.3	322.9	275.3	-	-	-	-
	EXP	705.9	594.2	462.6	362.1	315.5	268.4	242.7*	175.4*	139.3*	127.8*
	Elow							233.9	162.9	124.7	110.3
	Eup							251.5	188.3	155.0	147.4
60	OBS	1595.2	1369.4	1171.4	849.0	650.0	526.8	-	-	-	-
	EXP	1667.3	1348.6	1109.6	840.6	638.6	545.2	463.7*	419.4*	303.0*	240.6*
	Elow							446.9	389.6	271.2	207.6
	Eup							480.5	450.4	337.1	277.4
65	OBS	3524.3	2917.9	2253.5	1794.1	1391.2	979.6	-	-	-	-
	EXP	3508.4	2891.0	2285.6	1830.0	1345.3	1001.3	854.8*	727.1*	657.6*	475.1*
	Elow							823.9	675.4	588.7	409.9
	Eup							885.8	780.8	731.8	547.8
70	OBS	7349.9	5895.8	4706.5	3622.1	2708.5	1956.6	-	-	-	-
	EXP	7245.2	5845.5	4708.0	3622.0	2814.0	2027.0	1508.7*	1288.1*	1095.6*	990.9*
	Elow							1454.1	1196.4	980.7	854.9
	Eup							1563.4	1383.1	1219.1	1142.6
75	OBS	14434.5	11653.2	9208.6	7337.6	5470.9	4243.7	-	-	-	-
	EXP	14434.5	11776.7	9286.9	7278.4	5433.6	4136.5	2979.6*	2217.8*	1893.4*	1610.5*
	Elow							2871.6	2059.9	1694.9	1389.4
	Eup							3087.6	2381.4	2106.8	1856.9
30-79	OBS	1468.3	1204.0	965.1	752.6	578.9	443.4	-	-	-	-
	EXP	1472.8	1201.9	960.9	755.0	579.2	444.3	345.7*	281.2*	236.6*	197.1*
	Elow							333.2	261.2	211.8	170.1
	Eup							358.2	301.9	263.3	227.3

Osmond and Gardner Modelling

**Sweden IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

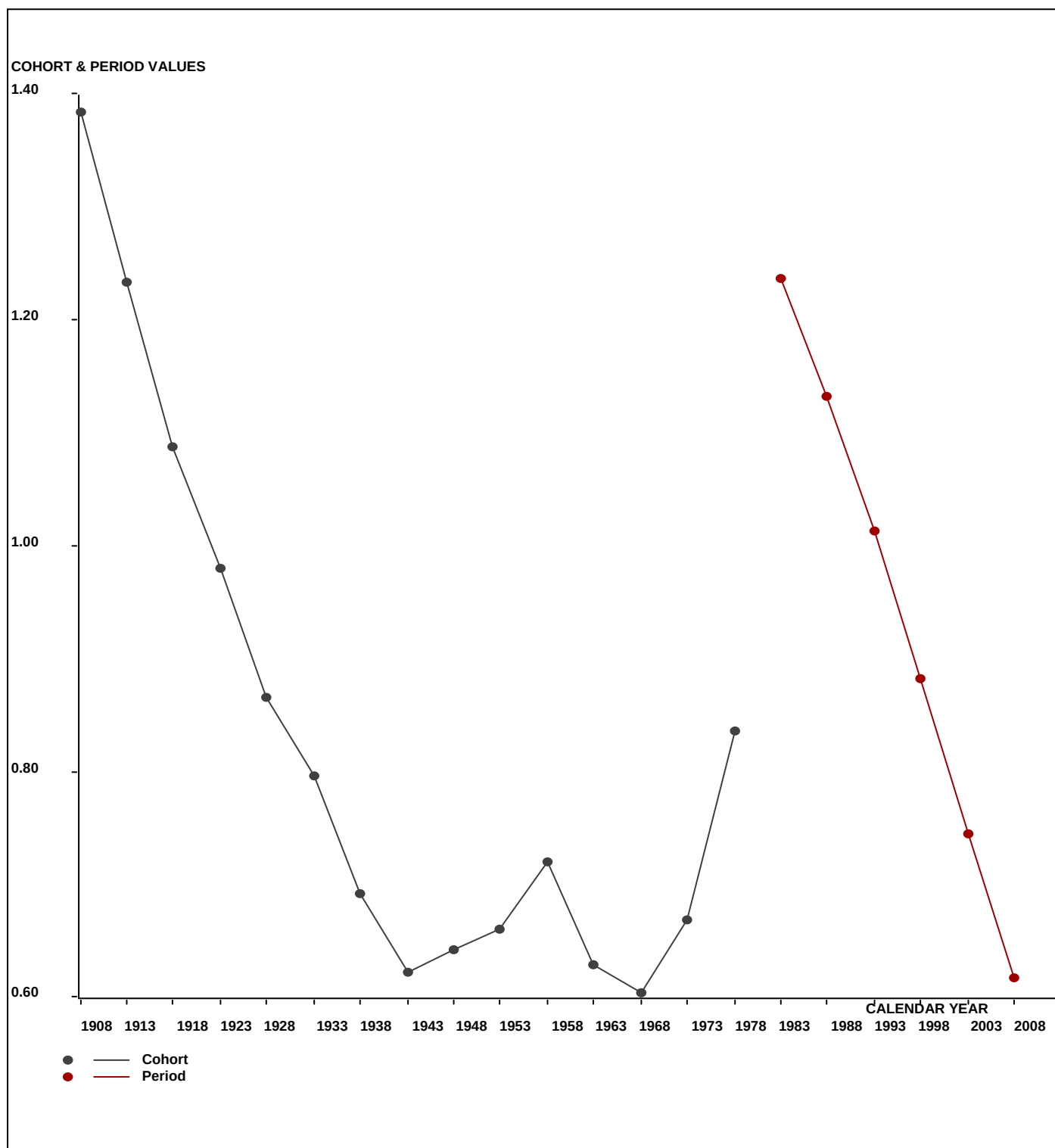
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	17.0	12.0	15.0	8.0	5.0	9.0	-	-	-	-
	EXP	14.9	13.8	11.3	9.9	9.2	7.0	5.7*	5.1*	4.7*	3.6*
	CHI	0.282	0.228	1.213	0.373	1.934	0.600	-	-	-	-
35 -	OBS	45.0	33.0	25.0	23.0	14.0	22.0	-	-	-	-
	EXP	37.0	33.4	30.5	24.2	20.6	19.1	14.5*	11.8*	10.6*	9.8*
	CHI	1.746	0.004	0.997	0.058	2.125	0.427	-	-	-	-
40 -	OBS	61.0	86.0	76.0	60.0	43.0	48.0	-	-	-	-
	EXP	71.4	80.1	71.2	63.3	48.7	41.4	38.5*	28.8*	23.4*	21.1*
	CHI	1.517	0.438	0.319	0.173	0.672	1.066	-	-	-	-
45 -	OBS	151.0	162.0	174.0	130.0	132.0	98.0	-	-	-	-
	EXP	156.6	153.8	169.3	146.4	126.6	95.8	81.8*	75.7*	56.8*	46.2*
	CHI	0.198	0.434	0.128	1.837	0.233	0.053	-	-	-	-
50 -	OBS	328.0	273.0	281.0	278.0	235.0	206.0	-	-	-	-
	EXP	343.9	273.7	264.0	281.8	236.9	201.7	153.1*	130.3*	120.7*	90.7*
	CHI	0.736	0.002	1.098	0.053	0.015	0.091	-	-	-	-
55 -	OBS	827.0	631.0	517.0	464.0	497.0	412.0	-	-	-	-
	EXP	850.8	640.5	501.5	468.9	485.6	401.6	342.9*	260.3*	221.8*	205.8*
	CHI	0.666	0.141	0.478	0.051	0.268	0.270	-	-	-	-
60 -	OBS	1978.0	1602.0	1236.0	899.0	821.0	801.0	-	-	-	-
	EXP	2067.4	1577.7	1170.8	890.2	806.6	828.9	685.8*	582.5*	443.0*	378.1*
	CHI	3.864	0.374	3.627	0.088	0.257	0.939	-	-	-	-
65 -	OBS	4054.0	3443.0	2528.0	1818.0	1414.0	1184.0	-	-	-	-
	EXP	4035.6	3411.3	2564.0	1854.4	1367.4	1210.3	1260.1*	1040.2*	887.0*	676.1*
	CHI	0.084	0.295	0.505	0.714	1.591	0.570	-	-	-	-
70 -	OBS	7807.0	6226.0	5152.0	3780.0	2561.0	1863.0	-	-	-	-
	EXP	7695.8	6172.9	5153.7	3779.8	2660.8	1930.1	1718.7*	1799.5*	1491.3*	1278.6*
	CHI	1.608	0.456	0.001	0.000	3.742	2.332	-	-	-	-
75 -	OBS	12265.0	10624.0	8475.0	7064.0	5054.0	3591.0	-	-	-	-
	EXP	12265.0	10736.6	8547.0	7007.0	5019.5	3500.2	2572.4*	2305.9*	2431.1*	2025.4*
	CHI	0.000	1.181	0.607	0.464	0.236	2.354	-	-	-	-
30-79	OBS	27533.0	23092.0	18479.0	14524.0	10776.0	8234.0	-	-	-	-
	EXP	27538.4	23093.8	18483.4	14526.0	10781.9	8236.0	6873.3*	6240.1*	5690.6*	4735.3*
	O/E	1.000	1.000	1.000	1.000	0.999	1.000	-	-	-	-

Osmond and Gardner Modelling

Sweden IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

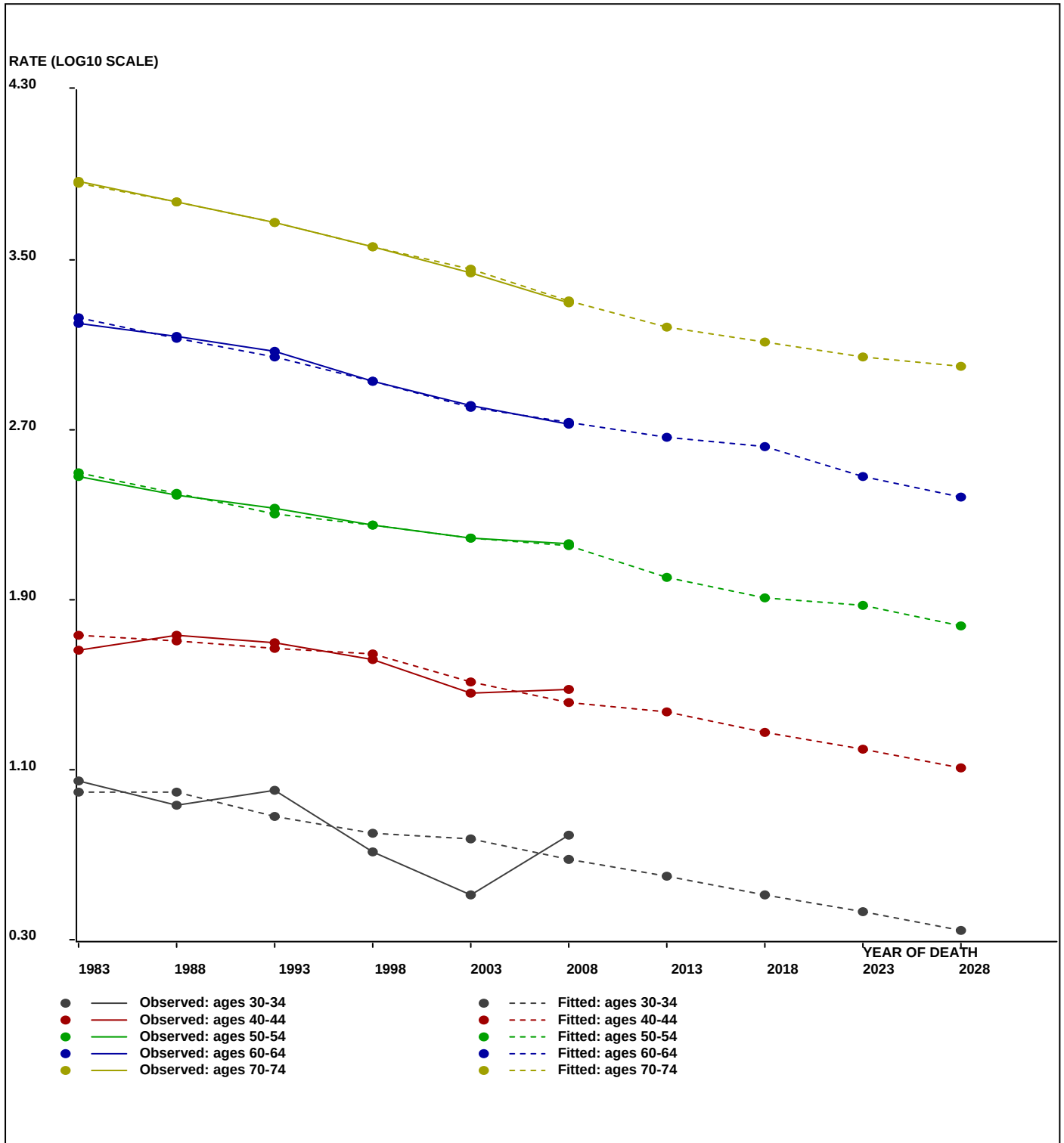


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Sweden IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Sweden IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	4.0	9.7	23.8	50.9	102.3	242.7	463.7	854.8	1508.7	2979.6
2016 PRE	3.3	8.0	19.1	46.7	81.2	175.4	419.4	727.1	1288.1	2217.8
2021 PRE	2.7	6.6	15.8	37.4	74.6	139.3	303.0	657.6	1095.6	1893.4
2026 PRE	2.2	5.5	13.0	30.9	59.7	127.8	240.6	475.1	990.9	1610.5

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	5.7	14.5	38.5	81.8	153.1	342.9	685.8	1260.1	1718.7	2572.4
2016 PRE	5.1	11.8	28.8	75.7	130.3	260.3	582.5	1040.2	1799.5	2305.9
2021 PRE	4.7	10.6	23.4	56.8	120.7	221.8	443.0	887.0	1491.3	2431.1
2026 PRE	3.6	9.8	21.1	46.2	90.7	205.8	378.1	676.1	1278.6	2025.4

Osmond and Gardner Modelling

Sweden Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	617.36	12.11	51	P, C	98.62	3327.79	0.0000
AGE-PERIOD	17.30	0.38	45	Cohort	50.88	92.12	0.0000
AGE-COHORT	19.99	0.56	36	Period	57.51	106.13	0.0000
PERIOD-COHORT	10.27	0.26	40	Age	17.24	54.52	0.0627
FULL AGE-PERIOD-COHORT	8.50	0.27	32			45.12	0.0619

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.324855	21.127828
35	1.522549	33.308070
40	1.806131	63.992792
45	2.037957	109.133107
50	2.232237	170.701528
55	2.404797	253.978478
60	2.657475	454.438272
65	2.944472	879.978991
70	3.295551	1974.927315
75	3.645092	4416.644338

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.102654	1.266643
1986	0.044687	1.108375
1991	0.017231	1.040473
1996	-0.026197	0.941461
2001	-0.091412	0.810192
2006	-0.195876	0.636977

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.031323	1.074789
1911	0.037490	1.090160
1916	0.026318	1.062474
1921	0.001727	1.003984
1926	-0.024697	0.944719
1931	-0.022947	0.948535
1936	-0.048260	0.894828
1941	-0.067527	0.855998
1946	-0.041719	0.908408
1951	-0.017052	0.961497
1956	-0.072149	0.846938
1961	-0.149048	0.709499
1966	-0.147279	0.712395
1971	-0.413988	0.385489
1976	-0.246530	0.566852

Osmond and Gardner Modelling

Sweden Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	39.0	30.0	24.0	18.0	10.0	11.0
EXP	39.0	27.7	22.9	21.9	10.1	11.0
CHI	0.0	0.2	0.1	0.7	0.0	0.0
35 - OBS	69.0	48.0	41.0	34.0	26.0	13.0
EXP	60.7	53.9	41.7	33.0	30.0	12.9
CHI	1.1	0.6	0.0	0.0	0.5	0.0
40 - OBS	117.0	97.0	76.0	67.0	49.0	53.0
EXP	92.3	101.8	97.9	72.9	54.8	46.3
CHI	6.6	0.2	4.9	0.5	0.6	1.0
45 - OBS	147.0	144.0	145.0	143.0	110.0	77.0
EXP	137.0	136.9	162.7	150.6	106.9	73.7
CHI	0.7	0.4	1.9	0.4	0.1	0.1
50 - OBS	221.0	180.0	192.0	227.0	218.0	132.0
EXP	225.0	185.6	199.8	228.2	201.2	131.2
CHI	0.1	0.2	0.3	0.0	1.4	0.0
55 - OBS	369.0	260.0	255.0	268.0	295.0	247.0
EXP	366.3	287.8	256.3	265.0	287.7	232.8
CHI	0.0	2.7	0.0	0.0	0.2	0.9
60 - OBS	688.0	567.0	487.0	422.0	378.0	406.0
EXP	716.6	556.7	473.2	405.4	398.1	399.8
CHI	1.1	0.2	0.4	0.7	1.0	0.1
65 - OBS	1343.0	1129.0	984.0	785.0	700.0	569.0
EXP	1362.2	1155.5	970.3	796.3	648.4	579.9
CHI	0.3	0.6	0.2	0.2	4.1	0.2
70 - OBS	2898.0	2505.0	2305.0	1834.0	1410.0	995.0
EXP	2896.7	2456.0	2258.3	1833.1	1435.1	1071.9
CHI	0.0	1.0	1.0	0.0	0.4	5.5
75 - OBS	5109.0	4864.0	4463.0	4026.0	3095.0	2310.0
EXP	5109.0	4865.3	4493.5	4019.0	3122.9	2258.1
CHI	0.0	0.0	0.2	0.0	0.2	1.2

Osmond and Gardner Modelling

Sweden Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	21.127828
35	33.308070
40	63.992792
45	109.133107
50	170.701528
55	253.978478
60	454.438272
65	879.978991
70	1974.927315
75	4416.644338

PERIOD	EFFECT	LOWER	UPPER
% Period Change	78.6205	75.6205	81.6205

1981	1.266643		
1986	1.108375		
1991	1.040473		
1996	0.941461		
2001	0.810192		
2006	0.636977		
2011	0.500795	0.481686	0.519904
2016	0.393728	0.364253	0.424349
2021	0.309551	0.275450	0.346355
2026	0.243370	0.208297	0.282697

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.074789	1.000000	
1911	1.090160	2.000000	
1916	1.062474	4.000000	
1921	1.003984	8.000000	
1926	0.944719	16.000000	
1931	0.948535	32.000000	
1936	0.894828	64.000000	
1941	0.855998	128.000000	
1946	0.908408	256.000000	
1951	0.961497	512.000000	
1956	0.846938	1024.000000	
1961	0.709499	2048.000000	
1966	0.712395	4096.000000	
1971	0.385489	8192.000000	
1976	0.362519	EXTRAPOLATION	0.566852
1981	0.297456	EXTRAPOLATION	
1986	0.244070	EXTRAPOLATION	
1991	0.200266	EXTRAPOLATION	
1996	0.164323	EXTRAPOLATION	

Osmond and Gardner Modelling

**Sweden Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	25.7	21.5	16.4	11.7	6.5	7.6	-	-	-	-
	EXP	25.7	19.8	15.6	14.2	6.6	4.9	3.1*	2.0*	1.3*	0.8*
	Elow							3.0	1.9	1.2	0.7
	Eup							3.3	2.2	1.5	1.0
35	OBS	43.6	31.6	28.8	22.9	16.7	8.2	-	-	-	-
	EXP	38.3	35.5	29.4	22.2	19.2	8.2	6.0*	3.9*	2.5*	1.6*
	Elow							5.8	3.6	2.2	1.4
	Eup							6.3	4.2	2.8	1.9
40	OBS	88.0	61.4	49.7	46.9	32.9	33.3	-	-	-	-
	EXP	69.4	64.4	64.0	51.0	36.8	29.0	12.4*	9.1*	5.9*	3.8*
	Elow							11.9	8.5	5.2	3.3
	Eup							12.8	9.8	6.6	4.4
45	OBS	132.7	108.9	91.9	93.8	77.0	51.5	-	-	-	-
	EXP	123.7	103.5	103.1	98.8	74.9	49.3	38.9*	16.6*	12.2*	7.9*
	Elow							37.4	15.3	10.9	6.8
	Eup							40.4	17.9	13.7	9.2
50	OBS	201.4	164.2	146.1	145.2	144.1	92.7	-	-	-	-
	EXP	205.1	169.3	152.0	146.0	133.0	92.1	60.7*	47.9*	20.4*	15.1*
	Elow							58.3	44.3	18.1	12.9
	Eup							63.0	51.6	22.8	17.5
55	OBS	306.1	241.2	235.2	207.0	191.7	165.1	-	-	-	-
	EXP	303.9	267.0	236.5	204.7	186.9	155.5	107.7*	70.9*	56.0*	23.8*
	Elow							103.6	65.6	49.8	20.4
	Eup							111.8	76.5	62.7	27.7
60	OBS	554.9	484.7	461.5	398.5	299.3	267.0	-	-	-	-
	EXP	577.9	475.8	448.5	382.8	315.2	263.0	218.8*	151.5*	99.8*	78.8*
	Elow							210.5	140.2	88.8	67.4
	Eup							227.2	163.3	111.7	91.5
65	OBS	1167.5	956.8	877.2	774.7	688.7	470.8	-	-	-	-
	EXP	1184.3	979.2	865.0	785.8	638.0	479.8	400.3*	333.1*	230.7*	151.9*
	Elow							385.0	308.2	205.3	130.0
	Eup							415.6	359.0	258.1	176.5
70	OBS	2728.3	2372.1	2105.7	1757.4	1491.2	1045.0	-	-	-	-
	EXP	2727.1	2325.7	2063.0	1756.5	1517.7	1125.7	846.6*	706.4*	587.8*	407.1*
	Elow							814.3	653.5	523.0	348.4
	Eup							878.9	761.3	657.7	472.9
75	OBS	6012.7	5335.2	4849.3	4182.0	3350.3	2729.9	-	-	-	-
	EXP	6012.7	5336.7	4882.5	4174.7	3380.5	2668.5	1979.2*	1488.5*	1242.0*	1033.5*
	Elow							1903.7	1377.1	1105.1	884.6
	Eup							2054.7	1604.3	1389.6	1200.5
30-79	OBS	598.8	512.7	465.0	403.9	336.6	257.4	-	-	-	-
	EXP	598.0	514.5	465.9	404.2	335.6	257.6	194.3*	148.5*	114.6*	84.3*
	Elow							186.9	137.4	102.0	72.2
	Eup							201.7	160.1	128.2	97.9

Osmond and Gardner Modelling

**Sweden Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

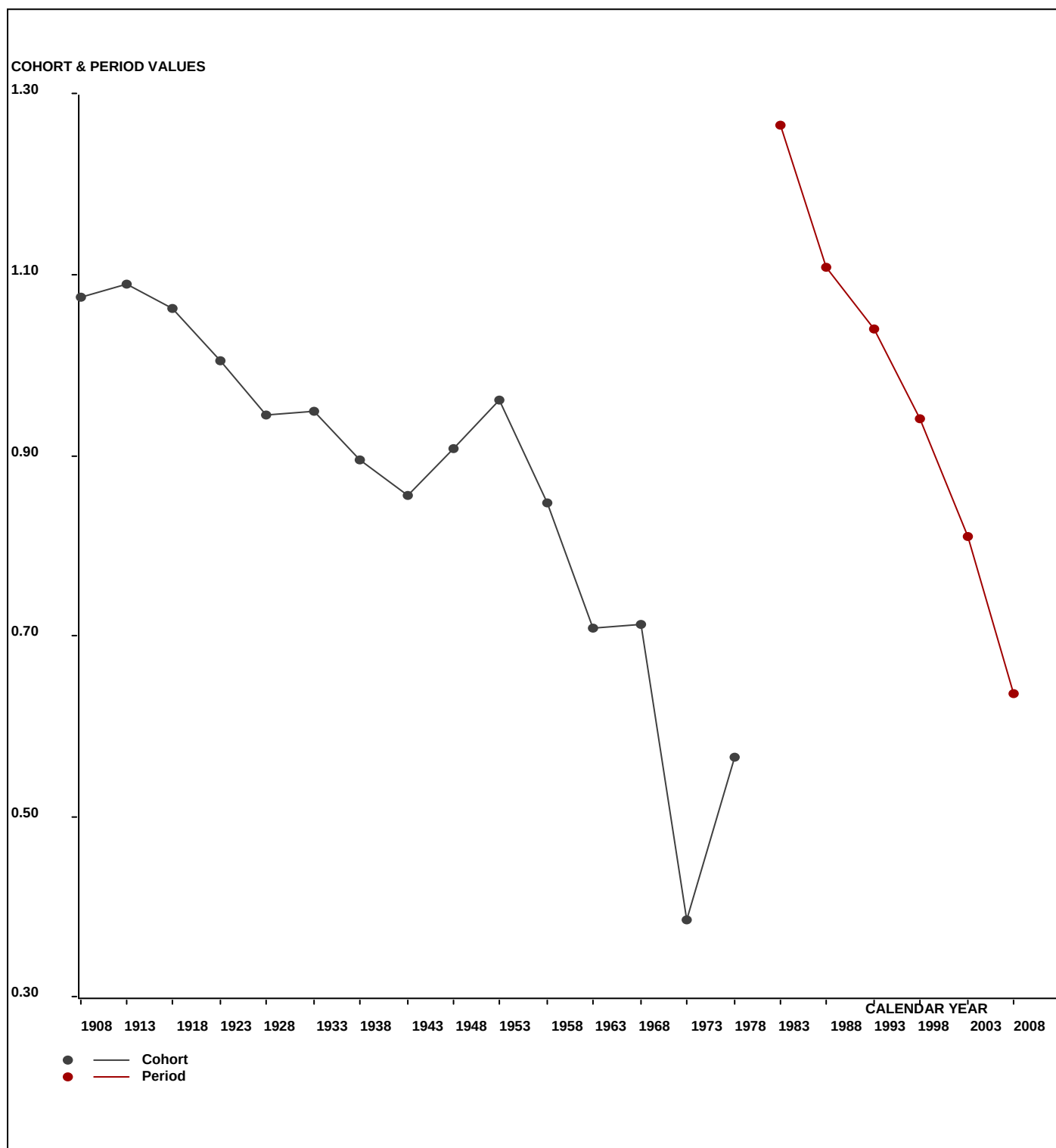
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	39.0	30.0	24.0	18.0	10.0	11.0	-	-	-	-
	EXP	39.0	27.7	22.9	21.9	10.1	7.0	4.5*	3.2*	2.3*	1.3*
	CHI	0.000	0.194	0.056	0.679	0.001	2.235	-	-	-	-
35 -	OBS	69.0	48.0	41.0	34.0	26.0	13.0	-	-	-	-
	EXP	60.7	53.9	41.7	33.0	30.0	12.9	9.0*	5.7*	4.0*	2.9*
	CHI	1.142	0.647	0.012	0.031	0.530	0.001	-	-	-	-
40 -	OBS	117.0	97.0	76.0	67.0	49.0	53.0	-	-	-	-
	EXP	92.3	101.8	97.9	72.9	54.8	46.3	20.0*	13.8*	8.8*	6.2*
	CHI	6.634	0.223	4.879	0.472	0.620	0.979	-	-	-	-
45 -	OBS	147.0	144.0	145.0	143.0	110.0	77.0	-	-	-	-
	EXP	137.0	136.9	162.7	150.6	106.9	73.7	62.6*	26.9*	18.6*	11.8*
	CHI	0.730	0.369	1.927	0.382	0.089	0.144	-	-	-	-
50 -	OBS	221.0	180.0	192.0	227.0	218.0	132.0	-	-	-	-
	EXP	225.0	185.6	199.8	228.2	201.2	131.2	90.8*	76.8*	33.0*	22.9*
	CHI	0.072	0.167	0.306	0.006	1.403	0.005	-	-	-	-
55 -	OBS	369.0	260.0	255.0	268.0	295.0	247.0	-	-	-	-
	EXP	366.3	287.8	256.3	265.0	287.7	232.8	152.2*	105.3*	89.2*	38.4*
	CHI	0.020	2.689	0.007	0.033	0.186	0.871	-	-	-	-
60 -	OBS	688.0	567.0	487.0	422.0	378.0	406.0	-	-	-	-
	EXP	716.6	556.7	473.2	405.4	398.1	399.8	323.6*	210.5*	145.9*	123.8*
	CHI	1.140	0.192	0.401	0.681	1.015	0.096	-	-	-	-
65 -	OBS	1343.0	1129.0	984.0	785.0	700.0	569.0	-	-	-	-
	EXP	1362.2	1155.5	970.3	796.3	648.4	579.9	590.1*	476.6*	311.2*	216.2*
	CHI	0.271	0.606	0.193	0.161	4.099	0.206	-	-	-	-
70 -	OBS	2898.0	2505.0	2305.0	1834.0	1410.0	995.0	-	-	-	-
	EXP	2896.7	2456.0	2258.3	1833.1	1435.1	1071.9	964.4*	986.9*	800.1*	525.3*
	CHI	0.001	0.978	0.964	0.000	0.438	5.510	-	-	-	-
75 -	OBS	5109.0	4864.0	4463.0	4026.0	3095.0	2310.0	-	-	-	-
	EXP	5109.0	4865.3	4493.5	4019.0	3122.9	2258.1	1708.7*	1547.7*	1594.7*	1299.8*
	CHI	0.000	0.000	0.207	0.012	0.250	1.195	-	-	-	-
30-79	OBS	11000.0	9824.0	8972.0	7824.0	6291.0	4813.0	-	-	-	-
	EXP	11004.7	9827.1	8976.7	7825.3	6295.3	4813.6	3925.8*	3453.2*	3007.8*	2248.5*
	O/E	1.000	1.000	0.999	1.000	0.999	1.000	-	-	-	-

Osmond and Gardner Modelling

Sweden Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

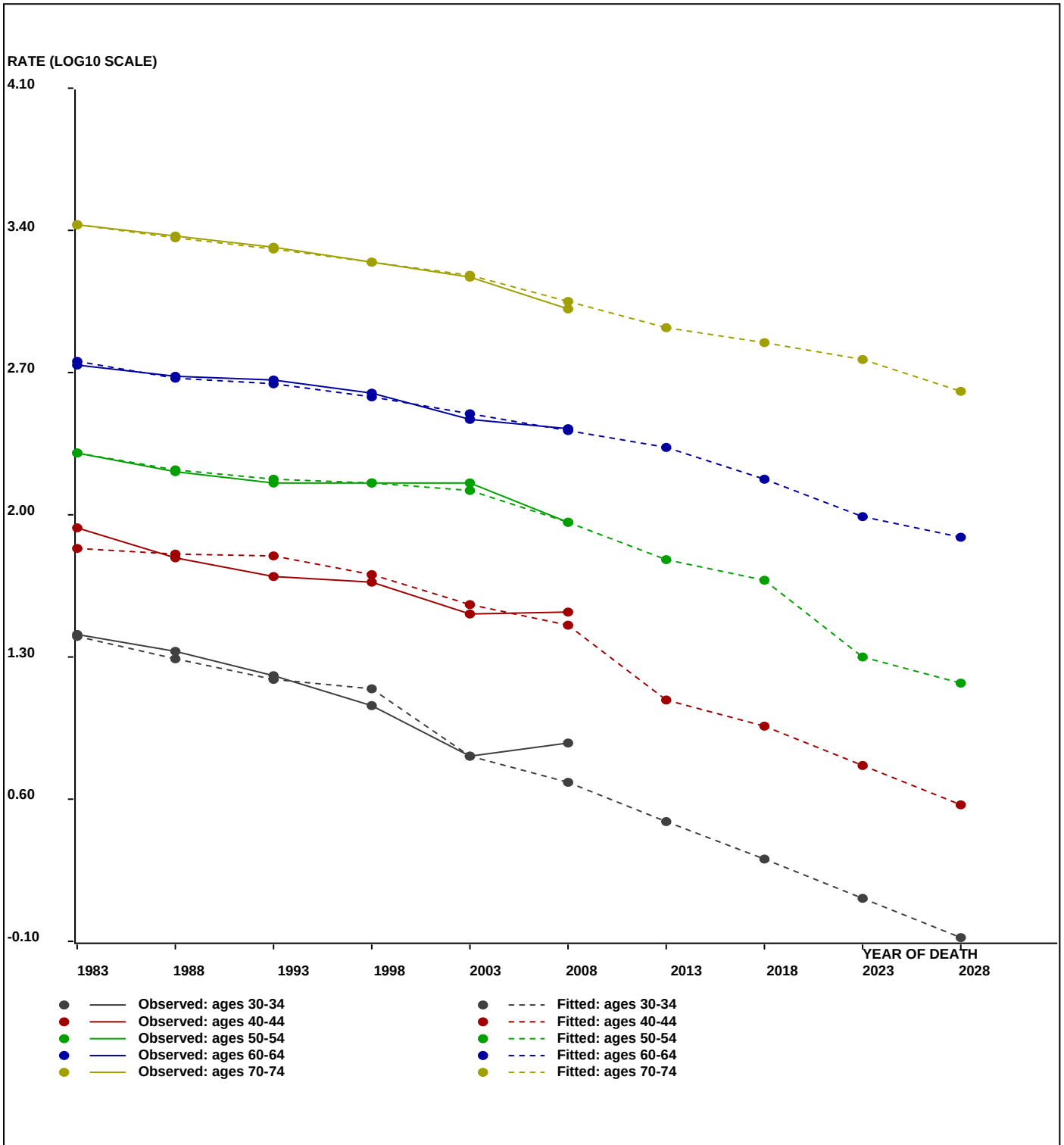


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Sweden Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Sweden Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	3.1	6.0	12.4	38.9	60.7	107.7	218.8	400.3	846.6	1979.2
2016 PRE	2.0	3.9	9.1	16.6	47.9	70.9	151.5	333.1	706.4	1488.5
2021 PRE	1.3	2.5	5.9	12.2	20.4	56.0	99.8	230.7	587.8	1242.0
2026 PRE	0.8	1.6	3.8	7.9	15.1	23.8	78.8	151.9	407.1	1033.5

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	4.5	9.0	20.0	62.6	90.8	152.2	323.6	590.1	964.4	1708.7
2016 PRE	3.2	5.7	13.8	26.9	76.8	105.3	210.5	476.6	986.9	1547.7
2021 PRE	2.3	4.0	8.8	18.6	33.0	89.2	145.9	311.2	800.1	1594.7
2026 PRE	1.3	2.9	6.2	11.8	22.9	38.4	123.8	216.2	525.3	1299.8

Osmond and Gardner Modelling

Sweden Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	389.64	7.64	51	P, C	98.65	2097.00	0.0000
AGE-PERIOD	81.29	1.81	45	Cohort	93.54	439.45	0.0000
AGE-COHORT	6.44	0.18	36	Period	18.54	34.19	0.5551
PERIOD-COHORT	35.37	0.88	40	Age	85.16	188.98	0.0000
FULL AGE-PERIOD-COHORT	5.25	0.16	32			27.85	0.6767

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.815840	6.543951
35	1.151080	14.160553
40	1.599415	39.757144
45	1.956823	90.536292
50	2.240343	173.917369
55	2.487167	307.020014
60	2.698764	499.762488
65	2.896001	787.048326
70	3.037888	1091.158758
75	3.146543	1401.338342

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.024970	0.944127
1986	-0.010631	0.975819
1991	-0.004469	0.989763
1996	-0.005375	0.987700
2001	0.018373	1.043213
2006	0.007094	1.016469

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.365994	0.430533
1911	-0.299266	0.502035
1916	-0.215243	0.609195
1921	-0.115130	0.767131
1926	-0.073627	0.844059
1931	0.019848	1.046761
1936	0.072440	1.181516
1941	0.140995	1.383551
1946	0.201392	1.589980
1951	0.130608	1.350852
1956	0.079616	1.201202
1961	-0.020496	0.953901
1966	-0.098122	0.797770
1971	-0.176272	0.666390
1976	-0.504757	0.312783

Osmond and Gardner Modelling

Sweden Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	11.0	12.0	9.0	9.0	6.0	3.0
EXP	12.6	10.7	9.1	8.0	7.0	3.0
CHI	0.2	0.2	0.0	0.1	0.1	0.0
35 - OBS	30.0	24.0	27.0	26.0	14.0	16.0
EXP	33.7	28.3	23.9	19.8	18.4	15.1
CHI	0.4	0.7	0.4	2.0	1.0	0.0
40 - OBS	67.0	94.0	85.0	70.0	55.0	54.0
EXP	69.1	97.4	81.2	67.4	59.0	51.4
CHI	0.1	0.1	0.2	0.1	0.3	0.1
45 - OBS	112.0	172.0	224.0	185.0	154.0	128.0
EXP	111.9	161.6	224.7	184.1	162.0	131.2
CHI	0.0	0.7	0.0	0.0	0.4	0.1
50 - OBS	187.0	210.0	315.0	420.0	386.0	303.0
EXP	188.6	219.8	313.0	426.9	370.8	302.5
CHI	0.0	0.4	0.0	0.1	0.6	0.0
55 - OBS	272.0	329.0	395.0	531.0	834.0	616.0
EXP	294.9	338.0	389.2	543.2	783.7	630.8
CHI	1.8	0.2	0.1	0.3	3.2	0.3
60 - OBS	458.0	482.0	548.0	662.0	891.0	1190.0
EXP	448.8	481.5	546.3	617.6	911.1	1228.1
CHI	0.2	0.0	0.0	3.2	0.4	1.2
65 - OBS	530.0	712.0	727.0	804.0	969.0	1359.0
EXP	520.7	695.2	737.6	824.6	986.0	1337.8
CHI	0.2	0.4	0.2	0.5	0.3	0.3
70 - OBS	561.0	693.0	919.0	969.0	1100.0	1222.0
EXP	549.4	685.0	906.9	949.3	1126.7	1247.8
CHI	0.2	0.1	0.2	0.4	0.6	0.5
75 - OBS	484.0	614.0	760.0	983.0	1152.0	1316.0
EXP	484.0	625.9	777.6	1022.2	1139.9	1261.7
CHI	0.0	0.2	0.4	1.5	0.1	2.3

Osmond and Gardner Modelling

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 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	6.543951
35	14.160553
40	39.757144
45	90.536292
50	173.917369
55	307.020014
60	499.762488
65	787.048326
70	1091.158758
75	1401.338342

PERIOD	EFFECT	LOWER	UPPER
% Period Change	97.4364	94.4364	100.4364

1981	0.944127		
1986	0.975819		
1991	0.989763		
1996	0.987700		
2001	1.043213		
2006	1.016469		
2011	0.990410	0.959916	1.020904
2016	0.965020	0.906510	1.025359
2021	0.940280	0.856075	1.029833
2026	0.916175	0.808446	1.034327

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.430533	1.000000	
1911	0.502035	2.000000	
1916	0.609195	4.000000	
1921	0.767131	8.000000	
1926	0.844059	16.000000	
1931	1.046761	32.000000	
1936	1.181516	64.000000	
1941	1.383551	128.000000	
1946	1.589980	256.000000	
1951	1.350852	512.000000	
1956	1.201202	1024.000000	
1961	0.953901	2048.000000	
1966	0.797770	4096.000000	
1971	0.666390	8192.000000	
1976	0.591526	EXTRAPOLATION	0.312783
1981	0.511514	EXTRAPOLATION	
1986	0.442324	EXTRAPOLATION	
1991	0.382493	EXTRAPOLATION	
1996	0.330756	EXTRAPOLATION	

Osmond and Gardner Modelling

**Sweden Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	7.3	8.6	6.1	5.8	3.9	2.1	-	-	-	-
	EXP	8.3	7.7	6.2	5.2	4.5	3.9	3.3*	2.8*	2.4*	2.0*
	Elow							3.2	2.6	2.1	1.7
	Eup							3.4	3.0	2.6	2.2
35	OBS	18.9	15.8	19.0	17.5	9.0	10.1	-	-	-	-
	EXP	21.3	18.7	16.8	13.3	11.8	9.6	8.3*	7.0*	5.9*	5.0*
	Elow							8.0	6.6	5.4	4.4
	Eup							8.6	7.4	6.5	5.6
40	OBS	50.4	59.5	55.6	49.0	36.9	33.9	-	-	-	-
	EXP	51.9	61.7	53.2	47.2	39.6	32.2	26.2*	22.7*	19.1*	16.1*
	Elow							25.4	21.3	17.4	14.2
	Eup							27.0	24.1	20.9	18.2
45	OBS	101.1	130.1	142.0	121.4	107.9	85.6	-	-	-	-
	EXP	101.0	122.2	142.5	120.8	113.5	87.8	71.5*	58.2*	50.4*	42.4*
	Elow							69.3	54.7	45.8	37.4
	Eup							73.7	61.9	55.2	47.9
50	OBS	170.4	191.6	239.7	268.7	255.1	212.7	-	-	-	-
	EXP	171.9	200.5	238.2	273.1	245.1	212.4	164.3*	133.9*	109.0*	94.3*
	Elow							159.3	125.8	99.2	83.2
	Eup							169.4	142.3	119.4	106.4
55	OBS	225.7	305.2	364.4	410.1	541.9	411.7	-	-	-	-
	EXP	244.7	313.6	359.0	419.6	509.3	421.6	365.3*	282.6*	230.3*	187.4*
	Elow							354.0	265.5	209.7	165.4
	Eup							376.5	300.3	252.2	211.6
60	OBS	369.4	412.0	519.4	625.2	705.4	782.7	-	-	-	-
	EXP	362.0	411.6	517.8	583.2	721.3	807.7	668.6*	579.3*	448.3*	365.3*
	Elow							648.0	544.2	408.1	322.3
	Eup							689.2	615.5	490.9	412.4
65	OBS	460.8	603.4	648.1	793.4	953.3	1124.4	-	-	-	-
	EXP	452.7	589.2	657.5	813.7	970.1	1106.9	1239.4*	1026.0*	888.9*	687.8*
	Elow							1201.2	963.8	809.3	607.0
	Eup							1277.6	1090.1	973.6	776.5
70	OBS	528.2	656.2	839.5	928.5	1163.3	1283.4	-	-	-	-
	EXP	517.2	648.7	828.5	909.7	1191.5	1310.5	1495.2*	1674.2*	1386.0*	1200.8*
	Elow							1449.2	1572.7	1261.8	1059.6
	Eup							1541.2	1778.9	1518.0	1355.7
75	OBS	569.6	673.5	825.8	1021.1	1247.0	1555.2	-	-	-	-
	EXP	569.6	686.5	844.9	1061.8	1233.9	1491.0	1639.8*	1871.0*	2095.0*	1734.3*
	Elow							1589.3	1757.6	1907.4	1530.4
	Eup							1690.3	1988.0	2294.6	1958.0
30-79	OBS	185.5	226.5	268.8	305.9	353.9	368.2	-	-	-	-
	EXP	186.5	227.1	268.1	304.7	354.3	369.6	366.8*	346.1*	306.1*	252.6*
	Elow							355.5	325.1	278.7	222.9
	Eup							378.1	367.7	335.2	285.1

Osmond and Gardner Modelling

**Sweden Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

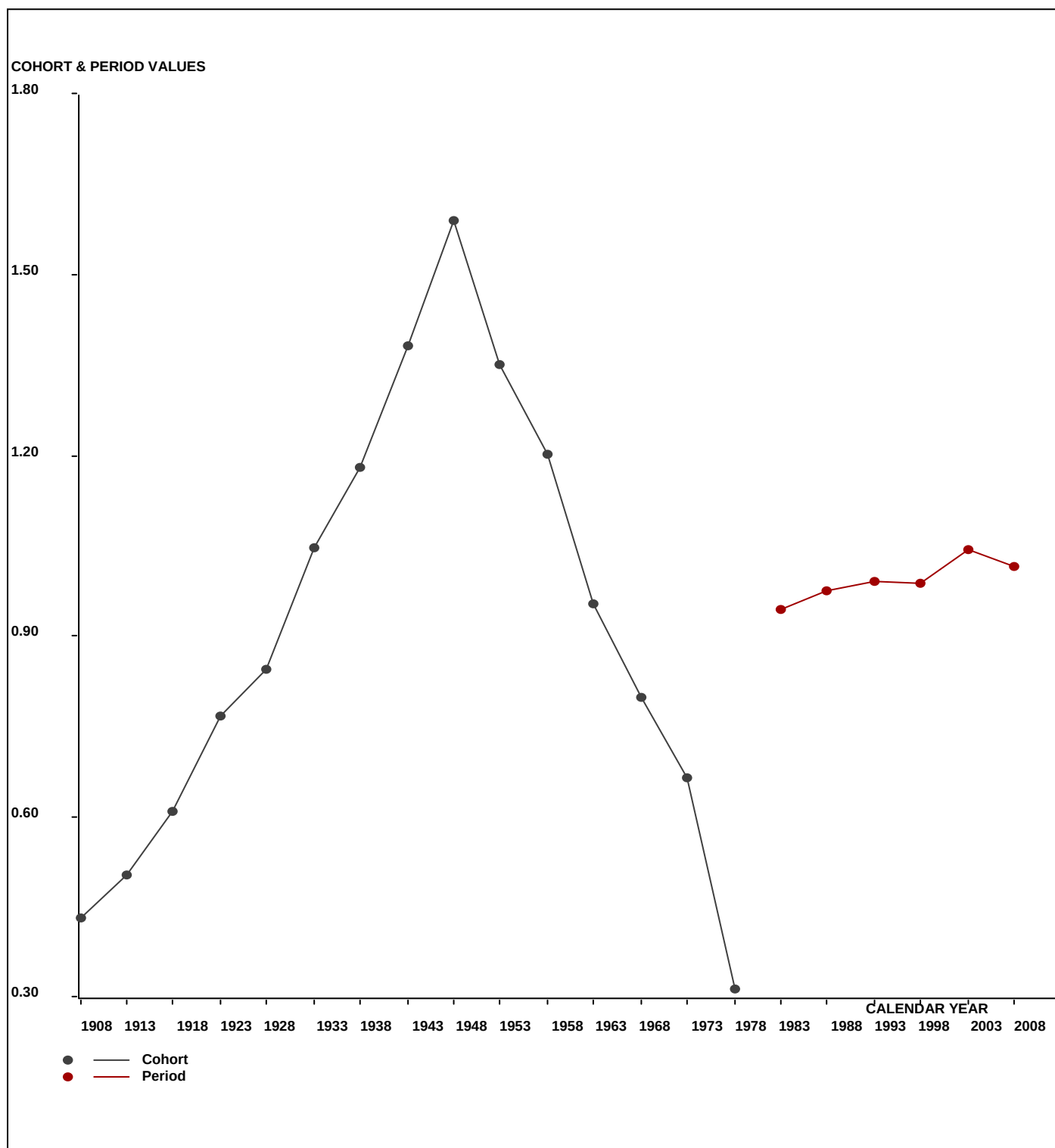
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	11.0	12.0	9.0	9.0	6.0	3.0	-	-	-	-
	EXP	12.6	10.7	9.1	8.0	7.0	5.7	4.7*	4.3*	4.1*	3.1*
	CHI	0.214	0.156	0.000	0.138	0.133	1.260	-	-	-	-
35 -	OBS	30.0	24.0	27.0	26.0	14.0	16.0	-	-	-	-
	EXP	33.7	28.3	23.9	19.8	18.4	15.1	12.4*	10.2*	9.4*	8.9*
	CHI	0.397	0.667	0.394	1.953	1.044	0.050	-	-	-	-
40 -	OBS	67.0	94.0	85.0	70.0	55.0	54.0	-	-	-	-
	EXP	69.1	97.4	81.2	67.4	59.0	51.4	42.4*	34.3*	28.5*	26.1*
	CHI	0.061	0.121	0.173	0.104	0.268	0.135	-	-	-	-
45 -	OBS	112.0	172.0	224.0	185.0	154.0	128.0	-	-	-	-
	EXP	111.9	161.6	224.7	184.1	162.0	131.2	115.0*	94.4*	76.6*	63.5*
	CHI	0.000	0.669	0.002	0.004	0.394	0.080	-	-	-	-
50 -	OBS	187.0	210.0	315.0	420.0	386.0	303.0	-	-	-	-
	EXP	188.6	219.8	313.0	426.9	370.8	302.5	245.9*	214.8*	176.5*	143.3*
	CHI	0.013	0.436	0.013	0.110	0.620	0.001	-	-	-	-
55 -	OBS	272.0	329.0	395.0	531.0	834.0	616.0	-	-	-	-
	EXP	294.9	338.0	389.2	543.2	783.7	630.8	515.9*	419.5*	366.8*	301.8*
	CHI	1.778	0.242	0.086	0.276	3.223	0.348	-	-	-	-
60 -	OBS	458.0	482.0	548.0	662.0	891.0	1190.0	-	-	-	-
	EXP	448.8	481.5	546.3	617.6	911.1	1228.1	988.8*	804.6*	655.3*	573.9*
	CHI	0.188	0.000	0.005	3.197	0.446	1.180	-	-	-	-
65 -	OBS	530.0	712.0	727.0	804.0	969.0	1359.0	-	-	-	-
	EXP	520.7	695.2	737.6	824.6	986.0	1337.8	1826.9*	1467.7*	1199.0*	978.8*
	CHI	0.166	0.406	0.152	0.513	0.294	0.335	-	-	-	-
70 -	OBS	561.0	693.0	919.0	969.0	1100.0	1222.0	-	-	-	-
	EXP	549.4	685.0	906.9	949.3	1126.7	1247.8	1703.3*	2339.1*	1886.6*	1549.5*
	CHI	0.247	0.094	0.161	0.408	0.631	0.533	-	-	-	-
75 -	OBS	484.0	614.0	760.0	983.0	1152.0	1316.0	-	-	-	-
	EXP	484.0	625.9	777.6	1022.2	1139.9	1261.7	1415.7*	1945.3*	2690.1*	2181.1*
	CHI	0.000	0.225	0.400	1.503	0.128	2.338	-	-	-	-
30-79	OBS	2712.0	3342.0	4009.0	4659.0	5561.0	6207.0	-	-	-	-
	EXP	2713.6	3343.5	4009.7	4663.0	5564.6	6212.2	6871.0*	7334.4*	7092.9*	5830.1*
	O/E	0.999	1.000	1.000	0.999	0.999	0.999	-	-	-	-

Osmond and Gardner Modelling

Sweden Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

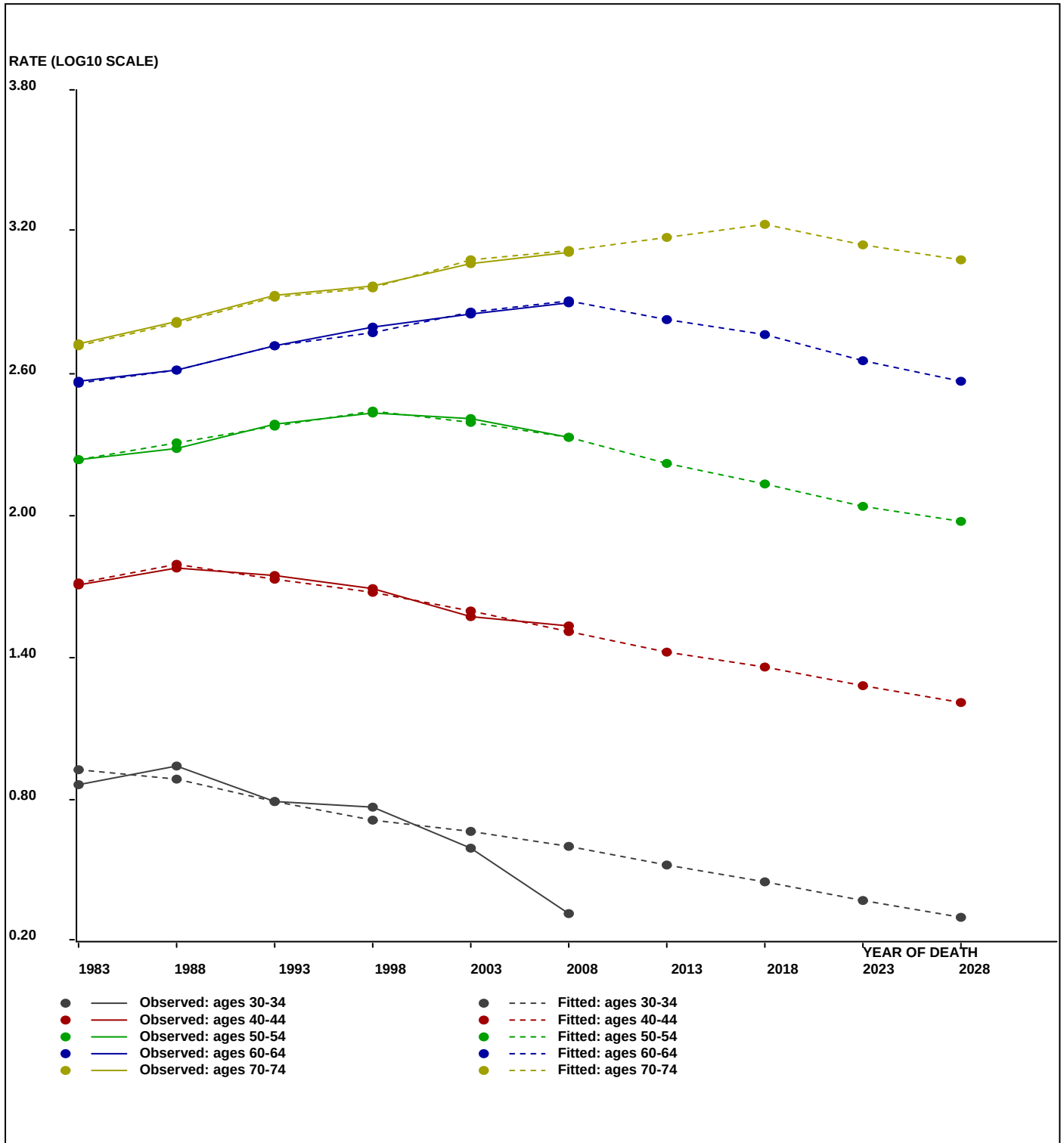


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Sweden Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Sweden Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	3.3	8.3	26.2	71.5	164.3	365.3	668.6	1239.4	1495.2	1639.8
2016	PRE	2.8	7.0	22.7	58.2	133.9	282.6	579.3	1026.0	1674.2	1871.0
2021	PRE	2.4	5.9	19.1	50.4	109.0	230.3	448.3	888.9	1386.0	2095.0
2026	PRE	2.0	5.0	16.1	42.4	94.3	187.4	365.3	687.8	1200.8	1734.3

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	4.7	12.4	42.4	115.0	245.9	515.9	988.8	1826.9	1703.3	1415.7
2016	PRE	4.3	10.2	34.3	94.4	214.8	419.5	804.6	1467.7	2339.1	1945.3
2021	PRE	4.1	9.4	28.5	76.6	176.5	366.8	655.3	1199.0	1886.6	2690.1
2026	PRE	3.1	8.9	26.1	63.5	143.3	301.8	573.9	978.8	1549.5	2181.1

Osmond and Gardner Modelling

Sweden COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	159.57	3.13	51	P, C	95.62	862.49	0.0000
AGE-PERIOD	96.83	2.15	45	Cohort	92.77	536.54	0.0000
AGE-COHORT	15.74	0.44	36	Period	55.55	83.75	0.0000
PERIOD-COHORT	22.84	0.57	40	Age	69.36	123.13	0.0000
FULL AGE-PERIOD-COHORT	7.00	0.22	32			37.23	0.2409

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.986445	9.692709
35	1.030681	10.732008
40	1.156000	14.321877
45	1.429542	26.886974
50	1.748451	56.033904
55	2.035997	108.641825
60	2.338139	217.840811
65	2.608429	405.908913
70	2.868620	738.958186
75	3.091568	1234.718946

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.081030	1.205120
1986	-0.006481	0.985188
1991	-0.025787	0.942352
1996	-0.009590	0.978160
2001	-0.002026	0.995345
2006	-0.021211	0.952333

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.323713	0.474555
1911	-0.209464	0.617357
1916	-0.114190	0.768794
1921	-0.012176	0.972354
1926	0.035832	1.086005
1931	0.108902	1.284997
1936	0.102712	1.266813
1941	0.066506	1.165482
1946	0.058211	1.143434
1951	-0.096742	0.800310
1956	-0.152801	0.703395
1961	-0.479324	0.331647
1966	-0.404544	0.393963
1971	-0.637084	0.230630
1976	-0.823148	0.150263

Osmond and Gardner Modelling

Sweden COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	14.0	9.0	5.0	5.0	4.0	2.0
EXP	14.2	9.4	4.4	5.8	3.4	2.0
CHI	0.0	0.0	0.1	0.1	0.1	0.0
35 - OBS	18.0	16.0	8.0	6.0	9.0	3.0
EXP	23.4	12.9	10.1	5.2	6.6	3.7
CHI	1.3	0.8	0.4	0.1	0.9	0.1
40 - OBS	30.0	23.0	18.0	11.0	9.0	6.0
EXP	26.7	25.5	16.5	14.1	7.0	8.6
CHI	0.4	0.2	0.1	0.7	0.5	0.8
45 - OBS	57.0	39.0	42.0	22.0	31.0	8.0
EXP	45.5	40.8	45.7	32.1	26.9	12.7
CHI	2.9	0.1	0.3	3.2	0.6	1.7
50 - OBS	111.0	81.0	70.0	93.0	60.0	54.0
EXP	95.2	76.7	80.9	97.9	67.5	53.5
CHI	2.6	0.2	1.5	0.2	0.8	0.0
55 - OBS	174.0	153.0	124.0	144.0	203.0	134.0
EXP	171.4	148.3	140.6	160.4	190.3	123.9
CHI	0.0	0.2	2.0	1.7	0.8	0.8
60 - OBS	325.0	272.0	279.0	279.0	315.0	363.0
EXP	316.5	272.7	278.3	285.8	319.2	360.7
CHI	0.2	0.0	0.0	0.2	0.1	0.0
65 - OBS	412.0	436.0	482.0	507.0	528.0	572.0
EXP	432.6	458.8	466.0	517.0	520.2	544.5
CHI	1.0	1.1	0.5	0.2	0.1	1.4
70 - OBS	564.0	586.0	728.0	840.0	913.0	846.0
EXP	584.0	591.0	741.2	819.2	893.7	848.9
CHI	0.7	0.0	0.2	0.5	0.4	0.0
75 - OBS	600.0	704.0	848.0	1157.0	1193.0	1246.0
EXP	600.0	684.6	823.3	1130.6	1233.0	1278.6
CHI	0.0	0.5	0.7	0.6	1.3	0.8

Osmond and Gardner Modelling

Sweden COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	9.692709
35	10.732008
40	14.321877
45	26.886974
50	56.033904
55	108.641825
60	217.840811
65	405.908913
70	738.958186
75	1234.718946

PERIOD	EFFECT	LOWER	UPPER
% Period Change	95.6786	92.6786	98.6786
1981	1.205120		
1986	0.985188		
1991	0.942352		
1996	0.978160		
2001	0.995345		
2006	0.952333		
2011	0.911179	0.882609	0.939749
2016	0.871804	0.817990	0.927332
2021	0.834130	0.758102	0.915079
2026	0.798085	0.702599	0.902987

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.474555	1.000000	
1911	0.617357	2.000000	
1916	0.768794	4.000000	
1921	0.972354	8.000000	
1926	1.086005	16.000000	
1931	1.284997	32.000000	
1936	1.266813	64.000000	
1941	1.165482	128.000000	
1946	1.143434	256.000000	
1951	0.800310	512.000000	
1956	0.703395	1024.000000	
1961	0.331647	2048.000000	
1966	0.393963	4096.000000	
1971	0.230630	8192.000000	
1976	0.185716	EXTRAPOLATION	0.150263
1981	0.140709	EXTRAPOLATION	
1986	0.106609	EXTRAPOLATION	
1991	0.080773	EXTRAPOLATION	
1996	0.061198	EXTRAPOLATION	

Osmond and Gardner Modelling

**Sweden COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	9.2	6.4	3.4	3.2	2.6	1.4	-	-	-	-
	EXP	9.3	6.7	3.0	3.7	2.2	1.7	1.2*	0.9*	0.7*	0.5*
	Elow							1.2	0.8	0.6	0.4
	Eup							1.3	1.0	0.7	0.5
35	OBS	11.4	10.5	5.6	4.0	5.8	1.9	-	-	-	-
	EXP	14.8	8.5	7.1	3.5	4.2	2.4	1.8*	1.3*	1.0*	0.7*
	Elow							1.8	1.2	0.9	0.6
	Eup							1.9	1.4	1.0	0.8
40	OBS	22.6	14.6	11.8	7.7	6.0	3.8	-	-	-	-
	EXP	20.1	16.1	10.8	9.9	4.7	5.4	3.0*	2.3*	1.7*	1.2*
	Elow							2.9	2.2	1.5	1.1
	Eup							3.1	2.5	1.8	1.4
45	OBS	51.5	29.5	26.6	14.4	21.7	5.4	-	-	-	-
	EXP	41.0	30.9	29.0	21.0	18.8	8.5	9.7*	5.4*	4.2*	3.0*
	Elow							9.3	5.1	3.8	2.7
	Eup							10.0	5.8	4.6	3.4
50	OBS	101.2	73.9	53.3	59.5	39.7	37.9	-	-	-	-
	EXP	86.8	69.9	61.5	62.7	44.6	37.5	16.9*	19.2*	10.8*	8.3*
	Elow							16.4	18.1	9.8	7.3
	Eup							17.5	20.5	11.8	9.4
55	OBS	144.4	141.9	114.4	111.2	131.9	89.6	-	-	-	-
	EXP	142.2	137.5	129.7	123.9	123.6	82.8	69.6*	31.4*	35.7*	20.0*
	Elow							67.4	29.5	32.4	17.6
	Eup							71.8	33.4	39.2	22.6
60	OBS	262.1	232.5	264.4	263.5	249.4	238.7	-	-	-	-
	EXP	255.3	233.1	263.8	269.9	252.7	237.2	158.9*	133.6*	60.3*	68.5*
	Elow							153.9	125.3	54.8	60.3
	Eup							163.8	142.1	66.1	77.5
65	OBS	358.2	369.5	429.7	500.3	519.5	473.2	-	-	-	-
	EXP	376.1	388.8	415.4	510.2	511.8	450.5	422.9*	283.2*	238.2*	107.4*
	Elow							409.6	265.7	216.4	94.6
	Eup							436.2	301.2	261.3	121.6
70	OBS	531.0	554.9	665.0	804.9	965.6	888.5	-	-	-	-
	EXP	549.8	559.7	677.1	785.0	945.1	891.5	784.7*	736.6*	493.3*	414.8*
	Elow							760.1	691.2	448.3	365.2
	Eup							809.4	783.5	541.2	469.4
75	OBS	706.1	772.2	921.4	1201.8	1291.4	1472.5	-	-	-	-
	EXP	706.1	751.0	894.5	1174.4	1334.7	1511.0	1425.2*	1254.6*	1177.6*	788.6*
	Elow							1380.5	1177.1	1070.3	694.3
	Eup							1469.9	1334.5	1291.9	892.3
30-79	OBS	145.2	139.0	150.4	171.4	184.1	174.3	-	-	-	-
	EXP	143.6	139.1	152.0	173.5	183.3	174.0	151.6*	125.7*	98.7*	69.3*
	Elow							146.8	117.9	89.7	61.0
	Eup							156.3	133.7	108.3	78.4

Osmond and Gardner Modelling

**Sweden COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

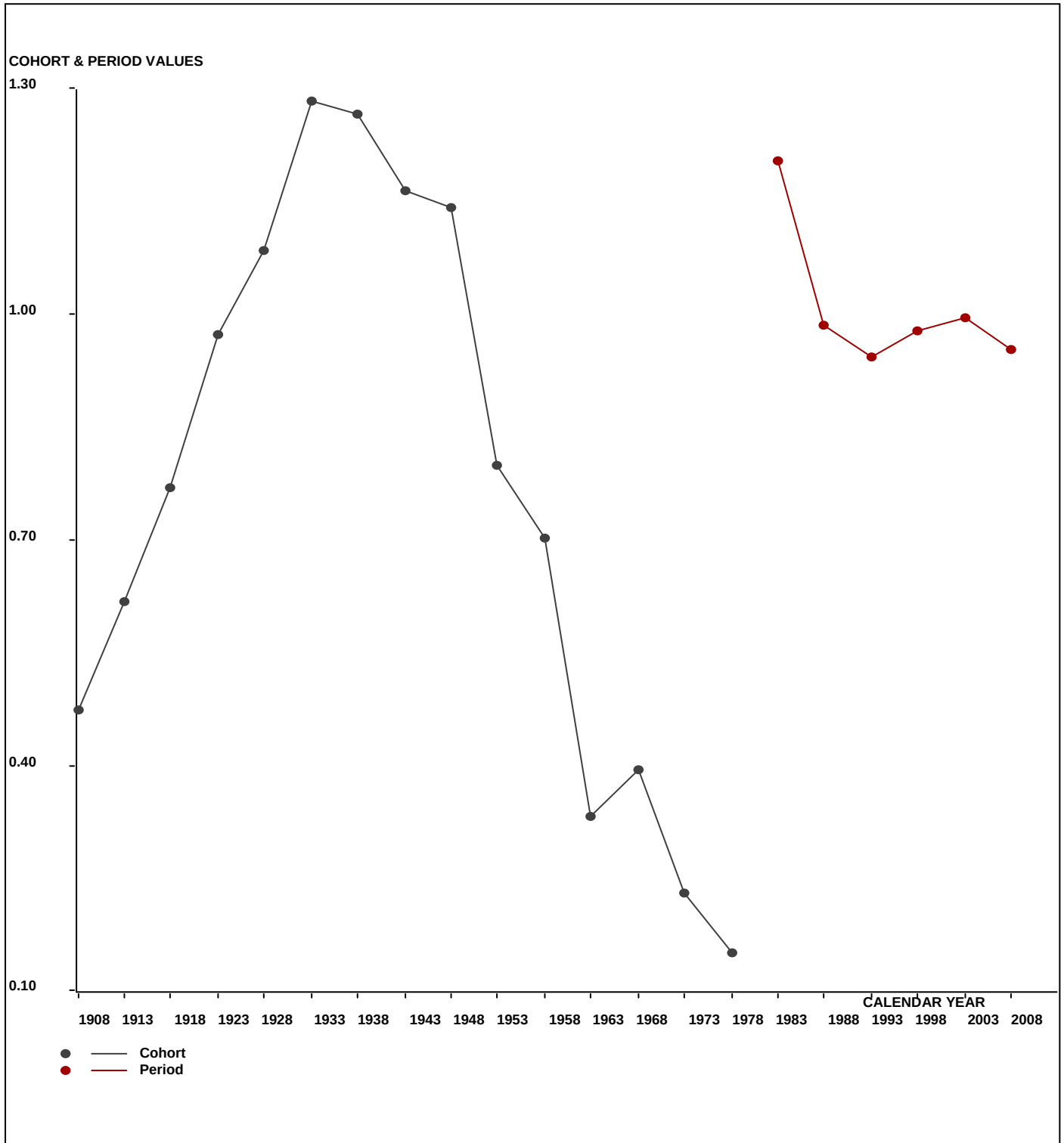
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	14.0	9.0	5.0	5.0	4.0	2.0	-	-	-	-
	EXP	14.2	9.4	4.4	5.8	3.4	2.5	1.8*	1.4*	1.1*	0.8*
	CHI	0.002	0.015	0.070	0.100	0.104	0.090	-	-	-	-
35 -	OBS	18.0	16.0	8.0	6.0	9.0	3.0	-	-	-	-
	EXP	23.4	12.9	10.1	5.2	6.6	3.7	2.7*	1.9*	1.5*	1.2*
	CHI	1.251	0.772	0.441	0.136	0.904	0.139	-	-	-	-
40 -	OBS	30.0	23.0	18.0	11.0	9.0	6.0	-	-	-	-
	EXP	26.7	25.5	16.5	14.1	7.0	8.6	4.9*	3.5*	2.5*	2.0*
	CHI	0.395	0.242	0.135	0.670	0.541	0.766	-	-	-	-
45 -	OBS	57.0	39.0	42.0	22.0	31.0	8.0	-	-	-	-
	EXP	45.5	40.8	45.7	32.1	26.9	12.7	15.5*	8.8*	6.3*	4.5*
	CHI	2.928	0.081	0.299	3.170	0.632	1.737	-	-	-	-
50 -	OBS	111.0	81.0	70.0	93.0	60.0	54.0	-	-	-	-
	EXP	95.2	76.7	80.9	97.9	67.5	53.5	25.3*	30.9*	17.5*	12.6*
	CHI	2.621	0.247	1.464	0.250	0.841	0.005	-	-	-	-
55 -	OBS	174.0	153.0	124.0	144.0	203.0	134.0	-	-	-	-
	EXP	171.4	148.3	140.6	160.4	190.3	123.9	98.4*	46.6*	56.9*	32.2*
	CHI	0.040	0.152	1.960	1.671	0.848	0.823	-	-	-	-
60 -	OBS	325.0	272.0	279.0	279.0	315.0	363.0	-	-	-	-
	EXP	316.5	272.7	278.3	285.8	319.2	360.7	234.9*	185.5*	88.1*	107.6*
	CHI	0.227	0.002	0.002	0.163	0.056	0.015	-	-	-	-
65 -	OBS	412.0	436.0	482.0	507.0	528.0	572.0	-	-	-	-
	EXP	432.6	458.8	466.0	517.0	520.2	544.5	623.4*	405.1*	321.2*	152.9*
	CHI	0.980	1.135	0.549	0.194	0.116	1.384	-	-	-	-
70 -	OBS	564.0	586.0	728.0	840.0	913.0	846.0	-	-	-	-
	EXP	584.0	591.0	741.2	819.2	893.7	848.9	894.0*	1029.1*	671.5*	535.3*
	CHI	0.683	0.043	0.235	0.528	0.418	0.010	-	-	-	-
75 -	OBS	600.0	704.0	848.0	1157.0	1193.0	1246.0	-	-	-	-
	EXP	600.0	684.6	823.3	1130.6	1233.0	1278.6	1230.5*	1304.4*	1512.1*	991.8*
	CHI	0.000	0.547	0.744	0.618	1.296	0.830	-	-	-	-
30-79	OBS	2305.0	2319.0	2604.0	3064.0	3265.0	3234.0	-	-	-	-
	EXP	2309.4	2320.6	2607.0	3068.0	3267.8	3237.5	3131.3*	3017.3*	2678.7*	1840.9*
	O/E	0.998	0.999	0.999	0.999	0.999	0.999	-	-	-	-

Osmond and Gardner Modelling

Sweden COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

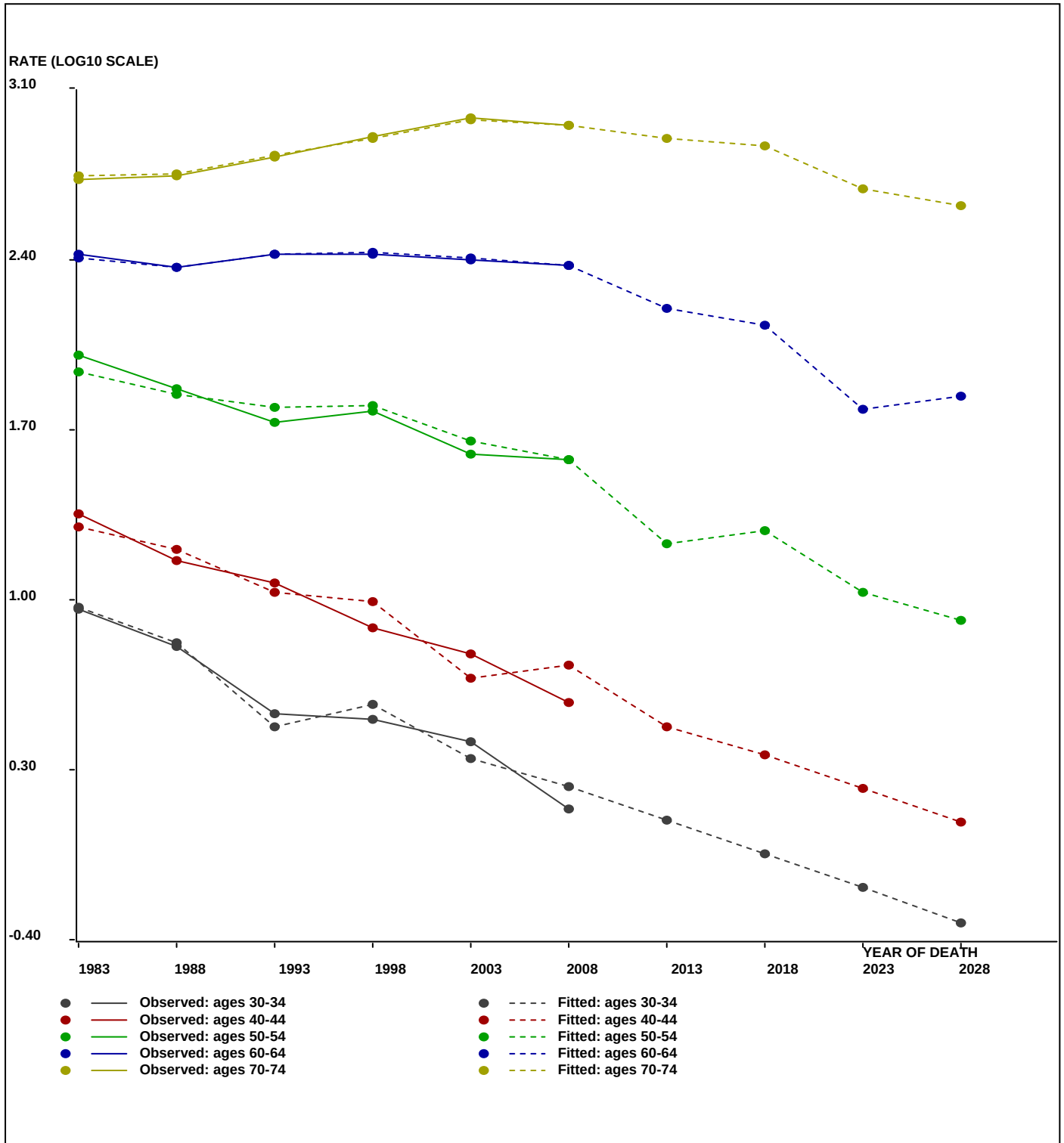
O&G Cohort and Period parameter values



Osmond and Gardner Modelling

Sweden COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Sweden COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	1.2	1.8	3.0	9.7	16.9	69.6	158.9	422.9	784.7	1425.2
2016 PRE	0.9	1.3	2.3	5.4	19.2	31.4	133.6	283.2	736.6	1254.6
2021 PRE	0.7	1.0	1.7	4.2	10.8	35.7	60.3	238.2	493.3	1177.6
2026 PRE	0.5	0.7	1.2	3.0	8.3	20.0	68.5	107.4	414.8	788.6

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	1.8	2.7	4.9	15.5	25.3	98.4	234.9	623.4	894.0	1230.5
2016 PRE	1.4	1.9	3.5	8.8	30.9	46.6	185.5	405.1	1029.1	1304.4
2021 PRE	1.1	1.5	2.5	6.3	17.5	56.9	88.1	321.2	671.5	1512.1
2026 PRE	0.8	1.2	2.0	4.5	12.6	32.2	107.6	152.9	535.3	991.8

Osmond and Gardner Modelling

Switzerland IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	2136.44	41.89	51	P, C	99.66	11610.96	0.0000
AGE-PERIOD	117.78	2.62	45	Cohort	93.81	625.20	0.0000
AGE-COHORT	24.88	0.69	36	Period	70.69	132.09	0.0000
PERIOD-COHORT	31.42	0.79	40	Age	76.79	166.74	0.0000
FULL AGE-PERIOD-COHORT	7.29	0.23	32			38.77	0.1909

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.831855	67.897765
35	2.198639	157.993299
40	2.570399	371.876782
45	2.812722	649.713886
50	3.036990	1088.904851
55	3.243853	1753.286475
60	3.423372	2650.769416
65	3.613400	4105.822104
70	3.789001	6151.781515
75	3.979806	9545.658656

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.085441	1.217420
1986	0.051617	1.126203
1991	0.023414	1.055392
1996	-0.021034	0.952721
2001	-0.105394	0.784524
2006	-0.148030	0.711164

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.077817	1.196236
1911	0.092915	1.238555
1916	0.098962	1.255920
1921	0.091441	1.234357
1926	0.032056	1.076603
1931	-0.031533	0.929965
1936	-0.110632	0.775118
1941	-0.187031	0.650083
1946	-0.198681	0.632876
1951	-0.209622	0.617131
1956	-0.261441	0.547720
1961	-0.288559	0.514566
1966	-0.362990	0.433521
1971	-0.403048	0.395323
1976	-0.333544	0.463934

Osmond and Gardner Modelling

Switzerland IHD, Males, based on 1981-2010 (UN) Replace last cohort value

Fitting the FULL AGE-PERIOD-COHORT Model

Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	43.0	56.0	47.0	50.0	38.0	29.0
EXP	62.7	52.8	53.4	42.1	28.9	29.0
CHI	6.2	0.2	0.8	1.5	2.8	0.0
35 - OBS	151.0	141.0	122.0	113.0	95.0	54.0
EXP	152.7	139.1	121.7	115.7	83.3	65.4
CHI	0.0	0.0	0.0	0.1	1.6	2.0
40 - OBS	335.0	314.0	325.0	265.0	233.0	163.0
EXP	325.4	332.9	310.9	258.6	224.4	185.4
CHI	0.3	1.1	0.6	0.2	0.3	2.7
45 - OBS	627.0	509.0	527.0	480.0	365.0	365.0
EXP	600.9	519.3	539.7	481.5	367.3	365.1
CHI	1.1	0.2	0.3	0.0	0.0	0.0
50 - OBS	1145.0	908.0	798.0	767.0	636.0	552.0
EXP	1116.7	904.7	792.0	788.1	645.5	559.9
CHI	0.7	0.0	0.0	0.6	0.1	0.1
55 - OBS	1827.0	1589.0	1296.0	1095.0	1025.0	930.0
EXP	1901.3	1576.5	1288.2	1084.6	994.2	919.3
CHI	2.9	0.1	0.0	0.1	1.0	0.1
60 - OBS	2747.0	2481.0	2012.0	1625.0	1258.0	1327.0
EXP	2814.5	2433.0	2043.0	1607.0	1249.3	1305.0
CHI	1.6	0.9	0.5	0.2	0.1	0.4
65 - OBS	3703.0	3581.0	3163.0	2527.0	1804.0	1611.0
EXP	3690.0	3558.8	3118.5	2543.5	1843.3	1636.0
CHI	0.0	0.1	0.6	0.1	0.8	0.4
70 - OBS	4966.0	4303.0	4254.0	3586.0	2716.0	2235.0
EXP	4887.2	4286.9	4248.9	3627.8	2758.4	2252.1
CHI	1.3	0.1	0.0	0.5	0.7	0.1
75 - OBS	5078.0	5266.0	4799.0	4776.0	3816.0	3351.0
EXP	5078.0	5346.0	4828.3	4736.7	3795.0	3303.2
CHI	0.0	1.2	0.2	0.3	0.1	0.7

Osmond and Gardner Modelling

Switzerland IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	67.897765
35	157.993299
40	371.876782
45	649.713886
50	1088.904851
55	1753.286475
60	2650.769416
65	4105.822104
70	6151.781515
75	9545.658656

PERIOD	EFFECT	LOWER	UPPER
% Period Change	90.6491	87.6491	93.6491
1981	1.217420		
1986	1.126203		
1991	1.055392		
1996	0.952721		
2001	0.784524		
2006	0.711164		
2011	0.644663	0.623329	0.665998
2016	0.584382	0.546342	0.623701
2021	0.529737	0.478864	0.584091
2026	0.480202	0.419720	0.546996

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.196236	1.000000	
1911	1.238555	2.000000	
1916	1.255920	4.000000	
1921	1.234357	8.000000	
1926	1.076603	16.000000	
1931	0.929965	32.000000	
1936	0.775118	64.000000	
1941	0.650083	128.000000	
1946	0.632876	256.000000	
1951	0.617131	512.000000	
1956	0.547720	1024.000000	
1961	0.514566	2048.000000	
1966	0.433521	4096.000000	
1971	0.395323	8192.000000	
1976	0.356568	EXTRAPOLATION	0.463934
1981	0.320843	EXTRAPOLATION	
1986	0.288697	EXTRAPOLATION	
1991	0.259772	EXTRAPOLATION	
1996	0.233745	EXTRAPOLATION	

Osmond and Gardner Modelling

**Switzerland IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	35.0	44.4	32.5	33.3	27.6	22.4	-	-	-	-
	EXP	51.0	41.9	36.9	28.0	21.1	17.2	14.0*	11.5*	9.3*	7.6*
	Elow							13.6	10.7	8.4	6.7
	Eup							14.5	12.2	10.3	8.7
35	OBS	120.4	111.3	91.6	75.6	61.3	36.7	-	-	-	-
	EXP	121.7	109.8	91.3	77.5	53.7	44.4	36.3*	29.6*	24.2*	19.7*
	Elow							35.1	27.7	21.8	17.2
	Eup							37.5	31.6	26.6	22.4
40	OBS	303.0	250.0	253.2	198.8	155.9	100.8	-	-	-	-
	EXP	294.3	265.1	242.2	194.1	150.1	114.7	94.8*	77.5*	63.2*	51.6*
	Elow							91.6	72.4	57.1	45.1
	Eup							97.9	82.7	69.7	58.7
45	OBS	639.7	466.2	423.8	380.8	277.4	237.7	-	-	-	-
	EXP	613.1	475.7	434.0	382.0	279.2	237.8	181.6*	150.1*	122.7*	100.1*
	Elow							175.6	140.3	110.9	87.5
	Eup							187.6	160.2	135.3	114.0
50	OBS	1264.1	954.1	752.7	639.0	519.5	418.2	-	-	-	-
	EXP	1232.8	950.5	747.1	656.6	527.2	424.1	361.2*	275.9*	228.0*	186.4*
	Elow							349.3	257.9	206.1	163.0
	Eup							373.2	294.4	251.4	212.4
55	OBS	2208.2	1850.8	1442.9	1096.4	897.5	778.5	-	-	-	-
	EXP	2298.0	1836.3	1434.3	1085.9	870.5	769.5	619.1*	527.2*	402.6*	332.8*
	Elow							598.6	492.9	364.0	290.9
	Eup							639.6	562.7	444.0	379.1
60	OBS	3887.8	3277.4	2562.3	1979.4	1361.4	1213.1	-	-	-	-
	EXP	3983.4	3214.0	2601.7	1957.5	1351.9	1193.1	1054.6*	848.5*	722.6*	551.8*
	Elow							1019.7	793.2	653.2	482.3
	Eup							1089.5	905.5	796.7	628.6
65	OBS	6299.9	5743.2	4731.8	3614.1	2443.5	1869.2	-	-	-	-
	EXP	6277.7	5707.7	4665.2	3637.7	2496.7	1898.2	1675.1*	1480.7*	1191.3*	1014.5*
	Elow							1619.7	1384.3	1076.9	886.7
	Eup							1730.6	1580.4	1313.5	1155.6
70	OBS	9425.4	8733.9	8023.7	6237.3	4419.2	3365.4	-	-	-	-
	EXP	9275.9	8701.2	8014.1	6309.9	4488.2	3391.1	2578.1*	2275.2*	2011.1*	1618.0*
	Elow							2492.8	2127.1	1818.0	1414.2
	Eup							2663.4	2428.3	2217.5	1843.1
75	OBS	13901.6	13115.7	12576.0	11318.7	8107.0	6404.4	-	-	-	-
	EXP	13901.6	13314.9	12652.7	11225.7	8062.5	6313.1	4769.9*	3626.4*	3200.3*	2828.8*
	Elow							4612.0	3390.3	2892.9	2472.5
	Eup							4927.7	3870.4	3528.6	3222.3
30-79	OBS	2372.8	2103.3	1827.2	1483.2	1067.8	851.4	-	-	-	-
	EXP	2375.2	2101.0	1827.0	1483.7	1068.7	851.7	686.9*	567.6*	479.3*	397.9*
	Elow							664.1	530.7	433.2	347.8
	Eup							709.6	605.8	528.4	453.2

Osmond and Gardner Modelling

**Switzerland IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

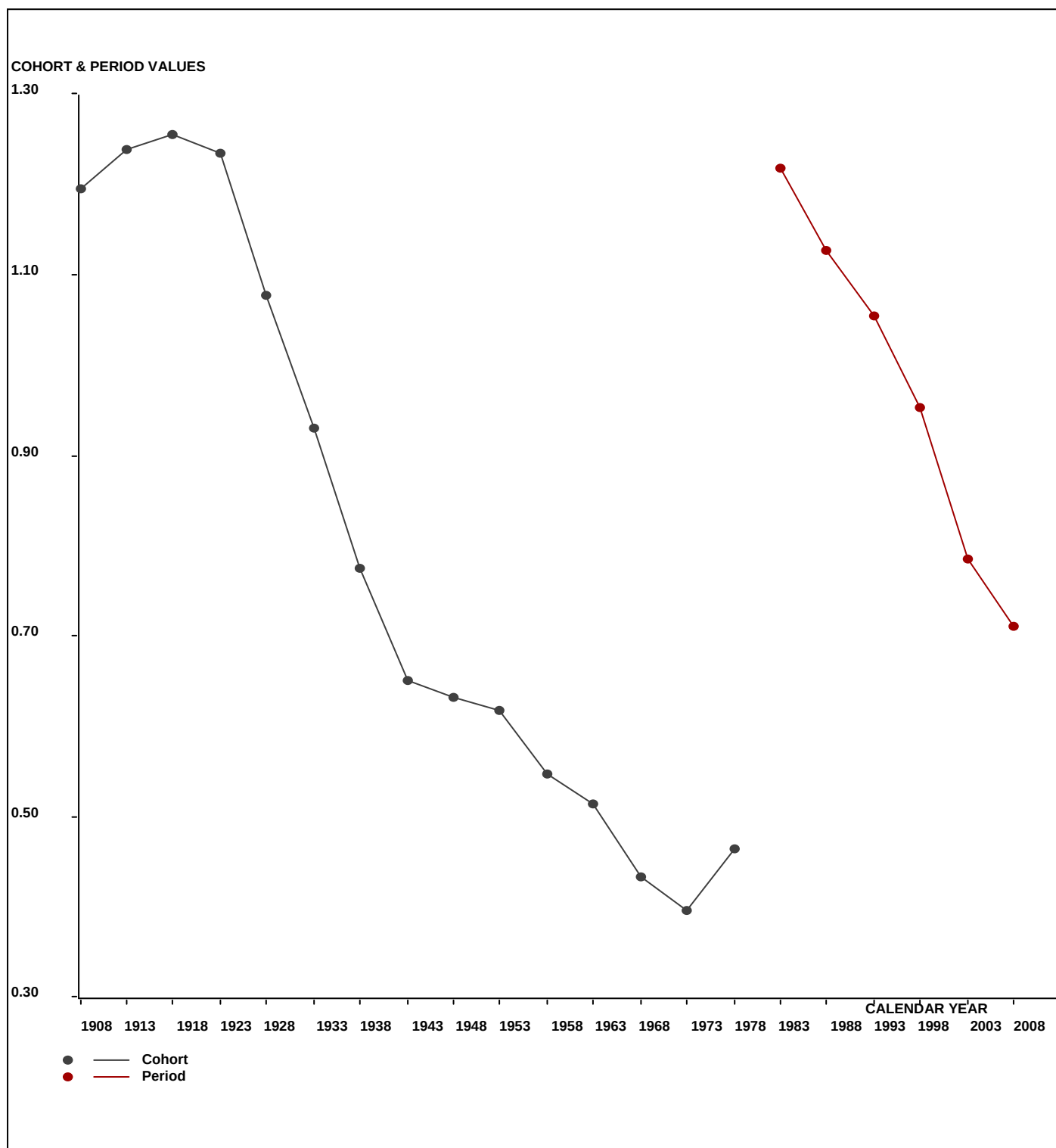
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	43.0	56.0	47.0	50.0	38.0	29.0	-	-	-	-
	EXP	62.7	52.8	53.4	42.1	28.9	22.3	19.6*	17.5*	14.8*	12.0*
	CHI	6.188	0.196	0.768	1.467	2.836	2.021	-	-	-	-
35 -	OBS	151.0	141.0	122.0	113.0	95.0	54.0	-	-	-	-
	EXP	152.7	139.1	121.7	115.7	83.3	65.4	50.8*	44.6*	39.4*	33.4*
	CHI	0.019	0.027	0.001	0.064	1.634	1.989	-	-	-	-
40 -	OBS	335.0	314.0	325.0	265.0	233.0	163.0	-	-	-	-
	EXP	325.4	332.9	310.9	258.6	224.4	185.4	145.4*	112.4*	98.4*	86.7*
	CHI	0.282	1.069	0.636	0.157	0.332	2.711	-	-	-	-
45 -	OBS	627.0	509.0	527.0	480.0	365.0	365.0	-	-	-	-
	EXP	600.9	519.3	539.7	481.5	367.3	365.1	301.8*	234.4*	181.6*	158.8*
	CHI	1.131	0.205	0.299	0.005	0.014	0.000	-	-	-	-
50 -	OBS	1145.0	908.0	798.0	767.0	636.0	552.0	-	-	-	-
	EXP	1116.7	904.7	792.0	788.1	645.5	559.9	557.2*	455.8*	354.5*	275.1*
	CHI	0.718	0.012	0.045	0.566	0.139	0.111	-	-	-	-
55 -	OBS	1827.0	1589.0	1296.0	1095.0	1025.0	930.0	-	-	-	-
	EXP	1901.3	1576.5	1288.2	1084.6	994.2	919.3	795.9*	787.2*	645.8*	502.8*
	CHI	2.902	0.098	0.047	0.101	0.952	0.125	-	-	-	-
60 -	OBS	2747.0	2481.0	2012.0	1625.0	1258.0	1327.0	-	-	-	-
	EXP	2814.5	2433.0	2043.0	1607.0	1249.3	1305.0	1200.5*	1032.4*	1027.8*	846.4*
	CHI	1.621	0.946	0.469	0.201	0.061	0.369	-	-	-	-
65 -	OBS	3703.0	3581.0	3163.0	2527.0	1804.0	1611.0	-	-	-	-
	EXP	3690.0	3558.8	3118.5	2543.5	1843.3	1636.0	1720.7*	1569.1*	1358.5*	1361.0*
	CHI	0.046	0.138	0.636	0.107	0.837	0.381	-	-	-	-
70 -	OBS	4966.0	4303.0	4254.0	3586.0	2716.0	2235.0	-	-	-	-
	EXP	4887.2	4286.9	4248.9	3627.8	2758.4	2252.1	2036.4*	2139.6*	1963.3*	1711.8*
	CHI	1.269	0.061	0.006	0.481	0.653	0.129	-	-	-	-
75 -	OBS	5078.0	5266.0	4799.0	4776.0	3816.0	3351.0	-	-	-	-
	EXP	5078.0	5346.0	4828.3	4736.7	3795.0	3303.2	2737.8*	2498.3*	2646.3*	2447.0*
	CHI	0.000	1.197	0.177	0.325	0.116	0.691	-	-	-	-
30-79	OBS	20622.0	19148.0	17343.0	15284.0	11986.0	10617.0	-	-	-	-
	EXP	20629.5	19150.0	17344.6	15285.7	11989.6	10613.7	9566.1*	8891.3*	8330.3*	7434.9*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Switzerland IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

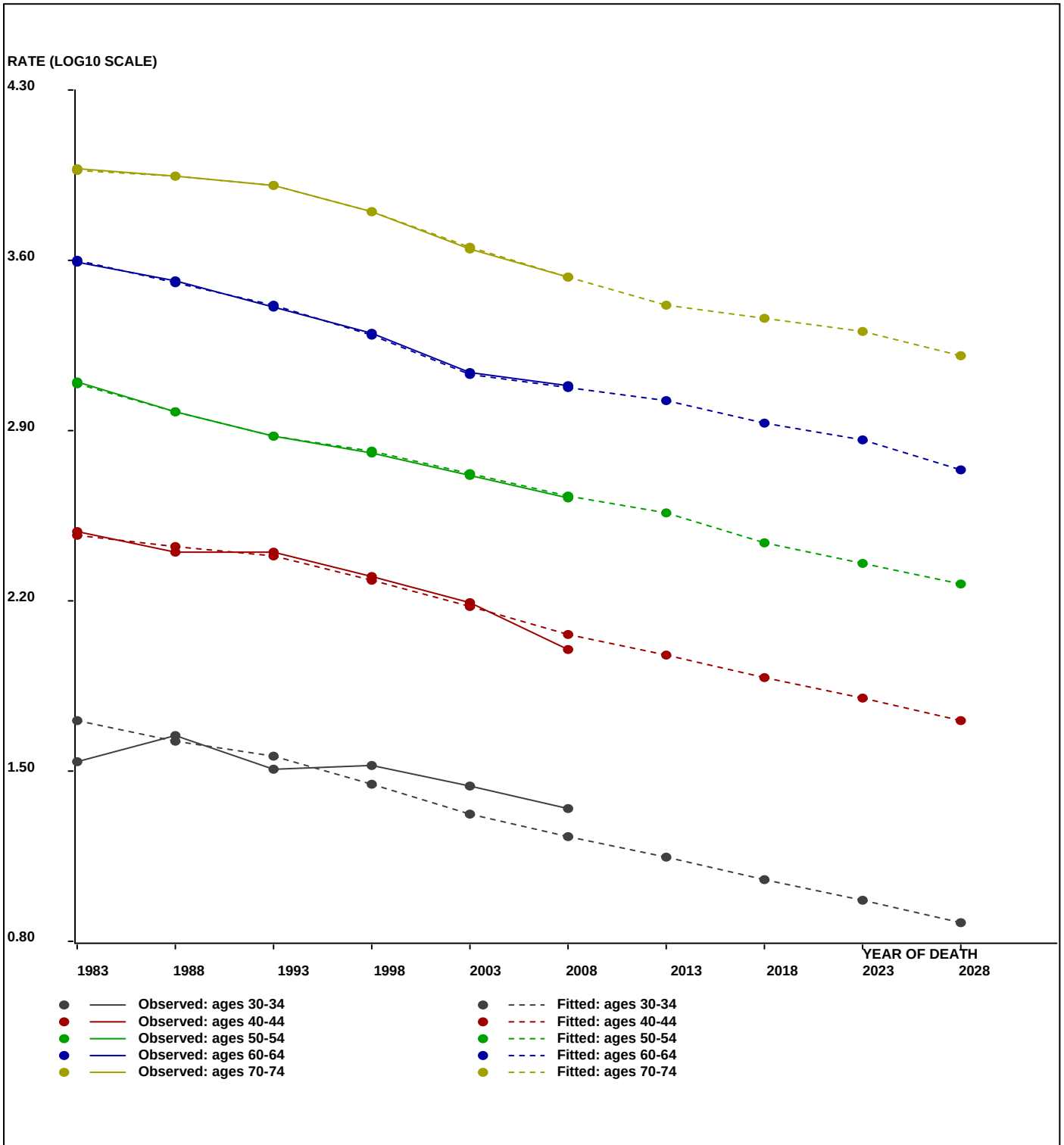


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Switzerland IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Switzerland IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	14.0	36.3	94.8	181.6	361.2	619.1	1054.6	1675.1	2578.1	4769.9
2016	PRE	11.5	29.6	77.5	150.1	275.9	527.2	848.5	1480.7	2275.2	3626.4
2021	PRE	9.3	24.2	63.2	122.7	228.0	402.6	722.6	1191.3	2011.1	3200.3
2026	PRE	7.6	19.7	51.6	100.1	186.4	332.8	551.8	1014.5	1618.0	2828.8

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	19.6	50.8	145.4	301.8	557.2	795.9	1200.5	1720.7	2036.4	2737.8
2016	PRE	17.5	44.6	112.4	234.4	455.8	787.2	1032.4	1569.1	2139.6	2498.3
2021	PRE	14.8	39.4	98.4	181.6	354.5	645.8	1027.8	1358.5	1963.3	2646.3
2026	PRE	12.0	33.4	86.7	158.8	275.1	502.8	846.4	1361.0	1711.8	2447.0

Osmond and Gardner Modelling

Switzerland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	913.82	17.92	51	P, C	98.93	4996.96	0.0000
AGE-PERIOD	18.87	0.42	45	Cohort	48.40	100.46	0.0000
AGE-COHORT	13.03	0.36	36	Period	25.28	69.23	0.0007
PERIOD-COHORT	13.07	0.33	40	Age	25.51	69.57	0.0026
FULL AGE-PERIOD-COHORT	9.74	0.30	32			51.72	0.0151

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.322278	21.002844
35	1.591655	39.053042
40	1.857550	72.036004
45	2.084907	121.592597
50	2.284364	192.470271
55	2.492269	310.648074
60	2.754593	568.320206
65	3.043300	1104.841205
70	3.335951	2167.461173
75	3.631332	4278.897070

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.129471	1.347319
1986	0.043980	1.106572
1991	0.003365	1.007778
1996	-0.048466	0.894405
2001	-0.123101	0.753181
2006	-0.207366	0.620347

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.136413	1.369029
1911	0.109396	1.286458
1916	0.076690	1.193137
1921	0.007728	1.017953
1926	-0.043036	0.905658
1931	-0.088938	0.814820
1936	-0.127218	0.746075
1941	-0.170560	0.675211
1946	-0.181332	0.658670
1951	-0.189746	0.646032
1956	-0.188760	0.647500
1961	-0.251665	0.560190
1966	-0.194302	0.639290
1971	-0.174577	0.668996
1976	-0.323940	0.474308

Osmond and Gardner Modelling

Switzerland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	24.0	17.0	15.0	15.0	19.0	8.0
EXP	22.5	19.0	17.2	18.0	14.5	8.0
CHI	0.1	0.2	0.3	0.5	1.4	0.0
35 - OBS	49.0	29.0	42.0	21.0	32.0	18.0
EXP	43.5	35.4	34.0	29.2	29.2	23.9
CHI	0.7	1.1	1.9	2.3	0.3	1.4
40 - OBS	69.0	72.0	57.0	60.0	41.0	46.0
EXP	72.5	65.9	60.2	55.6	45.4	46.2
CHI	0.2	0.6	0.2	0.3	0.4	0.0
45 - OBS	105.0	96.0	111.0	86.0	73.0	77.0
EXP	119.8	99.2	100.4	88.6	78.0	64.9
CHI	1.8	0.1	1.1	0.1	0.3	2.3
50 - OBS	195.0	164.0	128.0	134.0	117.0	95.0
EXP	191.4	151.2	138.8	136.1	114.7	102.0
CHI	0.1	1.1	0.8	0.0	0.0	0.5
55 - OBS	337.0	215.0	184.0	206.0	173.0	156.0
EXP	313.6	240.5	209.8	187.4	176.0	148.7
CHI	1.7	2.7	3.2	1.9	0.1	0.4
60 - OBS	519.0	439.0	342.0	363.0	276.0	235.0
EXP	550.7	431.2	366.5	311.3	267.1	254.0
CHI	1.8	0.1	1.6	8.6	0.3	1.4
65 - OBS	1049.0	809.0	671.0	546.0	451.0	387.0
EXP	1044.0	776.0	674.1	563.0	458.4	398.9
CHI	0.0	1.4	0.0	0.5	0.1	0.4
70 - OBS	1987.0	1391.0	1211.0	996.0	833.0	642.0
EXP	1979.4	1409.9	1178.9	1009.4	817.5	666.2
CHI	0.0	0.3	0.9	0.2	0.3	0.9
75 - OBS	2883.0	2438.0	1977.0	1608.0	1358.0	1176.0
EXP	2883.0	2445.7	1963.3	1643.8	1373.9	1131.7
CHI	0.0	0.0	0.1	0.8	0.2	1.7

Osmond and Gardner Modelling

Switzerland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	21.002844
35	39.053042
40	72.036004
45	121.592597
50	192.470271
55	310.648074
60	568.320206
65	1104.841205
70	2167.461173
75	4278.897070

PERIOD	EFFECT	LOWER	UPPER
% Period Change	82.3635	79.3635	85.3635

1981	1.347319		
1986	1.106572		
1991	1.007778		
1996	0.894405		
2001	0.753181		
2006	0.620347		
2011	0.510939	0.492329	0.529550
2016	0.420828	0.390730	0.452042
2021	0.346609	0.310097	0.385879
2026	0.285479	0.246104	0.329400

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.369029	1.000000	
1911	1.286458	2.000000	
1916	1.193137	4.000000	
1921	1.017953	8.000000	
1926	0.905658	16.000000	
1931	0.814820	32.000000	
1936	0.746075	64.000000	
1941	0.675211	128.000000	
1946	0.658670	256.000000	
1951	0.646032	512.000000	
1956	0.647500	1024.000000	
1961	0.560190	2048.000000	
1966	0.639290	4096.000000	
1971	0.668996	8192.000000	
1976	0.657546	EXTRAPOLATION	0.474308
1981	0.663497	EXTRAPOLATION	
1986	0.669501	EXTRAPOLATION	
1991	0.675559	EXTRAPOLATION	
1996	0.681673	EXTRAPOLATION	

Osmond and Gardner Modelling

**Switzerland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	19.5	13.5	10.4	10.0	13.8	6.2	-	-	-	-
	EXP	18.3	15.0	11.9	12.0	10.6	8.6	7.1*	5.9*	4.9*	4.1*
	Elow							6.9	5.5	4.4	3.5
	Eup							7.4	6.4	5.5	4.7
35	OBS	39.1	22.9	31.5	14.1	20.6	12.2	-	-	-	-
	EXP	34.7	27.9	25.5	19.6	18.8	16.2	13.1*	10.9*	9.1*	7.5*
	Elow							12.6	10.1	8.1	6.5
	Eup							13.6	11.7	10.1	8.7
40	OBS	62.4	57.3	44.4	45.0	27.4	28.4	-	-	-	-
	EXP	65.5	52.5	46.9	41.7	30.4	28.6	24.6*	19.9*	16.6*	13.8*
	Elow							23.7	18.5	14.8	11.9
	Eup							25.5	21.4	18.4	15.9
45	OBS	107.1	87.9	89.3	68.2	55.5	50.1	-	-	-	-
	EXP	122.2	90.9	80.7	70.3	59.3	42.3	39.7*	34.2*	27.7*	23.0*
	Elow							38.3	31.8	24.8	19.9
	Eup							41.2	36.8	30.9	26.6
50	OBS	215.3	172.3	120.7	111.6	95.6	72.0	-	-	-	-
	EXP	211.3	158.9	131.0	113.4	93.7	77.3	55.1*	51.8*	44.6*	36.1*
	Elow							53.1	48.1	39.9	31.1
	Eup							57.1	55.6	49.7	41.7
55	OBS	407.3	250.4	204.9	206.3	151.5	130.6	-	-	-	-
	EXP	379.1	280.1	233.6	187.6	154.1	124.5	102.8*	73.2*	68.8*	59.3*
	Elow							99.0	68.0	61.6	51.1
	Eup							106.5	78.7	76.6	68.5
60	OBS	734.5	579.9	435.5	442.2	298.7	214.8	-	-	-	-
	EXP	779.5	569.6	466.7	379.2	289.0	232.2	187.6*	154.9*	110.3*	103.7*
	Elow							180.8	143.8	98.7	89.4
	Eup							194.4	166.3	122.9	119.7
65	OBS	1784.6	1297.5	1003.8	780.9	610.9	449.0	-	-	-	-
	EXP	1776.1	1244.5	1008.4	805.2	620.8	462.8	371.8*	300.4*	248.0*	176.7*
	Elow							358.3	278.9	221.8	152.3
	Eup							385.4	322.7	276.1	203.9
70	OBS	3771.3	2823.4	2284.1	1732.4	1355.4	966.7	-	-	-	-
	EXP	3756.8	2861.7	2223.5	1755.7	1330.2	1003.2	747.8*	600.8*	485.3*	400.7*
	Elow							720.5	557.8	434.2	345.4
	Eup							775.0	645.4	540.3	462.3
75	OBS	7892.5	6072.2	5180.8	3810.8	2885.0	2247.6	-	-	-	-
	EXP	7892.5	6091.3	5145.0	3895.8	2918.7	2162.9	1631.1*	1215.8*	976.9*	789.2*
	Elow							1571.7	1128.9	874.0	680.3
	Eup							1690.5	1306.0	1087.6	910.6
30-79	OBS	790.1	594.3	485.6	384.2	294.0	222.4	-	-	-	-
	EXP	790.8	594.4	487.3	383.6	294.0	223.7	173.2*	136.5*	110.7*	90.1*
	Elow							166.9	126.8	99.0	77.6
	Eup							179.5	146.6	123.2	103.9

Osmond and Gardner Modelling

Switzerland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

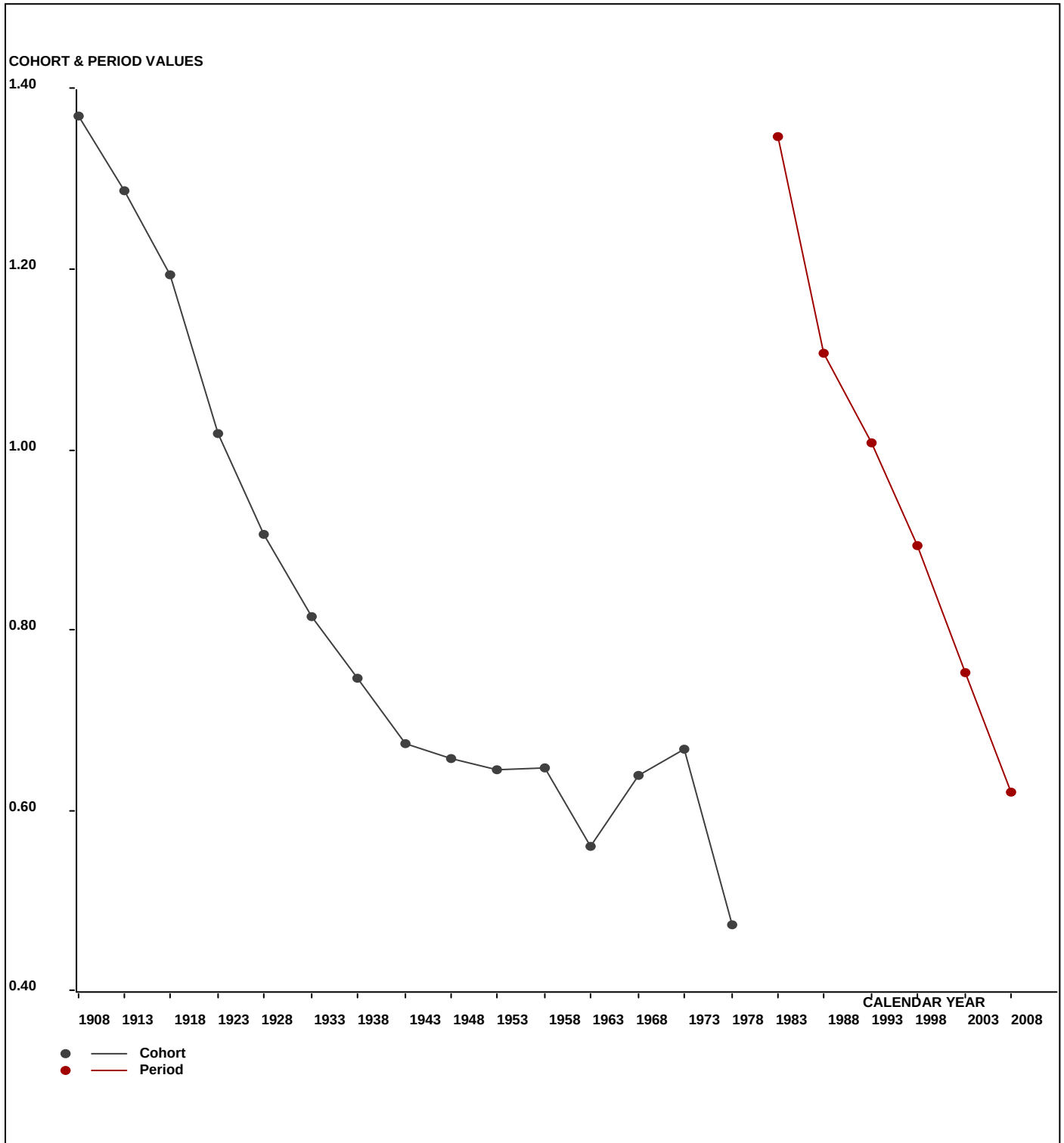
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	24.0	17.0	15.0	15.0	19.0	8.0	-	-	-	-
	EXP	22.5	19.0	17.2	18.0	14.5	11.1	9.9*	9.0*	7.8*	6.5*
	CHI	0.104	0.204	0.275	0.514	1.365	0.861	-	-	-	-
35 -	OBS	49.0	29.0	42.0	21.0	32.0	18.0	-	-	-	-
	EXP	43.5	35.4	34.0	29.2	29.2	23.9	18.3*	16.4*	14.8*	12.8*
	CHI	0.702	1.143	1.909	2.319	0.276	1.442	-	-	-	-
40 -	OBS	69.0	72.0	57.0	60.0	41.0	46.0	-	-	-	-
	EXP	72.5	65.9	60.2	55.6	45.4	46.2	37.8*	28.9*	25.8*	23.2*
	CHI	0.165	0.557	0.171	0.348	0.431	0.001	-	-	-	-
45 -	OBS	105.0	96.0	111.0	86.0	73.0	77.0	-	-	-	-
	EXP	119.8	99.2	100.4	88.6	78.0	64.9	66.0*	53.5*	41.0*	36.5*
	CHI	1.828	0.102	1.124	0.074	0.322	2.261	-	-	-	-
50 -	OBS	195.0	164.0	128.0	134.0	117.0	95.0	-	-	-	-
	EXP	191.4	151.2	138.8	136.1	114.7	102.0	85.0*	85.6*	69.4*	53.3*
	CHI	0.068	1.079	0.847	0.033	0.048	0.487	-	-	-	-
55 -	OBS	337.0	215.0	184.0	206.0	173.0	156.0	-	-	-	-
	EXP	313.6	240.5	209.8	187.4	176.0	148.7	132.1*	109.3*	110.4*	89.6*
	CHI	1.743	2.700	3.170	1.852	0.052	0.355	-	-	-	-
60 -	OBS	519.0	439.0	342.0	363.0	276.0	235.0	-	-	-	-
	EXP	550.7	431.2	366.5	311.3	267.1	254.0	213.5*	188.4*	157.0*	159.1*
	CHI	1.829	0.143	1.633	8.575	0.298	1.423	-	-	-	-
65 -	OBS	1049.0	809.0	671.0	546.0	451.0	387.0	-	-	-	-
	EXP	1044.0	776.0	674.1	563.0	458.4	398.9	381.9*	318.3*	282.8*	237.0*
	CHI	0.024	1.404	0.014	0.513	0.118	0.352	-	-	-	-
70 -	OBS	1987.0	1391.0	1211.0	996.0	833.0	642.0	-	-	-	-
	EXP	1979.4	1409.9	1178.9	1009.4	817.5	666.2	590.6*	565.0*	473.8*	423.9*
	CHI	0.030	0.253	0.876	0.178	0.293	0.880	-	-	-	-
75 -	OBS	2883.0	2438.0	1977.0	1608.0	1358.0	1176.0	-	-	-	-
	EXP	2883.0	2445.7	1963.3	1643.8	1373.9	1131.7	936.2*	837.6*	807.8*	682.6*
	CHI	0.000	0.024	0.095	0.782	0.183	1.736	-	-	-	-
30-79	OBS	7217.0	5670.0	4738.0	4035.0	3373.0	2840.0	-	-	-	-
	EXP	7220.3	5673.9	4743.1	4042.5	3374.6	2847.6	2471.5*	2212.1*	1990.4*	1724.5*
	O/E	1.000	0.999	0.999	0.998	1.000	0.997	-	-	-	-

Osmond and Gardner Modelling

Switzerland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

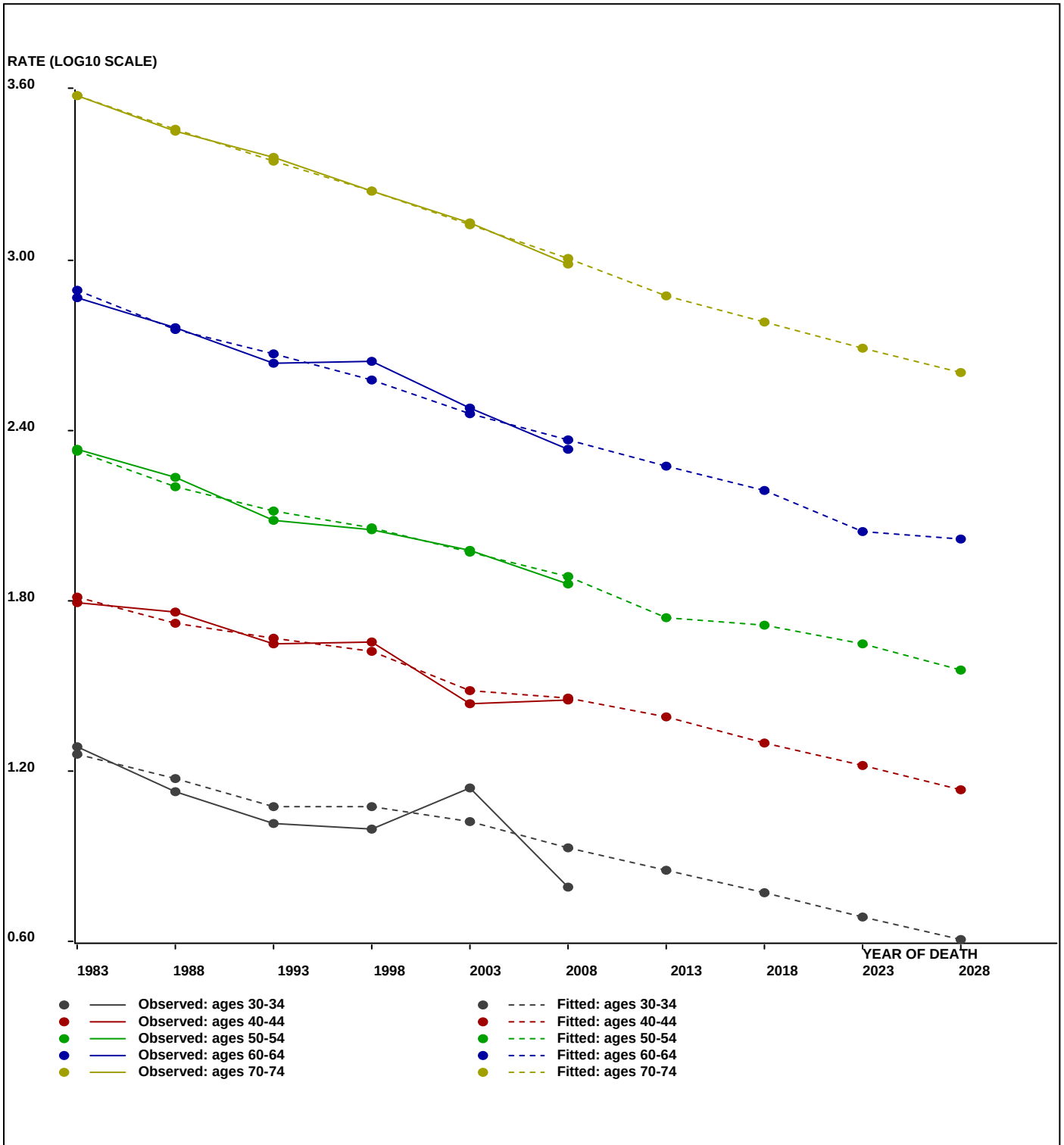


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Switzerland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Switzerland Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	7.1	13.1	24.6	39.7	55.1	102.8	187.6	371.8	747.8	1631.1
2016 PRE	5.9	10.9	19.9	34.2	51.8	73.2	154.9	300.4	600.8	1215.8
2021 PRE	4.9	9.1	16.6	27.7	44.6	68.8	110.3	248.0	485.3	976.9
2026 PRE	4.1	7.5	13.8	23.0	36.1	59.3	103.7	176.7	400.7	789.2

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	9.9	18.3	37.8	66.0	85.0	132.1	213.5	381.9	590.6	936.2
2016 PRE	9.0	16.4	28.9	53.5	85.6	109.3	188.4	318.3	565.0	837.6
2021 PRE	7.8	14.8	25.8	41.0	69.4	110.4	157.0	282.8	473.8	807.8
2026 PRE	6.5	12.8	23.2	36.5	53.3	89.6	159.1	237.0	423.9	682.6

Osmond and Gardner Modelling

Switzerland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	460.48	9.03	51	P, C	98.48	2460.97	0.0000
AGE-PERIOD	33.95	0.75	45	Cohort	79.40	180.37	0.0000
AGE-COHORT	9.87	0.27	36	Period	29.12	52.46	0.0375
PERIOD-COHORT	12.02	0.30	40	Age	41.83	63.89	0.0096
FULL AGE-PERIOD-COHORT	6.99	0.22	32			37.23	0.2407

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.084925	12.159757
35	1.574787	37.565340
40	2.093747	124.093035
45	2.478770	301.140832
50	2.791907	619.307750
55	3.042219	1102.095570
60	3.247714	1768.943300
65	3.409434	2567.050844
70	3.511311	3245.720409
75	3.574074	3750.368731

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.079165	1.199954
1986	0.052544	1.128612
1991	0.013256	1.030993
1996	-0.038406	0.915365
2001	-0.053989	0.883103
2006	-0.083671	0.824762

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.023682	1.056043
1911	0.029920	1.071323
1916	0.037595	1.090423
1921	0.053770	1.131800
1926	0.042465	1.102718
1931	0.003723	1.008609
1936	-0.027049	0.939617
1941	-0.068274	0.854527
1946	-0.068549	0.853986
1951	-0.106606	0.782337
1956	-0.116048	0.765513
1961	-0.209330	0.617547
1966	-0.247243	0.565923
1971	-0.396340	0.401476
1976	-0.414401	0.385123

Osmond and Gardner Modelling

Switzerland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	8.0	8.0	14.0	11.0	9.0	5.0
EXP	14.0	13.2	11.2	9.5	5.9	5.0
CHI	2.6	2.1	0.7	0.2	1.6	0.0
35 - OBS	47.0	44.0	43.0	29.0	31.0	14.0
EXP	48.3	42.0	39.5	31.7	29.1	18.3
CHI	0.0	0.1	0.3	0.2	0.1	1.0
40 - OBS	125.0	157.0	130.0	130.0	96.0	90.0
EXP	140.7	150.2	128.5	115.9	101.1	93.7
CHI	1.8	0.3	0.0	1.7	0.3	0.1
45 - OBS	311.0	302.0	348.0	280.0	272.0	240.0
EXP	332.8	317.1	329.7	271.8	267.8	235.5
CHI	1.4	0.7	1.0	0.2	0.1	0.1
50 - OBS	680.0	586.0	595.0	625.0	517.0	497.0
EXP	678.9	625.0	578.4	581.1	523.9	516.1
CHI	0.0	2.4	0.5	3.3	0.1	0.7
55 - OBS	1220.0	1072.0	954.0	876.0	931.0	849.0
EXP	1206.6	1077.1	958.9	861.0	949.3	849.6
CHI	0.1	0.0	0.0	0.3	0.4	0.0
60 - OBS	1714.0	1699.0	1445.0	1275.0	1209.0	1310.0
EXP	1697.5	1666.6	1444.4	1249.0	1233.5	1362.9
CHI	0.2	0.6	0.0	0.5	0.5	2.1
65 - OBS	1994.0	2059.0	1924.0	1583.0	1615.0	1581.0
EXP	1974.3	2044.6	1950.9	1657.1	1572.6	1559.3
CHI	0.2	0.1	0.4	3.3	1.1	0.3
70 - OBS	2189.0	1964.0	2011.0	1881.0	1795.0	1665.0
EXP	2198.4	1967.9	2008.0	1883.6	1776.8	1670.5
CHI	0.0	0.0	0.0	0.0	0.2	0.0
75 - OBS	1736.0	1830.0	1593.0	1605.0	1702.0	1689.0
EXP	1736.0	1820.7	1608.9	1639.5	1719.1	1632.4
CHI	0.0	0.0	0.2	0.7	0.2	2.0

Osmond and Gardner Modelling

Switzerland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	12.159757
35	37.565340
40	124.093035
45	301.140832
50	619.307750
55	1102.095570
60	1768.943300
65	2567.050844
70	3245.720409
75	3750.368731

PERIOD	EFFECT	LOWER	UPPER
% Period Change	93.3937	90.3937	96.3937
1981	1.199954		
1986	1.128612		
1991	1.030993		
1996	0.915365		
2001	0.883103		
2006	0.824762		
2011	0.770276	0.745533	0.795019
2016	0.719389	0.673915	0.766348
2021	0.671865	0.609177	0.738712
2026	0.627479	0.550658	0.712072

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.056043	1.000000	
1911	1.071323	2.000000	
1916	1.090423	4.000000	
1921	1.131800	8.000000	
1926	1.102718	16.000000	
1931	1.008609	32.000000	
1936	0.939617	64.000000	
1941	0.854527	128.000000	
1946	0.853986	256.000000	
1951	0.782337	512.000000	
1956	0.765513	1024.000000	
1961	0.617547	2048.000000	
1966	0.565923	4096.000000	
1971	0.401476	8192.000000	
1976	0.363416	EXTRAPOLATION	0.385123
1981	0.308860	EXTRAPOLATION	
1986	0.262494	EXTRAPOLATION	
1991	0.223088	EXTRAPOLATION	
1996	0.189598	EXTRAPOLATION	

Osmond and Gardner Modelling

**Switzerland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	6.5	6.3	9.7	7.3	6.5	3.9	-	-	-	-
	EXP	11.4	10.5	7.7	6.3	4.3	3.6	2.9*	2.3*	1.8*	1.4*
	Elow							2.8	2.2	1.7	1.3
	Eup							3.0	2.4	2.0	1.6
35	OBS	37.5	34.7	32.3	19.4	20.0	9.5	-	-	-	-
	EXP	38.5	33.2	29.6	21.2	18.8	12.4	10.5*	8.3*	6.6*	5.3*
	Elow							10.2	7.8	6.0	4.6
	Eup							10.9	8.9	7.3	6.0
40	OBS	113.1	125.0	101.3	97.5	64.2	55.7	-	-	-	-
	EXP	127.2	119.6	100.1	87.0	67.7	57.9	38.4*	32.4*	25.8*	20.4*
	Elow							37.1	30.4	23.3	17.9
	Eup							39.6	34.6	28.3	23.2
45	OBS	317.3	276.6	279.8	222.1	206.8	156.3	-	-	-	-
	EXP	339.5	290.4	265.1	215.7	203.6	153.4	131.3*	87.0*	73.5*	58.4*
	Elow							127.1	81.5	66.7	51.2
	Eup							135.5	92.7	80.8	66.2
50	OBS	750.7	615.7	561.2	520.7	422.3	376.5	-	-	-	-
	EXP	749.5	656.8	545.6	484.1	427.9	391.0	294.6*	252.1*	167.1*	141.2*
	Elow							285.1	236.2	151.5	123.9
	Eup							304.1	268.6	183.7	160.3
55	OBS	1474.6	1248.6	1062.2	877.1	815.2	710.7	-	-	-	-
	EXP	1458.3	1254.5	1067.6	862.1	831.2	711.1	649.9*	489.6*	419.0*	277.6*
	Elow							629.0	458.7	379.9	243.6
	Eup							670.7	521.6	460.7	315.1
60	OBS	2425.8	2244.4	1840.2	1553.1	1308.3	1197.6	-	-	-	-
	EXP	2402.4	2201.5	1839.5	1521.5	1334.9	1245.9	1066.0*	974.2*	733.9*	628.2*
	Elow							1031.8	912.6	665.5	551.3
	Eup							1100.2	1037.7	807.0	712.8
65	OBS	3392.4	3302.2	2878.3	2264.0	2187.5	1834.4	-	-	-	-
	EXP	3358.9	3279.1	2918.5	2370.0	2130.1	1809.2	1688.6*	1444.7*	1320.3*	994.7*
	Elow							1634.4	1353.4	1197.1	872.9
	Eup							1742.9	1539.1	1451.6	1128.8
70	OBS	4154.7	3986.4	3793.1	3271.7	2920.6	2507.1	-	-	-	-
	EXP	4172.5	3994.4	3787.4	3276.2	2891.0	2515.3	2136.4*	1994.0*	1706.0*	1559.1*
	Elow							2067.8	1868.0	1546.9	1368.2
	Eup							2205.0	2124.2	1875.8	1769.2
75	OBS	4752.5	4557.9	4174.5	3803.7	3615.9	3228.0	-	-	-	-
	EXP	4752.5	4534.6	4216.2	3885.4	3652.2	3119.8	2714.4*	2305.5*	2151.8*	1841.1*
	Elow							2627.2	2159.8	1951.0	1615.7
	Eup							2801.6	2456.0	2365.9	2089.3
30-79	OBS	1183.5	1098.3	976.5	828.7	749.4	650.5	-	-	-	-
	EXP	1183.3	1099.6	976.5	828.3	749.4	651.8	566.6*	488.3*	414.7*	340.6*
	Elow							548.4	457.4	376.0	298.9
	Eup							584.8	520.2	456.0	386.5

Osmond and Gardner Modelling

**Switzerland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

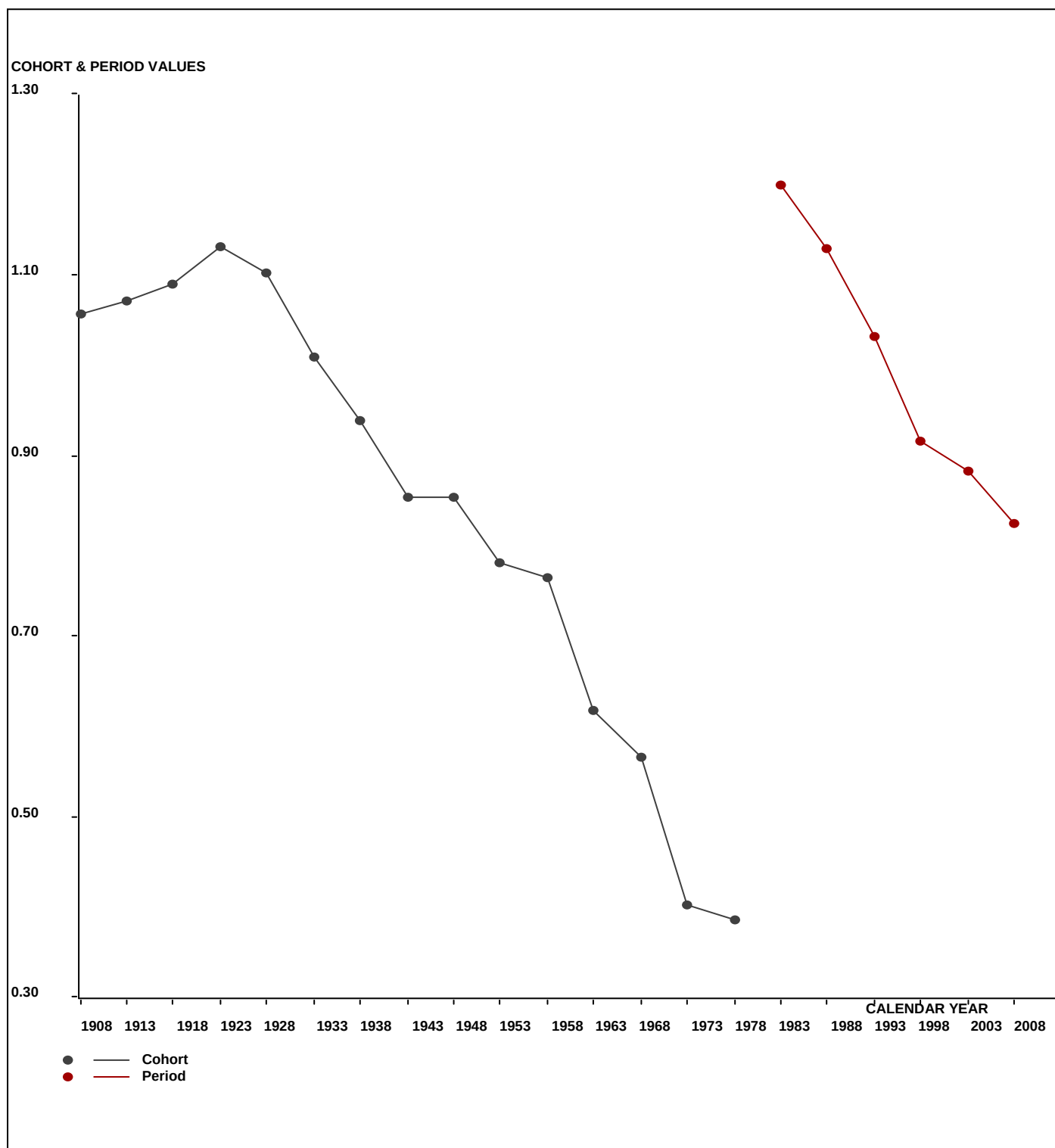
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	8.0	8.0	14.0	11.0	9.0	5.0	-	-	-	-
	EXP	14.0	13.2	11.2	9.5	5.9	4.7	4.0*	3.5*	2.9*	2.3*
	CHI	2.592	2.073	0.693	0.249	1.596	0.017	-	-	-	-
35 -	OBS	47.0	44.0	43.0	29.0	31.0	14.0	-	-	-	-
	EXP	48.3	42.0	39.5	31.7	29.1	18.3	14.7*	12.6*	10.8*	8.9*
	CHI	0.034	0.095	0.310	0.234	0.122	1.017	-	-	-	-
40 -	OBS	125.0	157.0	130.0	130.0	96.0	90.0	-	-	-	-
	EXP	140.7	150.2	128.5	115.9	101.1	93.7	58.9*	47.1*	40.1*	34.4*
	CHI	1.751	0.308	0.018	1.717	0.262	0.144	-	-	-	-
45 -	OBS	311.0	302.0	348.0	280.0	272.0	240.0	-	-	-	-
	EXP	332.8	317.1	329.7	271.8	267.8	235.5	218.2*	135.8*	108.8*	92.6*
	CHI	1.427	0.717	1.011	0.246	0.065	0.085	-	-	-	-
50 -	OBS	680.0	586.0	595.0	625.0	517.0	497.0	-	-	-	-
	EXP	678.9	625.0	578.4	581.1	523.9	516.1	454.4*	416.6*	259.7*	208.4*
	CHI	0.002	2.439	0.475	3.313	0.090	0.709	-	-	-	-
55 -	OBS	1220.0	1072.0	954.0	876.0	931.0	849.0	-	-	-	-
	EXP	1206.6	1077.1	958.9	861.0	949.3	849.6	835.5*	731.1*	672.1*	419.4*
	CHI	0.150	0.024	0.025	0.261	0.352	0.000	-	-	-	-
60 -	OBS	1714.0	1699.0	1445.0	1275.0	1209.0	1310.0	-	-	-	-
	EXP	1697.5	1666.6	1444.4	1249.0	1233.5	1362.9	1213.5*	1185.4*	1044.0*	963.4*
	CHI	0.161	0.631	0.000	0.540	0.488	2.052	-	-	-	-
65 -	OBS	1994.0	2059.0	1924.0	1583.0	1615.0	1581.0	-	-	-	-
	EXP	1974.3	2044.6	1950.9	1657.1	1572.6	1559.3	1734.5*	1530.9*	1505.6*	1334.4*
	CHI	0.196	0.102	0.370	3.316	1.144	0.302	-	-	-	-
70 -	OBS	2189.0	1964.0	2011.0	1881.0	1795.0	1665.0	-	-	-	-
	EXP	2198.4	1967.9	2008.0	1883.6	1776.8	1670.5	1687.5*	1875.2*	1665.4*	1649.4*
	CHI	0.040	0.008	0.005	0.004	0.187	0.018	-	-	-	-
75 -	OBS	1736.0	1830.0	1593.0	1605.0	1702.0	1689.0	-	-	-	-
	EXP	1736.0	1820.7	1608.9	1639.5	1719.1	1632.4	1558.0*	1588.3*	1779.3*	1592.6*
	CHI	0.000	0.048	0.158	0.725	0.170	1.964	-	-	-	-
30-79	OBS	10024.0	9721.0	9057.0	8295.0	8177.0	7940.0	-	-	-	-
	EXP	10027.5	9724.4	9058.5	8300.3	8179.1	7942.9	7779.2*	7526.5*	7088.7*	6305.7*
	O/E	1.000	1.000	1.000	0.999	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

Switzerland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

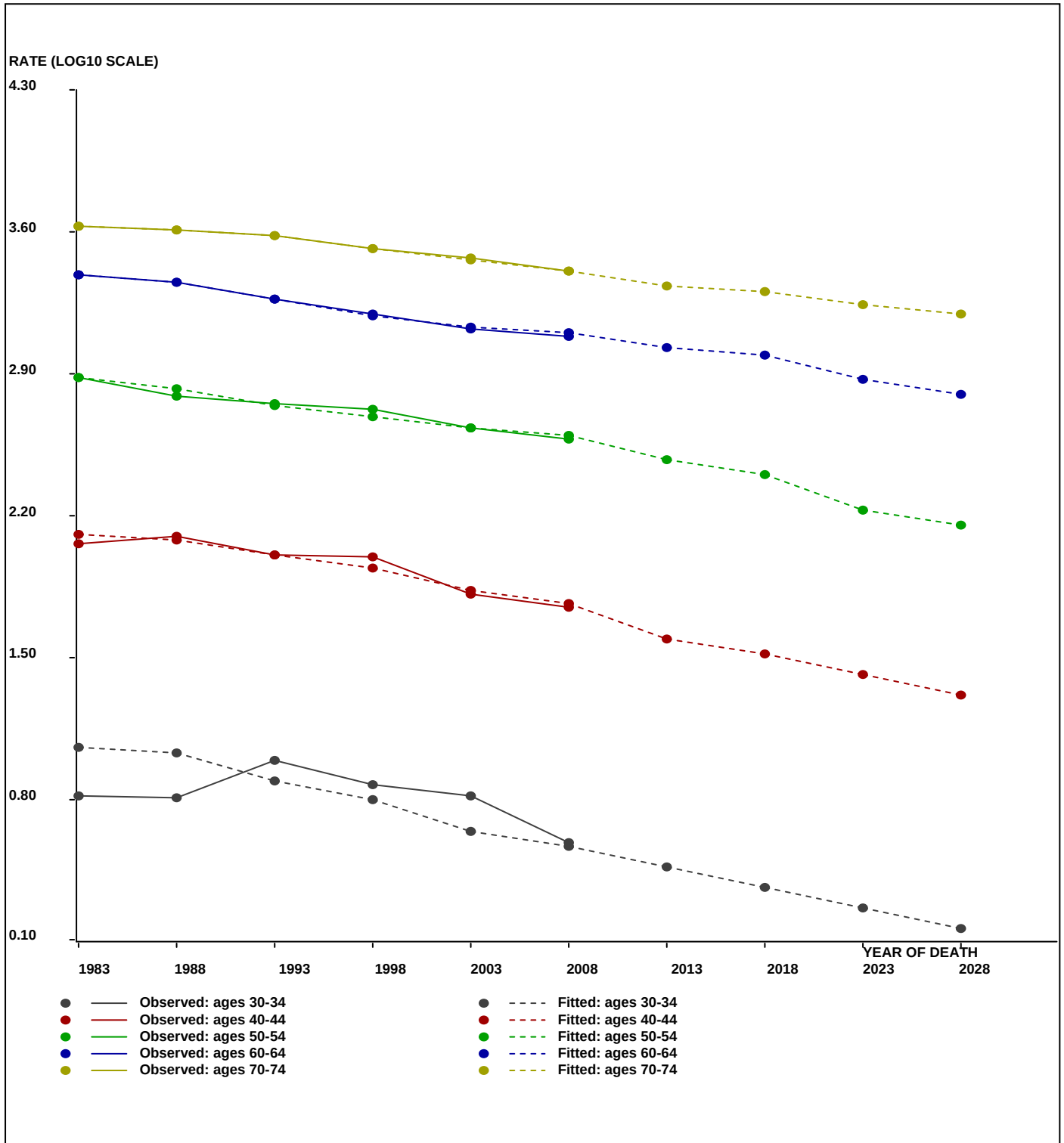


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Switzerland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Switzerland Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	2.9	10.5	38.4	131.3	294.6	649.9	1066.0	1688.6	2136.4	2714.4
2016	PRE	2.3	8.3	32.4	87.0	252.1	489.6	974.2	1444.7	1994.0	2305.5
2021	PRE	1.8	6.6	25.8	73.5	167.1	419.0	733.9	1320.3	1706.0	2151.8
2026	PRE	1.4	5.3	20.4	58.4	141.2	277.6	628.2	994.7	1559.1	1841.1

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	4.0	14.7	58.9	218.2	454.4	835.5	1213.5	1734.5	1687.5	1558.0
2016	PRE	3.5	12.6	47.1	135.8	416.6	731.1	1185.4	1530.9	1875.2	1588.3
2021	PRE	2.9	10.8	40.1	108.8	259.7	672.1	1044.0	1505.6	1665.4	1779.3
2026	PRE	2.3	8.9	34.4	92.6	208.4	419.4	963.4	1334.4	1649.4	1592.6

Osmond and Gardner Modelling

Switzerland COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	435.34	8.54	51	P, C	98.77	2370.79	0.0000
AGE-PERIOD	49.44	1.10	45	Cohort	89.21	264.34	0.0000
AGE-COHORT	9.53	0.26	36	Period	43.99	50.85	0.0514
PERIOD-COHORT	13.82	0.35	40	Age	61.40	74.07	0.0008
FULL AGE-PERIOD-COHORT	5.34	0.17	32			28.61	0.6390

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.180109	15.139409
35	1.257861	18.107589
40	1.490155	30.913986
45	1.727368	53.378716
50	2.072248	118.099504
55	2.377662	238.595314
60	2.719501	524.204696
65	2.988139	973.059231
70	3.234634	1716.460077
75	3.449405	2814.526213

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.086339	1.219942
1986	0.071932	1.180135
1991	0.020244	1.047718
1996	-0.027508	0.938625
2001	-0.111709	0.773198
2006	-0.145917	0.714633

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.006454	1.014973
1911	0.021262	1.050175
1916	0.068362	1.170474
1921	0.083090	1.210849
1926	0.031949	1.076338
1931	-0.043082	0.905561
1936	-0.102474	0.789817
1941	-0.173606	0.670493
1946	-0.179577	0.661337
1951	-0.306981	0.493195
1956	-0.390488	0.406923
1961	-0.547632	0.283379
1966	-0.581409	0.262175
1971	-0.685280	0.206405
1976	-1.146309	0.071399

Osmond and Gardner Modelling

Switzerland COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	9.0	12.0	6.0	6.0	1.0	1.0
EXP	11.2	9.2	6.5	5.6	3.3	1.0
CHI	0.4	0.9	0.0	0.0	1.6	0.0
35 - OBS	16.0	12.0	10.0	7.0	8.0	5.0
EXP	18.3	13.3	10.3	7.2	5.7	3.9
CHI	0.3	0.1	0.0	0.0	0.9	0.3
40 - OBS	32.0	30.0	23.0	14.0	8.0	5.0
EXP	28.0	30.3	20.5	15.7	10.1	9.4
CHI	0.6	0.0	0.3	0.2	0.4	2.0
45 - OBS	66.0	36.0	40.0	27.0	20.0	19.0
EXP	50.4	46.1	46.0	31.1	22.1	16.6
CHI	4.8	2.2	0.8	0.6	0.2	0.3
50 - OBS	121.0	98.0	86.0	91.0	57.0	46.0
EXP	118.2	104.8	88.0	88.0	55.1	45.3
CHI	0.1	0.4	0.0	0.1	0.1	0.0
55 - OBS	264.0	240.0	169.0	142.0	125.0	103.0
EXP	259.2	218.9	177.3	150.0	139.3	100.5
CHI	0.1	2.0	0.4	0.4	1.5	0.1
60 - OBS	540.0	489.0	395.0	318.0	251.0	289.0
EXP	547.1	504.1	390.5	319.0	251.1	271.0
CHI	0.1	0.5	0.1	0.0	0.0	1.2
65 - OBS	784.0	881.0	735.0	577.0	442.0	416.0
EXP	816.7	867.0	733.5	578.3	438.7	401.8
CHI	1.3	0.2	0.0	0.0	0.0	0.5
70 - OBS	1172.0	1174.0	1136.0	998.0	742.0	638.0
EXP	1158.6	1168.1	1154.5	997.0	738.6	643.4
CHI	0.2	0.0	0.3	0.0	0.0	0.0
75 - OBS	1273.0	1387.0	1343.0	1361.0	1110.0	921.0
EXP	1273.0	1400.5	1317.1	1349.8	1102.5	953.0
CHI	0.0	0.1	0.5	0.1	0.1	1.1

Osmond and Gardner Modelling

Switzerland COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	15.139409
35	18.107589
40	30.913986
45	53.378716
50	118.099504
55	238.595314
60	524.204696
65	973.059231
70	1716.460077
75	2814.526213

PERIOD	EFFECT	LOWER	UPPER
% Period Change	92.4255	89.4255	95.4255

1981	1.219942		
1986	1.180135		
1991	1.047718		
1996	0.938625		
2001	0.773198		
2006	0.714633		
2011	0.660503	0.639064	0.681942
2016	0.610474	0.571487	0.650747
2021	0.564234	0.511055	0.620979
2026	0.521496	0.457014	0.592572

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.014973	1.000000	
1911	1.050175	2.000000	
1916	1.170474	4.000000	
1921	1.210849	8.000000	
1926	1.076338	16.000000	
1931	0.905561	32.000000	
1936	0.789817	64.000000	
1941	0.670493	128.000000	
1946	0.661337	256.000000	
1951	0.493195	512.000000	
1956	0.406923	1024.000000	
1961	0.283379	2048.000000	
1966	0.262175	4096.000000	
1971	0.206405	8192.000000	
1976	0.169069	EXTRAPOLATION	0.071399
1981	0.137904	EXTRAPOLATION	
1986	0.112483	EXTRAPOLATION	
1991	0.091749	EXTRAPOLATION	
1996	0.074836	EXTRAPOLATION	

Osmond and Gardner Modelling

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Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	7.3	9.5	4.1	4.0	0.7	0.8	-	-	-	-
	EXP	9.1	7.3	4.5	3.7	2.4	1.8	1.4*	1.0*	0.8*	0.6*
	Elow							1.3	1.0	0.7	0.5
	Eup							1.4	1.1	0.9	0.7
35	OBS	12.8	9.5	7.5	4.7	5.2	3.4	-	-	-	-
	EXP	14.6	10.5	7.7	4.8	3.7	2.7	2.0*	1.5*	1.1*	0.9*
	Elow							2.0	1.4	1.0	0.8
	Eup							2.1	1.6	1.3	1.0
40	OBS	28.9	23.9	17.9	10.5	5.4	3.1	-	-	-	-
	EXP	25.3	24.1	16.0	11.8	6.8	5.8	4.2*	3.2*	2.4*	1.8*
	Elow							4.1	3.0	2.2	1.6
	Eup							4.4	3.4	2.6	2.1
45	OBS	67.3	33.0	32.2	21.4	15.2	12.4	-	-	-	-
	EXP	51.4	42.2	37.0	24.7	16.8	10.8	9.2*	6.7*	5.1*	3.8*
	Elow							8.9	6.3	4.6	3.4
	Eup							9.5	7.2	5.6	4.4
50	OBS	133.6	103.0	81.1	75.8	46.6	34.8	-	-	-	-
	EXP	130.5	110.1	83.0	73.3	45.0	34.3	22.1*	18.9*	13.8*	10.4*
	Elow							21.4	17.7	12.5	9.1
	Eup							22.8	20.1	15.1	11.8
55	OBS	319.1	279.5	188.2	142.2	109.4	86.2	-	-	-	-
	EXP	313.3	255.0	197.4	150.2	122.0	84.1	64.1*	41.3*	35.3*	25.7*
	Elow							62.0	38.6	32.0	22.5
	Eup							66.2	44.0	38.8	29.2
60	OBS	764.3	646.0	503.0	387.4	271.6	264.2	-	-	-	-
	EXP	774.3	665.9	497.4	388.6	271.8	247.7	170.8*	130.2*	83.8*	71.7*
	Elow							165.2	121.9	75.9	62.8
	Eup							176.3	138.8	92.2	81.4
65	OBS	1333.8	1412.9	1099.6	825.2	598.7	482.7	-	-	-	-
	EXP	1389.4	1390.5	1097.3	827.1	594.2	466.2	425.0*	293.0*	223.4*	143.8*
	Elow							411.3	274.3	202.4	126.0
	Eup							438.8	312.3	245.9	163.4
70	OBS	2224.4	2382.9	2142.7	1735.9	1207.3	960.7	-	-	-	-
	EXP	2199.0	2371.0	2177.5	1734.1	1201.8	968.8	760.2*	693.0*	477.7*	364.2*
	Elow							735.5	648.7	432.6	319.2
	Eup							784.8	738.7	525.7	413.9
75	OBS	3485.0	3454.5	3519.4	3225.5	2358.2	1760.2	-	-	-	-
	EXP	3485.0	3488.2	3451.5	3198.8	2342.3	1821.4	1468.3*	1152.0*	1050.2*	723.9*
	Elow							1420.6	1078.5	951.3	634.4
	Eup							1515.9	1228.0	1155.9	822.6
30-79	OBS	481.2	470.3	409.3	337.5	241.1	191.9	-	-	-	-
	EXP	481.7	470.4	409.7	337.8	241.5	191.7	153.2*	121.3*	94.9*	68.2*
	Elow							148.3	113.6	86.0	59.8
	Eup							158.2	129.3	104.5	77.5

Osmond and Gardner Modelling

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Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

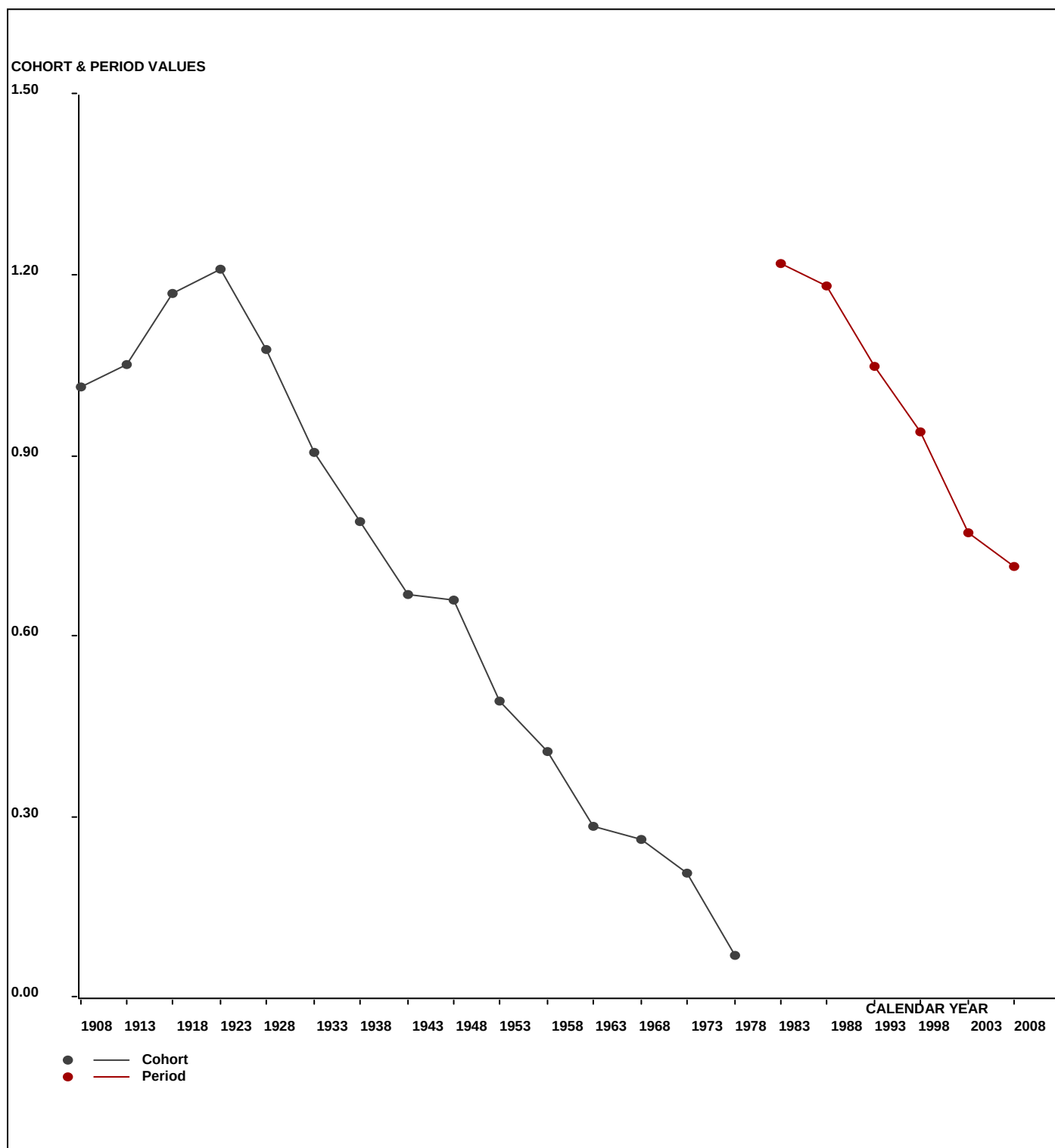
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	9.0	12.0	6.0	6.0	1.0	1.0	-	-	-	-
	EXP	11.2	9.2	6.5	5.6	3.3	2.4	1.9*	1.6*	1.2*	0.9*
	CHI	0.431	0.879	0.040	0.029	1.622	0.790	-	-	-	-
35 -	OBS	16.0	12.0	10.0	7.0	8.0	5.0	-	-	-	-
	EXP	18.3	13.3	10.3	7.2	5.7	3.9	2.8*	2.3*	1.9*	1.5*
	CHI	0.295	0.136	0.008	0.005	0.936	0.289	-	-	-	-
40 -	OBS	32.0	30.0	23.0	14.0	8.0	5.0	-	-	-	-
	EXP	28.0	30.3	20.5	15.7	10.1	9.4	6.5*	4.6*	3.7*	3.0*
	CHI	0.584	0.003	0.303	0.192	0.445	2.036	-	-	-	-
45 -	OBS	66.0	36.0	40.0	27.0	20.0	19.0	-	-	-	-
	EXP	50.4	46.1	46.0	31.1	22.1	16.6	15.4*	10.5*	7.5*	6.1*
	CHI	4.821	2.218	0.782	0.552	0.199	0.347	-	-	-	-
50 -	OBS	121.0	98.0	86.0	91.0	57.0	46.0	-	-	-	-
	EXP	118.2	104.8	88.0	88.0	55.1	45.3	34.1*	31.2*	21.4*	15.4*
	CHI	0.067	0.437	0.043	0.102	0.063	0.010	-	-	-	-
55 -	OBS	264.0	240.0	169.0	142.0	125.0	103.0	-	-	-	-
	EXP	259.2	218.9	177.3	150.0	139.3	100.5	82.4*	61.6*	56.6*	38.8*
	CHI	0.089	2.030	0.392	0.424	1.476	0.064	-	-	-	-
60 -	OBS	540.0	489.0	395.0	318.0	251.0	289.0	-	-	-	-
	EXP	547.1	504.1	390.5	319.0	251.1	271.0	194.4*	158.5*	119.2*	109.9*
	CHI	0.093	0.450	0.051	0.003	0.000	1.195	-	-	-	-
65 -	OBS	784.0	881.0	735.0	577.0	442.0	416.0	-	-	-	-
	EXP	816.7	867.0	733.5	578.3	438.7	401.8	436.6*	310.4*	254.8*	192.9*
	CHI	1.309	0.226	0.003	0.003	0.025	0.499	-	-	-	-
70 -	OBS	1172.0	1174.0	1136.0	998.0	742.0	638.0	-	-	-	-
	EXP	1158.6	1168.1	1154.5	997.0	738.6	643.4	600.4*	651.7*	466.3*	385.4*
	CHI	0.154	0.030	0.296	0.001	0.015	0.045	-	-	-	-
75 -	OBS	1273.0	1387.0	1343.0	1361.0	1110.0	921.0	-	-	-	-
	EXP	1273.0	1400.5	1317.1	1349.8	1102.5	953.0	842.8*	793.7*	868.4*	626.2*
	CHI	0.000	0.131	0.509	0.094	0.051	1.076	-	-	-	-
30-79	OBS	4277.0	4359.0	3943.0	3541.0	2764.0	2443.0	-	-	-	-
	EXP	4280.7	4362.3	3944.2	3541.7	2766.7	2447.3	2217.3*	2026.1*	1801.1*	1380.1*
	O/E	0.999	0.999	1.000	1.000	0.999	0.998	-	-	-	-

Osmond and Gardner Modelling

Switzerland COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

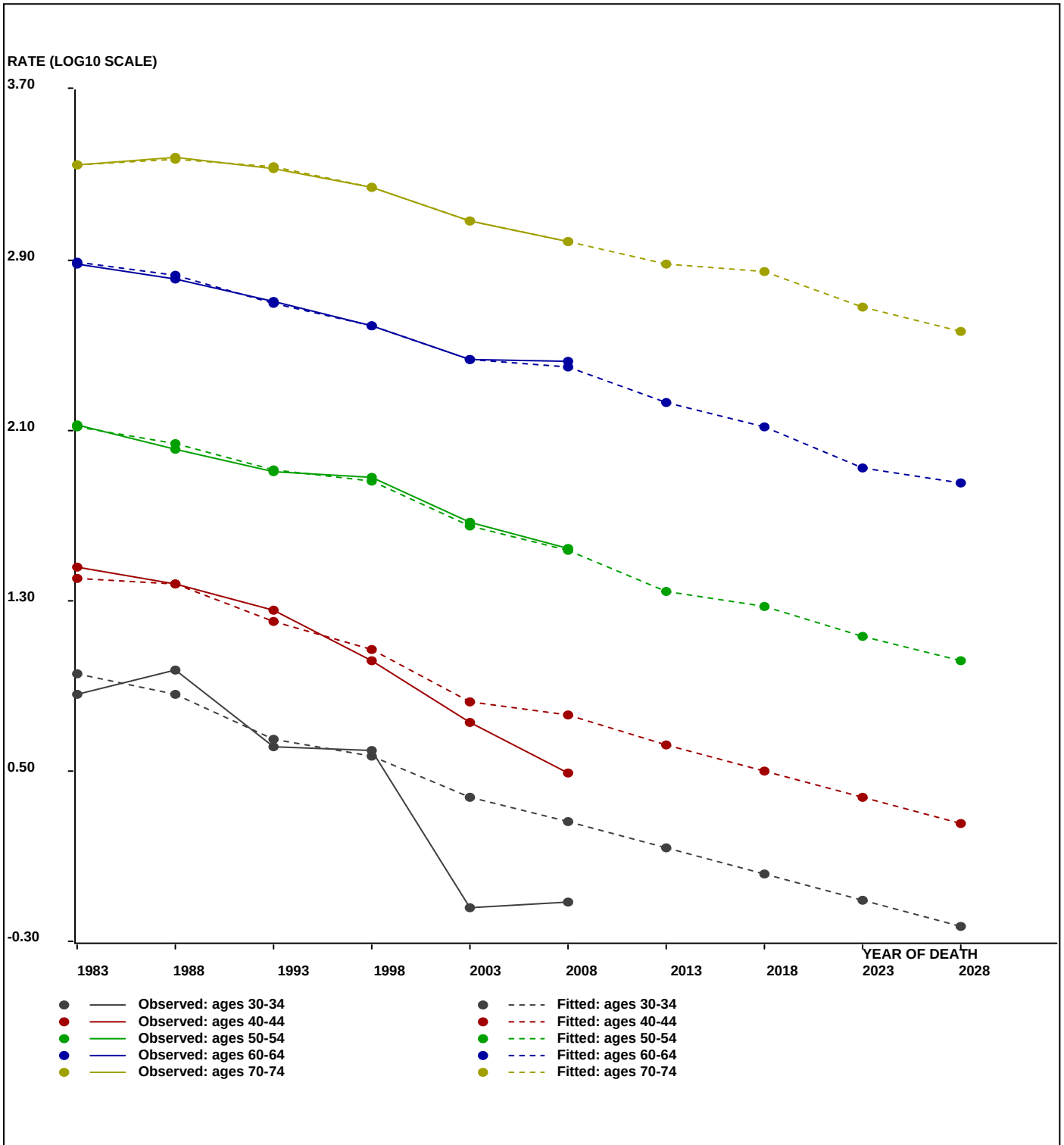


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Switzerland COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Switzerland COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	1.4	2.0	4.2	9.2	22.1	64.1	170.8	425.0	760.2	1468.3
2016	PRE	1.0	1.5	3.2	6.7	18.9	41.3	130.2	293.0	693.0	1152.0
2021	PRE	0.8	1.1	2.4	5.1	13.8	35.3	83.8	223.4	477.7	1050.2
2026	PRE	0.6	0.9	1.8	3.8	10.4	25.7	71.7	143.8	364.2	723.9

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	1.9	2.8	6.5	15.4	34.1	82.4	194.4	436.6	600.4	842.8
2016	PRE	1.6	2.3	4.6	10.5	31.2	61.6	158.5	310.4	651.7	793.7
2021	PRE	1.2	1.9	3.7	7.5	21.4	56.6	119.2	254.8	466.3	868.4
2026	PRE	0.9	1.5	3.0	6.1	15.4	38.8	109.9	192.9	385.4	626.2

Osmond and Gardner Modelling

Switzerland IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	864.41	16.95	51	P, C	98.85	4715.52	0.0000
AGE-PERIOD	28.66	0.64	45	Cohort	65.40	153.37	0.0000
AGE-COHORT	30.65	0.85	36	Period	67.65	163.57	0.0000
PERIOD-COHORT	12.63	0.32	40	Age	21.48	68.51	0.0033
FULL AGE-PERIOD-COHORT	9.92	0.31	32			53.67	0.0096

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.903297	8.003813
35	1.171217	14.832596
40	1.585919	38.540684
45	1.965925	92.453951
50	2.172806	148.869494
55	2.471298	296.003942
60	2.776247	597.374336
65	3.079630	1201.239459
70	3.394043	2477.667600
75	3.698536	4995.006205

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.110258	1.289014
1986	0.067023	1.166870
1991	0.029176	1.069487
1996	-0.021373	0.951977
2001	-0.142531	0.720226
2006	-0.239603	0.575966

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.027441	1.065224
1911	0.039588	1.095439
1916	0.038727	1.093268
1921	0.031214	1.074520
1926	-0.006674	0.984750
1931	-0.050976	0.889249
1936	-0.108665	0.778637
1941	-0.122687	0.753898
1946	-0.102407	0.789938
1951	-0.095137	0.803272
1956	-0.067900	0.855264
1961	-0.084541	0.823112
1966	-0.108471	0.778985
1971	-0.103405	0.788125
1976	-0.477842	0.332780

Osmond and Gardner Modelling

Switzerland IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	7.0	12.0	9.0	11.0	5.0	2.0
EXP	10.1	9.9	9.9	8.9	6.3	2.0
CHI	1.0	0.5	0.1	0.5	0.3	0.0
35 - OBS	22.0	13.0	23.0	5.0	11.0	11.0
EXP	18.4	17.2	17.5	16.9	12.8	9.9
CHI	0.7	1.0	1.7	8.3	0.3	0.1
40 - OBS	27.0	50.0	38.0	39.0	42.0	27.0
EXP	40.6	43.4	41.6	40.8	33.4	27.6
CHI	4.6	1.0	0.3	0.1	2.2	0.0
45 - OBS	95.0	85.0	91.0	103.0	62.0	63.0
EXP	91.3	87.6	95.0	88.0	73.7	65.7
CHI	0.1	0.1	0.2	2.5	1.9	0.1
50 - OBS	154.0	110.0	122.0	151.0	114.0	99.0
EXP	162.3	130.8	127.1	133.1	105.2	95.2
CHI	0.4	3.3	0.2	2.4	0.7	0.1
55 - OBS	367.0	282.0	224.0	225.0	184.0	148.0
EXP	344.3	283.1	230.3	216.3	193.6	164.5
CHI	1.5	0.0	0.2	0.3	0.5	1.7
60 - OBS	677.0	568.0	506.0	426.0	317.0	288.0
EXP	666.7	602.6	501.3	393.9	315.0	305.4
CHI	0.2	2.0	0.0	2.6	0.0	1.0
65 - OBS	1170.0	1215.0	1050.0	827.0	563.0	498.0
EXP	1216.2	1149.3	1052.3	850.1	567.8	490.4
CHI	1.8	3.8	0.0	0.6	0.0	0.1
70 - OBS	2570.0	2100.0	1996.0	1801.0	1240.0	879.0
EXP	2544.7	2091.7	2022.5	1798.5	1242.9	886.1
CHI	0.3	0.0	0.3	0.0	0.0	0.1
75 - OBS	4032.0	3999.0	3441.0	3178.0	2470.0	1872.0
EXP	4032.0	4024.5	3404.2	3230.0	2460.1	1842.1
CHI	0.0	0.2	0.4	0.8	0.0	0.5

Osmond and Gardner Modelling

Switzerland IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	8.003813
35	14.832596
40	38.540684
45	92.453951
50	148.869494
55	296.003942
60	597.374336
65	1201.239459
70	2477.667600
75	4995.006205

PERIOD	EFFECT	LOWER	UPPER
% Period Change	79.9702	76.9702	82.9702
1981	1.289014		
1986	1.166870		
1991	1.069487		
1996	0.951977		
2001	0.720226		
2006	0.575966		
2011	0.460601	0.443322	0.477880
2016	0.368343	0.341226	0.396498
2021	0.294565	0.262642	0.328975
2026	0.235564	0.202156	0.272951

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.065224	1.000000	
1911	1.095439	2.000000	
1916	1.093268	4.000000	
1921	1.074520	8.000000	
1926	0.984750	16.000000	
1931	0.889249	32.000000	
1936	0.778637	64.000000	
1941	0.753898	128.000000	
1946	0.789938	256.000000	
1951	0.803272	512.000000	
1956	0.855264	1024.000000	
1961	0.823112	2048.000000	
1966	0.778985	4096.000000	
1971	0.788125	8192.000000	
1976	0.777712	EXTRAPOLATION	0.332780
1981	0.769237	EXTRAPOLATION	
1986	0.760855	EXTRAPOLATION	
1991	0.752564	EXTRAPOLATION	
1996	0.744364	EXTRAPOLATION	

Osmond and Gardner Modelling

**Switzerland IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	5.7	9.7	6.4	7.3	3.6	1.5	-	-	-	-
	EXP	8.3	8.0	7.0	5.9	4.5	3.6	2.8*	2.2*	1.8*	1.4*
	Elow							2.7	2.1	1.6	1.2
	Eup							2.9	2.4	2.0	1.6
35	OBS	18.1	10.5	17.8	3.4	7.1	7.5	-	-	-	-
	EXP	15.1	13.9	13.6	11.6	8.3	6.7	5.3*	4.2*	3.3*	2.6*
	Elow							5.1	3.9	3.0	2.3
	Eup							5.5	4.5	3.7	3.0
40	OBS	24.9	41.0	30.3	30.0	28.7	16.9	-	-	-	-
	EXP	37.5	35.5	33.1	31.4	22.8	17.3	14.0*	11.0*	8.7*	6.9*
	Elow							13.5	10.2	7.8	5.9
	Eup							14.5	11.9	9.8	8.0
45	OBS	96.5	78.9	74.8	82.7	47.9	42.0	-	-	-	-
	EXP	92.8	81.3	78.1	70.7	57.0	43.8	33.2*	26.8*	21.2*	16.8*
	Elow							31.9	24.9	18.9	14.4
	Eup							34.4	28.9	23.7	19.4
50	OBS	161.9	113.8	115.3	127.0	93.3	76.2	-	-	-	-
	EXP	170.6	135.3	120.0	112.0	86.1	73.3	56.4*	42.7*	34.6*	27.3*
	Elow							54.3	39.6	30.8	23.4
	Eup							58.6	46.0	38.6	31.6
55	OBS	400.5	305.9	239.8	221.0	160.1	123.2	-	-	-	-
	EXP	375.7	307.1	246.5	212.4	168.4	136.9	116.6*	89.7*	67.9*	55.0*
	Elow							112.2	83.1	60.6	47.2
	Eup							121.0	96.6	75.9	63.7
60	OBS	840.2	647.0	573.5	478.8	326.4	256.3	-	-	-	-
	EXP	827.4	686.4	568.1	442.8	324.4	271.8	221.0*	188.2*	144.8*	109.6*
	Elow							212.7	174.3	129.1	94.1
	Eup							229.3	202.6	161.8	127.0
65	OBS	1628.5	1592.3	1262.4	989.2	667.9	529.7	-	-	-	-
	EXP	1692.8	1506.1	1265.1	1016.9	673.6	521.6	437.1*	355.4*	302.6*	232.9*
	Elow							420.7	329.3	269.8	199.9
	Eup							453.5	382.6	338.0	269.9
70	OBS	3533.3	3173.3	2809.9	2325.9	1583.2	1102.3	-	-	-	-
	EXP	3498.6	3160.8	2847.3	2322.7	1586.8	1111.2	860.4*	720.9*	586.3*	499.2*
	Elow							828.1	667.8	522.7	428.4
	Eup							892.6	776.0	654.7	578.4
75	OBS	6858.6	6344.3	5903.4	5027.2	3556.9	2599.8	-	-	-	-
	EXP	6858.6	6384.8	5840.3	5109.5	3542.7	2558.3	1791.4*	1387.1*	1162.3*	945.2*
	Elow							1724.2	1285.0	1036.3	811.1
	Eup							1858.6	1493.1	1298.1	1095.2
30-79	OBS	719.7	644.1	569.2	481.1	334.4	248.3	-	-	-	-
	EXP	720.8	644.9	570.3	479.4	335.0	249.6	190.9*	153.6*	125.7*	101.5*
	Elow							183.7	142.3	112.1	87.1
	Eup							198.1	165.3	140.4	117.6

Osmond and Gardner Modelling

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Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

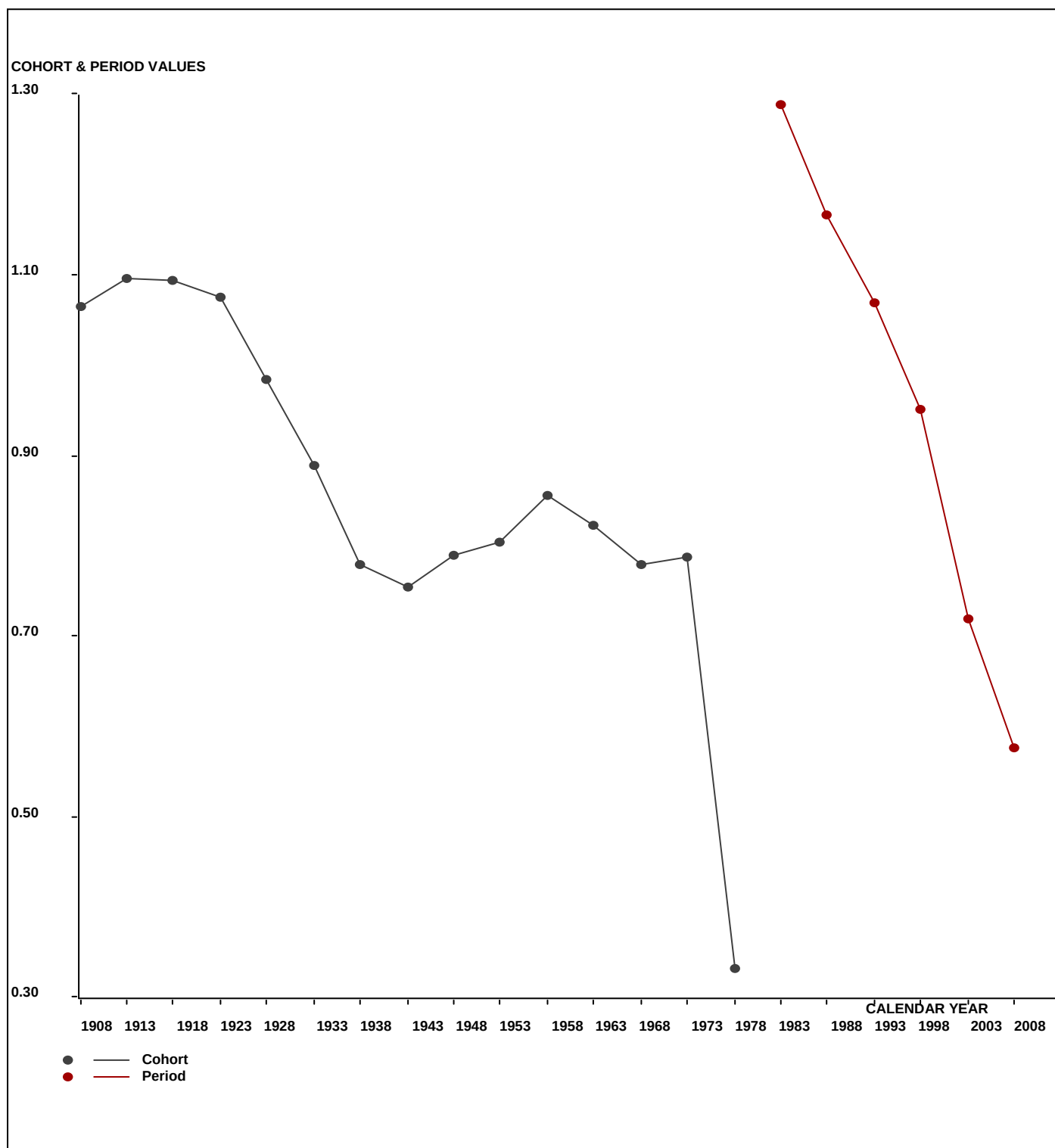
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	7.0	12.0	9.0	11.0	5.0	2.0	-	-	-	-
	EXP	10.1	9.9	9.9	8.9	6.3	4.7	3.9*	3.4*	2.8*	2.2*
	CHI	0.954	0.452	0.085	0.484	0.281	1.530	-	-	-	-
35 -	OBS	22.0	13.0	23.0	5.0	11.0	11.0	-	-	-	-
	EXP	18.4	17.2	17.5	16.9	12.8	9.9	7.4*	6.2*	5.3*	4.4*
	CHI	0.712	1.034	1.737	8.339	0.265	0.127	-	-	-	-
40 -	OBS	27.0	50.0	38.0	39.0	42.0	27.0	-	-	-	-
	EXP	40.6	43.4	41.6	40.8	33.4	27.6	21.2*	15.8*	13.2*	11.3*
	CHI	4.554	1.020	0.307	0.076	2.207	0.013	-	-	-	-
45 -	OBS	95.0	85.0	91.0	103.0	62.0	63.0	-	-	-	-
	EXP	91.3	87.6	95.0	88.0	73.7	65.7	54.2*	41.5*	31.0*	25.9*
	CHI	0.148	0.077	0.170	2.539	1.871	0.112	-	-	-	-
50 -	OBS	154.0	110.0	122.0	151.0	114.0	99.0	-	-	-	-
	EXP	162.3	130.8	127.1	133.1	105.2	95.2	84.9*	69.5*	53.3*	39.8*
	CHI	0.424	3.299	0.201	2.415	0.731	0.150	-	-	-	-
55 -	OBS	367.0	282.0	224.0	225.0	184.0	148.0	-	-	-	-
	EXP	344.3	283.1	230.3	216.3	193.6	164.5	148.3*	131.7*	108.1*	82.9*
	CHI	1.499	0.005	0.172	0.348	0.472	1.655	-	-	-	-
60 -	OBS	677.0	568.0	506.0	426.0	317.0	288.0	-	-	-	-
	EXP	666.7	602.6	501.3	393.9	315.0	305.4	258.3*	231.6*	206.4*	169.9*
	CHI	0.160	1.984	0.045	2.611	0.012	0.995	-	-	-	-
65 -	OBS	1170.0	1215.0	1050.0	827.0	563.0	498.0	-	-	-	-
	EXP	1216.2	1149.3	1052.3	850.1	567.8	490.4	477.4*	401.0*	360.6*	322.5*
	CHI	1.755	3.757	0.005	0.630	0.041	0.119	-	-	-	-
70 -	OBS	2570.0	2100.0	1996.0	1801.0	1240.0	879.0	-	-	-	-
	EXP	2544.7	2091.7	2022.5	1798.5	1242.9	886.1	772.7*	751.3*	633.4*	572.0*
	CHI	0.251	0.033	0.348	0.003	0.007	0.056	-	-	-	-
75 -	OBS	4032.0	3999.0	3441.0	3178.0	2470.0	1872.0	-	-	-	-
	EXP	4032.0	4024.5	3404.2	3230.0	2460.1	1842.1	1318.9*	1157.2*	1131.3*	958.8*
	CHI	0.000	0.161	0.397	0.838	0.040	0.485	-	-	-	-
30-79	OBS	9121.0	8434.0	7500.0	6766.0	5008.0	3887.0	-	-	-	-
	EXP	9126.6	8440.0	7501.7	6776.6	5010.9	3891.6	3147.2*	2809.2*	2545.4*	2189.8*
	O/E	0.999	0.999	1.000	0.998	0.999	0.999	-	-	-	-

Osmond and Gardner Modelling

Switzerland IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

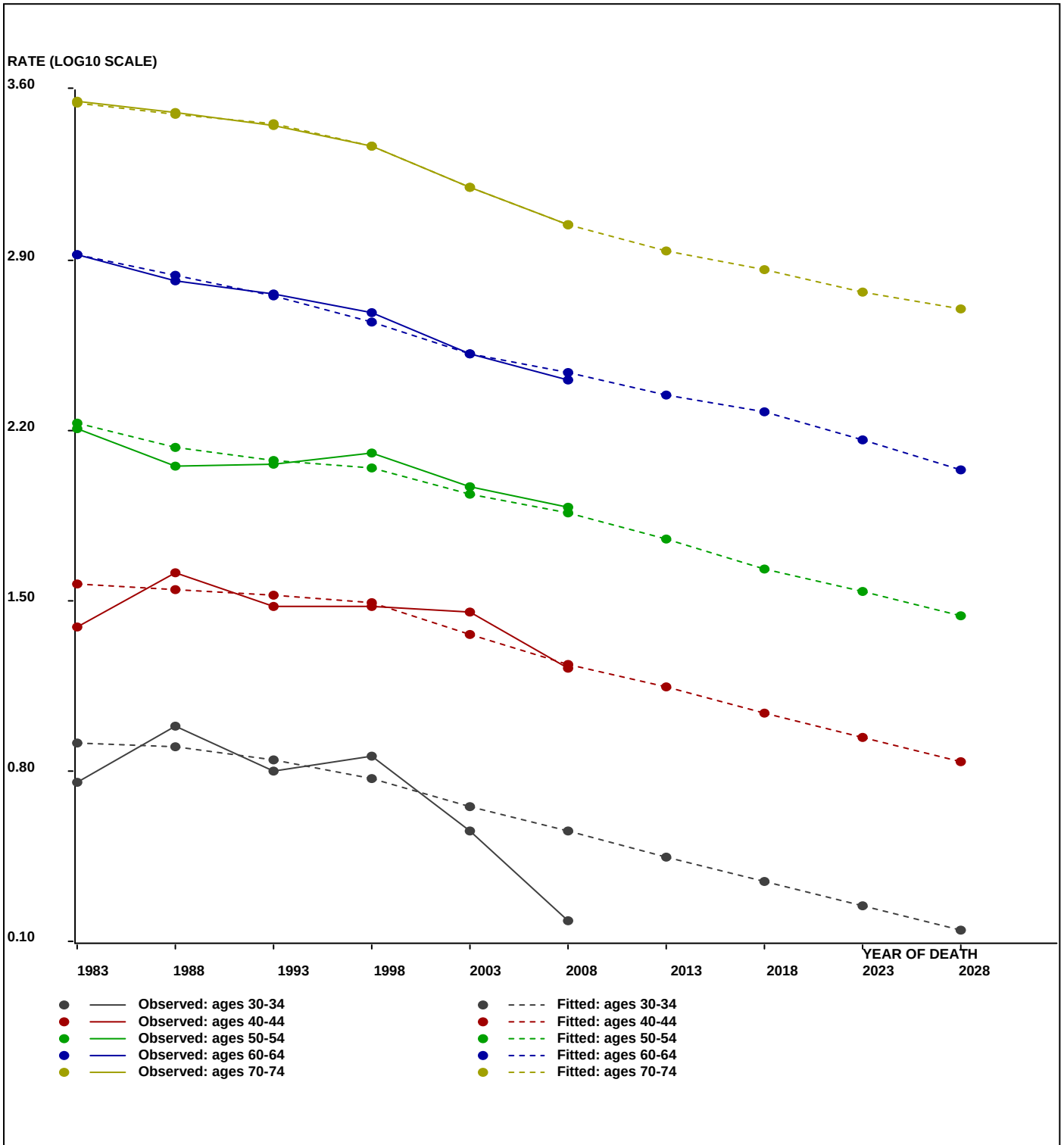


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Switzerland IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Switzerland IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	2.8	5.3	14.0	33.2	56.4	116.6	221.0	437.1	860.4	1791.4
2016	PRE	2.2	4.2	11.0	26.8	42.7	89.7	188.2	355.4	720.9	1387.1
2021	PRE	1.8	3.3	8.7	21.2	34.6	67.9	144.8	302.6	586.3	1162.3
2026	PRE	1.4	2.6	6.9	16.8	27.3	55.0	109.6	232.9	499.2	945.2

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	3.9	7.4	21.2	54.2	84.9	148.3	258.3	477.4	772.7	1318.9
2016	PRE	3.4	6.2	15.8	41.5	69.5	131.7	231.6	401.0	751.3	1157.2
2021	PRE	2.8	5.3	13.2	31.0	53.3	108.1	206.4	360.6	633.4	1131.3
2026	PRE	2.2	4.4	11.3	25.9	39.8	82.9	169.9	322.5	572.0	958.8

Osmond and Gardner Modelling

Switzerland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	780.67	15.31	51	P, C	99.43	4254.30	0.0000
AGE-PERIOD	23.21	0.52	45	Cohort	80.86	123.68	0.0000
AGE-COHORT	8.78	0.24	36	Period	49.43	46.64	0.1103
PERIOD-COHORT	9.46	0.24	40	Age	53.06	50.38	0.1259
FULL AGE-PERIOD-COHORT	4.44	0.14	32			23.59	0.8588

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.472645	29.692387
35	1.593237	39.195574
40	1.799404	63.009216
45	1.982213	95.987029
50	2.146345	140.070073
55	2.290015	194.991140
60	2.515888	328.010958
65	2.816101	654.788569
70	3.156042	1432.327846
75	3.495786	3131.745128

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.117779	1.311533
1986	0.025723	1.061018
1991	-0.017489	0.960531
1996	-0.040145	0.911707
2001	-0.110347	0.775627
2006	-0.159203	0.693101

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.166520	1.467303
1911	0.103580	1.269345
1916	0.044743	1.108518
1921	-0.002808	0.993555
1926	-0.091354	0.810300
1931	-0.108671	0.778626
1936	-0.157010	0.696611
1941	-0.188618	0.647711
1946	-0.161939	0.688749
1951	-0.139292	0.725618
1956	-0.145290	0.715665
1961	-0.212096	0.613627
1966	-0.344393	0.452488
1971	-0.421196	0.379143
1976	-0.252529	0.559076

Osmond and Gardner Modelling

Switzerland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value

Fitting the FULL AGE-PERIOD-COHORT Model

Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	32.0	21.0	29.0	20.0	14.0	15.0
EXP	34.5	27.9	24.6	18.4	12.2	15.0
CHI	0.2	1.7	0.8	0.1	0.3	0.0
35 - OBS	43.0	45.0	30.0	32.0	19.0	13.0
EXP	43.1	37.4	34.7	31.8	21.2	15.1
CHI	0.0	1.6	0.6	0.0	0.2	0.3
40 - OBS	56.0	66.0	52.0	50.0	41.0	32.0
EXP	58.0	56.2	55.1	53.4	43.9	31.5
CHI	0.1	1.7	0.2	0.2	0.2	0.0
45 - OBS	88.0	82.0	65.0	79.0	69.0	59.0
EXP	86.3	71.0	77.2	79.1	69.0	61.2
CHI	0.0	1.7	1.9	0.0	0.0	0.1
50 - OBS	131.0	88.0	90.0	115.0	90.0	103.0
EXP	136.0	100.1	92.2	104.6	96.3	90.2
CHI	0.2	1.5	0.1	1.0	0.4	1.8
55 - OBS	186.0	136.0	132.0	118.0	121.0	121.0
EXP	189.9	148.5	121.9	117.2	119.7	117.8
CHI	0.1	1.1	0.8	0.0	0.0	0.1
60 - OBS	342.0	249.0	227.0	189.0	158.0	164.0
EXP	344.4	247.6	216.4	185.3	160.0	176.0
CHI	0.0	0.0	0.5	0.1	0.0	0.8
65 - OBS	702.0	512.0	424.0	398.0	291.0	270.0
EXP	683.9	526.7	423.9	388.6	298.2	276.4
CHI	0.5	0.4	0.0	0.2	0.2	0.1
70 - OBS	1730.0	1122.0	991.0	799.0	672.0	554.0
EXP	1734.4	1114.8	971.0	819.3	677.5	551.5
CHI	0.0	0.0	0.4	0.5	0.0	0.0
75 - OBS	3543.0	2663.0	1918.0	1790.0	1389.0	1219.0
EXP	3543.0	2658.6	1943.7	1793.3	1366.8	1216.9
CHI	0.0	0.0	0.3	0.0	0.4	0.0

Osmond and Gardner Modelling

Switzerland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	29.692387
35	39.195574
40	63.009216
45	95.987029
50	140.070073
55	194.991140
60	328.010958
65	654.788569
70	1432.327846
75	3131.745128

PERIOD	EFFECT	LOWER	UPPER
% Period Change	89.3602	86.3602	92.3602

1981	1.311533		
1986	1.061018		
1991	0.960531		
1996	0.911707		
2001	0.775627		
2006	0.693101		
2011	0.619357	0.598564	0.640150
2016	0.553458	0.516921	0.591244
2021	0.494572	0.446414	0.546074
2026	0.441950	0.385524	0.504355

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.467303	1.000000	
1911	1.269345	2.000000	
1916	1.108518	4.000000	
1921	0.993555	8.000000	
1926	0.810300	16.000000	
1931	0.778626	32.000000	
1936	0.696611	64.000000	
1941	0.647711	128.000000	
1946	0.688749	256.000000	
1951	0.725618	512.000000	
1956	0.715665	1024.000000	
1961	0.613627	2048.000000	
1966	0.452488	4096.000000	
1971	0.379143	8192.000000	
1976	0.337408	EXTRAPOLATION	0.559076
1981	0.290388	EXTRAPOLATION	
1986	0.249921	EXTRAPOLATION	
1991	0.215094	EXTRAPOLATION	
1996	0.185119	EXTRAPOLATION	

Osmond and Gardner Modelling

**Switzerland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	26.2	17.0	20.6	13.3	10.0	11.5	-	-	-	-
	EXP	28.3	22.5	17.5	12.2	8.7	6.9	5.3*	4.1*	3.2*	2.4*
	Elow							5.2	3.8	2.9	2.1
	Eup							5.5	4.4	3.5	2.8
35	OBS	35.3	36.3	23.3	22.1	12.3	8.9	-	-	-	-
	EXP	35.4	30.2	26.9	21.9	13.8	10.3	8.2*	6.3*	4.8*	3.7*
	Elow							7.9	5.9	4.4	3.3
	Eup							8.5	6.7	5.3	4.3
40	OBS	51.7	54.1	41.4	38.5	28.0	20.0	-	-	-	-
	EXP	53.5	46.0	43.9	41.1	30.0	19.8	14.8*	11.8*	9.0*	7.0*
	Elow							14.3	11.0	8.2	6.1
	Eup							15.3	12.6	10.0	7.9
45	OBS	89.4	76.1	53.4	63.4	53.3	39.4	-	-	-	-
	EXP	87.7	66.0	63.5	63.5	53.3	40.8	26.9*	20.1*	16.0*	12.3*
	Elow							26.0	18.8	14.5	10.7
	Eup							27.8	21.5	17.7	14.1
50	OBS	137.7	91.0	85.0	96.7	73.7	79.3	-	-	-	-
	EXP	143.0	103.5	87.1	88.0	78.8	69.5	53.2*	35.1*	26.3*	20.9*
	Elow							51.4	32.8	23.7	18.2
	Eup							55.0	37.5	29.0	23.8
55	OBS	203.0	147.5	141.3	115.9	105.3	100.7	-	-	-	-
	EXP	207.2	161.1	130.5	115.1	104.2	98.1	86.4*	66.2*	43.6*	32.7*
	Elow							83.5	61.9	39.4	28.5
	Eup							89.3	70.7	48.2	37.3
60	OBS	424.5	283.7	257.3	212.4	162.7	145.9	-	-	-	-
	EXP	427.4	282.0	245.3	208.3	164.8	156.6	147.4*	129.9*	99.5*	65.6*
	Elow							142.5	121.3	89.9	57.2
	Eup							152.4	138.8	109.9	74.9
65	OBS	977.1	671.0	509.8	476.1	345.2	287.2	-	-	-	-
	EXP	952.0	690.3	509.6	464.8	353.8	294.0	279.3*	263.0*	231.8*	177.6*
	Elow							269.9	245.6	209.2	154.9
	Eup							288.7	280.9	255.9	202.6
70	OBS	2378.5	1695.5	1395.1	1031.9	858.0	694.7	-	-	-	-
	EXP	2384.5	1684.6	1366.9	1058.1	865.0	691.6	574.6*	546.0*	514.0*	453.0*
	Elow							555.3	510.0	464.0	395.2
	Eup							593.9	583.3	567.5	517.0
75	OBS	6026.8	4224.8	3290.6	2831.5	2000.2	1693.0	-	-	-	-
	EXP	6026.8	4217.8	3334.6	2836.8	1968.3	1690.1	1351.2*	1122.7*	1066.8*	1004.3*
	Elow							1305.8	1048.6	962.9	876.1
	Eup							1396.6	1199.3	1177.9	1146.1
30-79	OBS	524.0	371.7	300.1	255.6	193.5	164.8	-	-	-	-
	EXP	524.2	372.8	299.8	255.0	194.3	164.2	137.4*	118.6*	105.0*	89.6*
	Elow							132.8	110.8	94.8	78.1
	Eup							142.0	126.7	116.0	102.2

Osmond and Gardner Modelling

**Switzerland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

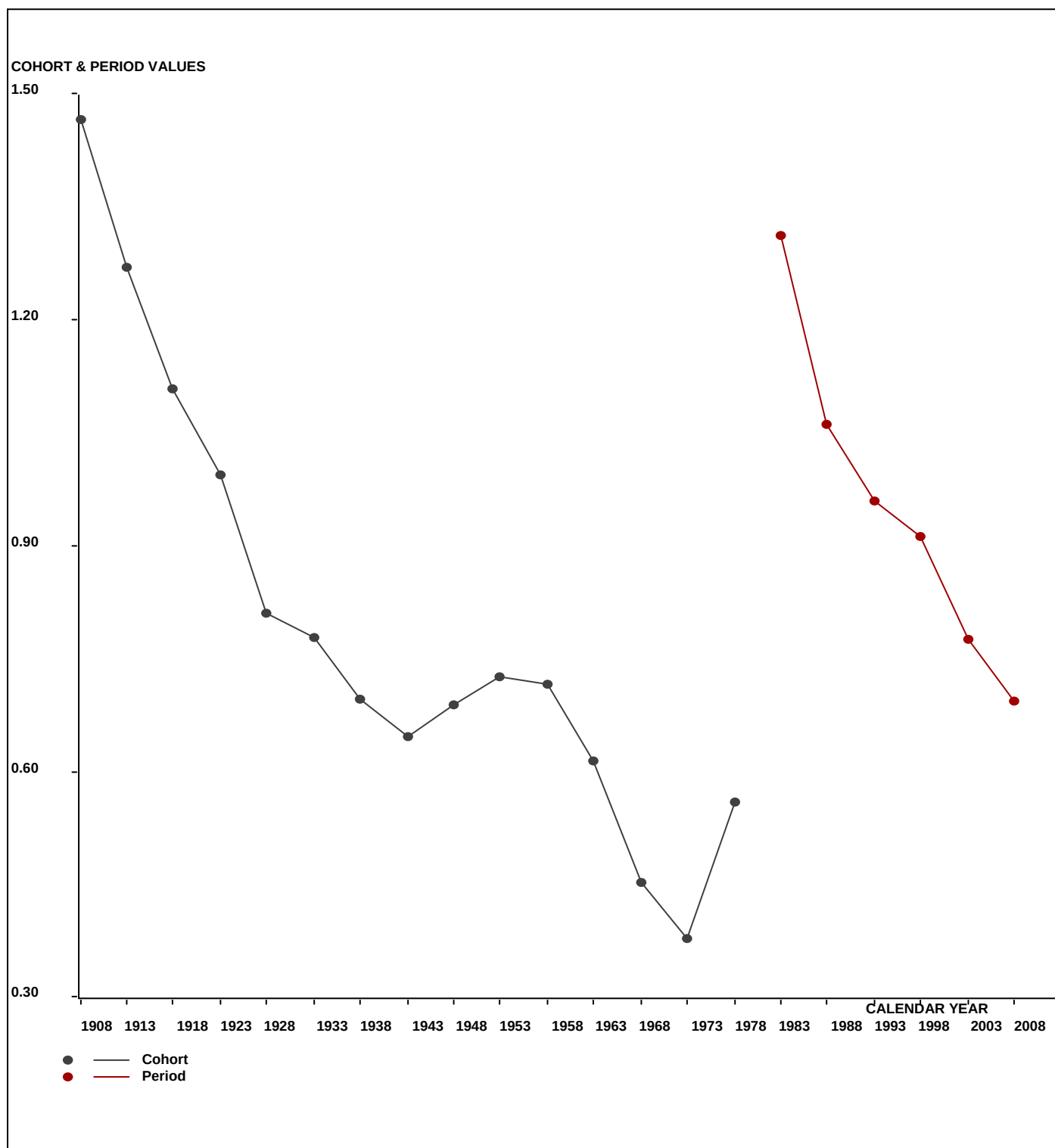
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	32.0	21.0	29.0	20.0	14.0	15.0	-	-	-	-
	EXP	34.5	27.9	24.6	18.4	12.2	9.1	7.4*	6.2*	5.0*	3.9*
	CHI	0.175	1.709	0.771	0.137	0.274	3.907	-	-	-	-
35 -	OBS	43.0	45.0	30.0	32.0	19.0	13.0	-	-	-	-
	EXP	43.1	37.4	34.7	31.8	21.2	15.1	11.3*	9.3*	7.7*	6.3*
	CHI	0.000	1.556	0.644	0.001	0.235	0.295	-	-	-	-
40 -	OBS	56.0	66.0	52.0	50.0	41.0	32.0	-	-	-	-
	EXP	58.0	56.2	55.1	53.4	43.9	31.5	22.5*	16.9*	13.7*	11.4*
	CHI	0.070	1.713	0.179	0.216	0.186	0.007	-	-	-	-
45 -	OBS	88.0	82.0	65.0	79.0	69.0	59.0	-	-	-	-
	EXP	86.3	71.0	77.2	79.1	69.0	61.2	44.0*	31.2*	23.4*	19.0*
	CHI	0.033	1.688	1.942	0.000	0.000	0.079	-	-	-	-
50 -	OBS	131.0	88.0	90.0	115.0	90.0	103.0	-	-	-	-
	EXP	136.0	100.1	92.2	104.6	96.3	90.2	80.0*	57.1*	40.5*	30.5*
	CHI	0.187	1.461	0.055	1.044	0.414	1.810	-	-	-	-
55 -	OBS	186.0	136.0	132.0	118.0	121.0	121.0	-	-	-	-
	EXP	189.9	148.5	121.9	117.2	119.7	117.8	110.0*	97.2*	69.5*	49.3*
	CHI	0.079	1.052	0.837	0.005	0.014	0.087	-	-	-	-
60 -	OBS	342.0	249.0	227.0	189.0	158.0	164.0	-	-	-	-
	EXP	344.4	247.6	216.4	185.3	160.0	176.0	172.3*	159.9*	141.9*	101.7*
	CHI	0.017	0.008	0.515	0.073	0.026	0.813	-	-	-	-
65 -	OBS	702.0	512.0	424.0	398.0	291.0	270.0	-	-	-	-
	EXP	683.9	526.7	423.9	388.6	298.2	276.4	305.1*	296.7*	276.2*	245.9*
	CHI	0.477	0.411	0.000	0.227	0.175	0.146	-	-	-	-
70 -	OBS	1730.0	1122.0	991.0	799.0	672.0	554.0	-	-	-	-
	EXP	1734.4	1114.8	971.0	819.3	677.5	551.5	516.1*	569.0*	555.3*	519.1*
	CHI	0.011	0.046	0.413	0.505	0.045	0.012	-	-	-	-
75 -	OBS	3543.0	2663.0	1918.0	1790.0	1389.0	1219.0	-	-	-	-
	EXP	3543.0	2658.6	1943.7	1793.3	1366.8	1216.9	994.8*	936.6*	1038.3*	1018.8*
	CHI	0.000	0.007	0.339	0.006	0.360	0.003	-	-	-	-
30-79	OBS	6853.0	4984.0	3958.0	3590.0	2864.0	2550.0	-	-	-	-
	EXP	6853.5	4988.8	3960.9	3591.1	2864.9	2545.7	2263.4*	2179.9*	2171.5*	2005.8*
	O/E	1.000	0.999	0.999	1.000	1.000	1.002	-	-	-	-

Osmond and Gardner Modelling

Switzerland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

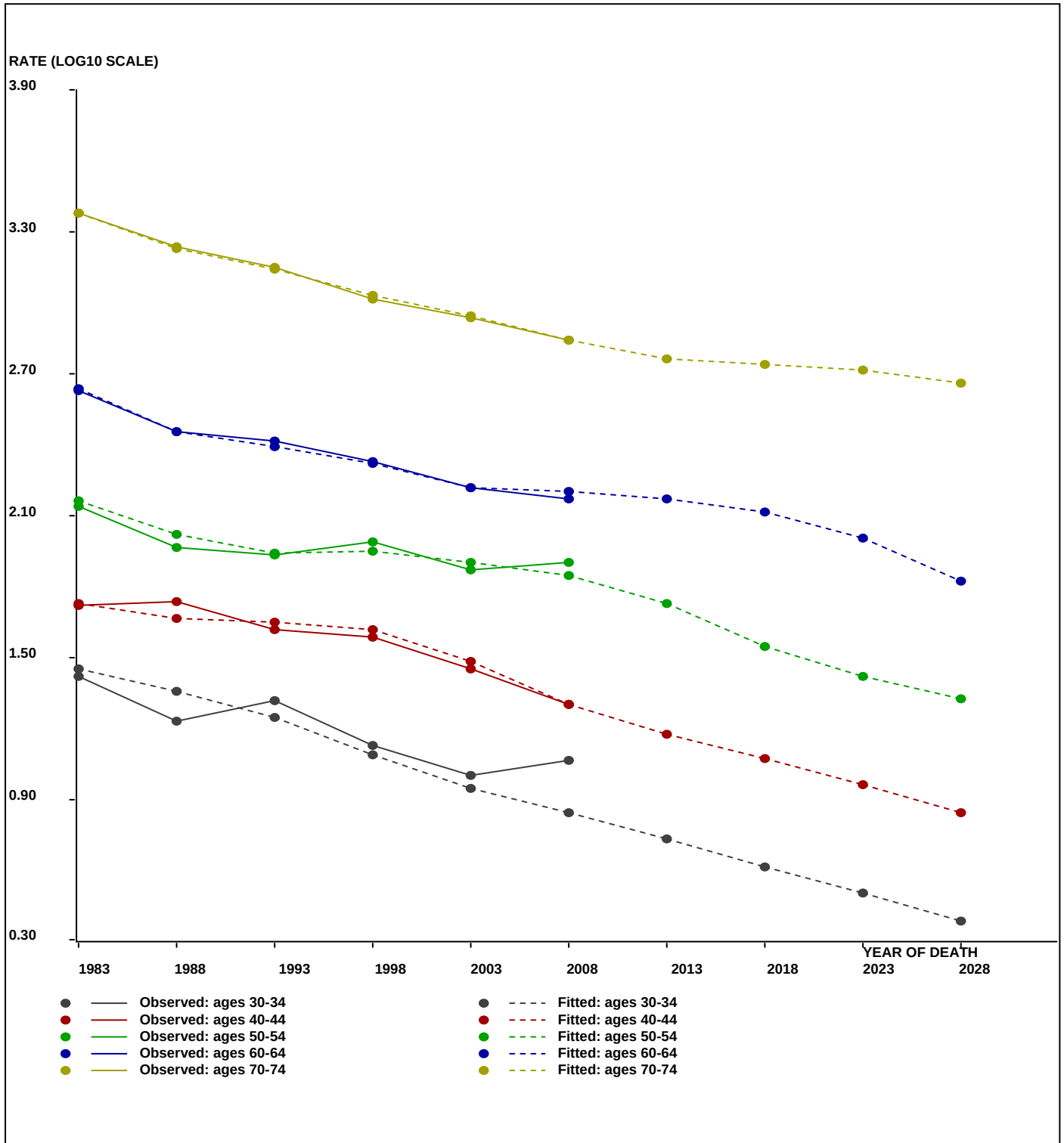


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Switzerland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Switzerland Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	5.3	8.2	14.8	26.9	53.2	86.4	147.4	279.3	574.6	1351.2
2016	PRE	4.1	6.3	11.8	20.1	35.1	66.2	129.9	263.0	546.0	1122.7
2021	PRE	3.2	4.8	9.0	16.0	26.3	43.6	99.5	231.8	514.0	1066.8
2026	PRE	2.4	3.7	7.0	12.3	20.9	32.7	65.6	177.6	453.0	1004.3

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	7.4	11.3	22.5	44.0	80.0	110.0	172.3	305.1	516.1	994.8
2016	PRE	6.2	9.3	16.9	31.2	57.1	97.2	159.9	296.7	569.0	936.6
2021	PRE	5.0	7.7	13.7	23.4	40.5	69.5	141.9	276.2	555.3	1038.3
2026	PRE	3.9	6.3	11.4	19.0	30.5	49.3	101.7	245.9	519.1	1018.8

Osmond and Gardner Modelling

Switzerland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	199.38	3.91	51	P, C	97.23	1072.84	0.0000
AGE-PERIOD	29.51	0.66	45	Cohort	81.28	161.14	0.0000
AGE-COHORT	7.57	0.21	36	Period	27.03	40.23	0.2884
PERIOD-COHORT	15.35	0.38	40	Age	64.02	82.43	0.0001
FULL AGE-PERIOD-COHORT	5.52	0.17	32			29.37	0.6006

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.713132	5.165733
35	1.191930	15.557147
40	1.625603	42.228232
45	1.938232	86.742418
50	2.180305	151.462602
55	2.416039	260.638580
60	2.610411	407.766224
65	2.780339	603.030775
70	2.900021	794.366634
75	2.999852	999.660149

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.070254	0.850639
1986	-0.051864	0.887434
1991	0.006658	1.015449
1996	-0.004265	0.990227
2001	0.015932	1.037365
2006	0.034832	1.083508

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.300944	0.500099
1911	-0.190776	0.644501
1916	-0.152069	0.704581
1921	-0.130494	0.740468
1926	-0.091673	0.809704
1931	-0.018002	0.959397
1936	0.016247	1.038120
1941	0.071277	1.178357
1946	0.158285	1.439744
1951	0.181354	1.518287
1956	0.185132	1.531553
1961	0.098036	1.253244
1966	-0.068116	0.854838
1971	-0.127300	0.745934
1976	-0.562113	0.274086

Osmond and Gardner Modelling

Switzerland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	8.0	10.0	8.0	6.0	6.0	2.0
EXP	8.1	8.7	9.3	6.6	5.6	2.0
CHI	0.0	0.2	0.2	0.0	0.0	0.0
35 - OBS	31.0	29.0	25.0	27.0	15.0	18.0
EXP	23.2	26.0	31.2	28.0	21.3	18.4
CHI	2.6	0.4	1.2	0.0	1.9	0.0
40 - OBS	50.0	49.0	76.0	91.0	82.0	68.0
EXP	45.9	65.8	81.7	83.2	80.3	62.4
CHI	0.4	4.3	0.4	0.7	0.0	0.5
45 - OBS	72.0	101.0	151.0	153.0	190.0	177.0
EXP	75.4	97.7	154.3	162.4	178.5	176.6
CHI	0.2	0.1	0.1	0.5	0.7	0.0
50 - OBS	106.0	130.0	201.0	272.0	298.0	310.0
EXP	117.6	134.9	191.8	256.7	291.5	326.4
CHI	1.1	0.2	0.4	0.9	0.1	0.8
55 - OBS	162.0	197.0	269.0	295.0	454.0	520.0
EXP	164.5	204.6	256.7	309.7	447.4	515.0
CHI	0.0	0.3	0.6	0.7	0.1	0.0
60 - OBS	195.0	270.0	366.0	359.0	494.0	701.0
EXP	206.9	257.2	350.5	372.9	484.1	714.8
CHI	0.7	0.6	0.7	0.5	0.2	0.3
65 - OBS	255.0	317.0	408.0	488.0	545.0	711.0
EXP	259.7	302.4	412.4	478.9	547.4	723.8
CHI	0.1	0.7	0.0	0.2	0.0	0.2
70 - OBS	336.0	339.0	412.0	490.0	592.0	724.0
EXP	316.8	328.7	424.3	493.2	619.2	712.5
CHI	1.2	0.3	0.4	0.0	1.2	0.2
75 - OBS	250.0	340.0	411.0	472.0	580.0	768.0
EXP	250.0	360.4	416.9	463.4	583.1	748.2
CHI	0.0	1.2	0.1	0.2	0.0	0.5

Osmond and Gardner Modelling

Switzerland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
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AGE	EFFECT
30	5.165733
35	15.557147
40	42.228232
45	86.742418
50	151.462602
55	260.638580
60	407.766224
65	603.030775
70	794.366634
75	999.660149

PERIOD	EFFECT	LOWER	UPPER
% Period Change	104.4481	101.4481	107.4481

1981	0.850639		
1986	0.887434		
1991	1.015449		
1996	0.990227		
2001	1.037365		
2006	1.083508		
2011	1.131703	1.099198	1.164208
2016	1.182042	1.115115	1.250919
2021	1.234620	1.131262	1.344089
2026	1.289537	1.147644	1.444197

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.500099	1.000000	
1911	0.644501	2.000000	
1916	0.704581	4.000000	
1921	0.740468	8.000000	
1926	0.809704	16.000000	
1931	0.959397	32.000000	
1936	1.038120	64.000000	
1941	1.178357	128.000000	
1946	1.439744	256.000000	
1951	1.518287	512.000000	
1956	1.531553	1024.000000	
1961	1.253244	2048.000000	
1966	0.854838	4096.000000	
1971	0.745934	8192.000000	
1976	0.667176	EXTRAPOLATION	0.274086
1981	0.576123	EXTRAPOLATION	
1986	0.497496	EXTRAPOLATION	
1991	0.429600	EXTRAPOLATION	
1996	0.370970	EXTRAPOLATION	

Osmond and Gardner Modelling

**Switzerland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	6.6	8.1	5.7	4.0	4.3	1.5	-	-	-	-
	EXP	6.7	7.0	6.6	4.4	4.0	3.7	3.4*	3.0*	2.7*	2.5*
	Elow							3.3	2.9	2.5	2.2
	Eup							3.5	3.2	3.0	2.8
35	OBS	25.5	23.4	19.4	18.6	9.7	12.3	-	-	-	-
	EXP	19.1	21.0	24.2	19.3	13.8	12.6	11.7*	10.6*	9.6*	8.6*
	Elow							11.4	10.0	8.8	7.7
	Eup							12.1	11.2	10.4	9.7
40	OBS	46.1	40.2	60.5	70.1	56.1	42.6	-	-	-	-
	EXP	42.3	54.0	65.1	64.0	54.9	39.1	35.6*	33.3*	30.0*	27.1*
	Elow							34.6	31.4	27.5	24.1
	Eup							36.7	35.2	32.7	30.3
45	OBS	73.2	93.8	124.1	122.9	146.7	118.1	-	-	-	-
	EXP	76.6	90.7	126.8	130.4	137.8	117.8	83.9*	76.5*	71.5*	64.4*
	Elow							81.5	72.2	65.5	57.4
	Eup							86.3	80.9	77.8	72.2
50	OBS	111.5	134.5	189.9	228.8	243.9	238.7	-	-	-	-
	EXP	123.6	139.5	181.2	215.9	238.6	251.3	214.8*	153.0*	139.5*	130.3*
	Elow							208.6	144.4	127.8	116.0
	Eup							221.0	162.0	151.9	145.9
55	OBS	176.8	213.7	287.9	289.7	395.0	432.9	-	-	-	-
	EXP	179.5	221.9	274.8	304.1	389.3	428.8	451.8*	386.1*	275.1*	250.7*
	Elow							438.8	364.2	252.0	223.1
	Eup							464.7	408.6	299.5	280.8
60	OBS	242.0	307.6	414.8	403.5	508.6	623.8	-	-	-	-
	EXP	256.8	293.0	397.3	419.2	498.4	636.1	700.6*	738.2*	630.9*	449.5*
	Elow							680.5	696.4	578.1	400.0
	Eup							720.8	781.2	686.9	503.4
65	OBS	354.9	415.4	490.5	583.7	646.6	756.3	-	-	-	-
	EXP	361.4	396.3	495.8	572.9	649.4	769.9	982.6*	1082.2*	1140.3*	974.6*
	Elow							954.3	1021.0	1044.8	867.3
	Eup							1010.8	1145.3	1241.4	1091.4
70	OBS	461.9	512.3	580.0	632.8	755.9	907.9	-	-	-	-
	EXP	435.5	496.7	597.3	636.9	790.6	893.5	1059.3*	1351.9*	1489.0*	1568.9*
	Elow							1028.9	1275.3	1364.4	1396.2
	Eup							1089.8	1430.7	1621.1	1757.0
75	OBS	425.3	539.4	705.1	746.6	835.2	1066.6	-	-	-	-
	EXP	425.3	571.8	715.2	733.0	839.7	1039.2	1174.4*	1392.4*	1776.9*	1957.2*
	Elow							1140.7	1313.6	1628.2	1741.9
	Eup							1208.2	1473.5	1934.5	2192.0
30-79	OBS	141.2	167.2	212.9	229.0	266.6	299.8	-	-	-	-
	EXP	142.6	167.3	212.1	229.6	265.8	301.2	329.4*	347.5*	348.4*	325.5*
	Elow							319.9	327.8	319.2	289.7
	Eup							338.9	367.7	379.3	364.5

Osmond and Gardner Modelling

**Switzerland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

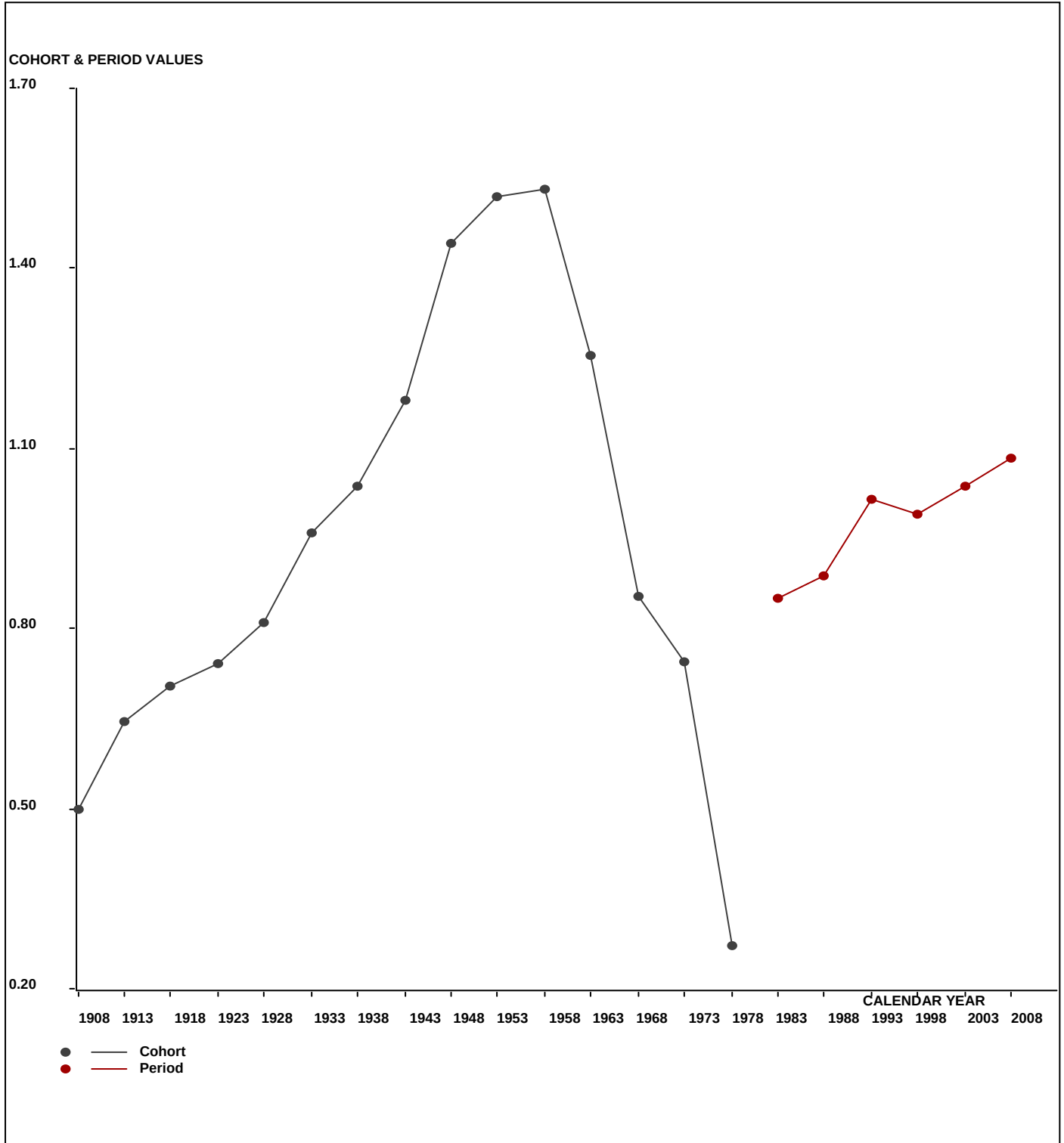
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	8.0	10.0	8.0	6.0	6.0	2.0	-	-	-	-
	EXP	8.1	8.7	9.3	6.6	5.6	4.9	4.7*	4.6*	4.4*	3.9*
	CHI	0.002	0.197	0.170	0.050	0.033	1.690	-	-	-	-
35 -	OBS	31.0	29.0	25.0	27.0	15.0	18.0	-	-	-	-
	EXP	23.2	26.0	31.2	28.0	21.3	18.4	16.3*	15.6*	15.2*	14.5*
	CHI	2.632	0.356	1.228	0.036	1.862	0.011	-	-	-	-
40 -	OBS	50.0	49.0	76.0	91.0	82.0	68.0	-	-	-	-
	EXP	45.9	65.8	81.7	83.2	80.3	62.4	54.1*	47.7*	45.5*	44.4*
	CHI	0.370	4.307	0.404	0.736	0.037	0.496	-	-	-	-
45 -	OBS	72.0	101.0	151.0	153.0	190.0	177.0	-	-	-	-
	EXP	75.4	97.7	154.3	162.4	178.5	176.6	137.1*	118.4*	104.5*	99.6*
	CHI	0.152	0.112	0.069	0.546	0.747	0.001	-	-	-	-
50 -	OBS	106.0	130.0	201.0	272.0	298.0	310.0	-	-	-	-
	EXP	117.6	134.9	191.8	256.7	291.5	326.4	323.0*	249.1*	215.1*	190.1*
	CHI	1.137	0.179	0.437	0.914	0.147	0.822	-	-	-	-
55 -	OBS	162.0	197.0	269.0	295.0	454.0	520.0	-	-	-	-
	EXP	164.5	204.6	256.7	309.7	447.4	515.0	574.7*	566.6*	438.0*	378.4*
	CHI	0.038	0.279	0.589	0.696	0.097	0.048	-	-	-	-
60 -	OBS	195.0	270.0	366.0	359.0	494.0	701.0	-	-	-	-
	EXP	206.9	257.2	350.5	372.9	484.1	714.8	818.7*	908.3*	899.1*	696.7*
	CHI	0.690	0.636	0.685	0.519	0.202	0.268	-	-	-	-
65 -	OBS	255.0	317.0	408.0	488.0	545.0	711.0	-	-	-	-
	EXP	259.7	302.4	412.4	478.9	547.4	723.8	1073.2*	1220.9*	1358.8*	1349.4*
	CHI	0.084	0.708	0.047	0.171	0.011	0.227	-	-	-	-
70 -	OBS	336.0	339.0	412.0	490.0	592.0	724.0	-	-	-	-
	EXP	316.8	328.7	424.3	493.2	619.2	712.5	951.4*	1408.9*	1608.7*	1797.8*
	CHI	1.168	0.323	0.355	0.020	1.195	0.185	-	-	-	-
75 -	OBS	250.0	340.0	411.0	472.0	580.0	768.0	-	-	-	-
	EXP	250.0	360.4	416.9	463.4	583.1	748.2	864.7*	1161.6*	1729.5*	1985.5*
	CHI	0.000	1.154	0.083	0.161	0.016	0.522	-	-	-	-
30-79	OBS	1465.0	1782.0	2327.0	2653.0	3256.0	3999.0	-	-	-	-
	EXP	1468.0	1786.3	2329.1	2654.9	3258.3	4003.2	4817.9*	5701.8*	6418.8*	6560.2*
	O/E	0.998	0.998	0.999	0.999	0.999	0.999	-	-	-	-

Osmond and Gardner Modelling

Switzerland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

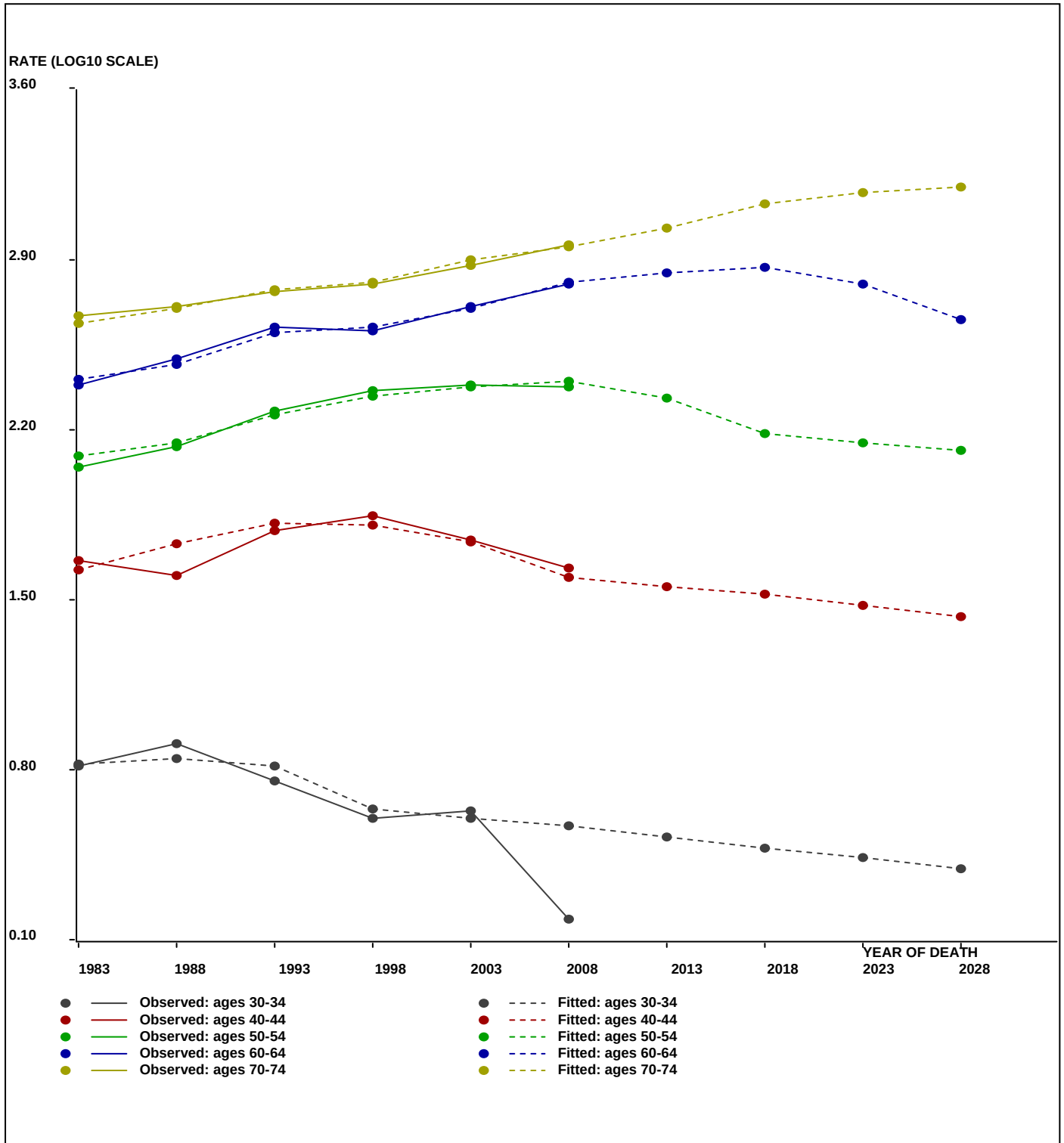


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Switzerland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Switzerland Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	3.4	11.7	35.6	83.9	214.8	451.8	700.6	982.6	1059.3	1174.4
2016	PRE	3.0	10.6	33.3	76.5	153.0	386.1	738.2	1082.2	1351.9	1392.4
2021	PRE	2.7	9.6	30.0	71.5	139.5	275.1	630.9	1140.3	1489.0	1776.9
2026	PRE	2.5	8.6	27.1	64.4	130.3	250.7	449.5	974.6	1568.9	1957.2

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	4.7	16.3	54.1	137.1	323.0	574.7	818.7	1073.2	951.4	864.7
2016	PRE	4.6	15.6	47.7	118.4	249.1	566.6	908.3	1220.9	1408.9	1161.6
2021	PRE	4.4	15.2	45.5	104.5	215.1	438.0	899.1	1358.8	1608.7	1729.5
2026	PRE	3.9	14.5	44.4	99.6	190.1	378.4	696.7	1349.4	1797.8	1985.5

Osmond and Gardner Modelling

Switzerland COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	34.88	0.68	51	P, C	70.92	196.18	0.0000
AGE-PERIOD	28.45	0.63	45	Cohort	64.35	160.49	0.0000
AGE-COHORT	11.93	0.33	36	Period	14.98	63.99	0.0028
PERIOD-COHORT	13.80	0.34	40	Age	26.50	74.19	0.0008
FULL AGE-PERIOD-COHORT	10.14	0.32	32			54.48	0.0079

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.901810	7.976449
35	0.897530	7.898236
40	1.021638	10.510848
45	1.256193	18.038189
50	1.562704	36.534584
55	1.861798	72.744174
60	2.166187	146.618016
65	2.436072	272.943036
70	2.694716	495.126654
75	2.952301	895.984543

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.064038	1.158878
1986	0.064462	1.160011
1991	0.019452	1.045809
1996	-0.005719	0.986918
2001	-0.070539	0.850082
2006	-0.061656	0.867648

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.163410	0.686420
1911	-0.118120	0.761868
1916	-0.028963	0.935486
1921	0.010638	1.024798
1926	0.053313	1.130609
1931	0.014182	1.033193
1936	0.050918	1.124393
1941	0.052977	1.129736
1946	0.061658	1.152544
1951	0.037108	1.089200
1956	-0.088961	0.814777
1961	-0.262601	0.546259
1966	-0.522139	0.300511
1971	-0.584971	0.260033
1976	-1.955332	0.011083

Osmond and Gardner Modelling

Switzerland COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	5.0	14.0	5.0	4.0	2.0	0.1
EXP	12.3	9.3	6.4	3.6	2.5	0.1
CHI	4.3	2.3	0.3	0.1	0.1	0.0
35 - OBS	15.0	14.0	6.0	3.0	3.0	3.0
EXP	12.8	12.4	8.7	6.2	3.1	2.6
CHI	0.4	0.2	0.8	1.6	0.0	0.1
40 - OBS	17.0	19.0	13.0	9.0	7.0	4.0
EXP	14.9	17.1	15.0	11.0	7.1	4.4
CHI	0.3	0.2	0.3	0.4	0.0	0.0
45 - OBS	28.0	30.0	20.0	13.0	16.0	16.0
EXP	23.1	25.5	26.4	24.1	16.2	12.8
CHI	1.0	0.8	1.6	5.1	0.0	0.8
50 - OBS	60.0	35.0	44.0	44.0	37.0	32.0
EXP	41.6	46.1	45.7	49.4	41.3	33.5
CHI	8.1	2.7	0.1	0.6	0.5	0.1
55 - OBS	81.0	84.0	70.0	75.0	84.0	98.0
EXP	87.3	80.4	79.9	82.6	81.9	82.6
CHI	0.5	0.2	1.2	0.7	0.1	2.9
60 - OBS	129.0	146.0	164.0	144.0	139.0	169.0
EXP	140.3	168.8	139.8	144.7	136.8	164.8
CHI	0.9	3.1	4.2	0.0	0.0	0.1
65 - OBS	208.0	249.0	284.0	223.0	217.0	251.0
EXP	212.6	247.6	268.4	232.7	219.9	251.5
CHI	0.1	0.0	0.9	0.4	0.0	0.0
70 - OBS	312.0	361.0	357.0	433.0	338.0	402.0
EXP	318.0	355.6	376.9	427.8	340.6	385.2
CHI	0.1	0.1	1.1	0.1	0.0	0.7
75 - OBS	419.0	505.0	510.0	601.0	604.0	537.0
EXP	419.0	499.1	510.9	572.9	598.0	578.3
CHI	0.0	0.1	0.0	1.4	0.1	3.0

Osmond and Gardner Modelling

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Projections using parameters Log Transformed

AGE	EFFECT
30	7.976449
35	7.898236
40	10.510848
45	18.038189
50	36.534584
55	72.744174
60	146.618016
65	272.943036
70	495.126654
75	895.984543

PERIOD	EFFECT	LOWER	UPPER
% Period Change	102.0664	99.0664	105.0664
1981	1.158878		
1986	1.160011		
1991	1.045809		
1996	0.986918		
2001	0.850082		
2006	0.867648		
2011	0.885578	0.859548	0.911607
2016	0.903878	0.851524	0.957793
2021	0.922556	0.843575	1.006319
2026	0.941620	0.835699	1.057304

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.686420	1.000000	
1911	0.761868	2.000000	
1916	0.935486	4.000000	
1921	1.024798	8.000000	
1926	1.130609	16.000000	
1931	1.033193	32.000000	
1936	1.124393	64.000000	
1941	1.129736	128.000000	
1946	1.152544	256.000000	
1951	1.089200	512.000000	
1956	0.814777	1024.000000	
1961	0.546259	2048.000000	
1966	0.300511	4096.000000	
1971	0.260033	8192.000000	
1976	0.190915	EXTRAPOLATION	0.011083
1981	0.141425	EXTRAPOLATION	
1986	0.104765	EXTRAPOLATION	
1991	0.077607	EXTRAPOLATION	
1996	0.057489	EXTRAPOLATION	

Osmond and Gardner Modelling

**Switzerland COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	4.1	11.3	3.6	2.7	1.4	0.1	-	-	-	-
	EXP	10.1	7.5	4.6	2.4	1.8	1.3	1.0*	0.8*	0.6*	0.4*
	Elow							1.0	0.7	0.5	0.4
	Eup							1.0	0.8	0.6	0.5
35	OBS	12.3	11.3	4.7	2.1	1.9	2.0	-	-	-	-
	EXP	10.5	10.0	6.7	4.3	2.0	1.8	1.3*	1.0*	0.8*	0.6*
	Elow							1.3	1.0	0.7	0.5
	Eup							1.4	1.1	0.8	0.6
40	OBS	15.7	15.6	10.4	6.9	4.8	2.5	-	-	-	-
	EXP	13.8	14.1	12.0	8.5	4.9	2.7	2.4*	1.8*	1.4*	1.0*
	Elow							2.3	1.7	1.3	0.9
	Eup							2.5	1.9	1.5	1.2
45	OBS	28.4	27.9	16.4	10.4	12.4	10.7	-	-	-	-
	EXP	23.5	23.6	21.7	19.4	12.5	8.5	4.8*	4.2*	3.2*	2.4*
	Elow							4.7	4.0	2.9	2.1
	Eup							4.9	4.5	3.5	2.7
50	OBS	63.1	36.2	41.6	37.0	30.3	24.6	-	-	-	-
	EXP	43.7	47.7	43.2	41.6	33.8	25.8	17.7*	9.9*	8.8*	6.6*
	Elow							17.2	9.3	8.0	5.8
	Eup							18.2	10.5	9.6	7.4
55	OBS	88.4	91.1	74.9	73.7	73.1	81.6	-	-	-	-
	EXP	95.3	87.2	85.5	81.1	71.3	68.7	52.5*	35.9*	20.2*	17.8*
	Elow							50.9	33.8	18.4	15.8
	Eup							54.0	38.1	22.0	20.0
60	OBS	160.1	166.3	185.9	161.9	143.1	150.4	-	-	-	-
	EXP	174.1	192.3	158.4	162.7	140.8	146.6	141.4*	108.0*	73.9*	41.5*
	Elow							137.3	101.7	67.6	36.8
	Eup							145.6	114.4	80.6	46.6
65	OBS	289.5	326.3	341.4	266.7	257.4	267.0	-	-	-	-
	EXP	295.9	324.5	322.7	278.3	260.9	267.5	278.6*	268.7*	205.2*	140.4*
	Elow							270.4	253.1	187.6	124.6
	Eup							286.8	284.7	223.8	157.6
70	OBS	428.9	545.5	502.6	559.2	431.6	504.1	-	-	-	-
	EXP	437.2	537.3	530.6	552.5	434.9	483.0	495.4*	515.8*	497.5*	379.9*
	Elow							480.8	485.9	454.9	337.1
	Eup							509.9	546.6	542.7	426.5
75	OBS	712.7	801.2	875.0	950.7	869.8	745.8	-	-	-	-
	EXP	712.7	791.8	876.6	906.2	861.1	803.2	892.2*	914.9*	952.7*	918.9*
	Elow							865.9	861.9	871.1	815.6
	Eup							918.4	969.5	1039.2	1031.8
30-79	OBS	110.3	120.7	118.9	114.7	101.3	101.7	-	-	-	-
	EXP	110.4	121.8	119.2	116.6	101.6	101.0	101.8*	96.9*	87.5*	71.5*
	Elow							98.8	91.3	80.0	63.4
	Eup							104.8	102.7	95.4	80.2

Osmond and Gardner Modelling

**Switzerland COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

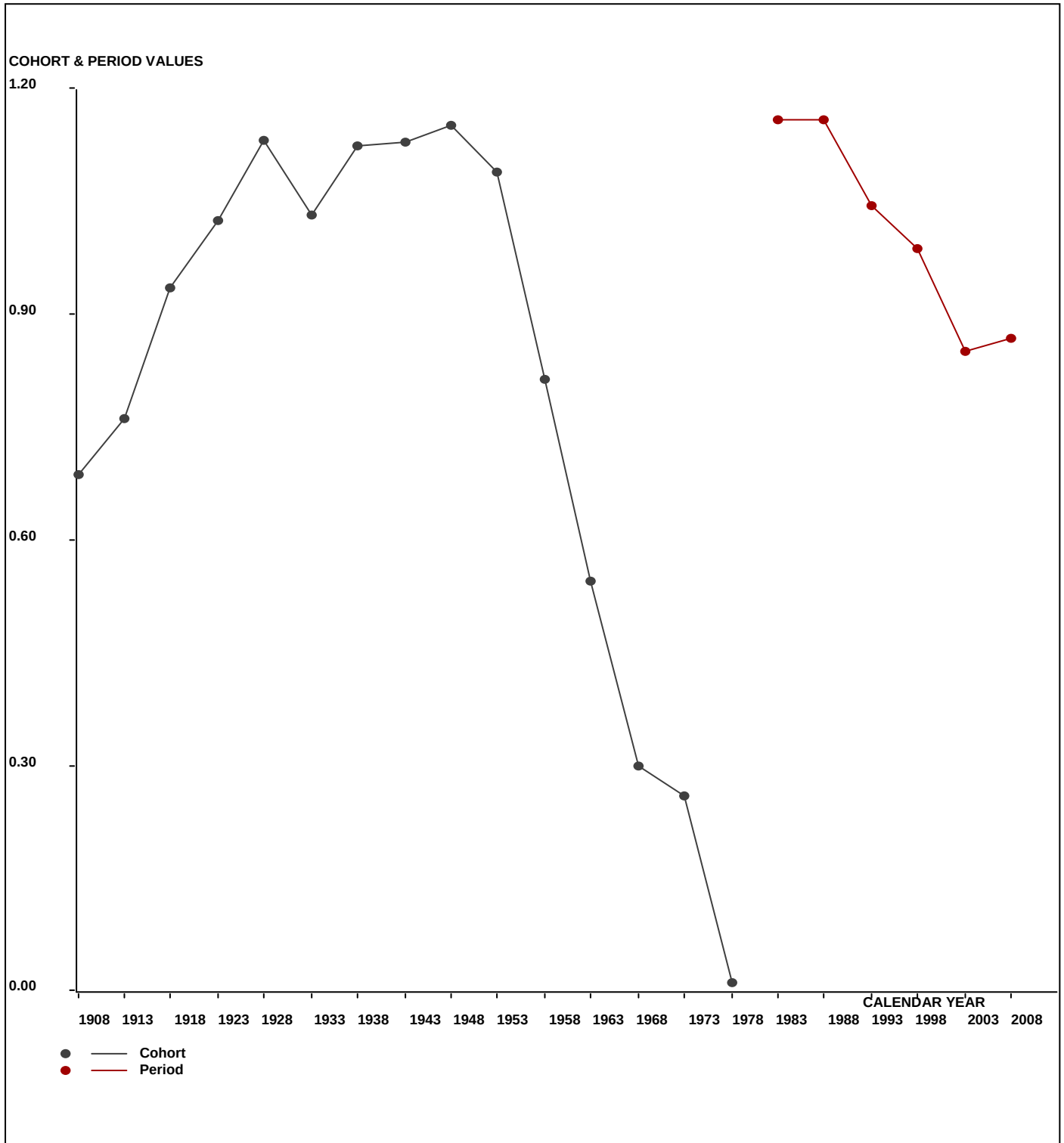
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	5.0	14.0	5.0	4.0	2.0	0.1	-	-	-	-
	EXP	12.3	9.3	6.4	3.6	2.5	1.7	1.4*	1.1*	0.9*	0.7*
	CHI	4.313	2.336	0.312	0.055	0.085	1.528	-	-	-	-
35 -	OBS	15.0	14.0	6.0	3.0	3.0	3.0	-	-	-	-
	EXP	12.8	12.4	8.7	6.2	3.1	2.6	1.8*	1.5*	1.2*	1.0*
	CHI	0.364	0.218	0.825	1.633	0.004	0.057	-	-	-	-
40 -	OBS	17.0	19.0	13.0	9.0	7.0	4.0	-	-	-	-
	EXP	14.9	17.1	15.0	11.0	7.1	4.4	3.7*	2.6*	2.1*	1.7*
	CHI	0.291	0.200	0.275	0.356	0.003	0.032	-	-	-	-
45 -	OBS	28.0	30.0	20.0	13.0	16.0	16.0	-	-	-	-
	EXP	23.1	25.5	26.4	24.1	16.2	12.8	7.8*	6.6*	4.6*	3.7*
	CHI	1.024	0.809	1.572	5.147	0.002	0.790	-	-	-	-
50 -	OBS	60.0	35.0	44.0	44.0	37.0	32.0	-	-	-	-
	EXP	41.6	46.1	45.7	49.4	41.3	33.5	26.6*	16.2*	13.5*	9.6*
	CHI	8.134	2.661	0.063	0.590	0.454	0.071	-	-	-	-
55 -	OBS	81.0	84.0	70.0	75.0	84.0	98.0	-	-	-	-
	EXP	87.3	80.4	79.9	82.6	81.9	82.6	66.8*	52.7*	32.1*	26.9*
	CHI	0.459	0.164	1.231	0.697	0.053	2.880	-	-	-	-
60 -	OBS	129.0	146.0	164.0	144.0	139.0	169.0	-	-	-	-
	EXP	140.3	168.8	139.8	144.7	136.8	164.8	165.3*	132.9*	105.3*	64.3*
	CHI	0.910	3.080	4.197	0.004	0.037	0.109	-	-	-	-
65 -	OBS	208.0	249.0	284.0	223.0	217.0	251.0	-	-	-	-
	EXP	212.6	247.6	268.4	232.7	219.9	251.5	304.3*	303.1*	244.5*	194.4*
	CHI	0.099	0.008	0.902	0.402	0.038	0.001	-	-	-	-
70 -	OBS	312.0	361.0	357.0	433.0	338.0	402.0	-	-	-	-
	EXP	318.0	355.6	376.9	427.8	340.6	385.2	444.9*	537.6*	537.5*	435.3*
	CHI	0.112	0.083	1.055	0.064	0.020	0.734	-	-	-	-
75 -	OBS	419.0	505.0	510.0	601.0	604.0	537.0	-	-	-	-
	EXP	419.0	499.1	510.9	572.9	598.0	578.3	656.9*	763.3*	927.3*	932.2*
	CHI	0.000	0.069	0.002	1.382	0.060	2.955	-	-	-	-
30-79	OBS	1274.0	1457.0	1473.0	1549.0	1447.0	1512.1	-	-	-	-
	EXP	1282.0	1461.8	1478.3	1554.9	1447.4	1517.5	1679.4*	1817.5*	1869.0*	1669.7*
	O/E	0.994	0.997	0.996	0.996	1.000	0.996	-	-	-	-

Osmond and Gardner Modelling

Switzerland COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

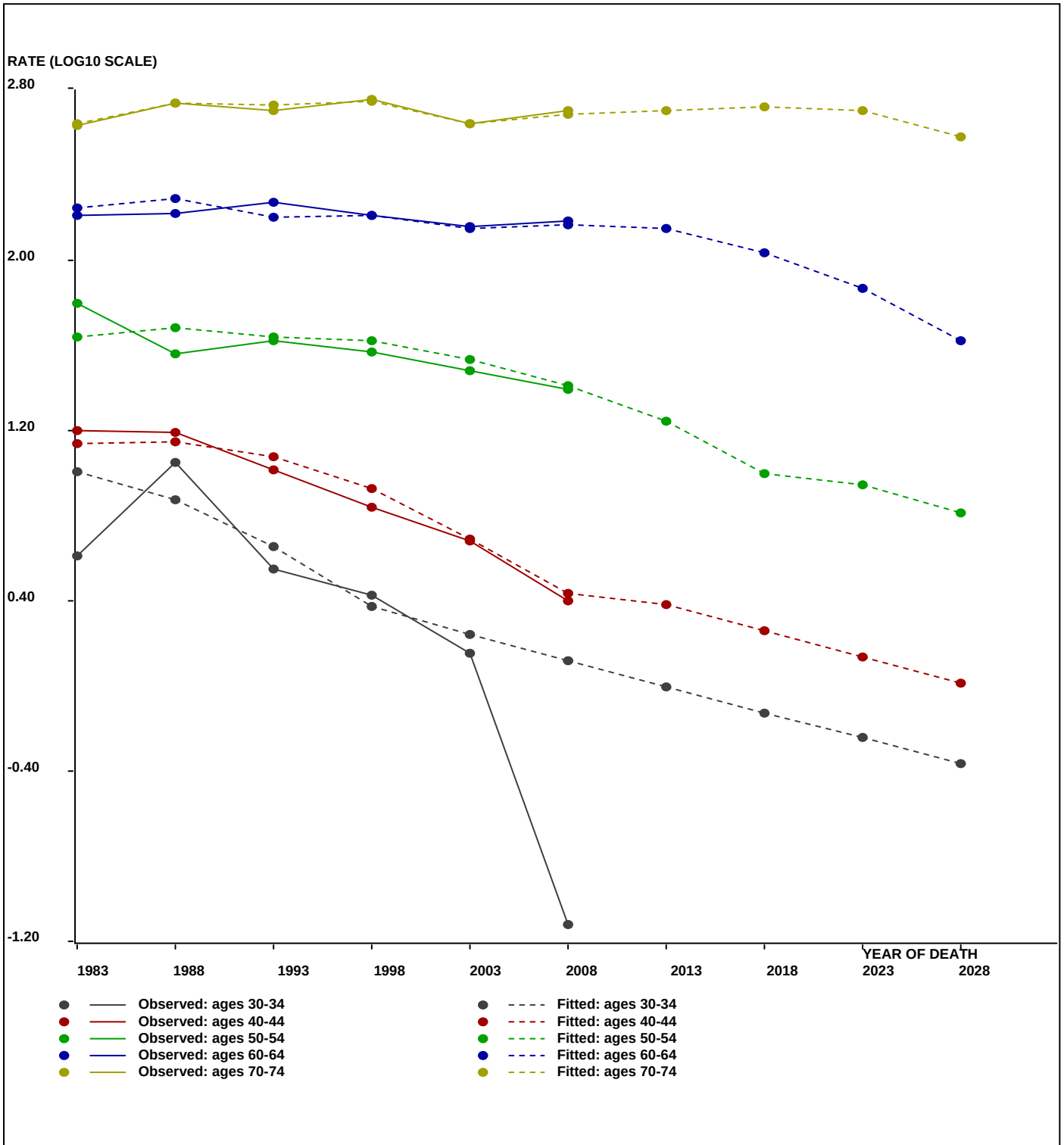


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

Switzerland COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

Switzerland COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	1.0	1.3	2.4	4.8	17.7	52.5	141.4	278.6	495.4	892.2
2016 PRE	0.8	1.0	1.8	4.2	9.9	35.9	108.0	268.7	515.8	914.9
2021 PRE	0.6	0.8	1.4	3.2	8.8	20.2	73.9	205.2	497.5	952.7
2026 PRE	0.4	0.6	1.0	2.4	6.6	17.8	41.5	140.4	379.9	918.9

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	1.4	1.8	3.7	7.8	26.6	66.8	165.3	304.3	444.9	656.9
2016 PRE	1.1	1.5	2.6	6.6	16.2	52.7	132.9	303.1	537.6	763.3
2021 PRE	0.9	1.2	2.1	4.6	13.5	32.1	105.3	244.5	537.5	927.3
2026 PRE	0.7	1.0	1.7	3.7	9.6	26.9	64.3	194.4	435.3	932.2

Osmond and Gardner Modelling

UK IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	48728.58	955.46	51	P, C	99.79	268186.36	0.0000
AGE-PERIOD	1437.72	31.95	45	Cohort	92.96	7631.01	0.0000
AGE-COHORT	791.30	21.98	36	Period	87.21	4197.98	0.0000
PERIOD-COHORT	626.93	15.67	40	Age	83.86	3326.90	0.0000
FULL AGE-PERIOD-COHORT	101.18	3.16	32			536.58	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.987769	97.222907
35	2.476762	299.751659
40	2.868641	738.994704
45	3.174781	1495.481400
50	3.410271	2572.002641
55	3.604153	4019.326254
60	3.779938	6024.737877
65	3.941622	8742.233627
70	4.101493	12632.606813
75	4.253977	17946.386975

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.106413	1.277652
1986	0.073196	1.183576
1991	0.021246	1.050138
1996	-0.054928	0.881194
2001	-0.145319	0.715617
2006	-0.250903	0.561174

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.070432	1.176067
1911	0.075394	1.189580
1916	0.072460	1.181571
1921	0.068250	1.170173
1926	0.023326	1.055178
1931	-0.023077	0.948250
1936	-0.091448	0.810124
1941	-0.151148	0.706077
1946	-0.202915	0.626736
1951	-0.232339	0.585681
1956	-0.235203	0.581831
1961	-0.260573	0.548817
1966	-0.263954	0.544560
1971	-0.219721	0.602946
1976	-0.161010	0.690223

Osmond and Gardner Modelling

UK IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	825.0	676.0	548.0	471.0	451.0	371.0
EXP	724.9	654.1	615.7	537.1	454.5	371.0
CHI	13.8	0.7	7.4	8.1	0.0	0.0
35 - OBS	2504.0	2148.0	1675.0	1429.0	1328.0	1112.0
EXP	2351.1	2044.9	1777.0	1580.6	1351.9	1108.6
CHI	9.9	5.2	5.9	14.5	0.4	0.0
40 - OBS	5847.0	5409.0	4180.0	3403.0	3158.0	2696.0
EXP	5540.0	5307.2	4441.2	3664.7	3156.2	2611.8
CHI	17.0	2.0	15.4	18.7	0.0	2.7
45 - OBS	12865.0	10284.0	8860.0	6893.0	5966.0	5162.0
EXP	12114.7	10182.8	9402.1	7459.0	5976.8	4960.0
CHI	46.5	1.0	31.3	42.9	0.0	8.2
50 - OBS	24332.0	19078.0	14527.0	12881.0	10150.0	8233.0
EXP	23864.4	18756.5	15198.8	13304.1	10213.1	7900.3
CHI	9.2	5.5	29.7	13.5	0.4	14.0
55 - OBS	41962.0	33225.0	24763.0	19284.0	16284.0	12746.0
EXP	42476.8	32975.8	25047.5	19315.5	16356.1	12114.4
CHI	6.2	1.9	3.2	0.1	0.3	32.9
60 - OBS	63293.0	53950.0	40935.0	30006.0	22717.0	19083.0
EXP	64324.9	54324.8	40930.7	29787.9	22300.9	18343.8
CHI	16.6	2.6	0.0	1.6	7.8	29.8
65 - OBS	77107.0	75789.0	62281.0	45499.0	32261.0	23247.0
EXP	78060.4	75687.0	61896.0	44987.2	32167.8	23396.2
CHI	11.6	0.1	2.4	5.8	0.3	1.0
70 - OBS	97986.0	84054.0	80423.0	63154.0	45088.0	31149.0
EXP	97330.5	84031.7	79858.8	62794.1	45571.0	32296.4
CHI	4.4	0.0	4.0	2.1	5.1	40.8
75 - OBS	89352.0	90432.0	78432.0	72409.0	56635.0	40586.0
EXP	89352.0	91092.1	77512.2	72054.6	56497.1	41354.0
CHI	0.0	4.8	10.9	1.7	0.3	14.3

Osmond and Gardner Modelling

UK IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	97.222907
35	299.751659
40	738.994704
45	1495.481400
50	2572.002641
55	4019.326254
60	6024.737877
65	8742.233627
70	12632.606813
75	17946.386975

PERIOD	EFFECT	LOWER	UPPER
% Period Change	78.4181	75.4181	81.4181
1981	1.277652		
1986	1.183576		
1991	1.050138		
1996	0.881194		
2001	0.715617		
2006	0.561174		
2011	0.440062	0.423227	0.456897
2016	0.345088	0.319190	0.371997
2021	0.270612	0.240727	0.302873
2026	0.212209	0.181552	0.246594

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.176067	1.000000	
1911	1.189580	2.000000	
1916	1.181571	4.000000	
1921	1.170173	8.000000	
1926	1.055178	16.000000	
1931	0.948250	32.000000	
1936	0.810124	64.000000	
1941	0.706077	128.000000	
1946	0.626736	256.000000	
1951	0.585681	512.000000	
1956	0.581831	1024.000000	
1961	0.548817	2048.000000	
1966	0.544560	4096.000000	
1971	0.602946	8192.000000	
1976	0.574424	EXTRAPOLATION	0.690223
1981	0.570662	EXTRAPOLATION	
1986	0.566925	EXTRAPOLATION	
1991	0.563212	EXTRAPOLATION	
1996	0.559524	EXTRAPOLATION	

Osmond and Gardner Modelling

**UK IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	82.8	69.2	49.9	40.9	41.6	37.7	-	-	-	-
	EXP	72.8	67.0	56.0	46.7	41.9	31.3	24.4*	19.0*	14.8*	11.5*
	Elow							23.5	17.6	13.2	9.9
	Eup							25.3	20.5	16.6	13.4
35	OBS	255.6	218.3	172.6	131.1	114.7	101.7	-	-	-	-
	EXP	240.0	207.8	183.1	145.0	116.8	101.4	75.8*	59.0*	46.0*	35.8*
	Elow							72.9	54.6	40.9	30.7
	Eup							78.7	63.6	51.5	41.6
40	OBS	703.6	558.7	427.8	351.8	290.4	233.1	-	-	-	-
	EXP	666.7	548.2	454.5	378.9	290.2	225.8	196.1*	146.5*	114.1*	88.9*
	Elow							188.6	135.5	101.5	76.1
	Eup							203.6	157.9	127.7	103.3
45	OBS	1643.8	1262.2	927.5	713.3	621.6	479.3	-	-	-	-
	EXP	1547.9	1249.8	984.3	771.8	622.7	460.6	358.4*	311.2*	232.5*	181.1*
	Elow							344.7	287.8	206.8	154.9
	Eup							372.1	335.4	260.2	210.4
50	OBS	3177.1	2508.4	1822.8	1375.3	1071.3	875.1	-	-	-	-
	EXP	3116.1	2466.1	1907.1	1420.5	1078.0	839.8	621.2*	483.3*	419.7*	313.5*
	Elow							597.4	447.1	373.3	268.2
	Eup							644.9	521.0	469.7	364.3
55	OBS	5353.0	4545.1	3380.6	2496.7	1794.7	1389.9	-	-	-	-
	EXP	5418.7	4511.0	3419.4	2500.8	1802.7	1321.0	1029.1*	761.2*	592.3*	514.3*
	Elow							989.7	704.1	526.9	440.0
	Eup							1068.5	820.6	662.9	597.6
60	OBS	8862.9	7472.3	6000.0	4332.4	3101.0	2204.3	-	-	-	-
	EXP	9007.4	7524.2	5999.4	4300.9	3044.2	2118.9	1552.8*	1209.7*	894.8*	696.2*
	Elow							1493.4	1118.9	796.0	595.6
	Eup							1612.2	1304.0	1001.4	809.0
65	OBS	13036.4	12124.2	9747.4	7388.0	5082.9	3441.9	-	-	-	-
	EXP	13197.6	12107.9	9687.1	7304.9	5068.2	3464.0	2411.1*	1766.9*	1376.5*	1018.2*
	Elow							2318.9	1634.3	1224.5	871.1
	Eup							2503.4	1904.7	1540.6	1183.1
70	OBS	19329.2	17671.1	15633.2	11813.3	8481.4	5539.0	-	-	-	-
	EXP	19199.9	17666.4	15523.5	11746.0	8572.3	5743.0	3925.2*	2732.2*	2002.2*	1559.7*
	Elow							3775.0	2527.1	1781.1	1334.4
	Eup							4075.3	2945.2	2240.9	1812.5
75	OBS	26966.3	25084.6	22532.3	18596.4	13584.5	9372.5	-	-	-	-
	EXP	26966.3	25267.8	22268.1	18505.4	13551.4	9549.9	6398.0*	4372.8*	3043.7*	2230.5*
	Elow							6153.2	4044.6	2707.6	1908.3
	Eup							6642.7	4713.8	3406.6	2591.9
30-79	OBS	5118.9	4520.5	3728.0	2856.6	2076.3	1465.1	-	-	-	-
	EXP	5115.9	4516.8	3735.7	2860.3	2075.9	1460.3	1037.9*	759.2*	571.2*	439.9*
	Elow							998.2	702.3	508.1	376.4
	Eup							1077.6	818.5	639.3	511.2

Osmond and Gardner Modelling

**UK IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

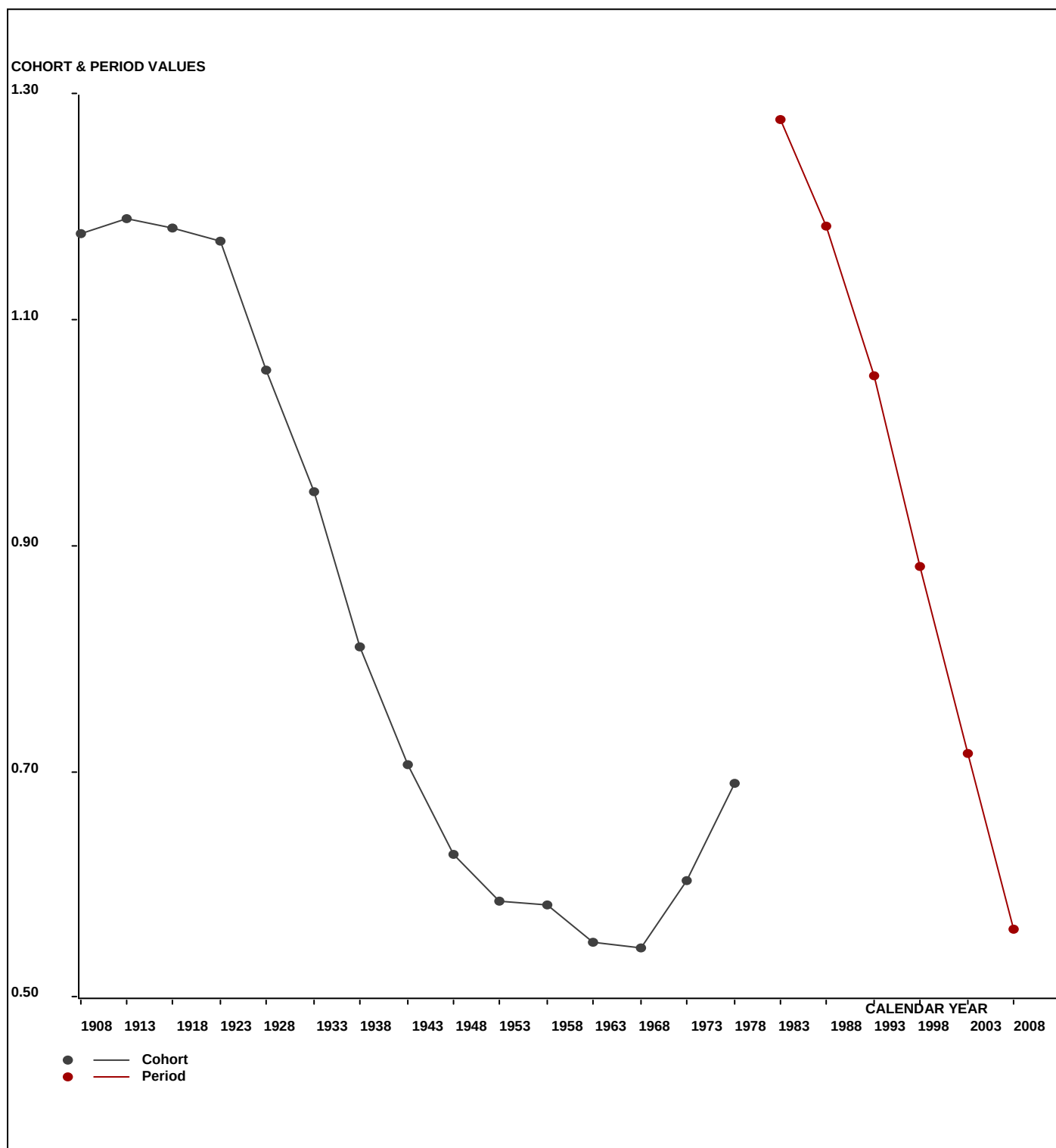
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	825.0	676.0	548.0	471.0	451.0	371.0	-	-	-	-
	EXP	724.9	654.1	615.7	537.1	454.5	308.8	254.1*	214.3*	164.9*	122.0*
	CHI	13.836	0.736	7.436	8.131	0.026	12.548	-	-	-	-
35 -	OBS	2504.0	2148.0	1675.0	1429.0	1328.0	1112.0	-	-	-	-
	EXP	2351.1	2044.9	1777.0	1580.6	1351.9	1108.6	756.3*	624.5*	524.8*	404.1*
	CHI	9.937	5.199	5.855	14.545	0.423	0.011	-	-	-	-
40 -	OBS	5847.0	5409.0	4180.0	3403.0	3158.0	2696.0	-	-	-	-
	EXP	5540.0	5307.2	4441.2	3664.7	3156.2	2611.8	2147.7*	1474.4*	1214.4*	1020.5*
	CHI	17.010	1.953	15.360	18.689	0.001	2.714	-	-	-	-
45 -	OBS	12865.0	10284.0	8860.0	6893.0	5966.0	5162.0	-	-	-	-
	EXP	12114.7	10182.8	9402.1	7459.0	5976.8	4960.0	4120.4*	3406.7*	2337.4*	1927.1*
	CHI	46.473	1.005	31.258	42.947	0.019	8.229	-	-	-	-
50 -	OBS	24332.0	19078.0	14527.0	12881.0	10150.0	8233.0	-	-	-	-
	EXP	23864.4	18756.5	15198.8	13304.1	10213.1	7900.3	6592.8*	5506.9*	4551.0*	3130.1*
	CHI	9.161	5.512	29.695	13.456	0.390	14.009	-	-	-	-
55 -	OBS	41962.0	33225.0	24763.0	19284.0	16284.0	12746.0	-	-	-	-
	EXP	42476.8	32975.8	25047.5	19315.5	16356.1	12114.4	9426.2*	7924.5*	6618.4*	5484.2*
	CHI	6.238	1.883	3.232	0.051	0.318	32.930	-	-	-	-
60 -	OBS	63293.0	53950.0	40935.0	30006.0	22717.0	19083.0	-	-	-	-
	EXP	64324.9	54324.8	40930.7	29787.9	22300.9	18343.8	13661.3*	10711.4*	9012.7*	7552.5*
	CHI	16.553	2.586	0.000	1.598	7.762	29.789	-	-	-	-
65 -	OBS	77107.0	75789.0	62281.0	45499.0	32261.0	23247.0	-	-	-	-
	EXP	78060.4	75687.0	61896.0	44987.2	32167.8	23396.2	19514.6*	14659.2*	11550.0*	9763.1*
	CHI	11.645	0.137	2.395	5.822	0.270	0.952	-	-	-	-
70 -	OBS	97986.0	84054.0	80423.0	63154.0	45088.0	31149.0	-	-	-	-
	EXP	97330.5	84031.7	79858.8	62794.1	45571.0	32296.4	23753.8*	20103.9*	15165.0*	12068.8*
	CHI	4.415	0.006	3.986	2.062	5.119	40.764	-	-	-	-
75 -	OBS	89352.0	90432.0	78432.0	72409.0	56635.0	40586.0	-	-	-	-
	EXP	89352.0	91092.1	77512.2	72054.6	56497.1	41354.0	30050.7*	22432.3*	19263.8*	14639.5*
	CHI	0.000	4.784	10.915	1.743	0.337	14.264	-	-	-	-
30-79	OBS	416073.0	375045.0	316624.0	255429.0	194038.0	144385.0	-	-	-	-
	EXP	416139.7	375056.8	316679.9	255484.8	194045.3	144394.2	110278.0*	87058.2*	70402.4*	56111.9*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

UK IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

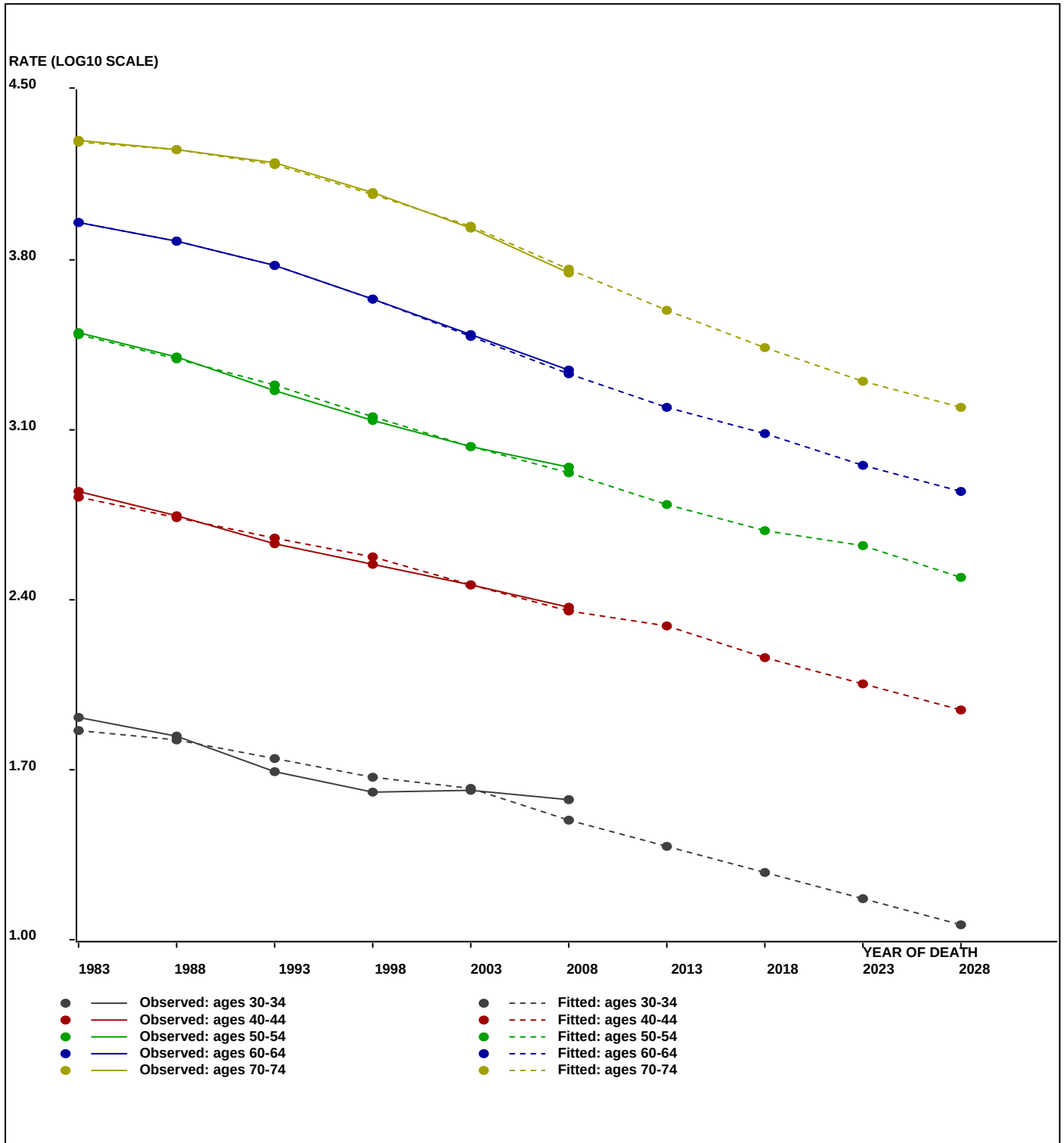


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

UK IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

UK IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	24.4	75.8	196.1	358.4	621.2	1029.1	1552.8	2411.1	3925.2	6398.0
2016	PRE	19.0	59.0	146.5	311.2	483.3	761.2	1209.7	1766.9	2732.2	4372.8
2021	PRE	14.8	46.0	114.1	232.5	419.7	592.3	894.8	1376.5	2002.2	3043.7
2026	PRE	11.5	35.8	88.9	181.1	313.5	514.3	696.2	1018.2	1559.7	2230.5

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	254.1	756.3	2147.7	4120.4	6592.8	9426.2	13661.3	19514.6	23753.8	30050.7
2016	PRE	214.3	624.5	1474.4	3406.7	5506.9	7924.5	10711.4	14659.2	20103.9	22432.3
2021	PRE	164.9	524.8	1214.4	2337.4	4551.0	6618.4	9012.7	11550.0	15165.0	19263.8
2026	PRE	122.0	404.1	1020.5	1927.1	3130.1	5484.2	7552.5	9763.1	12068.8	14639.5

Osmond and Gardner Modelling

UK Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	9667.91	189.57	51	P, C	99.71	52637.62	0.0000
AGE-PERIOD	217.33	4.83	45	Cohort	86.98	1155.73	0.0000
AGE-COHORT	122.07	3.39	36	Period	76.81	647.50	0.0000
PERIOD-COHORT	85.05	2.13	40	Age	66.72	451.30	0.0000
FULL AGE-PERIOD-COHORT	28.30	0.88	32			150.08	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.592127	39.095550
35	1.847282	70.352973
40	2.103114	126.798426
45	2.350904	224.338664
50	2.574938	375.783475
55	2.790917	617.898080
60	3.037466	1090.098757
65	3.291110	1954.836438
70	3.560917	3638.454544
75	3.820218	6610.247109

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.100822	1.261310
1986	0.058465	1.144104
1991	0.004337	1.010036
1996	-0.045108	0.901347
2001	-0.084533	0.823127
2006	-0.202152	0.627839

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.096484	1.248776
1911	0.089827	1.229779
1916	0.065684	1.163280
1921	0.029275	1.069733
1926	-0.017135	0.961314
1931	-0.056703	0.877600
1936	-0.117542	0.762884
1941	-0.163688	0.685980
1946	-0.181850	0.657886
1951	-0.177083	0.665147
1956	-0.139190	0.725788
1961	-0.146856	0.713090
1966	-0.127177	0.746145
1971	-0.133228	0.735820
1976	-0.055114	0.880817

Osmond and Gardner Modelling

UK Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	340.0	341.0	306.0	290.0	233.0	213.0
EXP	326.8	317.1	309.4	302.7	256.5	213.0
CHI	0.5	1.8	0.0	0.5	2.2	0.0
35 - OBS	636.0	503.0	488.0	461.0	476.0	377.0
EXP	571.8	526.9	500.4	493.0	500.1	355.2
CHI	7.2	1.1	0.3	2.1	1.2	1.3
40 - OBS	907.0	888.0	825.0	802.0	821.0	722.0
EXP	911.7	924.0	832.4	802.3	809.4	687.0
CHI	0.0	1.4	0.1	0.0	0.2	1.8
45 - OBS	1661.0	1415.0	1415.0	1353.0	1266.0	1104.0
EXP	1689.5	1434.6	1424.0	1299.8	1286.4	1081.6
CHI	0.5	0.3	0.1	2.2	0.3	0.5
50 - OBS	3079.0	2385.0	2117.0	2209.0	1985.0	1619.0
EXP	3185.7	2494.6	2075.0	2087.1	1949.2	1610.9
CHI	3.6	4.8	0.8	7.1	0.7	0.0
55 - OBS	5749.0	4430.0	3591.0	3119.0	3058.0	2292.0
EXP	5873.1	4535.3	3487.6	2950.9	3035.9	2366.3
CHI	2.6	2.4	3.1	9.6	0.2	2.3
60 - OBS	10439.0	8559.0	6681.0	5455.0	4482.0	3723.0
EXP	10503.7	8656.4	6592.4	5191.5	4509.2	3897.9
CHI	0.4	1.1	1.2	13.4	0.2	7.8
65 - OBS	17018.0	15240.0	12062.0	9496.0	7707.0	5520.0
EXP	16965.0	14955.6	12127.8	9523.0	7791.1	5686.5
CHI	0.2	5.4	0.4	0.1	0.9	4.9
70 - OBS	28800.0	23297.0	20402.0	16703.0	13640.0	9643.0
EXP	28609.9	23033.6	20223.8	16854.0	13972.4	9800.2
CHI	1.3	3.0	1.6	1.4	7.9	2.5
75 - OBS	34499.0	33338.0	26715.0	24412.0	22238.0	16240.0
EXP	34499.0	33529.3	27035.0	24816.9	21806.8	15771.9
CHI	0.0	1.1	3.8	6.6	8.5	13.9

Osmond and Gardner Modelling

UK Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	39.095550
35	70.352973
40	126.798426
45	224.338664
50	375.783475
55	617.898080
60	1090.098757
65	1954.836438
70	3638.454544
75	6610.247109

PERIOD	EFFECT	LOWER	UPPER
% Period Change	76.2749	73.2749	79.2749
1981	1.261310		
1986	1.144104		
1991	1.010036		
1996	0.901347		
2001	0.823127		
2006	0.627839		
2011	0.478884	0.460048	0.497719
2016	0.365268	0.337100	0.394566
2021	0.278608	0.247010	0.312792
2026	0.212508	0.180996	0.247965

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.248776	1.000000	
1911	1.229779	2.000000	
1916	1.163280	4.000000	
1921	1.069733	8.000000	
1926	0.961314	16.000000	
1931	0.877600	32.000000	
1936	0.762884	64.000000	
1941	0.685980	128.000000	
1946	0.657886	256.000000	
1951	0.665147	512.000000	
1956	0.725788	1024.000000	
1961	0.713090	2048.000000	
1966	0.746145	4096.000000	
1971	0.735820	8192.000000	
1976	0.743317	EXTRAPOLATION	0.880817
1981	0.749197	EXTRAPOLATION	
1986	0.755123	EXTRAPOLATION	
1991	0.761097	EXTRAPOLATION	
1996	0.767117	EXTRAPOLATION	

Osmond and Gardner Modelling

**UK Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	34.1	34.9	27.8	25.2	21.5	21.6	-	-	-	-
	EXP	32.8	32.5	28.2	26.3	23.7	18.2	14.0*	10.8*	8.3*	6.4*
	Elow							13.5	10.0	7.3	5.4
	Eup							14.6	11.6	9.3	7.4
35	OBS	64.9	51.1	50.3	42.3	41.1	34.5	-	-	-	-
	EXP	58.4	53.5	51.6	45.2	43.2	32.5	25.0*	19.3*	14.8*	11.4*
	Elow							24.1	17.8	13.1	9.7
	Eup							26.0	20.8	16.6	13.3
40	OBS	109.1	91.7	84.4	82.9	75.5	62.4	-	-	-	-
	EXP	109.7	95.4	85.2	82.9	74.4	59.4	44.7*	34.4*	26.5*	20.3*
	Elow							42.9	31.8	23.5	17.3
	Eup							46.4	37.2	29.7	23.7
45	OBS	212.2	173.7	148.1	140.0	131.9	102.5	-	-	-	-
	EXP	215.9	176.1	149.1	134.5	134.0	100.4	80.2*	60.3*	46.5*	35.7*
	Elow							77.0	55.6	41.2	30.4
	Eup							83.3	65.1	52.2	41.7
50	OBS	402.0	313.6	265.6	235.9	209.5	172.1	-	-	-	-
	EXP	416.0	328.0	260.4	222.8	205.7	171.2	128.3*	102.4*	77.0*	59.4*
	Elow							123.3	94.5	68.3	50.6
	Eup							133.4	110.6	86.5	69.3
55	OBS	733.4	606.0	490.2	403.8	337.0	249.9	-	-	-	-
	EXP	749.2	620.4	476.1	382.1	334.6	258.0	214.8*	160.9*	128.4*	96.6*
	Elow							206.3	148.5	113.9	82.3
	Eup							223.2	173.9	144.2	112.7
60	OBS	1461.8	1185.5	979.3	787.6	611.8	430.1	-	-	-	-
	EXP	1470.8	1198.9	966.3	749.6	615.5	450.3	347.2*	289.0*	216.6*	172.8*
	Elow							333.6	266.7	192.0	147.2
	Eup							360.9	312.2	243.1	201.7
65	OBS	2877.2	2438.0	1887.8	1541.9	1214.3	817.3	-	-	-	-
	EXP	2868.2	2392.5	1898.1	1546.3	1227.5	841.9	615.9*	474.9*	395.3*	296.2*
	Elow							591.6	438.3	350.5	252.3
	Eup							640.1	513.0	443.8	345.7
70	OBS	5681.2	4897.9	3965.9	3124.4	2565.8	1714.7	-	-	-	-
	EXP	5643.7	4842.5	3931.2	3152.6	2628.3	1742.7	1195.2*	874.3*	674.3*	561.2*
	Elow							1148.2	806.9	597.8	478.0
	Eup							1242.3	944.5	757.0	654.8
75	OBS	10411.8	9247.5	7674.8	6269.6	5334.0	3750.3	-	-	-	-
	EXP	10411.8	9300.6	7766.7	6373.6	5230.6	3642.2	2414.9*	1656.3*	1211.6*	934.4*
	Elow							2320.0	1528.6	1074.2	795.8
	Eup							2509.9	1789.2	1360.3	1090.2
30-79	OBS	1215.3	1039.3	848.6	693.2	575.6	405.7	-	-	-	-
	EXP	1216.5	1040.3	847.8	691.1	576.5	406.4	290.0*	215.2*	165.3*	129.3*
	Elow							278.6	198.6	146.6	110.2
	Eup							301.4	232.5	185.6	150.9

Osmond and Gardner Modelling

**UK Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

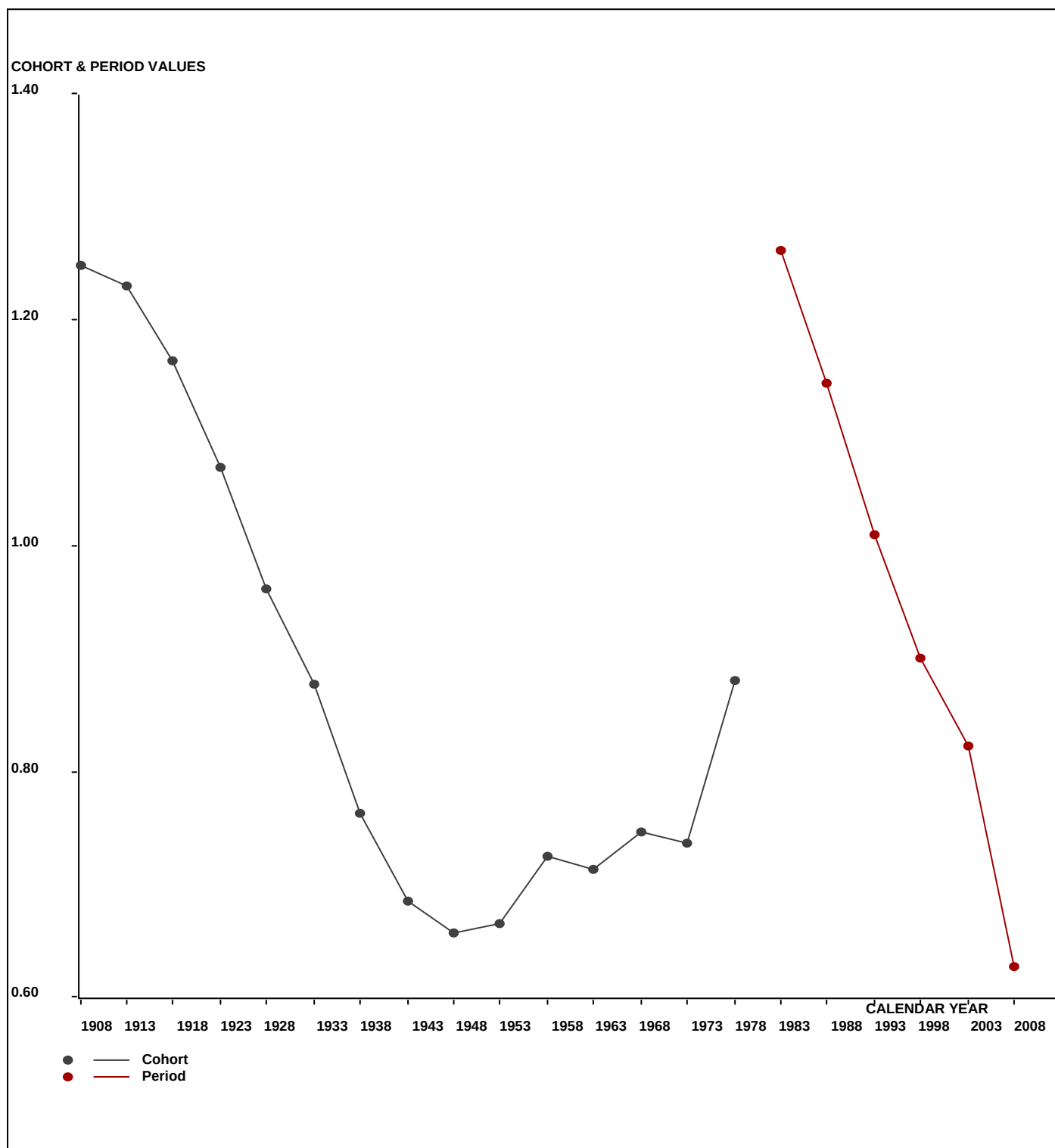
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	340.0	341.0	306.0	290.0	233.0	213.0	-	-	-	-
	EXP	326.8	317.1	309.4	302.7	256.5	179.7	146.0*	121.5*	92.2*	67.3*
	CHI	0.534	1.794	0.037	0.532	2.157	6.151	-	-	-	-
35 -	OBS	636.0	503.0	488.0	461.0	476.0	377.0	-	-	-	-
	EXP	571.8	526.9	500.4	493.0	500.1	355.2	250.0*	203.7*	168.9*	128.4*
	CHI	7.198	1.083	0.307	2.083	1.159	1.332	-	-	-	-
40 -	OBS	907.0	888.0	825.0	802.0	821.0	722.0	-	-	-	-
	EXP	911.7	924.0	832.4	802.3	809.4	687.0	489.4*	346.5*	281.6*	233.6*
	CHI	0.024	1.402	0.065	0.000	0.168	1.786	-	-	-	-
45 -	OBS	1661.0	1415.0	1415.0	1353.0	1266.0	1104.0	-	-	-	-
	EXP	1689.5	1434.6	1424.0	1299.8	1286.4	1081.6	921.6*	660.1*	467.1*	380.1*
	CHI	0.480	0.267	0.057	2.177	0.325	0.464	-	-	-	-
50 -	OBS	3079.0	2385.0	2117.0	2209.0	1985.0	1619.0	-	-	-	-
	EXP	3185.7	2494.6	2075.0	2087.1	1949.2	1610.9	1362.0*	1166.9*	835.4*	592.6*
	CHI	3.572	4.812	0.849	7.123	0.656	0.040	-	-	-	-
55 -	OBS	5749.0	4430.0	3591.0	3119.0	3058.0	2292.0	-	-	-	-
	EXP	5873.1	4535.3	3487.6	2950.9	3035.9	2366.3	1967.1*	1675.5*	1435.3*	1030.3*
	CHI	2.620	2.443	3.066	9.580	0.160	2.334	-	-	-	-
60 -	OBS	10439.0	8559.0	6681.0	5455.0	4482.0	3723.0	-	-	-	-
	EXP	10503.7	8656.4	6592.4	5191.5	4509.2	3897.9	3054.9*	2559.0*	2181.5*	1875.0*
	CHI	0.398	1.095	1.192	13.372	0.164	7.850	-	-	-	-
65 -	OBS	17018.0	15240.0	12062.0	9496.0	7707.0	5520.0	-	-	-	-
	EXP	16965.0	14955.6	12127.8	9523.0	7791.1	5686.5	4984.6*	3940.4*	3316.9*	2840.6*
	CHI	0.166	5.408	0.356	0.076	0.909	4.874	-	-	-	-
70 -	OBS	28800.0	23297.0	20402.0	16703.0	13640.0	9643.0	-	-	-	-
	EXP	28609.9	23033.6	20223.8	16854.0	13972.4	9800.2	7233.2*	6433.6*	5107.0*	4342.2*
	CHI	1.264	3.013	1.571	1.353	7.909	2.522	-	-	-	-
75 -	OBS	34499.0	33338.0	26715.0	24412.0	22238.0	16240.0	-	-	-	-
	EXP	34499.0	33529.3	27035.0	24816.9	21806.8	15771.9	11342.8*	8496.8*	7668.2*	6132.4*
	CHI	0.000	1.092	3.787	6.607	8.526	13.895	-	-	-	-
30-79	OBS	103128.0	90396.0	74602.0	64300.0	55906.0	41453.0	-	-	-	-
	EXP	103136.0	90407.2	74607.6	64321.2	55917.1	41437.3	31751.5*	25603.9*	21554.2*	17622.6*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

UK Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

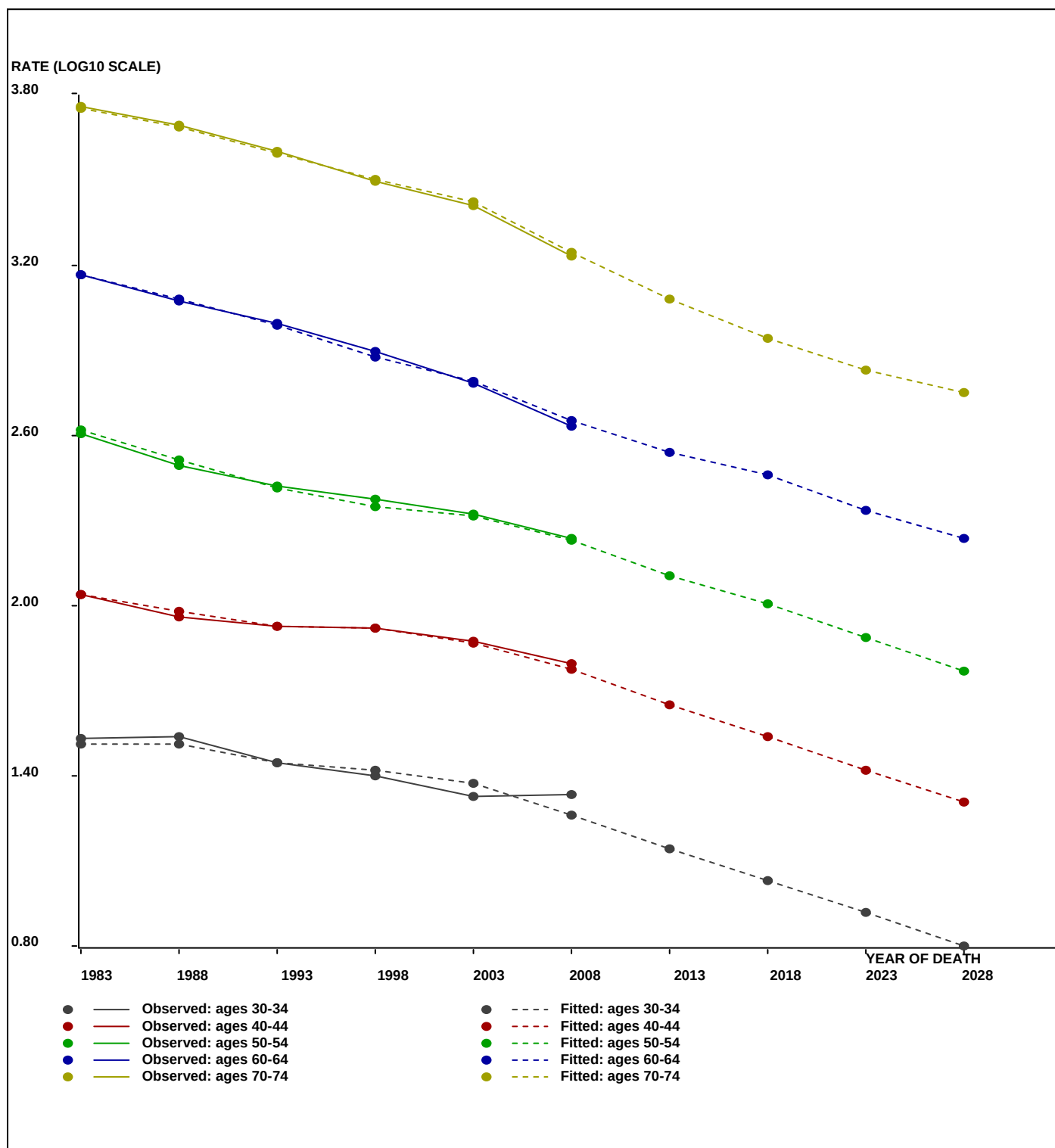


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

UK Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

UK Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	14.0	25.0	44.7	80.2	128.3	214.8	347.2	615.9	1195.2	2414.9
2016	PRE	10.8	19.3	34.4	60.3	102.4	160.9	289.0	474.9	874.3	1656.3
2021	PRE	8.3	14.8	26.5	46.5	77.0	128.4	216.6	395.3	674.3	1211.6
2026	PRE	6.4	11.4	20.3	35.7	59.4	96.6	172.8	296.2	561.2	934.4

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	146.0	250.0	489.4	921.6	1362.0	1967.1	3054.9	4984.6	7233.2	11342.8
2016	PRE	121.5	203.7	346.5	660.1	1166.9	1675.5	2559.0	3940.4	6433.6	8496.8
2021	PRE	92.2	168.9	281.6	467.1	835.4	1435.3	2181.5	3316.9	5107.0	7668.2
2026	PRE	67.3	128.4	233.6	380.1	592.6	1030.3	1875.0	2840.6	4342.2	6132.4

Osmond and Gardner Modelling

UK Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	8342.02	163.57	51	P, C	99.87	44756.40	0.0000
AGE-PERIOD	311.34	6.92	45	Cohort	96.53	1651.61	0.0000
AGE-COHORT	73.57	2.04	36	Period	85.32	390.15	0.0000
PERIOD-COHORT	105.60	2.64	40	Age	89.77	560.13	0.0000
FULL AGE-PERIOD-COHORT	10.80	0.34	32			57.27	0.0040

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.164285	14.597734
35	1.663308	46.058263
40	2.112457	129.555900
45	2.495132	312.702994
50	2.826784	671.094393
55	3.108806	1284.713907
60	3.340009	2187.804614
65	3.517420	3291.699095
70	3.649058	4457.154513
75	3.736172	5447.178927

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.086952	1.221664
1986	0.049541	1.120833
1991	0.005049	1.011694
1996	-0.051354	0.888476
2001	-0.085174	0.821914
2006	-0.092550	0.808072

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.063305	1.156923
1911	0.062410	1.154544
1916	0.055884	1.137323
1921	0.061734	1.152748
1926	0.031197	1.074477
1931	-0.021194	0.952371
1936	-0.079049	0.833587
1941	-0.096407	0.800928
1946	-0.143813	0.718104
1951	-0.181398	0.658570
1956	-0.232286	0.585752
1961	-0.321263	0.477240
1966	-0.341415	0.455602
1971	-0.393276	0.404319
1976	-0.402496	0.395826

Osmond and Gardner Modelling

UK Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	126.0	82.0	85.0	63.0	51.0	46.0
EXP	117.0	93.6	77.4	68.0	52.6	46.0
CHI	0.7	1.4	0.7	0.4	0.0	0.0
35 - OBS	419.0	335.0	267.0	207.0	176.0	166.0
EXP	395.8	334.6	264.8	212.9	199.6	164.5
CHI	1.4	0.0	0.0	0.2	2.8	0.0
40 - OBS	990.0	1024.0	845.0	658.0	565.0	578.0
EXP	1053.4	1009.5	843.4	652.1	552.6	551.6
CHI	3.8	0.2	0.0	0.1	0.3	1.3
45 - OBS	2516.0	2238.0	2217.0	1741.0	1464.0	1284.0
EXP	2492.3	2287.2	2170.1	1768.3	1445.0	1298.7
CHI	0.2	1.1	1.0	0.4	0.2	0.2
50 - OBS	6019.0	4578.0	4437.0	4049.0	3462.0	2972.0
EXP	5979.8	4768.8	4333.8	4010.3	3441.6	2988.3
CHI	0.3	7.6	2.5	0.4	0.1	0.1
55 - OBS	13282.0	9968.0	7928.0	7085.0	6863.0	6265.0
EXP	13219.5	10024.8	7936.3	7061.1	6879.9	6269.7
CHI	0.3	0.3	0.0	0.1	0.0	0.0
60 - OBS	22148.0	19035.0	14228.0	11191.0	10684.0	10882.0
EXP	22002.5	19023.3	14381.5	11222.3	10550.7	10990.4
CHI	1.0	0.0	1.6	0.1	1.7	1.1
65 - OBS	26803.0	26492.0	23045.0	17246.0	14530.0	14236.0
EXP	27051.5	26585.7	22863.0	17153.2	14314.1	14389.2
CHI	2.3	0.3	1.4	0.5	3.3	1.6
70 - OBS	31873.0	27397.0	26682.0	22648.0	18341.0	16869.0
EXP	31869.1	27025.7	26740.8	22747.3	18547.3	16883.8
CHI	0.0	5.1	0.1	0.4	2.3	0.0
75 - OBS	25510.0	25408.0	21690.0	21729.0	19897.0	18433.0
EXP	25510.0	25411.9	21816.8	21722.7	20055.7	18153.0
CHI	0.0	0.0	0.7	0.0	1.3	4.3

Osmond and Gardner Modelling

UK Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	14.597734
35	46.058263
40	129.555900
45	312.702994
50	671.094393
55	1284.713907
60	2187.804614
65	3291.699095
70	4457.154513
75	5447.178927

PERIOD	EFFECT	LOWER	UPPER
% Period Change	98.3159	95.3159	101.3159

1981	1.221664		
1986	1.120833		
1991	1.011694		
1996	0.888476		
2001	0.821914		
2006	0.808072		
2011	0.794464	0.770221	0.818706
2016	0.781084	0.734143	0.829479
2021	0.767930	0.699755	0.840394
2026	0.754997	0.666978	0.851453

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.156923	1.000000	
1911	1.154544	2.000000	
1916	1.137323	4.000000	
1921	1.152748	8.000000	
1926	1.074477	16.000000	
1931	0.952371	32.000000	
1936	0.833587	64.000000	
1941	0.800928	128.000000	
1946	0.718104	256.000000	
1951	0.658570	512.000000	
1956	0.585752	1024.000000	
1961	0.477240	2048.000000	
1966	0.455602	4096.000000	
1971	0.404319	8192.000000	
1976	0.361250	EXTRAPOLATION	0.395826
1981	0.323223	EXTRAPOLATION	
1986	0.289198	EXTRAPOLATION	
1991	0.258756	EXTRAPOLATION	
1996	0.231518	EXTRAPOLATION	

Osmond and Gardner Modelling

**UK Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	12.6	8.4	7.7	5.5	4.7	4.7	-	-	-	-
	EXP	11.7	9.6	7.0	5.9	4.9	4.3	3.7*	3.3*	2.9*	2.6*
	Elow							3.6	3.1	2.6	2.3
	Eup							3.9	3.5	3.2	2.9
35	OBS	42.8	34.0	27.5	19.0	15.2	15.2	-	-	-	-
	EXP	40.4	34.0	27.3	19.5	17.2	15.0	13.2*	11.6*	10.2*	9.0*
	Elow							12.8	10.9	9.3	7.9
	Eup							13.6	12.3	11.2	10.1
40	OBS	119.1	105.8	86.5	68.0	52.0	50.0	-	-	-	-
	EXP	126.8	104.3	86.3	67.4	50.8	47.7	41.6*	36.6*	32.2*	28.3*
	Elow							40.3	34.4	29.3	25.0
	Eup							42.9	38.8	35.2	31.9
45	OBS	321.5	274.7	232.1	180.1	152.5	119.2	-	-	-	-
	EXP	318.4	280.7	227.2	183.0	150.5	120.6	113.2*	98.8*	86.7*	76.3*
	Elow							109.7	92.8	79.0	67.4
	Eup							116.6	104.9	94.9	86.1
50	OBS	785.9	601.9	556.7	432.3	365.4	315.9	-	-	-	-
	EXP	780.8	627.0	543.8	428.2	363.3	317.6	254.4*	238.8*	208.4*	183.0*
	Elow							246.7	224.5	189.9	161.7
	Eup							262.2	253.6	228.0	206.4
55	OBS	1694.4	1363.6	1082.3	917.3	756.4	683.2	-	-	-	-
	EXP	1686.4	1371.4	1083.4	914.2	758.3	683.7	597.9*	478.9*	449.5*	392.2*
	Elow							579.6	450.1	409.6	346.5
	Eup							616.1	508.6	491.9	442.3
60	OBS	3101.4	2636.4	2085.5	1615.8	1458.4	1257.0	-	-	-	-
	EXP	3081.0	2634.8	2108.0	1620.3	1440.2	1269.5	1144.7*	1001.0*	801.8*	752.6*
	Elow							1109.8	940.8	730.6	664.8
	Eup							1179.6	1063.0	877.5	848.7
65	OBS	4531.6	4238.0	3606.7	2800.4	2289.3	2107.7	-	-	-	-
	EXP	4573.6	4253.0	3578.2	2785.3	2255.3	2130.4	1877.9*	1693.2*	1480.7*	1186.0*
	Elow							1820.6	1591.5	1349.2	1047.8
	Eup							1935.2	1798.2	1620.4	1337.6
70	OBS	6287.4	5759.8	5186.6	4236.4	3450.1	2999.7	-	-	-	-
	EXP	6286.7	5681.8	5198.1	4255.0	3488.9	3002.3	2836.1*	2500.0*	2254.1*	1971.1*
	Elow							2749.6	2349.8	2054.0	1741.3
	Eup							2922.7	2654.9	2466.9	2223.0
75	OBS	7698.9	7047.8	6231.2	5580.5	4772.5	4256.7	-	-	-	-
	EXP	7698.9	7048.9	6267.6	5578.9	4810.6	4192.1	3607.4*	3407.7*	3003.9*	2708.4*
	Elow							3497.3	3202.9	2737.2	2392.7
	Eup							3717.5	3618.8	3287.3	3054.5
30-79	OBS	1582.4	1397.5	1195.3	974.4	818.4	724.8	-	-	-	-
	EXP	1582.2	1399.0	1195.0	974.2	817.6	725.4	646.0*	576.2*	505.1*	441.5*
	Elow							626.3	541.6	460.3	390.1
	Eup							665.7	611.9	552.8	497.9

Osmond and Gardner Modelling

**UK Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

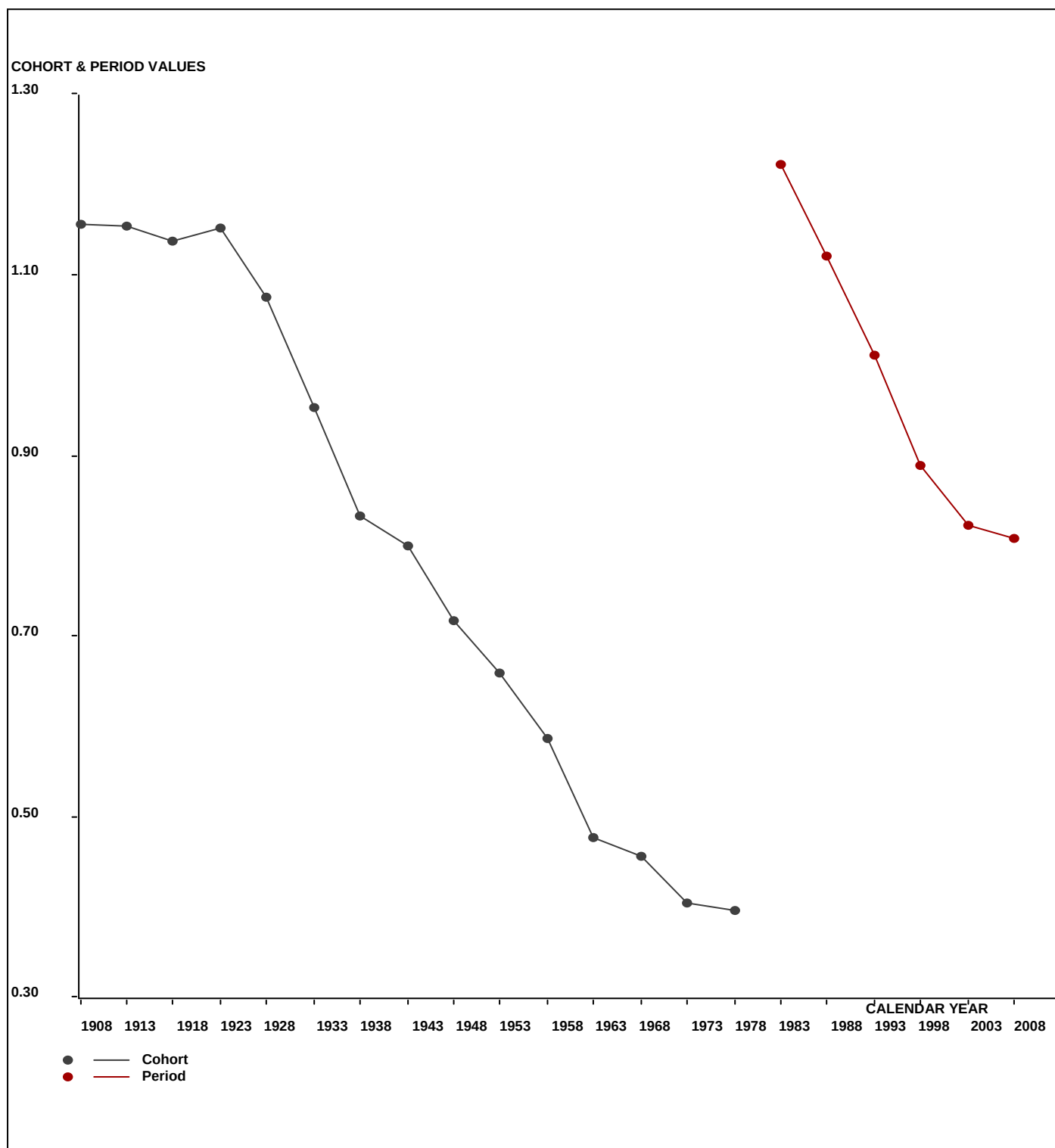
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	126.0	82.0	85.0	63.0	51.0	46.0	-	-	-	-
	EXP	117.0	93.6	77.4	68.0	52.6	42.0	39.0*	37.2*	32.3*	27.0*
	CHI	0.690	1.444	0.738	0.371	0.046	0.385	-	-	-	-
35 -	OBS	419.0	335.0	267.0	207.0	176.0	166.0	-	-	-	-
	EXP	395.8	334.6	264.8	212.9	199.6	164.5	131.9*	123.0*	116.7*	101.5*
	CHI	1.361	0.001	0.018	0.166	2.792	0.014	-	-	-	-
40 -	OBS	990.0	1024.0	845.0	658.0	565.0	578.0	-	-	-	-
	EXP	1053.4	1009.5	843.4	652.1	552.6	551.6	455.8*	367.9*	342.2*	324.7*
	CHI	3.820	0.207	0.003	0.052	0.277	1.260	-	-	-	-
45 -	OBS	2516.0	2238.0	2217.0	1741.0	1464.0	1284.0	-	-	-	-
	EXP	2492.3	2287.2	2170.1	1768.3	1445.0	1298.7	1301.3*	1081.2*	872.3*	812.0*
	CHI	0.225	1.059	1.013	0.420	0.249	0.165	-	-	-	-
50 -	OBS	6019.0	4578.0	4437.0	4049.0	3462.0	2972.0	-	-	-	-
	EXP	5979.8	4768.8	4333.8	4010.3	3441.6	2988.3	2700.6*	2721.0*	2259.6*	1827.4*
	CHI	0.257	7.633	2.459	0.374	0.121	0.089	-	-	-	-
55 -	OBS	13282.0	9968.0	7928.0	7085.0	6863.0	6265.0	-	-	-	-
	EXP	13219.5	10024.8	7936.3	7061.1	6879.9	6269.7	5476.0*	4985.4*	5022.5*	4182.1*
	CHI	0.296	0.322	0.009	0.081	0.041	0.004	-	-	-	-
60 -	OBS	22148.0	19035.0	14228.0	11191.0	10684.0	10882.0	-	-	-	-
	EXP	22002.5	19023.3	14381.5	11222.3	10550.7	10990.4	10070.8*	8863.4*	8076.3*	8163.6*
	CHI	0.962	0.007	1.639	0.087	1.685	1.070	-	-	-	-
65 -	OBS	26803.0	26492.0	23045.0	17246.0	14530.0	14236.0	-	-	-	-
	EXP	27051.5	26585.7	22863.0	17153.2	14314.1	14389.2	15199.2*	14048.1*	12424.3*	11373.0*
	CHI	2.284	0.330	1.448	0.502	3.257	1.631	-	-	-	-
70 -	OBS	31873.0	27397.0	26682.0	22648.0	18341.0	16869.0	-	-	-	-
	EXP	31869.1	27025.7	26740.8	22747.3	18547.3	16883.8	17163.3*	18395.6*	17073.5*	15252.1*
	CHI	0.000	5.101	0.129	0.433	2.296	0.013	-	-	-	-
75 -	OBS	25510.0	25408.0	21690.0	21729.0	19897.0	18433.0	-	-	-	-
	EXP	25510.0	25411.9	21816.8	21722.7	20055.7	18153.0	16943.7*	17481.4*	19011.3*	17776.3*
	CHI	0.000	0.001	0.737	0.002	1.256	4.319	-	-	-	-
30-79	OBS	129686.0	116557.0	101424.0	86617.0	76033.0	71731.0	-	-	-	-
	EXP	129691.0	116565.1	101428.1	86618.3	76039.1	71731.2	69481.7*	68104.3*	65231.1*	59839.8*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

UK Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

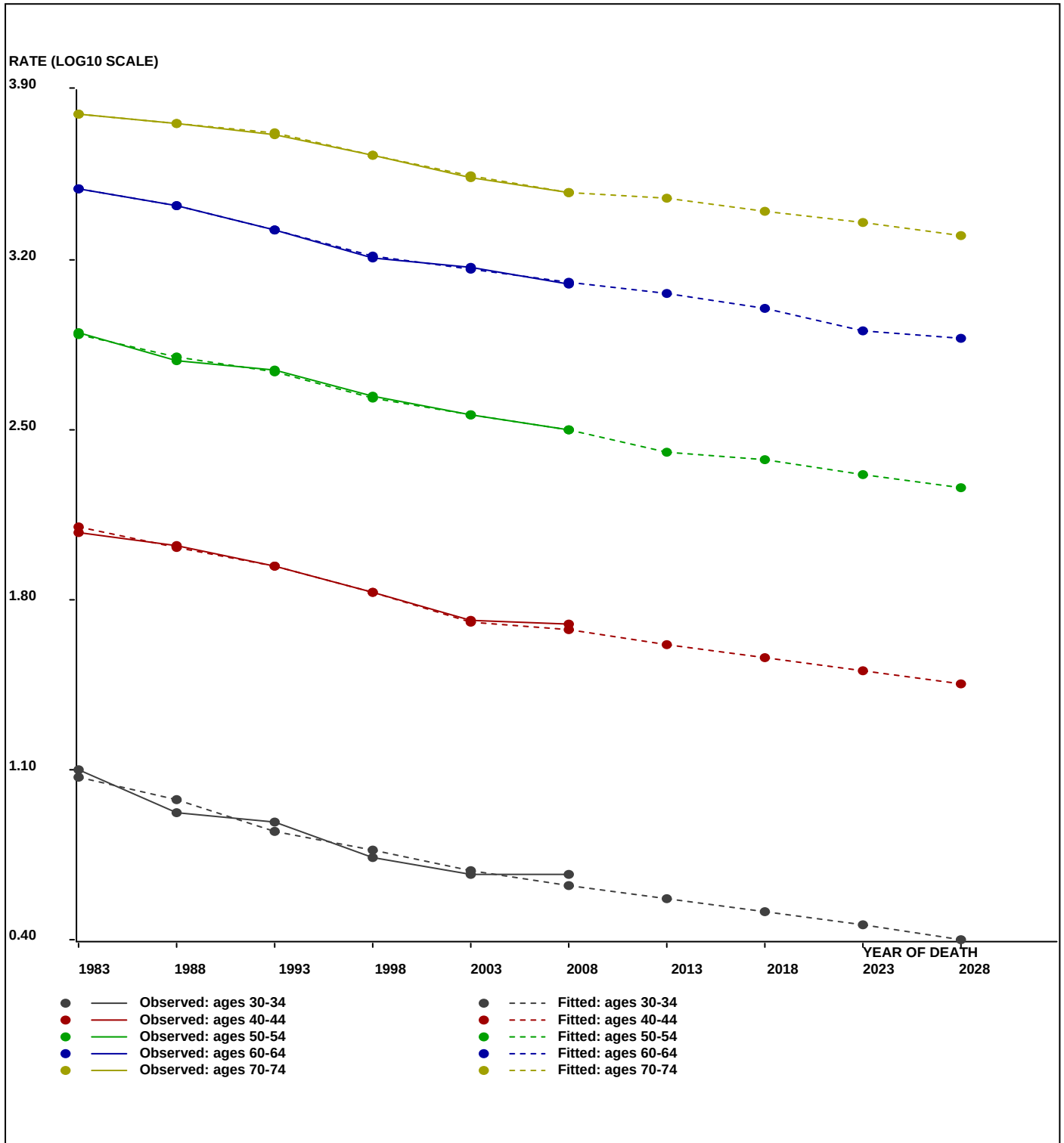


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

UK Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

UK Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	3.7	13.2	41.6	113.2	254.4	597.9	1144.7	1877.9	2836.1	3607.4
2016	PRE	3.3	11.6	36.6	98.8	238.8	478.9	1001.0	1693.2	2500.0	3407.7
2021	PRE	2.9	10.2	32.2	86.7	208.4	449.5	801.8	1480.7	2254.1	3003.9
2026	PRE	2.6	9.0	28.3	76.3	183.0	392.2	752.6	1186.0	1971.1	2708.4

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	39.0	131.9	455.8	1301.3	2700.6	5476.0	10070.8	15199.2	17163.3	16943.7
2016	PRE	37.2	123.0	367.9	1081.2	2721.0	4985.4	8863.4	14048.1	18395.6	17481.4
2021	PRE	32.3	116.7	342.2	872.3	2259.6	5022.5	8076.3	12424.3	17073.5	19011.3
2026	PRE	27.0	101.5	324.7	812.0	1827.4	4182.1	8163.6	11373.0	15252.1	17776.3

Osmond and Gardner Modelling

UK COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	5178.95	101.55	51	P, C	99.40	27836.99	0.0000
AGE-PERIOD	132.81	2.95	45	Cohort	76.42	704.89	0.0000
AGE-COHORT	46.92	1.30	36	Period	33.26	248.96	0.0000
PERIOD-COHORT	44.32	1.11	40	Age	29.35	235.47	0.0000
FULL AGE-PERIOD-COHORT	31.31	0.98	32			166.24	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.224598	16.772520
35	1.337339	21.743957
40	1.571019	37.240802
45	1.894710	78.471204
50	2.263676	183.516907
55	2.629112	425.708308
60	2.955776	903.184360
65	3.231973	1705.977311
70	3.485972	3061.762643
75	3.701785	5032.515178

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.087691	1.223745
1986	0.063345	1.157031
1991	0.003579	1.008275
1996	-0.040909	0.910103
2001	-0.090652	0.811611
2006	-0.127397	0.745767

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.070453	1.176123
1911	0.049779	1.121448
1916	0.048263	1.117540
1921	0.037166	1.089347
1926	0.007618	1.017697
1931	-0.050374	0.890484
1936	-0.100189	0.793984
1941	-0.114306	0.768589
1946	-0.143235	0.719061
1951	-0.143703	0.718286
1956	-0.169502	0.676858
1961	-0.208625	0.618551
1966	-0.206743	0.621237
1971	-0.263366	0.545298
1976	-0.510936	0.308364

Osmond and Gardner Modelling

UK COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	147.0	140.0	119.0	94.0	78.0	38.0
EXP	146.9	128.3	114.9	109.2	80.4	38.0
CHI	0.0	1.1	0.1	2.1	0.1	0.0
35 - OBS	182.0	185.0	137.0	124.0	138.0	99.0
EXP	187.4	177.8	144.0	133.5	126.9	96.6
CHI	0.2	0.3	0.3	0.7	1.0	0.1
40 - OBS	340.0	319.0	204.0	190.0	210.0	202.0
EXP	291.1	300.0	263.5	221.9	203.3	199.5
CHI	8.2	1.2	13.5	4.6	0.2	0.0
45 - OBS	721.0	538.0	492.0	437.0	413.0	388.0
EXP	596.7	568.6	543.5	495.8	413.8	389.8
CHI	25.9	1.6	4.9	7.0	0.0	0.0
50 - OBS	1668.0	1237.0	1081.0	1062.0	1003.0	896.0
EXP	1531.6	1282.2	1133.4	1124.8	1013.6	871.5
CHI	12.2	1.6	2.4	3.5	0.1	0.7
55 - OBS	4370.0	3116.0	2309.0	2219.0	2273.0	2199.0
EXP	4156.1	3206.3	2496.4	2300.0	2254.2	2091.2
CHI	11.0	2.5	14.1	2.9	0.2	5.6
60 - OBS	8606.0	7467.0	5521.0	4607.0	4175.0	4269.0
EXP	8598.3	7678.5	5532.5	4520.2	4127.3	4192.9
CHI	0.0	5.8	0.0	1.7	0.6	1.4
65 - OBS	13522.0	13429.0	11222.0	8599.0	7082.0	6664.0
EXP	13799.5	13441.2	11185.1	8514.6	6977.5	6604.6
CHI	5.6	0.0	0.1	0.8	1.6	0.5
70 - OBS	21020.0	18897.0	17401.0	15332.0	11807.0	10090.0
EXP	21300.6	18831.0	17300.1	15160.4	11763.5	10195.3
CHI	3.7	0.2	0.6	1.9	0.2	1.1
75 - OBS	24000.0	23818.0	19946.0	19330.0	17108.0	14301.0
EXP	24000.0	23540.9	19738.5	19427.0	17329.8	14472.2
CHI	0.0	3.3	2.2	0.5	2.8	2.0

Osmond and Gardner Modelling

UK COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	16.772520
35	21.743957
40	37.240802
45	78.471204
50	183.516907
55	425.708308
60	903.184360
65	1705.977311
70	3061.762643
75	5032.515178

PERIOD	EFFECT	LOWER	UPPER
% Period Change	91.8872	88.8872	94.8872
1981	1.223745		
1986	1.157031		
1991	1.008275		
1996	0.910103		
2001	0.811611		
2006	0.745767		
2011	0.685264	0.662891	0.707637
2016	0.629670	0.589225	0.671457
2021	0.578586	0.523746	0.637127
2026	0.531647	0.465543	0.604552

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.176123	1.000000	
1911	1.121448	2.000000	
1916	1.117540	4.000000	
1921	1.089347	8.000000	
1926	1.017697	16.000000	
1931	0.890484	32.000000	
1936	0.793984	64.000000	
1941	0.768589	128.000000	
1946	0.719061	256.000000	
1951	0.718286	512.000000	
1956	0.676858	1024.000000	
1961	0.618551	2048.000000	
1966	0.621237	4096.000000	
1971	0.545298	8192.000000	
1976	0.520975	EXTRAPOLATION	0.308364
1981	0.488960	EXTRAPOLATION	
1986	0.458912	EXTRAPOLATION	
1991	0.430710	EXTRAPOLATION	
1996	0.404242	EXTRAPOLATION	

Osmond and Gardner Modelling

**UK COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	14.8	14.3	10.8	8.2	7.2	3.9	-	-	-	-
	EXP	14.7	13.1	10.5	9.5	7.4	6.5	5.6*	4.8*	4.2*	3.6*
	Elow							5.4	4.5	3.8	3.2
	Eup							5.8	5.2	4.6	4.1
35	OBS	18.6	18.8	14.1	11.4	11.9	9.1	-	-	-	-
	EXP	19.1	18.1	14.8	12.2	11.0	8.8	7.8*	6.7*	5.8*	5.0*
	Elow							7.5	6.3	5.2	4.4
	Eup							8.0	7.1	6.4	5.7
40	OBS	40.9	32.9	20.9	19.6	19.3	17.5	-	-	-	-
	EXP	35.0	31.0	27.0	22.9	18.7	17.3	13.9*	12.2*	10.5*	9.1*
	Elow							13.5	11.4	9.5	8.0
	Eup							14.4	13.0	11.6	10.3
45	OBS	92.1	66.0	51.5	45.2	43.0	36.0	-	-	-	-
	EXP	76.2	69.8	56.9	51.3	43.1	36.2	33.4*	26.9*	23.7*	20.4*
	Elow							32.3	25.2	21.4	17.9
	Eup							34.5	28.7	26.0	23.2
50	OBS	217.8	162.6	135.6	113.4	105.9	95.2	-	-	-	-
	EXP	200.0	168.6	142.2	120.1	107.0	92.6	77.8*	71.8*	57.9*	50.8*
	Elow							75.2	67.2	52.4	44.5
	Eup							80.3	76.6	63.8	57.8
55	OBS	557.5	426.3	315.2	287.3	250.5	239.8	-	-	-	-
	EXP	530.2	438.6	340.8	297.8	248.4	228.0	197.5*	165.8*	153.0*	123.4*
	Elow							191.0	155.2	138.5	108.1
	Eup							203.9	176.8	168.5	140.3
60	OBS	1205.1	1034.2	809.2	665.2	569.9	493.1	-	-	-	-
	EXP	1204.0	1063.5	810.9	652.6	563.4	484.3	444.6*	384.9*	323.2*	298.3*
	Elow							430.0	360.2	292.6	261.2
	Eup							459.1	410.5	355.9	339.2
65	OBS	2286.1	2148.3	1756.3	1396.3	1115.8	986.6	-	-	-	-
	EXP	2333.1	2150.2	1750.5	1382.6	1099.3	977.8	840.6*	771.6*	668.1*	561.0*
	Elow							813.2	722.0	604.8	491.3
	Eup							868.1	822.8	735.7	637.9
70	OBS	4146.5	3972.8	3382.5	2867.9	2221.0	1794.2	-	-	-	-
	EXP	4201.9	3958.9	3362.9	2835.8	2212.8	1813.0	1612.6*	1386.3*	1272.4*	1101.8*
	Elow							1559.9	1297.2	1151.8	964.8
	Eup							1665.2	1478.3	1401.2	1252.9
75	OBS	7243.2	6606.8	5730.2	4964.4	4103.5	3302.5	-	-	-	-
	EXP	7243.2	6529.9	5670.6	4989.3	4156.7	3342.1	2738.1*	2435.5*	2093.7*	1921.8*
	Elow							2648.7	2279.1	1895.3	1682.8
	Eup							2827.5	2597.2	2305.6	2185.3
30-79	OBS	875.1	791.2	658.2	555.5	454.5	381.3	-	-	-	-
	EXP	873.5	792.6	659.8	556.0	453.9	381.0	328.2*	289.0*	253.2*	222.7*
	Elow							317.5	270.4	229.2	195.0
	Eup							339.0	308.1	278.8	253.2

Osmond and Gardner Modelling

**UK COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

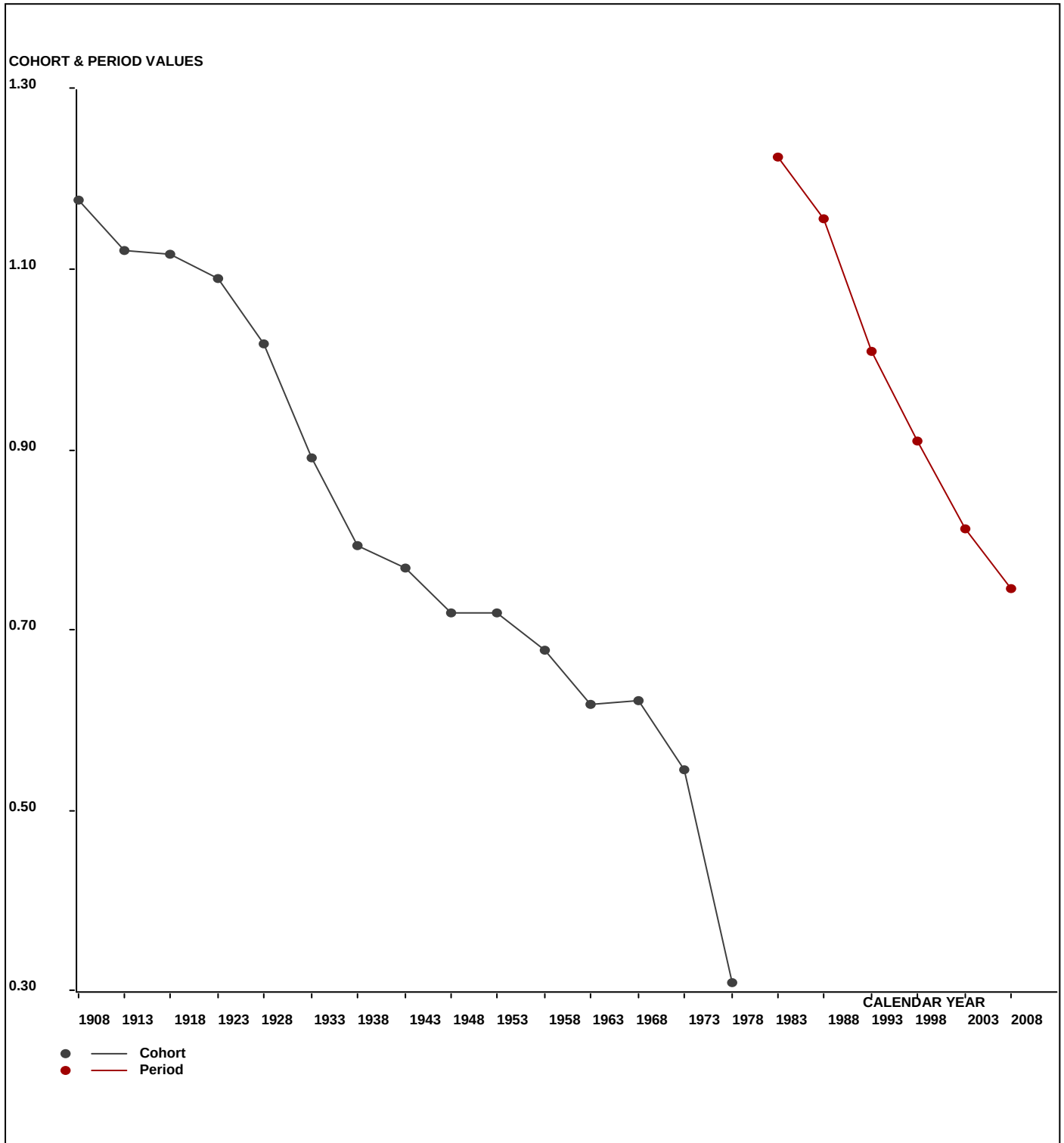
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	147.0	140.0	119.0	94.0	78.0	38.0	-	-	-	-
	EXP	146.9	128.3	114.9	109.2	80.4	64.2	58.5*	54.6*	46.5*	38.1*
	CHI	0.000	1.063	0.144	2.108	0.073	10.692	-	-	-	-
35 -	OBS	182.0	185.0	137.0	124.0	138.0	99.0	-	-	-	-
	EXP	187.4	177.8	144.0	133.5	126.9	96.6	77.5*	70.8*	65.9*	56.2*
	CHI	0.157	0.288	0.338	0.671	0.974	0.057	-	-	-	-
40 -	OBS	340.0	319.0	204.0	190.0	210.0	202.0	-	-	-	-
	EXP	291.1	300.0	263.5	221.9	203.3	199.5	152.4*	123.0*	112.1*	104.3*
	CHI	8.223	1.208	13.451	4.583	0.220	0.030	-	-	-	-
45 -	OBS	721.0	538.0	492.0	437.0	413.0	388.0	-	-	-	-
	EXP	596.7	568.6	543.5	495.8	413.8	389.8	384.1*	295.0*	237.8*	217.1*
	CHI	25.879	1.644	4.873	6.963	0.001	0.008	-	-	-	-
50 -	OBS	1668.0	1237.0	1081.0	1062.0	1003.0	896.0	-	-	-	-
	EXP	1531.6	1282.2	1133.4	1124.8	1013.6	871.5	825.6*	817.9*	627.9*	507.5*
	CHI	12.153	1.595	2.424	3.510	0.111	0.690	-	-	-	-
55 -	OBS	4370.0	3116.0	2309.0	2219.0	2273.0	2199.0	-	-	-	-
	EXP	4156.1	3206.3	2496.4	2300.0	2254.2	2091.2	1808.6*	1726.1*	1709.8*	1316.1*
	CHI	11.014	2.544	14.069	2.852	0.157	5.554	-	-	-	-
60 -	OBS	8606.0	7467.0	5521.0	4607.0	4175.0	4269.0	-	-	-	-
	EXP	8598.3	7678.5	5532.5	4520.2	4127.3	4192.9	3911.2*	3408.5*	3255.8*	3235.9*
	CHI	0.007	5.827	0.024	1.667	0.550	1.382	-	-	-	-
65 -	OBS	13522.0	13429.0	11222.0	8599.0	7082.0	6664.0	-	-	-	-
	EXP	13799.5	13441.2	11185.1	8514.6	6977.5	6604.6	6803.6*	6401.5*	5606.0*	5379.5*
	CHI	5.580	0.011	0.122	0.837	1.565	0.535	-	-	-	-
70 -	OBS	21020.0	18897.0	17401.0	15332.0	11807.0	10090.0	-	-	-	-
	EXP	21300.6	18831.0	17300.1	15160.4	11763.5	10195.3	9758.8*	10200.5*	9637.8*	8525.2*
	CHI	3.696	0.231	0.588	1.943	0.161	1.087	-	-	-	-
75 -	OBS	24000.0	23818.0	19946.0	19330.0	17108.0	14301.0	-	-	-	-
	EXP	24000.0	23540.9	19738.5	19427.0	17329.8	14472.2	12860.8*	12494.2*	13251.1*	12613.3*
	CHI	0.000	3.261	2.181	0.484	2.839	2.025	-	-	-	-
30-79	OBS	74576.0	69146.0	58432.0	51994.0	44287.0	39146.0	-	-	-	-
	EXP	74608.1	69154.9	58452.0	52007.2	44290.3	39177.8	36641.1*	35592.1*	34550.8*	31993.2*
	O/E	1.000	1.000	1.000	1.000	1.000	0.999	-	-	-	-

Osmond and Gardner Modelling

UK COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

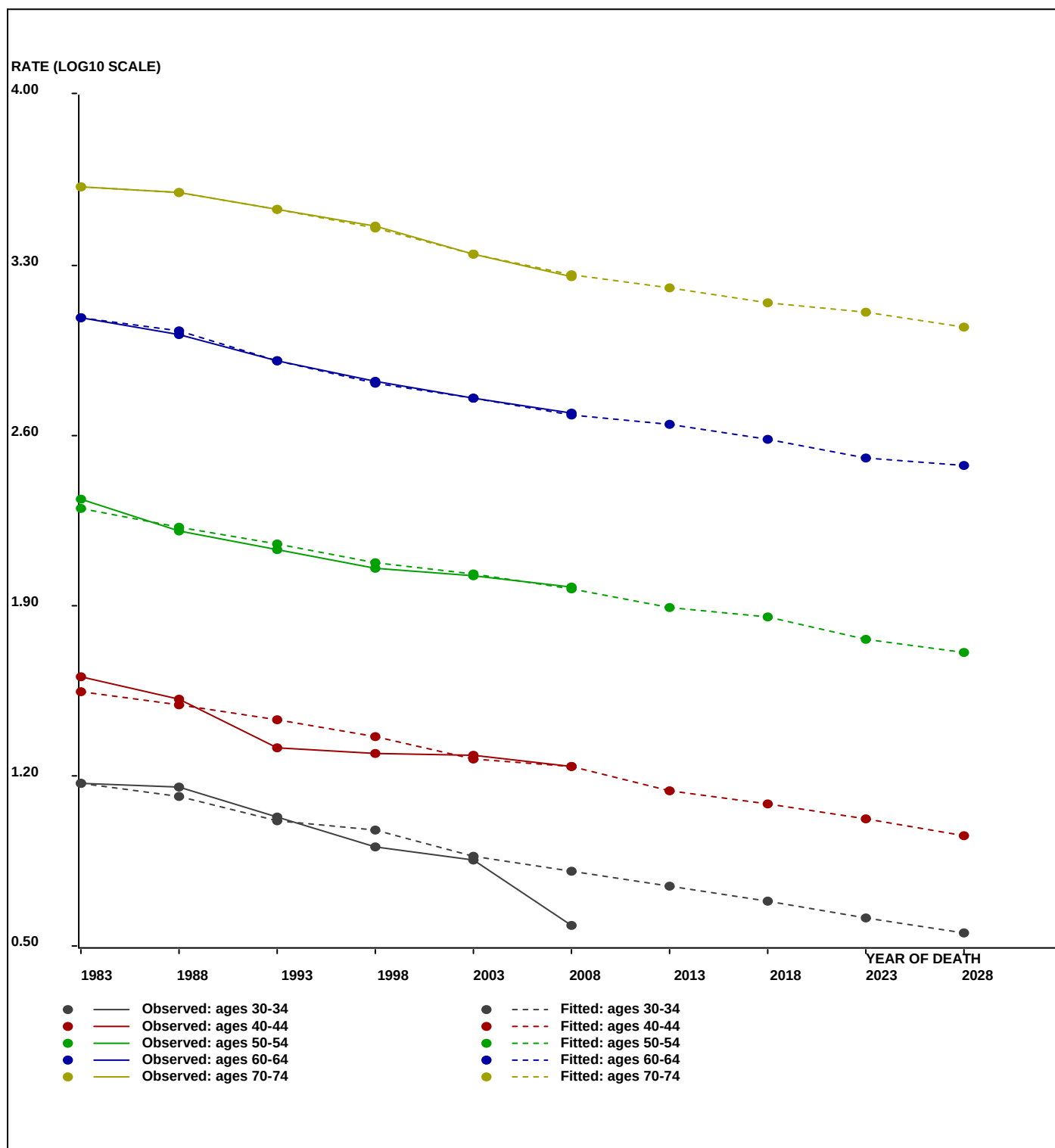


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

UK COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

UK COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	5.6	7.8	13.9	33.4	77.8	197.5	444.6	840.6	1612.6	2738.1
2016 PRE	4.8	6.7	12.2	26.9	71.8	165.8	384.9	771.6	1386.3	2435.5
2021 PRE	4.2	5.8	10.5	23.7	57.9	153.0	323.2	668.1	1272.4	2093.7
2026 PRE	3.6	5.0	9.1	20.4	50.8	123.4	298.3	561.0	1101.8	1921.8

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	58.5	77.5	152.4	384.1	825.6	1808.6	3911.2	6803.6	9758.8	12860.8
2016 PRE	54.6	70.8	123.0	295.0	817.9	1726.1	3408.5	6401.5	10200.5	12494.2
2021 PRE	46.5	65.9	112.1	237.8	627.9	1709.8	3255.8	5606.0	9637.8	13251.1
2026 PRE	38.1	56.2	104.3	217.1	507.5	1316.1	3235.9	5379.5	8525.2	12613.3

Osmond and Gardner Modelling

UK IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	23998.33	470.56	51	P, C	99.89	133509.76	0.0000
AGE-PERIOD	767.25	17.05	45	Cohort	96.64	4079.40	0.0000
AGE-COHORT	696.07	19.34	36	Period	96.29	3694.39	0.0000
PERIOD-COHORT	241.28	6.03	40	Age	89.30	1280.96	0.0000
FULL AGE-PERIOD-COHORT	25.81	0.81	32			136.93	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.227009	16.865887
35	1.680969	47.969959
40	2.083838	121.293631
45	2.428079	267.965819
50	2.735831	544.291176
55	3.033883	1081.143788
60	3.315751	2068.956413
65	3.561444	3642.870133
70	3.799533	6302.789796
75	4.018120	10426.054286

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.110854	1.290784
1986	0.082059	1.207979
1991	0.026041	1.061795
1996	-0.069619	0.851884
2001	-0.181469	0.658462
2006	-0.320743	0.477812

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.029816	1.071065
1911	0.030268	1.072182
1916	0.036844	1.088538
1921	0.038989	1.093927
1926	0.002906	1.006714
1931	-0.035459	0.921598
1936	-0.103934	0.787165
1941	-0.165610	0.682952
1946	-0.218696	0.604372
1951	-0.202879	0.626788
1956	-0.139322	0.725567
1961	-0.122285	0.754597
1966	-0.068668	0.853753
1971	0.004520	1.010461
1976	0.089237	1.228110

Osmond and Gardner Modelling

UK IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	170.0	139.0	154.0	114.0	110.0	98.0
EXP	134.3	144.1	150.1	143.6	123.5	98.0
CHI	9.5	0.2	0.1	6.1	1.5	0.0
35 - OBS	416.0	377.0	304.0	307.0	316.0	270.0
EXP	363.4	357.4	362.3	342.6	318.1	257.5
CHI	7.6	1.1	9.4	3.7	0.0	0.6
40 - OBS	921.0	836.0	777.0	701.0	667.0	612.0
EXP	877.1	855.7	794.5	735.9	669.5	584.3
CHI	2.2	0.5	0.4	1.7	0.0	1.3
45 - OBS	2101.0	1741.0	1594.0	1435.0	1310.0	1101.0
EXP	2119.0	1794.8	1650.9	1401.5	1250.7	1069.3
CHI	0.2	1.6	2.0	0.8	2.8	0.9
50 - OBS	5153.0	3948.0	3074.0	2657.0	2121.0	1849.0
EXP	5028.4	3958.4	3168.4	2661.0	2172.1	1817.5
CHI	3.1	0.0	2.8	0.0	1.2	0.5
55 - OBS	11524.0	9180.0	6724.0	5027.0	4005.0	3037.0
EXP	11621.3	9085.9	6761.0	4962.6	4004.5	3063.3
CHI	0.8	1.0	0.2	0.8	0.0	0.2
60 - OBS	22743.0	20123.0	14728.0	10257.0	7200.0	5431.0
EXP	23328.5	19872.0	14698.3	10064.1	7121.9	5408.5
CHI	14.7	3.2	0.1	3.7	0.9	0.1
65 - OBS	36560.0	36165.0	28766.0	19657.0	13027.0	8616.0
EXP	36996.8	35751.2	28733.3	19613.1	13043.3	8658.4
CHI	5.2	4.8	0.0	0.1	0.0	0.2
70 - OBS	61504.0	53363.0	48720.0	35471.0	23694.0	15075.0
EXP	60650.3	53199.2	48800.3	35955.7	24045.3	15188.8
CHI	12.0	0.5	0.1	6.5	5.1	0.9
75 - OBS	79493.0	76574.0	64825.0	55035.0	39588.0	25284.0
EXP	79493.0	77438.5	64555.4	54793.4	39296.1	25229.7
CHI	0.0	9.7	1.1	1.1	2.2	0.1

Osmond and Gardner Modelling

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 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	16.865887
35	47.969959
40	121.293631
45	267.965819
50	544.291176
55	1081.143788
60	2068.956413
65	3642.870133
70	6302.789796
75	10426.054286

PERIOD	EFFECT	LOWER	UPPER
% Period Change	72.5649	69.5649	75.5649
1981	1.290784		
1986	1.207979		
1991	1.061795		
1996	0.851884		
2001	0.658462		
2006	0.477812		
2011	0.346724	0.332390	0.361058
2016	0.251600	0.231227	0.272833
2021	0.182573	0.160853	0.206166
2026	0.132484	0.111897	0.155789

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.071065	1.000000	
1911	1.072182	2.000000	
1916	1.088538	4.000000	
1921	1.093927	8.000000	
1926	1.006714	16.000000	
1931	0.921598	32.000000	
1936	0.787165	64.000000	
1941	0.682952	128.000000	
1946	0.604372	256.000000	
1951	0.626788	512.000000	
1956	0.725567	1024.000000	
1961	0.754597	2048.000000	
1966	0.853753	4096.000000	
1971	1.010461	8192.000000	
1976	1.063594	EXTRAPOLATION	1.228110
1981	1.162457	EXTRAPOLATION	
1986	1.270510	EXTRAPOLATION	
1991	1.388607	EXTRAPOLATION	
1996	1.517680	EXTRAPOLATION	

Osmond and Gardner Modelling

**UK IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	17.3	14.3	13.9	9.7	10.0	9.9	-	-	-	-
	EXP	13.6	14.8	13.5	12.3	11.2	8.6	6.8*	5.4*	4.3*	3.4*
	Elow							6.5	5.0	3.8	2.9
	Eup							7.1	5.8	4.8	4.0
35	OBS	42.8	38.3	31.0	27.6	26.8	24.3	-	-	-	-
	EXP	37.4	36.3	37.0	30.8	27.0	23.2	17.7*	14.0*	11.1*	8.8*
	Elow							17.0	12.9	9.8	7.5
	Eup							18.4	15.2	12.6	10.4
40	OBS	112.3	86.5	78.9	71.4	60.0	51.8	-	-	-	-
	EXP	106.9	88.6	80.7	75.0	60.3	49.5	42.5*	32.5*	25.7*	20.4*
	Elow							40.7	29.8	22.7	17.2
	Eup							44.3	35.2	29.1	24.0
45	OBS	270.0	214.4	166.0	146.5	134.1	99.5	-	-	-	-
	EXP	272.3	221.1	172.0	143.1	128.0	96.6	79.3*	68.1*	52.0*	41.3*
	Elow							76.0	62.6	45.8	34.9
	Eup							82.6	73.9	58.8	48.5
50	OBS	663.5	516.2	382.9	279.8	219.4	192.0	-	-	-	-
	EXP	647.5	517.6	394.7	280.2	224.6	188.7	142.4*	116.9*	100.4*	76.7*
	Elow							136.5	107.4	88.5	64.8
	Eup							148.3	126.8	113.4	90.2
55	OBS	1393.1	1216.1	898.7	637.2	430.3	321.0	-	-	-	-
	EXP	1404.9	1203.6	903.6	629.0	430.2	323.8	272.0*	205.3*	168.5*	144.7*
	Elow							260.7	188.6	148.5	122.2
	Eup							283.2	222.6	190.3	170.2
60	OBS	2848.1	2547.8	2028.7	1414.0	940.6	600.0	-	-	-	-
	EXP	2921.4	2516.0	2024.6	1387.4	930.4	597.5	449.6*	377.7*	285.0*	234.0*
	Elow							431.0	347.1	251.1	197.7
	Eup							468.2	409.6	321.9	275.2
65	OBS	5058.0	4869.6	3898.4	2866.4	1885.8	1182.9	-	-	-	-
	EXP	5118.5	4813.8	3894.0	2860.0	1888.2	1188.8	763.4*	574.5*	482.6*	364.2*
	Elow							731.8	528.0	425.2	307.6
	Eup							794.9	623.0	544.9	428.2
70	OBS	8845.6	8313.3	7308.8	5332.4	3768.9	2352.8	-	-	-	-
	EXP	8722.8	8287.7	7320.9	5405.3	3824.8	2370.6	1492.5*	958.4*	721.3*	605.9*
	Elow							1430.8	880.8	635.4	511.7
	Eup							1554.2	1039.3	814.5	712.4
75	OBS	14414.2	13352.8	12100.8	9758.9	6962.6	4601.0	-	-	-	-
	EXP	14414.2	13503.5	12050.5	9716.0	6911.3	4591.1	2845.6*	1791.5*	1150.4*	865.8*
	Elow							2727.9	1646.4	1013.6	731.2
	Eup							2963.2	1942.7	1299.1	1018.1
30-79	OBS	1926.1	1768.1	1490.3	1120.3	785.7	519.3	-	-	-	-
	EXP	1928.2	1765.0	1492.2	1119.8	786.2	519.0	347.7*	246.1*	185.2*	147.2*
	Elow							333.3	226.2	163.2	124.4
	Eup							362.1	266.9	209.1	173.1

Osmond and Gardner Modelling

**UK IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

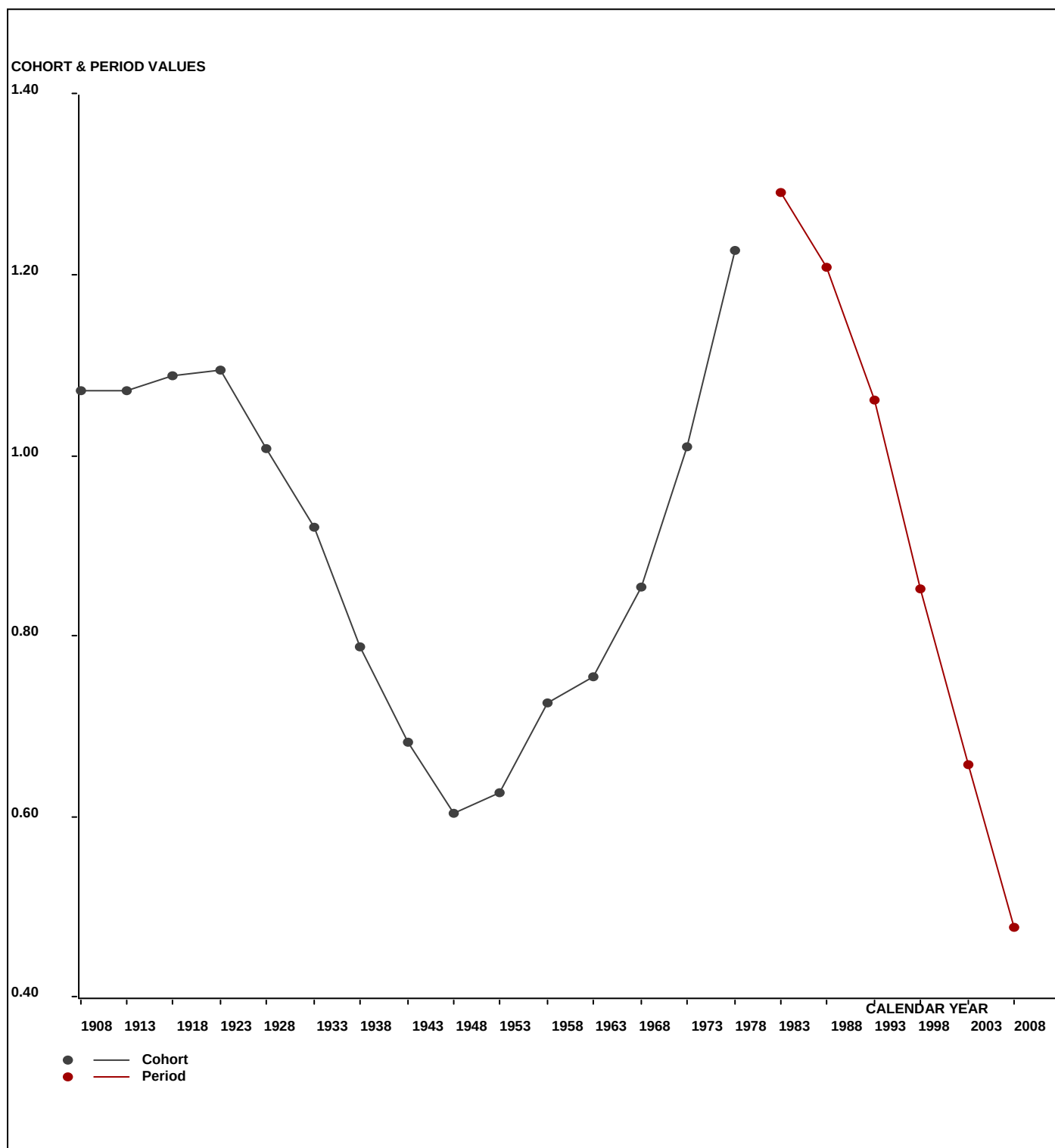
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	170.0	139.0	154.0	114.0	110.0	98.0	-	-	-	-
	EXP	134.3	144.1	150.1	143.6	123.5	84.9	68.8*	58.5*	45.6*	34.5*
	CHI	9.501	0.181	0.101	6.088	1.480	2.031	-	-	-	-
35 -	OBS	416.0	377.0	304.0	307.0	316.0	270.0	-	-	-	-
	EXP	363.4	357.4	362.3	342.6	318.1	257.5	177.5*	144.8*	122.6*	95.7*
	CHI	7.612	1.070	9.372	3.702	0.013	0.602	-	-	-	-
40 -	OBS	921.0	836.0	777.0	701.0	667.0	612.0	-	-	-	-
	EXP	877.1	855.7	794.5	735.9	669.5	584.3	474.9*	329.4*	268.0*	227.0*
	CHI	2.199	0.454	0.385	1.659	0.009	1.313	-	-	-	-
45 -	OBS	2101.0	1741.0	1594.0	1435.0	1310.0	1101.0	-	-	-	-
	EXP	2119.0	1794.8	1650.9	1401.5	1250.7	1069.3	935.8*	763.6*	529.3*	431.1*
	CHI	0.152	1.614	1.958	0.799	2.812	0.942	-	-	-	-
50 -	OBS	5153.0	3948.0	3074.0	2657.0	2121.0	1849.0	-	-	-	-
	EXP	5028.4	3958.4	3168.4	2661.0	2172.1	1817.5	1564.2*	1373.7*	1119.9*	777.9*
	CHI	3.087	0.027	2.812	0.006	1.203	0.544	-	-	-	-
55 -	OBS	11524.0	9180.0	6724.0	5027.0	4005.0	3037.0	-	-	-	-
	EXP	11621.3	9085.9	6761.0	4962.6	4004.5	3063.3	2574.5*	2228.9*	1955.8*	1597.9*
	CHI	0.814	0.975	0.202	0.836	0.000	0.226	-	-	-	-
60 -	OBS	22743.0	20123.0	14728.0	10257.0	7200.0	5431.0	-	-	-	-
	EXP	23328.5	19872.0	14698.3	10064.1	7121.9	5408.5	4147.3*	3500.9*	3030.0*	2665.0*
	CHI	14.695	3.171	0.060	3.697	0.856	0.094	-	-	-	-
65 -	OBS	36560.0	36165.0	28766.0	19657.0	13027.0	8616.0	-	-	-	-
	EXP	36996.8	35751.2	28733.3	19613.1	13043.3	8658.4	6626.8*	5105.6*	4319.3*	3750.1*
	CHI	5.157	4.789	0.037	0.098	0.020	0.208	-	-	-	-
70 -	OBS	61504.0	53363.0	48720.0	35471.0	23694.0	15075.0	-	-	-	-
	EXP	60650.3	53199.2	48800.3	35955.7	24045.3	15188.8	10126.1*	7817.9*	6032.3*	5139.2*
	CHI	12.015	0.504	0.132	6.534	5.133	0.852	-	-	-	-
75 -	OBS	79493.0	76574.0	64825.0	55035.0	39588.0	25284.0	-	-	-	-
	EXP	79493.0	77438.5	64555.4	54793.4	39296.1	25229.7	16144.3*	10860.4*	8454.1*	6556.9*
	CHI	0.000	9.651	1.126	1.065	2.169	0.117	-	-	-	-
30-79	OBS	220585.0	202446.0	169666.0	130661.0	92038.0	61373.0	-	-	-	-
	EXP	220612.1	202457.2	169674.4	130673.6	92044.9	61362.3	42840.2*	32183.7*	25876.9*	21275.3*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

UK IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

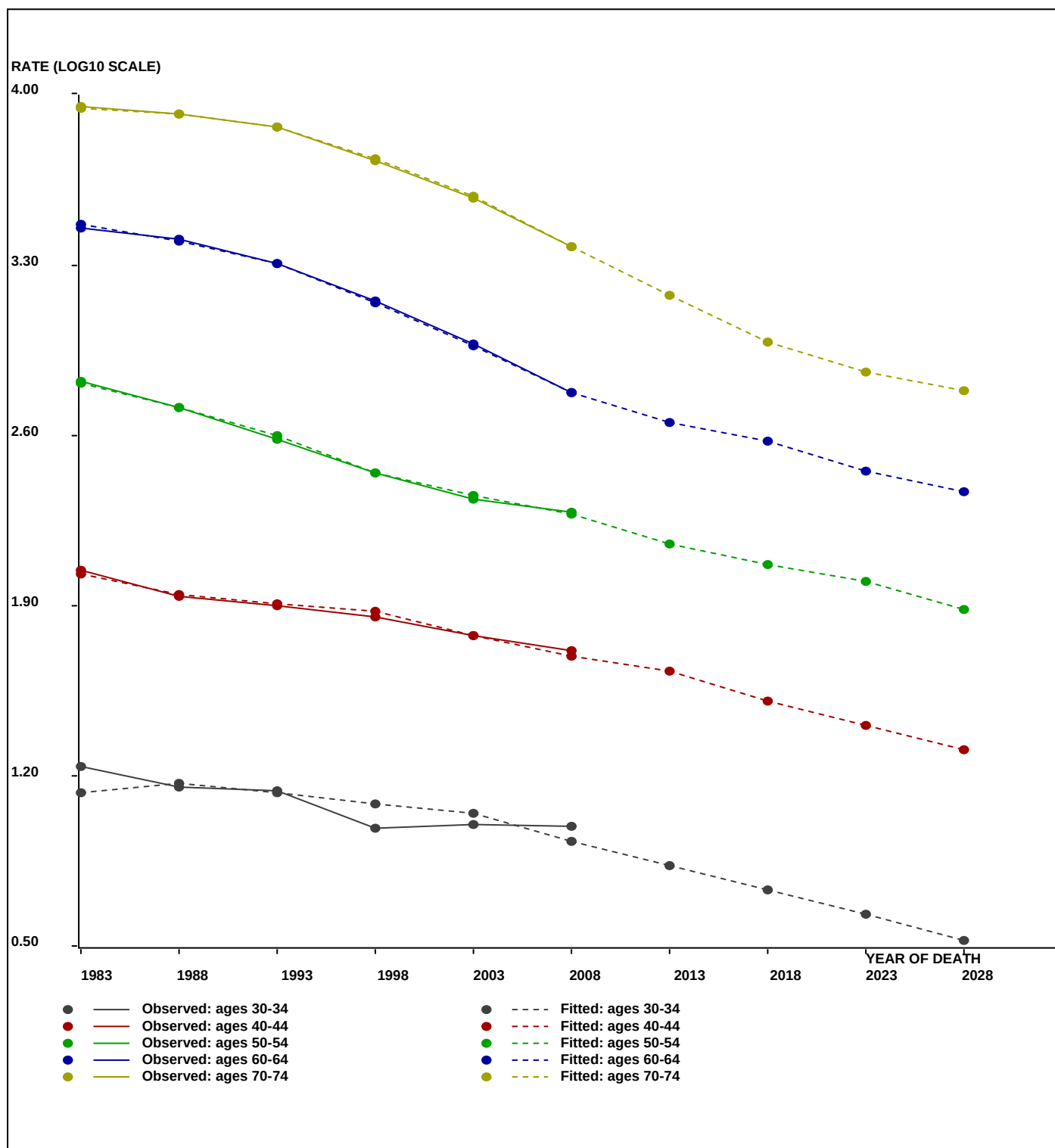


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

UK IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

UK IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	6.8	17.7	42.5	79.3	142.4	272.0	449.6	763.4	1492.5	2845.6
2016	PRE	5.4	14.0	32.5	68.1	116.9	205.3	377.7	574.5	958.4	1791.5
2021	PRE	4.3	11.1	25.7	52.0	100.4	168.5	285.0	482.6	721.3	1150.4
2026	PRE	3.4	8.8	20.4	41.3	76.7	144.7	234.0	364.2	605.9	865.8

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	68.8	177.5	474.9	935.8	1564.2	2574.5	4147.3	6626.8	10126.1	16144.3
2016	PRE	58.5	144.8	329.4	763.6	1373.7	2228.9	3500.9	5105.6	7817.9	10860.4
2021	PRE	45.6	122.6	268.0	529.3	1119.9	1955.8	3030.0	4319.3	6032.3	8454.1
2026	PRE	34.5	95.7	227.0	431.1	777.9	1597.9	2665.0	3750.1	5139.2	6556.9

Osmond and Gardner Modelling

UK Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	9531.61	186.89	51	P, C	99.69	51925.85	0.0000
AGE-PERIOD	184.43	4.10	45	Cohort	83.77	979.03	0.0000
AGE-COHORT	88.11	2.45	36	Period	66.04	467.38	0.0000
PERIOD-COHORT	78.32	1.96	40	Age	61.79	415.53	0.0000
FULL AGE-PERIOD-COHORT	29.93	0.94	32			158.70	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.615268	41.235171
35	1.865230	73.321311
40	2.116185	130.672857
45	2.327782	212.706858
50	2.502694	318.195499
55	2.686450	485.791406
60	2.912798	818.083713
65	3.166356	1466.748224
70	3.460288	2885.946797
75	3.756403	5706.940260

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.098676	1.255093
1986	0.052140	1.127560
1991	-0.002003	0.995399
1996	-0.053223	0.884661
2001	-0.093106	0.807037
2006	-0.201564	0.628689

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.086293	1.219813
1911	0.075144	1.188897
1916	0.053319	1.130627
1921	0.025105	1.059509
1926	-0.023747	0.946789
1931	-0.067944	0.855177
1936	-0.138359	0.727179
1941	-0.183202	0.655841
1946	-0.201470	0.628825
1951	-0.194227	0.639400
1956	-0.172387	0.672377
1961	-0.201401	0.628925
1966	-0.217894	0.605489
1971	-0.232084	0.586024
1976	-0.236240	0.580444

Osmond and Gardner Modelling

UK Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	354.0	299.0	288.0	236.0	211.0	149.0
EXP	325.6	304.7	286.7	258.5	214.7	149.0
CHI	2.5	0.1	0.0	2.0	0.1	0.0
35 - OBS	578.0	497.0	475.0	441.0	443.0	304.0
EXP	562.0	520.2	481.0	453.3	422.6	300.4
CHI	0.5	1.0	0.1	0.3	1.0	0.0
40 - OBS	918.0	885.0	828.0	738.0	725.0	588.0
EXP	882.3	895.3	818.6	763.0	736.7	587.4
CHI	1.4	0.1	0.1	0.8	0.2	0.0
45 - OBS	1545.0	1209.0	1231.0	1202.0	1159.0	953.0
EXP	1510.9	1277.1	1278.2	1178.6	1127.6	930.8
CHI	0.8	3.6	1.7	0.5	0.9	0.5
50 - OBS	2553.0	1878.0	1706.0	1794.0	1638.0	1300.0
EXP	2652.3	1995.4	1667.5	1680.9	1587.7	1295.6
CHI	3.7	6.9	0.9	7.6	1.6	0.0
55 - OBS	4722.0	3400.0	2610.0	2445.0	2360.0	1754.0
EXP	4775.2	3536.1	2630.9	2223.7	2294.5	1847.5
CHI	0.6	5.2	0.2	22.0	1.9	4.7
60 - OBS	8695.0	6797.0	5092.0	4045.0	3279.0	2781.0
EXP	8687.0	6897.9	5055.7	3817.6	3314.5	2927.7
CHI	0.0	1.5	0.3	13.5	0.4	7.3
65 - OBS	14963.0	13260.0	10224.0	7648.0	5922.0	4194.0
EXP	15044.4	13013.6	10200.0	7609.7	5946.2	4404.9
CHI	0.4	4.7	0.1	0.2	0.1	10.1
70 - OBS	30049.0	23925.0	20480.0	15941.0	12154.0	8343.0
EXP	29942.4	23616.5	20288.5	16079.3	12521.7	8453.4
CHI	0.4	4.0	1.8	1.2	10.8	1.4
75 - OBS	48185.0	43766.0	34177.0	29714.0	25059.0	17372.0
EXP	48185.0	43872.9	34407.1	30166.4	24793.7	16861.2
CHI	0.0	0.3	1.5	6.8	2.8	15.5

Osmond and Gardner Modelling

UK Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	41.235171
35	73.321311
40	130.672857
45	212.706858
50	318.195499
55	485.791406
60	818.083713
65	1466.748224
70	2885.946797
75	5706.940260

PERIOD	EFFECT	LOWER	UPPER
% Period Change	77.9009	74.9009	80.9009

1981	1.255093		
1986	1.127560		
1991	0.995399		
1996	0.884661		
2001	0.807037		
2006	0.628689		
2011	0.489754	0.470894	0.508615
2016	0.381523	0.352704	0.411474
2021	0.297210	0.264178	0.332886
2026	0.231529	0.197872	0.269308

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.219813	1.000000	
1911	1.188897	2.000000	
1916	1.130627	4.000000	
1921	1.059509	8.000000	
1926	0.946789	16.000000	
1931	0.855177	32.000000	
1936	0.727179	64.000000	
1941	0.655841	128.000000	
1946	0.628825	256.000000	
1951	0.639400	512.000000	
1956	0.672377	1024.000000	
1961	0.628925	2048.000000	
1966	0.605489	4096.000000	
1971	0.586024	8192.000000	
1976	0.568643	EXTRAPOLATION	0.580444
1981	0.550992	EXTRAPOLATION	
1986	0.533889	EXTRAPOLATION	
1991	0.517317	EXTRAPOLATION	
1996	0.501260	EXTRAPOLATION	

Osmond and Gardner Modelling

**UK Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	36.0	30.7	25.9	20.2	19.2	15.0	-	-	-	-
	EXP	33.1	31.3	25.8	22.1	19.5	14.7	11.1*	8.4*	6.3*	4.8*
	Elow							10.7	7.8	5.6	4.1
	Eup							11.6	9.1	7.1	5.6
35	OBS	59.5	50.5	48.5	39.7	37.6	27.3	-	-	-	-
	EXP	57.9	52.9	49.1	40.8	35.8	27.0	20.4*	15.4*	11.6*	8.8*
	Elow							19.6	14.2	10.3	7.5
	Eup							21.2	16.6	13.0	10.2
40	OBS	111.9	91.6	84.1	75.2	65.3	49.8	-	-	-	-
	EXP	107.6	92.7	83.2	77.7	66.3	49.7	37.5*	28.3*	21.4*	16.2*
	Elow							36.1	26.2	19.0	13.8
	Eup							38.9	30.6	24.0	18.8
45	OBS	198.5	148.9	128.2	122.7	118.6	86.1	-	-	-	-
	EXP	194.1	157.3	133.1	120.3	115.4	84.1	63.1*	47.6*	35.9*	27.1*
	Elow							60.6	44.0	32.0	23.2
	Eup							65.5	51.3	40.3	31.6
50	OBS	328.7	245.5	212.5	188.9	169.4	135.0	-	-	-	-
	EXP	341.5	260.9	207.7	177.0	164.2	134.5	98.0*	73.5*	55.4*	41.9*
	Elow							94.2	68.0	49.3	35.8
	Eup							101.8	79.3	62.1	48.7
55	OBS	570.8	450.4	348.8	309.9	253.6	185.4	-	-	-	-
	EXP	577.3	468.4	351.6	281.9	246.5	195.3	160.0*	116.6*	87.4*	65.9*
	Elow							153.8	107.8	77.7	56.3
	Eup							166.1	125.7	97.9	76.7
60	OBS	1088.9	860.6	701.4	557.6	428.4	307.2	-	-	-	-
	EXP	1087.9	873.4	696.4	526.3	433.0	323.4	256.2*	209.9*	152.9*	114.7*
	Elow							246.3	194.0	135.9	98.0
	Eup							266.0	226.3	171.3	133.4
65	OBS	2070.1	1785.4	1385.6	1115.2	857.3	575.8	-	-	-	-
	EXP	2081.4	1752.3	1382.3	1109.7	860.8	604.8	451.7*	357.8*	293.1*	213.6*
	Elow							434.3	330.8	260.5	182.5
	Eup							469.1	385.9	328.3	248.4
70	OBS	4321.7	3727.2	3072.3	2396.4	1933.3	1302.1	-	-	-	-
	EXP	4306.3	3679.1	3043.6	2417.2	1991.8	1319.4	927.0*	692.4*	548.4*	449.3*
	Elow							891.3	640.1	487.5	384.0
	Eup							962.7	746.7	614.3	522.6
75	OBS	8737.2	7631.8	6379.8	5268.9	4407.3	3161.2	-	-	-	-
	EXP	8737.2	7650.5	6422.7	5349.2	4360.6	3068.3	2032.5*	1428.0*	1066.6*	844.9*
	Elow							1954.2	1320.1	948.0	722.0
	Eup							2110.7	1540.1	1194.6	982.7
30-79	OBS	958.8	810.2	665.7	544.8	446.9	315.9	-	-	-	-
	EXP	959.3	812.5	665.3	541.4	447.1	317.7	227.4*	169.6*	130.1*	100.9*
	Elow							218.6	156.7	115.6	86.3
	Eup							236.1	182.9	145.7	117.4

Osmond and Gardner Modelling

**UK Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

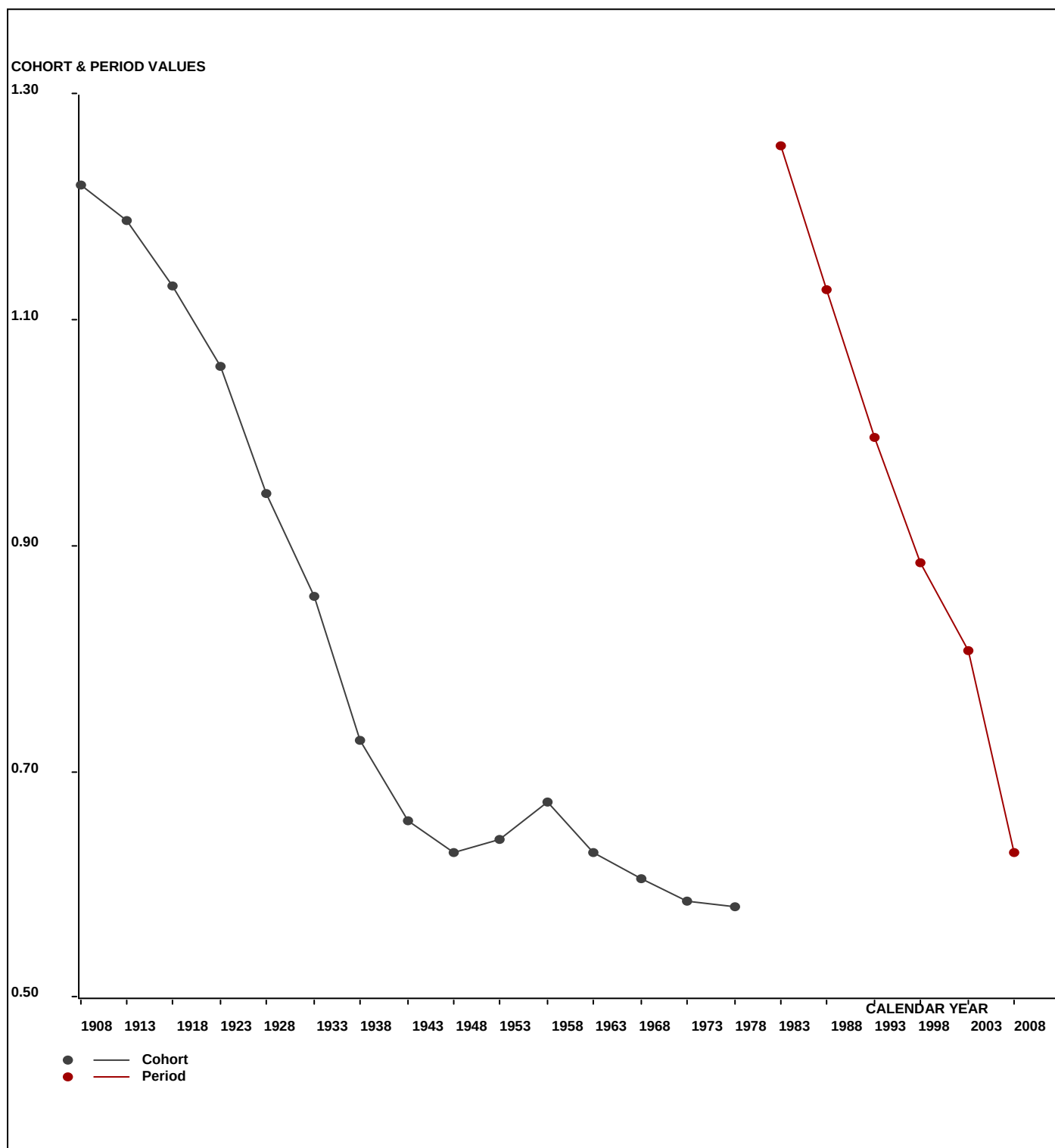
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	354.0	299.0	288.0	236.0	211.0	149.0	-	-	-	-
	EXP	325.6	304.7	286.7	258.5	214.7	146.0	112.6*	91.1*	67.6*	48.6*
	CHI	2.468	0.108	0.006	1.960	0.062	0.063	-	-	-	-
35 -	OBS	578.0	497.0	475.0	441.0	443.0	304.0	-	-	-	-
	EXP	562.0	520.2	481.0	453.3	422.6	300.4	204.9*	159.0*	128.2*	95.2*
	CHI	0.458	1.037	0.076	0.332	0.986	0.043	-	-	-	-
40 -	OBS	918.0	885.0	828.0	738.0	725.0	588.0	-	-	-	-
	EXP	882.3	895.3	818.6	763.0	736.7	587.4	419.1*	287.7*	222.8*	179.6*
	CHI	1.444	0.119	0.109	0.819	0.187	0.001	-	-	-	-
45 -	OBS	1545.0	1209.0	1231.0	1202.0	1159.0	953.0	-	-	-	-
	EXP	1510.9	1277.1	1278.2	1178.6	1127.6	930.8	744.2*	533.0*	365.7*	283.5*
	CHI	0.772	3.627	1.742	0.466	0.875	0.530	-	-	-	-
50 -	OBS	2553.0	1878.0	1706.0	1794.0	1638.0	1300.0	-	-	-	-
	EXP	2652.3	1995.4	1667.5	1680.9	1587.7	1295.6	1076.5*	863.7*	618.1*	424.9*
	CHI	3.721	6.911	0.889	7.616	1.595	0.015	-	-	-	-
55 -	OBS	4722.0	3400.0	2610.0	2445.0	2360.0	1754.0	-	-	-	-
	EXP	4775.2	3536.1	2630.9	2223.7	2294.5	1847.5	1514.2*	1265.8*	1014.6*	727.7*
	CHI	0.592	5.240	0.166	22.019	1.867	4.735	-	-	-	-
60 -	OBS	8695.0	6797.0	5092.0	4045.0	3279.0	2781.0	-	-	-	-
	EXP	8687.0	6897.9	5055.7	3817.6	3314.5	2927.7	2363.0*	1945.3*	1625.5*	1306.1*
	CHI	0.007	1.475	0.260	13.542	0.380	7.349	-	-	-	-
65 -	OBS	14963.0	13260.0	10224.0	7648.0	5922.0	4194.0	-	-	-	-
	EXP	15044.4	13013.6	10200.0	7609.7	5946.2	4404.9	3921.3*	3180.0*	2623.5*	2199.3*
	CHI	0.440	4.664	0.056	0.193	0.098	10.100	-	-	-	-
70 -	OBS	30049.0	23925.0	20480.0	15941.0	12154.0	8343.0	-	-	-	-
	EXP	29942.4	23616.5	20288.5	16079.3	12521.7	8453.4	6289.3*	5647.8*	4586.8*	3810.9*
	CHI	0.379	4.029	1.807	1.189	10.797	1.442	-	-	-	-
75 -	OBS	48185.0	43766.0	34177.0	29714.0	25059.0	17372.0	-	-	-	-
	EXP	48185.0	43872.9	34407.1	30166.4	24793.7	16861.2	11531.1*	8656.6*	7837.9*	6398.5*
	CHI	0.000	0.260	1.539	6.785	2.838	15.472	-	-	-	-
30-79	OBS	112562.0	95916.0	77111.0	64204.0	52950.0	37738.0	-	-	-	-
	EXP	112567.1	95929.9	77114.3	64231.0	52959.9	37754.9	28176.3*	22630.0*	19090.8*	15474.2*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

UK Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

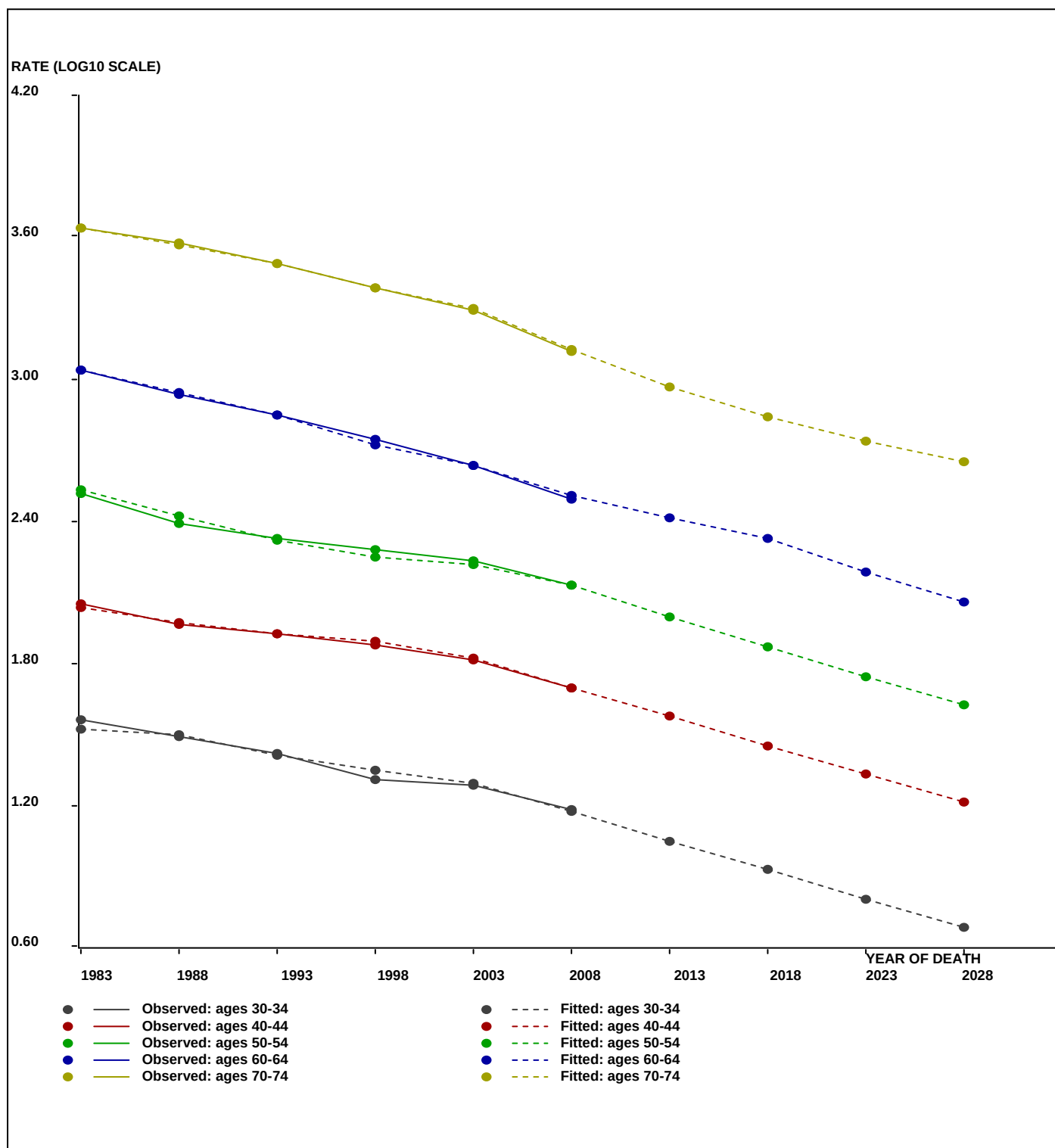


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

UK Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

UK Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	11.1	20.4	37.5	63.1	98.0	160.0	256.2	451.7	927.0	2032.5
2016	PRE	8.4	15.4	28.3	47.6	73.5	116.6	209.9	357.8	692.4	1428.0
2021	PRE	6.3	11.6	21.4	35.9	55.4	87.4	152.9	293.1	548.4	1066.6
2026	PRE	4.8	8.8	16.2	27.1	41.9	65.9	114.7	213.6	449.3	844.9

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	112.6	204.9	419.1	744.2	1076.5	1514.2	2363.0	3921.3	6289.3	11531.1
2016	PRE	91.1	159.0	287.7	533.0	863.7	1265.8	1945.3	3180.0	5647.8	8656.6
2021	PRE	67.6	128.2	222.8	365.7	618.1	1014.6	1625.5	2623.5	4586.8	7837.9
2026	PRE	48.6	95.2	179.6	283.5	424.9	727.7	1306.1	2199.3	3810.9	6398.5

Osmond and Gardner Modelling

UK Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	900.82	17.66	51	P, C	98.79	4797.35	0.0000
AGE-PERIOD	813.20	18.07	45	Cohort	98.66	4324.87	0.0000
AGE-COHORT	71.62	1.99	36	Period	84.84	379.84	0.0000
PERIOD-COHORT	87.77	2.19	40	Age	87.63	466.07	0.0000
FULL AGE-PERIOD-COHORT	10.86	0.34	32			57.60	0.0036

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.817090	6.562812
35	1.316910	20.744813
40	1.789144	61.538035
45	2.156220	143.291362
50	2.448028	280.561253
55	2.711484	514.617297
60	2.944642	880.322073
65	3.126030	1336.686556
70	3.267073	1849.580902
75	3.350234	2239.929577

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.024939	1.059105
1986	0.020503	1.048342
1991	-0.001525	0.996495
1996	-0.021728	0.951200
2001	-0.026977	0.939772
2006	0.006827	1.015844

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.210971	0.615218
1911	-0.130257	0.740872
1916	-0.044630	0.902339
1921	0.038198	1.091938
1926	0.065275	1.162185
1931	0.036752	1.088308
1936	-0.013001	0.970509
1941	-0.009447	0.978483
1946	-0.003835	0.991208
1951	-0.000709	0.998368
1956	-0.034543	0.923542
1961	-0.124734	0.750354
1966	-0.174894	0.668507
1971	-0.167744	0.679604
1976	-0.186170	0.651373

Osmond and Gardner Modelling

UK Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	70.0	58.0	47.0	47.0	56.0	43.0
EXP	68.3	61.9	54.5	48.8	46.1	43.0
CHI	0.0	0.3	1.0	0.1	2.1	0.0
35 - OBS	241.0	207.0	177.0	162.0	152.0	148.0
EXP	211.5	213.7	187.1	164.5	153.7	159.3
CHI	4.1	0.2	0.6	0.0	0.0	0.8
40 - OBS	499.0	618.0	597.0	565.0	472.0	497.0
EXP	523.1	617.9	602.6	530.7	482.0	493.5
CHI	1.1	0.0	0.1	2.2	0.2	0.0
45 - OBS	1138.0	1133.0	1372.0	1347.0	1235.0	1228.0
EXP	1146.3	1193.3	1358.8	1332.9	1215.0	1208.8
CHI	0.1	3.1	0.1	0.1	0.3	0.3
50 - OBS	2466.0	2111.0	2281.0	2549.0	2579.0	2493.0
EXP	2511.4	2183.2	2196.0	2511.8	2545.3	2535.3
CHI	0.8	2.4	3.3	0.5	0.4	0.7
55 - OBS	5248.0	4434.0	3592.0	3831.0	4565.0	4900.0
EXP	5239.7	4432.2	3723.7	3778.9	4461.7	4937.8
CHI	0.0	0.0	4.7	0.7	2.4	0.3
60 - OBS	8117.0	8688.0	6987.0	5838.0	6177.0	7835.0
EXP	8129.7	8471.2	6931.1	5895.1	6196.4	8024.1
CHI	0.0	5.5	0.5	0.6	0.1	4.5
65 - OBS	9367.0	11343.0	11322.0	9484.0	8451.0	9640.0
EXP	9233.4	11364.0	11422.9	9489.3	8421.7	9677.4
CHI	1.9	0.0	0.9	0.0	0.1	0.1
70 - OBS	10004.0	11083.0	13499.0	13578.0	11829.0	11917.0
EXP	10091.0	11230.9	13415.5	13600.9	11892.5	11683.3
CHI	0.7	1.9	0.5	0.0	0.3	4.7
75 - OBS	8049.0	10063.0	10802.0	13070.0	13805.0	13664.0
EXP	8049.0	9976.8	10789.6	13120.3	13909.9	13608.4
CHI	0.0	0.7	0.0	0.2	0.8	0.2

Osmond and Gardner Modelling

UK Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	6.562812
35	20.744813
40	61.538035
45	143.291362
50	280.561253
55	514.617297
60	880.322073
65	1336.686556
70	1849.580902
75	2239.929577

PERIOD	EFFECT	LOWER	UPPER
% Period Change	108.0946	105.0946	111.0946

1981	1.059105		
1986	1.048342		
1991	0.996495		
1996	0.951200		
2001	0.939772		
2006	1.015844		
2011	1.098072	1.067597	1.128548
2016	1.186958	1.121987	1.253756
2021	1.283038	1.179149	1.392856
2026	1.386895	1.239222	1.547388

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.615218	1.000000	
1911	0.740872	2.000000	
1916	0.902339	4.000000	
1921	1.091938	8.000000	
1926	1.162185	16.000000	
1931	1.088308	32.000000	
1936	0.970509	64.000000	
1941	0.978483	128.000000	
1946	0.991208	256.000000	
1951	0.998368	512.000000	
1956	0.923542	1024.000000	
1961	0.750354	2048.000000	
1966	0.668507	4096.000000	
1971	0.679604	8192.000000	
1976	0.617438	EXTRAPOLATION	0.651373
1981	0.573588	EXTRAPOLATION	
1986	0.532852	EXTRAPOLATION	
1991	0.495010	EXTRAPOLATION	
1996	0.459854	EXTRAPOLATION	

Osmond and Gardner Modelling

**UK Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	7.1	5.9	4.2	4.0	5.1	4.3	-	-	-	-
	EXP	6.9	6.4	4.9	4.2	4.2	4.1	4.1*	4.2*	4.2*	4.2*
	Elow							4.0	3.9	3.8	3.7
	Eup							4.2	4.4	4.5	4.7
35	OBS	24.8	21.0	18.1	14.6	12.9	13.3	-	-	-	-
	EXP	21.8	21.7	19.1	14.8	13.0	14.3	14.1*	14.1*	14.2*	14.2*
	Elow							13.7	13.4	13.0	12.7
	Eup							14.5	14.9	15.4	15.9
40	OBS	60.8	64.0	60.7	57.6	42.5	42.1	-	-	-	-
	EXP	63.8	63.9	61.2	54.1	43.4	41.8	45.9*	45.1*	45.3*	45.5*
	Elow							44.6	42.6	41.6	40.6
	Eup							47.2	47.6	49.2	50.7
45	OBS	146.2	139.6	142.9	137.5	126.4	111.0	-	-	-	-
	EXP	147.3	147.0	141.5	136.1	124.4	109.2	105.2*	115.6*	113.5*	114.0*
	Elow							102.3	109.3	104.3	101.9
	Eup							108.1	122.1	123.2	127.2
50	OBS	317.5	276.0	284.2	268.4	266.7	258.8	-	-	-	-
	EXP	323.4	285.4	273.6	264.5	263.2	263.2	231.2*	222.6*	244.6*	240.3*
	Elow							224.8	210.4	224.8	214.7
	Eup							237.6	235.2	265.6	268.1
55	OBS	634.4	587.4	480.1	485.6	490.5	517.9	-	-	-	-
	EXP	633.4	587.1	497.7	479.0	479.4	521.9	521.9*	458.3*	441.4*	485.0*
	Elow							507.4	433.2	405.7	433.4
	Eup							536.4	484.1	479.2	541.2
60	OBS	1016.5	1100.0	962.4	804.8	807.0	865.5	-	-	-	-
	EXP	1018.1	1072.6	954.7	812.7	809.5	886.4	965.1*	965.0*	847.5*	816.2*
	Elow							938.3	912.2	778.9	729.3
	Eup							991.9	1019.3	920.1	910.6
65	OBS	1295.9	1527.3	1534.4	1383.0	1223.4	1323.5	-	-	-	-
	EXP	1277.4	1530.1	1548.0	1383.7	1219.1	1328.6	1454.9*	1584.0*	1583.9*	1391.0*
	Elow							1414.5	1497.3	1455.6	1242.9
	Eup							1495.3	1673.1	1719.5	1552.0
70	OBS	1438.8	1726.6	2025.1	2041.2	1881.6	1859.9	-	-	-	-
	EXP	1451.3	1749.6	2012.5	2044.7	1891.7	1823.5	1987.3*	2176.1*	2369.2*	2369.0*
	Elow							1932.1	2057.0	2177.4	2116.8
	Eup							2042.4	2298.5	2572.0	2643.2
75	OBS	1459.5	1754.8	2016.4	2317.6	2428.0	2486.5	-	-	-	-
	EXP	1459.5	1739.7	2014.1	2326.5	2446.4	2476.4	2387.1*	2601.5*	2848.6*	3101.5*
	Elow							2320.8	2459.1	2618.0	2771.2
	Eup							2453.3	2747.9	3092.5	3460.4
30-79	OBS	458.2	497.6	500.1	483.7	464.5	478.0	-	-	-	-
	EXP	458.5	498.3	500.4	483.2	463.7	478.7	496.6*	517.3*	526.9*	523.5*
	Elow							482.9	489.0	484.2	467.8
	Eup							510.4	546.4	572.0	584.1

Osmond and Gardner Modelling

**UK Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

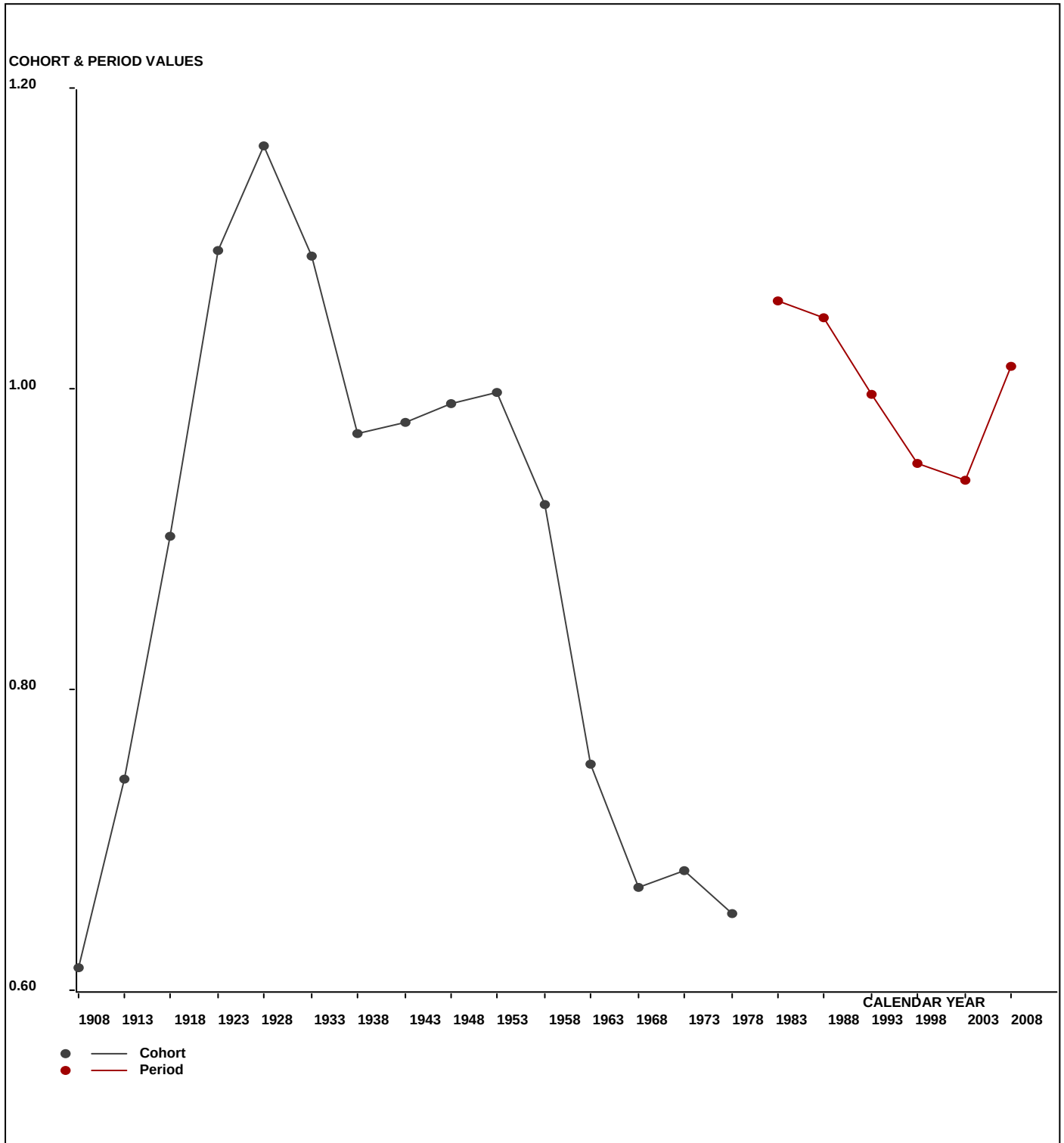
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	70.0	58.0	47.0	47.0	56.0	43.0	-	-	-	-
	EXP	68.3	61.9	54.5	48.8	46.1	40.8	41.8*	45.0*	44.4*	42.5*
	CHI	0.043	0.251	1.034	0.069	2.109	0.123	-	-	-	-
35 -	OBS	241.0	207.0	177.0	162.0	152.0	148.0	-	-	-	-
	EXP	211.5	213.7	187.1	164.5	153.7	159.3	141.1*	145.7*	156.3*	154.4*
	CHI	4.119	0.209	0.550	0.038	0.019	0.796	-	-	-	-
40 -	OBS	499.0	618.0	597.0	565.0	472.0	497.0	-	-	-	-
	EXP	523.1	617.9	602.6	530.7	482.0	493.5	513.2*	457.7*	471.5*	505.5*
	CHI	1.111	0.000	0.051	2.222	0.209	0.025	-	-	-	-
45 -	OBS	1138.0	1133.0	1372.0	1347.0	1235.0	1228.0	-	-	-	-
	EXP	1146.3	1193.3	1358.8	1332.9	1215.0	1208.8	1241.0*	1295.6*	1154.7*	1190.7*
	CHI	0.059	3.052	0.129	0.149	0.330	0.306	-	-	-	-
50 -	OBS	2466.0	2111.0	2281.0	2549.0	2579.0	2493.0	-	-	-	-
	EXP	2511.4	2183.2	2196.0	2511.8	2545.3	2535.3	2539.1*	2615.7*	2728.5*	2436.7*
	CHI	0.822	2.387	3.290	0.549	0.446	0.706	-	-	-	-
55 -	OBS	5248.0	4434.0	3592.0	3831.0	4565.0	4900.0	-	-	-	-
	EXP	5239.7	4432.2	3723.7	3778.9	4461.7	4937.8	4939.9*	4977.0*	5122.7*	5355.2*
	CHI	0.013	0.001	4.660	0.718	2.394	0.290	-	-	-	-
60 -	OBS	8117.0	8688.0	6987.0	5838.0	6177.0	7835.0	-	-	-	-
	EXP	8129.7	8471.2	6931.1	5895.1	6196.4	8024.1	8901.8*	8944.9*	9009.1*	9294.9*
	CHI	0.020	5.549	0.451	0.553	0.061	4.454	-	-	-	-
65 -	OBS	9367.0	11343.0	11322.0	9484.0	8451.0	9640.0	-	-	-	-
	EXP	9233.4	11364.0	11422.9	9489.3	8421.7	9677.4	12629.8*	14077.6*	14177.0*	14324.0*
	CHI	1.933	0.039	0.891	0.003	0.102	0.145	-	-	-	-
70 -	OBS	10004.0	11083.0	13499.0	13578.0	11829.0	11917.0	-	-	-	-
	EXP	10091.0	11230.9	13415.5	13600.9	11892.5	11683.3	13483.2*	17750.7*	19814.9*	20095.5*
	CHI	0.750	1.948	0.520	0.039	0.339	4.674	-	-	-	-
75 -	OBS	8049.0	10063.0	10802.0	13070.0	13805.0	13664.0	-	-	-	-
	EXP	8049.0	9976.8	10789.6	13120.3	13909.9	13608.4	13543.0*	15770.7*	20933.6*	23488.9*
	CHI	0.000	0.746	0.014	0.193	0.791	0.227	-	-	-	-
30-79	OBS	45199.0	49738.0	50676.0	50471.0	49321.0	52365.0	-	-	-	-
	EXP	45203.4	49745.1	50681.8	50473.2	49324.3	52368.6	57973.9*	66080.6*	73612.7*	76888.4*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

UK Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

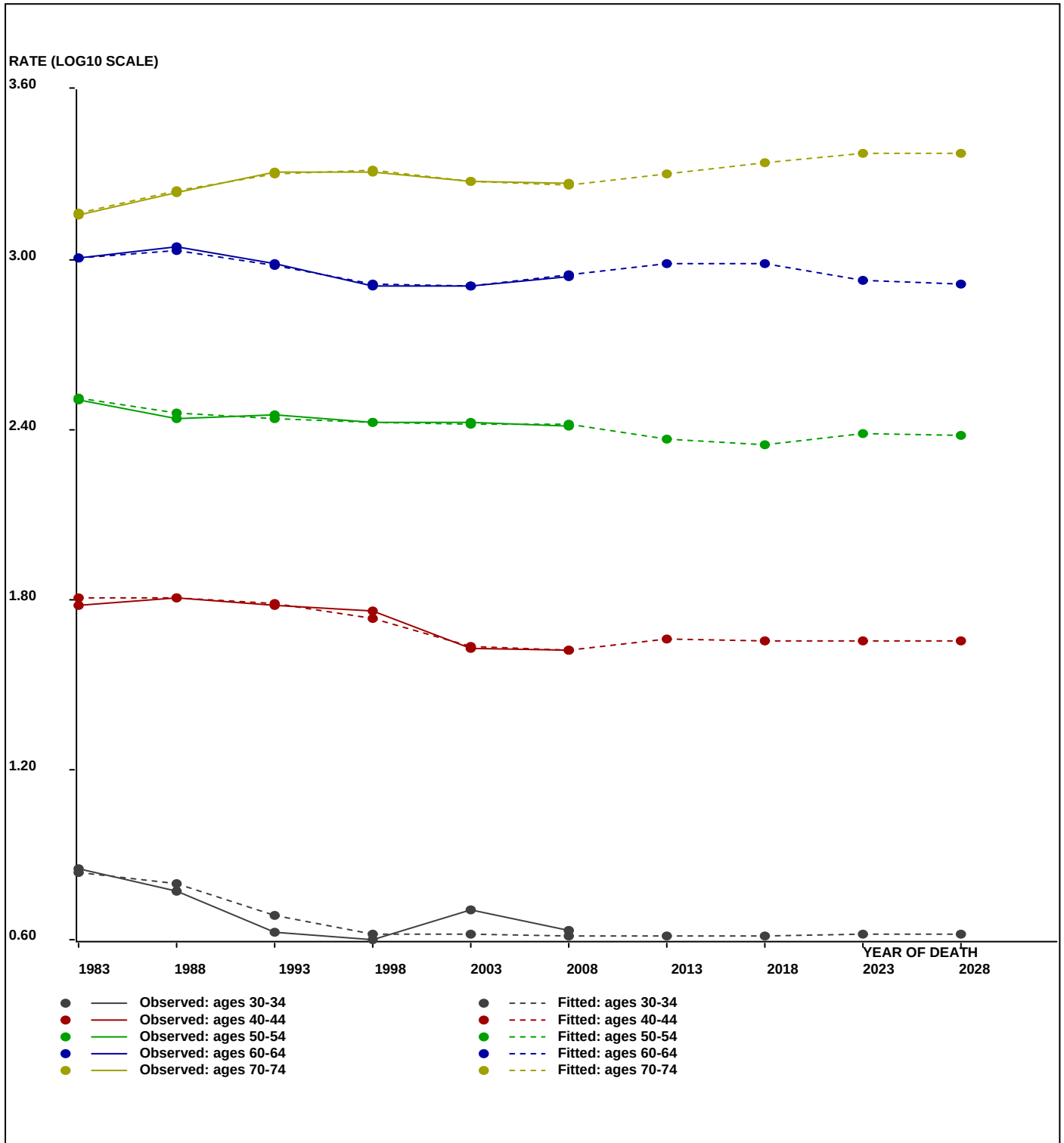


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

UK Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

**UK Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	4.1	14.1	45.9	105.2	231.2	521.9	965.1	1454.9	1987.3	2387.1
2016	PRE	4.2	14.1	45.1	115.6	222.6	458.3	965.0	1584.0	2176.1	2601.5
2021	PRE	4.2	14.2	45.3	113.5	244.6	441.4	847.5	1583.9	2369.2	2848.6
2026	PRE	4.2	14.2	45.5	114.0	240.3	485.0	816.2	1391.0	2369.0	3101.5

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	41.8	141.1	513.2	1241.0	2539.1	4939.9	8901.8	12629.8	13483.2	13543.0
2016	PRE	45.0	145.7	457.7	1295.6	2615.7	4977.0	8944.9	14077.6	17750.7	15770.7
2021	PRE	44.4	156.3	471.5	1154.7	2728.5	5122.7	9009.1	14177.0	19814.9	20933.6
2026	PRE	42.5	154.4	505.5	1190.7	2436.7	5355.2	9294.9	14324.0	20095.5	23488.9

Osmond and Gardner Modelling

UK COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	1329.58	26.07	51	P, C	97.49	7101.56	0.0000
AGE-PERIOD	1023.53	22.75	45	Cohort	96.75	5465.28	0.0000
AGE-COHORT	38.71	1.08	36	Period	13.96	205.41	0.0000
PERIOD-COHORT	138.13	3.45	40	Age	75.89	737.89	0.0000
FULL AGE-PERIOD-COHORT	33.31	1.04	32			176.81	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.140711	13.826475
35	1.228807	16.935842
40	1.508973	32.282942
45	1.759034	57.416080
50	2.102611	126.651640
55	2.409199	256.565682
60	2.686917	486.314422
65	2.945930	882.937389
70	3.171715	1484.959864
75	3.361998	2301.432848

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.009243	1.021512
1986	0.017929	1.042146
1991	0.007311	1.016976
1996	-0.000096	0.999779
2001	-0.016400	0.962941
2006	-0.016356	0.963039

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.214824	0.609784
1911	-0.139247	0.725693
1916	-0.041402	0.909072
1921	0.048179	1.117324
1926	0.083218	1.211206
1931	0.056792	1.139704
1936	-0.009261	0.978901
1941	-0.042779	0.906194
1946	-0.071694	0.847825
1951	-0.118248	0.761644
1956	-0.177226	0.664927
1961	-0.248315	0.564528
1966	-0.310115	0.489649
1971	-0.397481	0.400423
1976	-0.371889	0.424728

Osmond and Gardner Modelling

UK COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	102.0	108.0	70.0	79.0	63.0	56.0
EXP	105.9	93.4	88.2	79.2	58.7	56.0
CHI	0.1	2.3	3.7	0.0	0.3	0.0
35 - OBS	151.0	145.0	112.0	100.0	82.0	68.0
EXP	142.4	132.3	112.3	106.2	94.2	72.6
CHI	0.5	1.2	0.0	0.4	1.6	0.3
40 - OBS	288.0	263.0	210.0	208.0	185.0	191.0
EXP	245.1	275.6	246.1	210.7	194.9	179.8
CHI	7.5	0.6	5.3	0.0	0.5	0.7
45 - OBS	542.0	456.0	400.0	357.0	340.0	376.0
EXP	446.8	440.2	475.3	428.3	359.1	345.5
CHI	20.3	0.6	11.9	11.9	1.0	2.7
50 - OBS	1272.0	1000.0	814.0	952.0	926.0	787.0
EXP	1145.1	988.2	937.0	1019.4	898.2	781.2
CHI	14.1	0.1	16.1	4.5	0.9	0.0
55 - OBS	2709.0	2336.0	1817.0	1744.0	1948.0	1840.0
EXP	2625.9	2300.4	1911.0	1833.9	1949.5	1780.4
CHI	2.6	0.6	4.6	4.4	0.0	2.0
60 - OBS	4397.0	4822.0	3933.0	3442.0	3336.0	3731.0
EXP	4432.3	4848.3	4092.2	3452.5	3248.4	3594.4
CHI	0.3	0.1	6.2	0.0	2.4	5.2
65 - OBS	5755.0	7561.0	8084.0	6988.0	5793.0	5663.0
EXP	5926.4	7635.5	8025.2	6899.3	5749.3	5612.3
CHI	5.0	0.7	0.4	1.1	0.3	0.5
70 - OBS	7482.0	8879.0	11350.0	12102.0	10379.0	8911.0
EXP	7654.0	9030.5	11247.7	11961.5	10245.5	8969.4
CHI	3.9	2.5	0.9	1.7	1.7	0.4
75 - OBS	7906.0	10150.0	11713.0	14505.0	15001.0	13642.0
EXP	7906.0	9981.3	11398.2	14498.4	15261.9	13881.2
CHI	0.0	2.8	8.7	0.0	4.5	4.1

Osmond and Gardner Modelling

UK COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	13.826475
35	16.935842
40	32.282942
45	57.416080
50	126.651640
55	256.565682
60	486.314422
65	882.937389
70	1484.959864
75	2301.432848

PERIOD	EFFECT	LOWER	UPPER
% Period Change	100.0102	97.0102	103.0102
1981	1.021512		
1986	1.042146		
1991	1.016976		
1996	0.999779		
2001	0.962941		
2006	0.963039		
2011	0.963137	0.934246	0.992028
2016	0.963235	0.906313	1.021890
2021	0.963333	0.879216	1.052651
2026	0.963431	0.852929	1.084337

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.609784	1.000000	
1911	0.725693	2.000000	
1916	0.909072	4.000000	
1921	1.117324	8.000000	
1926	1.211206	16.000000	
1931	1.139704	32.000000	
1936	0.978901	64.000000	
1941	0.906194	128.000000	
1946	0.847825	256.000000	
1951	0.761644	512.000000	
1956	0.664927	1024.000000	
1961	0.564528	2048.000000	
1966	0.489649	4096.000000	
1971	0.400423	8192.000000	
1976	0.352246	EXTRAPOLATION	0.424728
1981	0.303354	EXTRAPOLATION	
1986	0.261248	EXTRAPOLATION	
1991	0.224986	EXTRAPOLATION	
1996	0.193758	EXTRAPOLATION	

Osmond and Gardner Modelling

**UK COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	10.4	11.1	6.3	6.8	5.7	5.7	-	-	-	-
	EXP	10.8	9.6	7.9	6.8	5.3	4.7	4.0*	3.5*	3.0*	2.6*
	Elow							3.9	3.3	2.7	2.3
	Eup							4.2	3.7	3.3	2.9
35	OBS	15.5	14.7	11.4	9.0	7.0	6.1	-	-	-	-
	EXP	14.7	13.4	11.5	9.6	8.0	6.5	5.7*	4.9*	4.3*	3.7*
	Elow							5.6	4.7	3.9	3.2
	Eup							5.9	5.3	4.7	4.1
40	OBS	35.1	27.2	21.3	21.2	16.7	16.2	-	-	-	-
	EXP	29.9	28.5	25.0	21.5	17.5	15.2	12.5*	11.0*	9.4*	8.1*
	Elow							12.1	10.3	8.6	7.2
	Eup							12.8	11.6	10.3	9.1
45	OBS	69.6	56.2	41.7	36.4	34.8	34.0	-	-	-	-
	EXP	57.4	54.2	49.5	43.7	36.8	31.2	27.1*	22.1*	19.5*	16.8*
	Elow							26.3	20.8	17.8	14.9
	Eup							27.9	23.5	21.3	18.9
50	OBS	163.8	130.7	101.4	100.3	95.8	81.7	-	-	-	-
	EXP	147.5	129.2	116.7	107.4	92.9	81.1	68.9*	59.7*	48.9*	43.0*
	Elow							66.8	56.2	44.6	38.1
	Eup							70.9	63.4	53.4	48.4
55	OBS	327.5	309.4	242.8	221.1	209.3	194.5	-	-	-	-
	EXP	317.4	304.7	255.4	232.4	209.5	188.2	164.3*	139.5*	121.0*	99.0*
	Elow							159.4	131.3	110.5	87.6
	Eup							169.2	148.0	132.2	111.4
60	OBS	550.6	610.5	541.7	474.5	435.8	412.2	-	-	-	-
	EXP	555.1	613.9	563.7	475.9	424.4	397.1	356.7*	311.5*	264.5*	229.4*
	Elow							346.0	293.1	241.4	203.1
	Eup							367.4	330.4	289.0	258.2
65	OBS	796.2	1018.1	1095.5	1019.0	838.6	777.5	-	-	-	-
	EXP	819.9	1028.1	1087.6	1006.1	832.3	770.5	721.0*	647.8*	565.6*	480.2*
	Elow							699.4	609.5	516.2	425.1
	Eup							742.6	687.2	618.0	540.5
70	OBS	1076.1	1383.2	1702.7	1819.3	1650.9	1390.8	-	-	-	-
	EXP	1100.8	1406.8	1687.3	1798.2	1629.7	1399.9	1296.1*	1212.7*	1089.5*	951.3*
	Elow							1257.2	1141.0	994.4	842.2
	Eup							1334.9	1286.5	1190.6	1070.7
75	OBS	1433.6	1769.9	2186.5	2572.0	2638.3	2482.5	-	-	-	-
	EXP	1433.6	1740.5	2127.7	2570.9	2684.2	2526.0	2169.8*	2008.9*	1879.7*	1688.8*
	Elow							2104.7	1890.2	1715.5	1495.1
	Eup							2234.9	2131.2	2053.9	1900.7
30-79	OBS	292.0	333.7	351.0	356.2	329.8	299.6	-	-	-	-
	EXP	290.0	333.8	354.4	357.4	328.9	298.5	267.4*	242.7*	217.0*	189.3*
	Elow							259.4	228.4	198.0	167.6
	Eup							275.5	257.5	237.1	213.1

Osmond and Gardner Modelling

UK COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

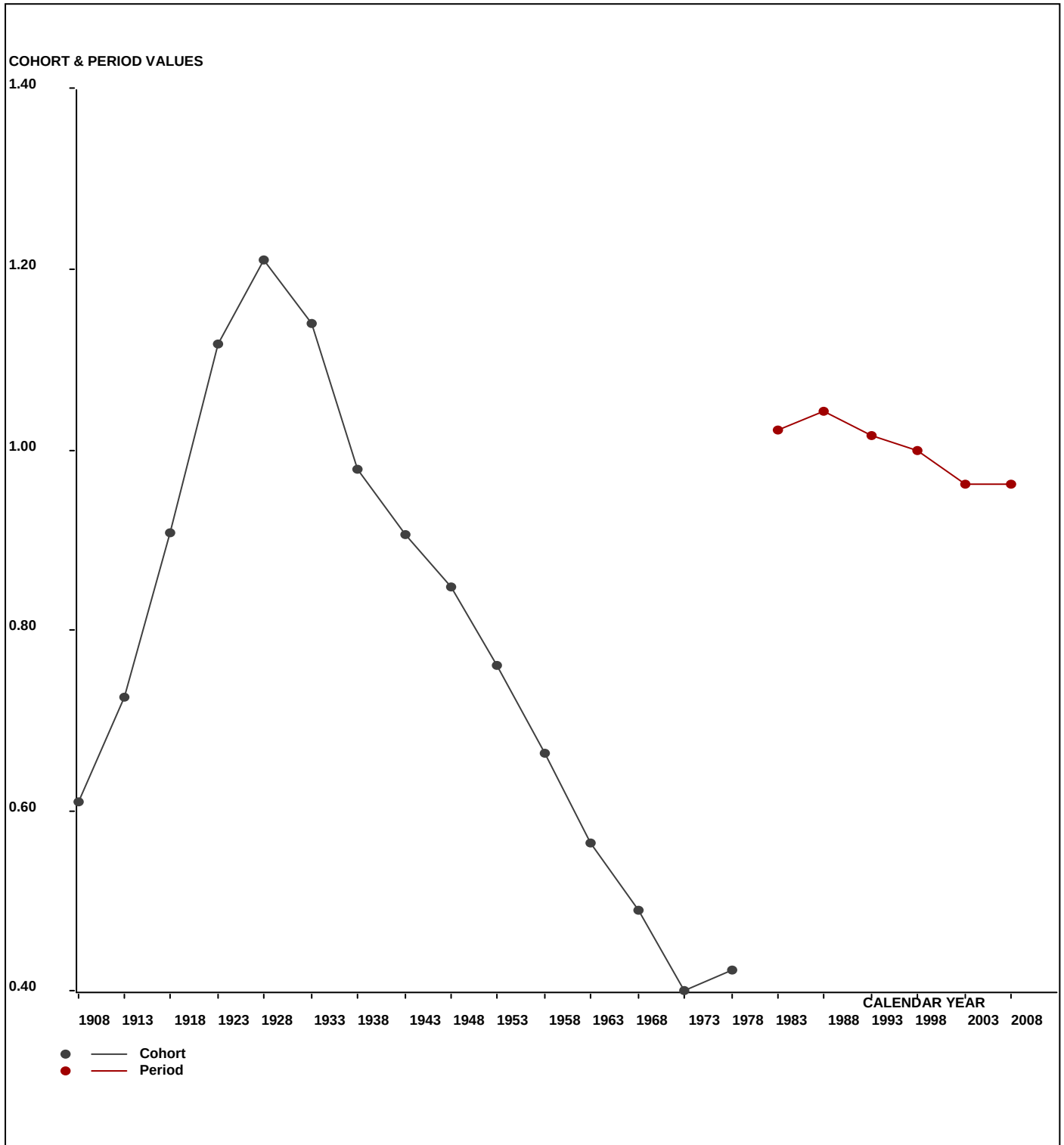
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	102.0	108.0	70.0	79.0	63.0	56.0	-	-	-	-
	EXP	105.9	93.4	88.2	79.2	58.7	46.4	40.9*	37.7*	31.9*	26.2*
	CHI	0.141	2.283	3.745	0.001	0.318	1.966	-	-	-	-
35 -	OBS	151.0	145.0	112.0	100.0	82.0	68.0	-	-	-	-
	EXP	142.4	132.3	112.3	106.2	94.2	72.6	57.7*	51.1*	47.0*	39.8*
	CHI	0.515	1.220	0.001	0.362	1.576	0.294	-	-	-	-
40 -	OBS	288.0	263.0	210.0	208.0	185.0	191.0	-	-	-	-
	EXP	245.1	275.6	246.1	210.7	194.9	179.8	139.1*	111.2*	98.2*	90.3*
	CHI	7.498	0.579	5.298	0.034	0.507	0.702	-	-	-	-
45 -	OBS	542.0	456.0	400.0	357.0	340.0	376.0	-	-	-	-
	EXP	446.8	440.2	475.3	428.3	359.1	345.5	319.5*	248.2*	198.2*	175.3*
	CHI	20.272	0.565	11.919	11.859	1.021	2.700	-	-	-	-
50 -	OBS	1272.0	1000.0	814.0	952.0	926.0	787.0	-	-	-	-
	EXP	1145.1	988.2	937.0	1019.4	898.2	781.2	756.4*	701.9*	544.9*	435.9*
	CHI	14.059	0.141	16.135	4.458	0.862	0.043	-	-	-	-
55 -	OBS	2709.0	2336.0	1817.0	1744.0	1948.0	1840.0	-	-	-	-
	EXP	2625.9	2300.4	1911.0	1833.9	1949.5	1780.4	1555.3*	1515.0*	1404.5*	1092.8*
	CHI	2.633	0.551	4.626	4.408	0.001	1.992	-	-	-	-
60 -	OBS	4397.0	4822.0	3933.0	3442.0	3336.0	3731.0	-	-	-	-
	EXP	4432.3	4848.3	4092.2	3452.5	3248.4	3594.4	3290.6*	2887.1*	2811.3*	2612.6*
	CHI	0.282	0.143	6.192	0.032	2.365	5.190	-	-	-	-
65 -	OBS	5755.0	7561.0	8084.0	6988.0	5793.0	5663.0	-	-	-	-
	EXP	5926.4	7635.5	8025.2	6899.3	5749.3	5612.3	6258.9*	5756.9*	5062.2*	4944.9*
	CHI	4.960	0.727	0.431	1.140	0.332	0.457	-	-	-	-
70 -	OBS	7482.0	8879.0	11350.0	12102.0	10379.0	8911.0	-	-	-	-
	EXP	7654.0	9030.5	11247.7	11961.5	10245.5	8969.4	8793.5*	9892.3*	9112.4*	8069.3*
	CHI	3.866	2.541	0.930	1.651	1.740	0.380	-	-	-	-
75 -	OBS	7906.0	10150.0	11713.0	14505.0	15001.0	13642.0	-	-	-	-
	EXP	7906.0	9981.3	11398.2	14498.4	15261.9	13881.2	12310.5*	12178.1*	13812.9*	12789.9*
	CHI	0.000	2.850	8.696	0.003	4.459	4.123	-	-	-	-
30-79	OBS	30604.0	35720.0	38503.0	40477.0	38053.0	35265.0	-	-	-	-
	EXP	30630.0	35725.7	38533.0	40489.4	38059.6	35263.3	33522.1*	33379.3*	33123.6*	30277.0*
	O/E	0.999	1.000	0.999	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

UK COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

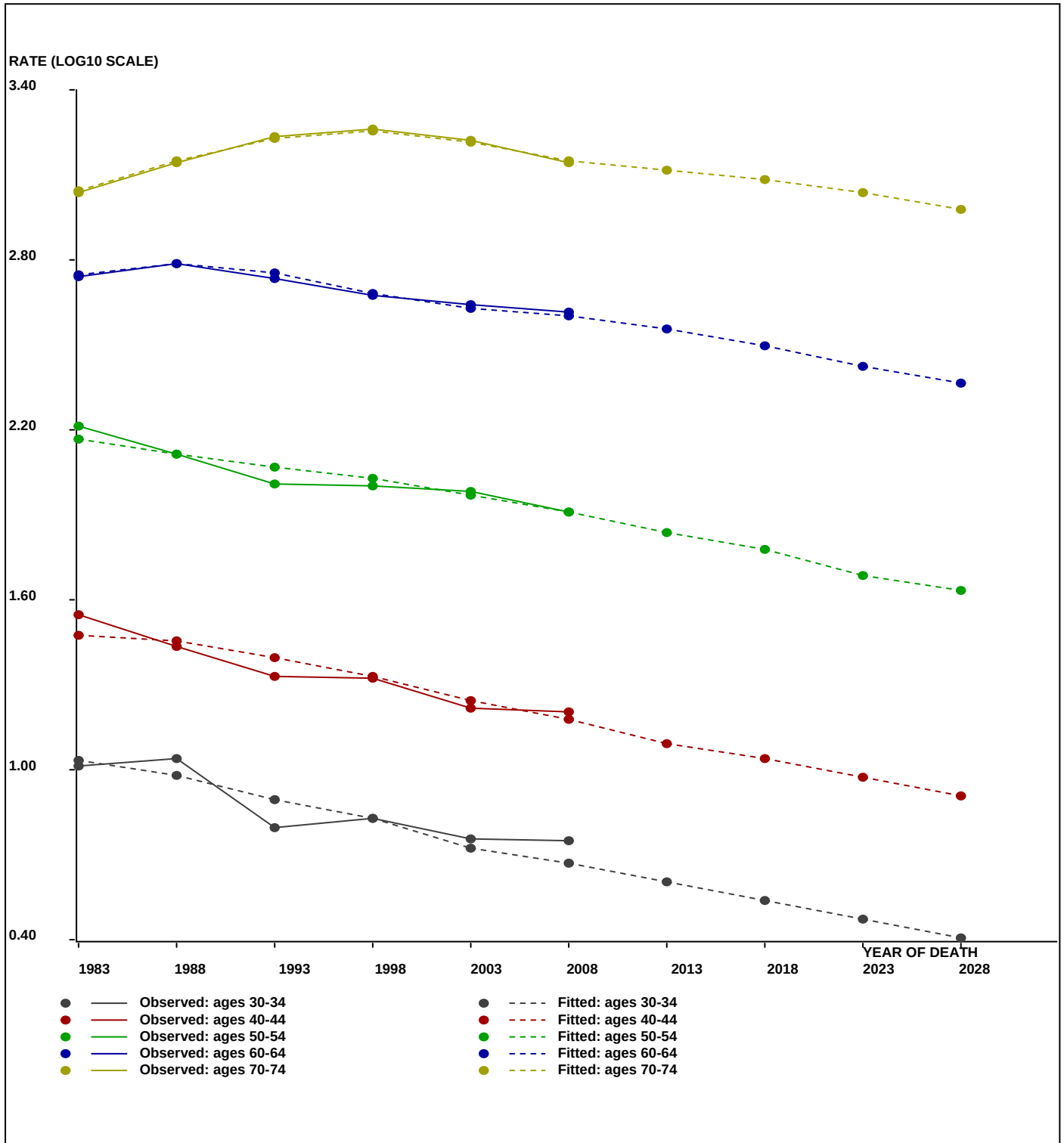


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

UK COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

UK COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	4.0	5.7	12.5	27.1	68.9	164.3	356.7	721.0	1296.1	2169.8
2016	PRE	3.5	4.9	11.0	22.1	59.7	139.5	311.5	647.8	1212.7	2008.9
2021	PRE	3.0	4.3	9.4	19.5	48.9	121.0	264.5	565.6	1089.5	1879.7
2026	PRE	2.6	3.7	8.1	16.8	43.0	99.0	229.4	480.2	951.3	1688.8

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	40.9	57.7	139.1	319.5	756.4	1555.3	3290.6	6258.9	8793.5	12310.5
2016	PRE	37.7	51.1	111.2	248.2	701.9	1515.0	2887.1	5756.9	9892.3	12178.1
2021	PRE	31.9	47.0	98.2	198.2	544.9	1404.5	2811.3	5062.2	9112.4	13812.9
2026	PRE	26.2	39.8	90.3	175.3	435.9	1092.8	2612.6	4944.9	8069.3	12789.9

Osmond and Gardner Modelling

USA IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	86779.55	1701.56	51	P, C	99.56	468027.25	0.0000
AGE-PERIOD	1923.58	42.75	45	Cohort	79.95	10214.59	0.0000
AGE-COHORT	1352.12	37.56	36	Period	71.47	7171.01	0.0000
PERIOD-COHORT	995.23	24.88	40	Age	61.24	5282.33	0.0000
FULL AGE-PERIOD-COHORT	385.77	12.06	32			2045.93	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.872553	74.568108
35	2.335940	216.740358
40	2.726965	533.292396
45	3.033710	1080.712460
50	3.279779	1904.491485
55	3.473403	2974.427303
60	3.645091	4416.633563
65	3.796400	6257.489934
70	3.955342	9022.814274
75	4.120874	13209.124519

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.119595	1.317027
1986	0.044332	1.107470
1991	-0.004633	0.989389
1996	-0.029731	0.933833
2001	-0.065494	0.860014
2006	-0.149234	0.709196

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.105641	1.275385
1911	0.100425	1.260158
1916	0.079552	1.201026
1921	0.049867	1.121674
1926	0.014674	1.034367
1931	-0.029456	0.934424
1936	-0.070975	0.849230
1941	-0.089708	0.813377
1946	-0.112024	0.772637
1951	-0.117991	0.762095
1956	-0.120196	0.758235
1961	-0.115118	0.767152
1966	-0.112785	0.771285
1971	-0.067875	0.855312
1976	0.014321	1.033525

Osmond and Gardner Modelling

USA IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	3674.0	3417.0	3045.0	2739.0	2946.0	2752.0
EXP	3598.2	3375.0	3183.3	2889.4	2787.6	2752.0
CHI	1.6	0.5	6.0	7.8	9.0	0.0
35 - OBS	9811.0	8885.0	8406.0	8309.0	7873.0	6565.0
EXP	8879.4	8817.3	8806.6	8870.5	7822.4	6729.9
CHI	97.8	0.5	18.2	35.5	0.3	4.0
40 - OBS	20359.0	19068.0	18406.0	18694.0	19912.0	15918.0
EXP	18446.7	18489.4	19311.2	20465.2	20027.8	15822.7
CHI	198.2	18.1	42.4	153.3	0.7	0.6
45 - OBS	36793.0	31227.0	32009.0	34365.0	37363.0	33930.0
EXP	34237.7	31071.3	32856.5	36680.6	37887.8	33145.1
CHI	190.7	0.8	21.9	146.2	7.3	18.6
50 - OBS	66394.0	49184.0	46344.0	51662.0	59029.0	56803.0
EXP	64665.2	49623.1	47857.0	54126.7	59009.5	54297.4
CHI	46.2	3.9	47.8	112.2	0.0	115.6
55 - OBS	110120.080915.0	65757.0	67309.0	75974.0	76897.0	
EXP	111226.781058.4	66271.4	68406.2	76089.5	73992.6	
CHI	11.0	0.3	4.0	17.6	0.2	114.0
60 - OBS	158829.0127374.0101463.090090.0	90871.0	91070.0			
EXP	162772.0129086.2100675.788424.5	89549.7	89294.3			
CHI	95.5	22.7	6.2	31.4	19.5	35.3
65 - OBS	200601.0172601.0147790.0125390.0107300.096712.0					
EXP	203030.7172842.0146702.2123030.3107200.197634.5					
CHI	29.1	0.3	8.1	45.3	0.1	8.7
70 - OBS	232517.0204299.0187996.0172292.0141677.0109155.0					
EXP	232569.6202689.7186436.1170812.1142817.4112691.0					
CHI	0.0	12.8	13.1	12.8	9.1	110.9
75 - OBS	228182.0215731.0203687.0205614.0184381.0137446.0					
EXP	228182.0215678.4202889.2203060.7184157.2141140.0					
CHI	0.0	0.0	3.1	32.1	0.3	96.7

Osmond and Gardner Modelling

USA IHD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	74.568108
35	216.740358
40	533.292396
45	1080.712460
50	1904.491485
55	2974.427303
60	4416.633563
65	6257.489934
70	9022.814274
75	13209.124519

PERIOD	EFFECT	LOWER	UPPER
% Period Change	82.4633	79.4633	85.4633

1981	1.317027		
1986	1.107470		
1991	0.989389		
1996	0.933833		
2001	0.860014		
2006	0.709196		
2011	0.584826	0.563550	0.606102
2016	0.482267	0.447816	0.517995
2021	0.397693	0.355849	0.442695
2026	0.327951	0.282769	0.378342

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.275385	1.000000	
1911	1.260158	2.000000	
1916	1.201026	4.000000	
1921	1.121674	8.000000	
1926	1.034367	16.000000	
1931	0.934424	32.000000	
1936	0.849230	64.000000	
1941	0.813377	128.000000	
1946	0.772637	256.000000	
1951	0.762095	512.000000	
1956	0.758235	1024.000000	
1961	0.767152	2048.000000	
1966	0.771285	4096.000000	
1971	0.855312	8192.000000	
1976	0.847449	EXTRAPOLATION	1.033525
1981	0.865752	EXTRAPOLATION	
1986	0.884450	EXTRAPOLATION	
1991	0.903552	EXTRAPOLATION	
1996	0.923066	EXTRAPOLATION	

Osmond and Gardner Modelling

**USA IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	76.4	63.4	54.1	50.9	58.0	54.7	-	-	-	-
	EXP	74.8	62.6	56.6	53.7	54.9	44.8	37.8*	31.8*	26.8*	22.6*
	Elow							36.4	29.5	24.0	19.5
	Eup							39.1	34.2	29.8	26.0
35	OBS	243.7	184.3	155.2	145.4	144.7	128.3	-	-	-	-
	EXP	220.6	182.9	162.6	155.3	143.8	131.5	107.4*	90.5*	76.2*	64.2*
	Elow							103.5	84.0	68.2	55.4
	Eup							111.3	97.2	84.9	74.1
40	OBS	630.5	470.6	383.3	344.9	349.8	293.5	-	-	-	-
	EXP	571.3	456.3	402.1	377.6	351.8	291.7	266.8*	218.0*	183.6*	154.7*
	Elow							257.1	202.4	164.3	133.4
	Eup							276.5	234.1	204.4	178.5
45	OBS	1298.9	978.4	804.8	720.6	695.0	601.9	-	-	-	-
	EXP	1208.7	973.5	826.1	769.1	704.7	588.0	487.5*	445.8*	364.2*	306.8*
	Elow							469.7	413.9	325.9	264.6
	Eup							505.2	478.8	405.4	354.0
50	OBS	2406.4	1775.3	1484.2	1311.5	1248.6	1071.4	-	-	-	-
	EXP	2343.8	1791.2	1532.6	1374.1	1248.2	1024.1	854.5*	708.4*	647.8*	529.3*
	Elow							823.4	657.8	579.7	456.4
	Eup							885.5	760.9	721.1	610.6
55	OBS	4011.7	3072.6	2479.8	2223.0	1973.4	1670.7	-	-	-	-
	EXP	4052.0	3078.1	2499.2	2259.3	1976.4	1607.6	1319.0*	1100.5*	912.4*	834.3*
	Elow							1271.0	1021.8	816.4	719.4
	Eup							1367.0	1182.0	1015.6	962.5
60	OBS	6366.5	4992.3	4115.1	3568.5	3135.1	2468.2	-	-	-	-
	EXP	6524.6	5059.4	4083.2	3502.6	3089.5	2420.1	1968.5*	1615.0*	1347.5*	1117.2*
	Elow							1896.9	1499.7	1205.7	963.2
	Eup							2040.1	1734.7	1500.0	1288.8
65	OBS	9779.5	7762.3	6451.3	5565.0	4574.4	3575.5	-	-	-	-
	EXP	9898.0	7773.2	6403.9	5460.3	4570.2	3609.6	2827.5*	2299.8*	1886.9*	1574.3*
	Elow							2724.6	2135.5	1688.4	1357.4
	Eup							2930.4	2470.2	2100.4	1816.2
70	OBS	14971.4	12096.5	10097.0	8790.9	7193.0	5263.7	-	-	-	-
	EXP	14974.8	12001.2	10013.3	8715.4	7250.9	5434.2	4292.0*	3362.1*	2734.6*	2243.6*
	Elow							4135.9	3121.9	2446.9	1934.5
	Eup							4448.2	3611.1	3044.1	2588.4
75	OBS	22187.6	18439.0	15757.9	14010.0	11764.7	8524.4	-	-	-	-
	EXP	22187.6	18434.5	15696.2	13836.0	11750.4	8753.5	6560.3*	5181.5*	4058.8*	3301.4*
	Elow							6321.7	4811.3	3631.7	2846.5
	Eup							6799.0	5565.3	4518.1	3808.6
30-79	OBS	3943.7	3125.8	2604.3	2288.1	1970.8	1537.4	-	-	-	-
	EXP	3941.1	3127.2	2605.8	2287.9	1970.3	1537.4	1224.4*	996.1*	821.3*	686.7*
	Elow							1179.8	925.0	734.9	592.1
	Eup							1268.9	1069.9	914.2	792.2

Osmond and Gardner Modelling

**USA IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

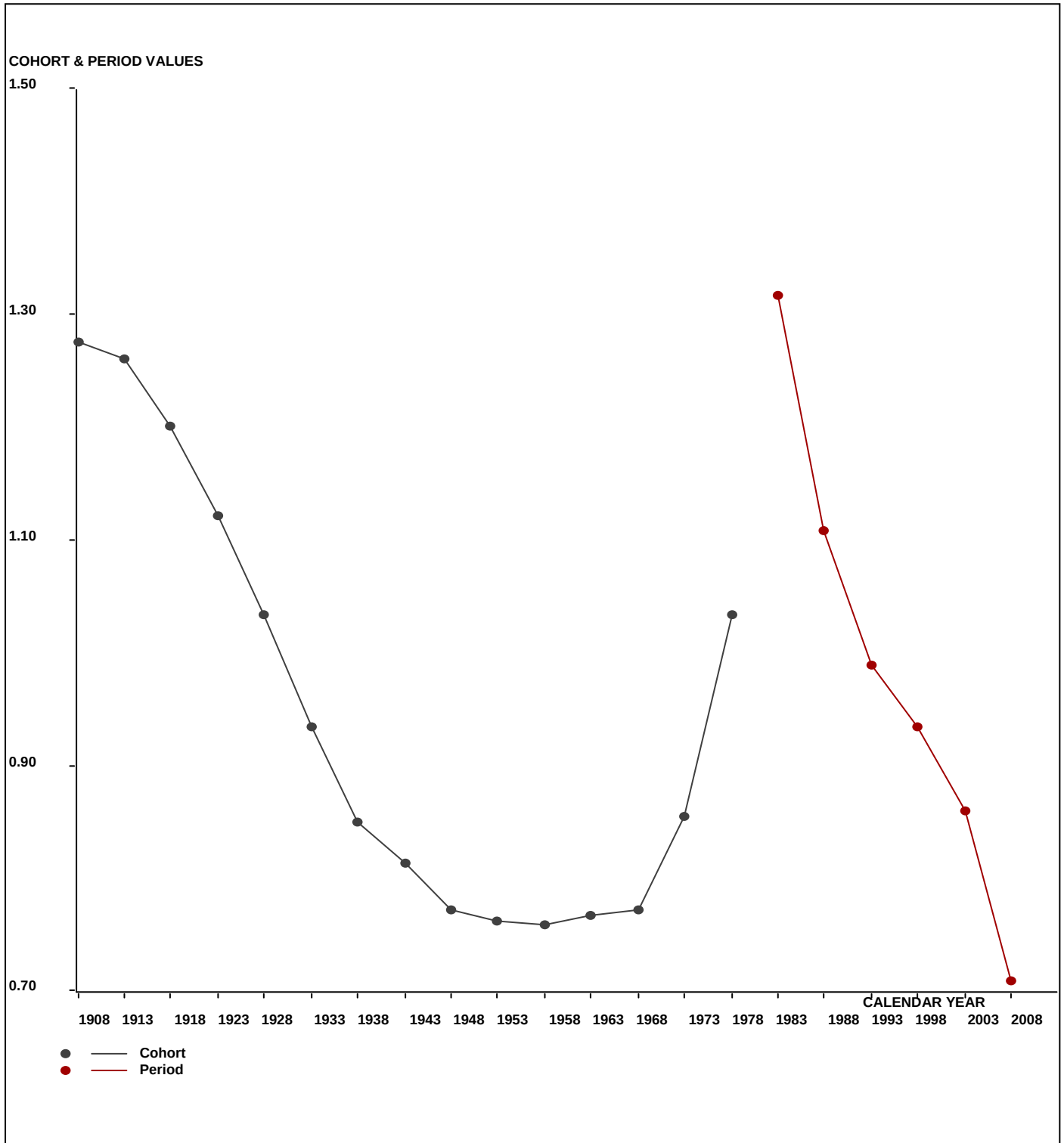
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	3674.0	3417.0	3045.0	2739.0	2946.0	2752.0	-	-	-	-
	EXP	3598.2	3375.0	3183.3	2889.4	2787.6	2256.5	2012.9*	1804.5*	1591.9*	1339.4*
	CHI	1.595	0.522	6.006	7.827	9.004	108.791	-	-	-	-
35 -	OBS	9811.0	8885.0	8406.0	8309.0	7873.0	6565.0	-	-	-	-
	EXP	8879.4	8817.3	8806.6	8870.5	7822.4	6729.9	5477.6*	4873.6*	4369.4*	3854.4*
	CHI	97.750	0.519	18.224	35.549	0.327	4.040	-	-	-	-
40 -	OBS	20359.0	19068.0	18406.0	18694.0	19912.0	15918.0	-	-	-	-
	EXP	18446.7	18489.4	19311.2	20465.2	20027.8	15822.7	13685.0*	11140.7*	9919.8*	8894.5*
	CHI	198.246	18.106	42.433	153.285	0.670	0.574	-	-	-	-
45 -	OBS	36793.0	31227.0	32009.0	34365.0	37363.0	33930.0	-	-	-	-
	EXP	34237.7	31071.3	32856.5	36680.6	37887.8	33145.1	26249.8*	22715.6*	18527.8*	16511.0*
	CHI	190.713	0.781	21.863	146.182	7.269	18.586	-	-	-	-
50 -	OBS	66394.0	49184.0	46344.0	51662.0	59029.0	56803.0	-	-	-	-
	EXP	64665.2	49623.1	47857.0	54126.7	59009.5	54297.4	47430.1*	37489.3*	32538.5*	26590.3*
	CHI	46.220	3.886	47.834	112.230	0.006	115.619	-	-	-	-
55 -	OBS	110120.0	80915.0	65757.0	67309.0	75974.0	76897.0	-	-	-	-
	EXP	111226.7	81058.4	66271.4	68406.2	76089.5	73992.6	68052.9*	59289.0*	47030.6*	40942.3*
	CHI	11.012	0.254	3.992	17.598	0.175	114.003	-	-	-	-
60 -	OBS	158829.0	127374.0	101463.0	90090.0	90871.0	91070.0	-	-	-	-
	EXP	162772.0	129086.2	100675.7	88424.5	89549.7	89294.3	86636.7*	79614.5*	69642.7*	55453.9*
	CHI	95.517	22.712	6.157	31.372	19.494	35.310	-	-	-	-
65 -	OBS	200601.0	172601.0	147790.0	125390.0	107300.0	96712.0	-	-	-	-
	EXP	203030.7	172842.0	146702.2	123030.3	107200.1	97634.5	97439.8*	94394.5*	87249.3*	76677.6*
	CHI	29.076	0.336	8.066	45.260	0.093	8.716	-	-	-	-
70 -	OBS	232517.0	204299.0	187996.0	172292.0	141677.0	109155.0	-	-	-	-
	EXP	232569.6	202689.7	186436.1	170812.1	142817.4	112691.0	103834.7*	104032.3*	101451.3*	94455.6*
	CHI	0.012	12.777	13.051	12.822	9.106	110.949	-	-	-	-
75 -	OBS	228182.0	215731.0	203687.0	205614.0	184381.0	137446.0	-	-	-	-
	EXP	228182.0	215678.4	202889.2	203060.7	184157.2	141140.0	113144.0*	105447.2*	106838.1*	105052.3*
	CHI	0.000	0.013	3.137	32.106	0.272	96.681	-	-	-	-
30-79	OBS	1067280.0	912701.0	814903.0	776464.0	727326.0	627248.0	-	-	-	-
	EXP	1067608.2	912730.9	814989.2	776766.1	727349.1	627004.0	563963.6*	520801.0*	479159.5*	429771.4*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

USA IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

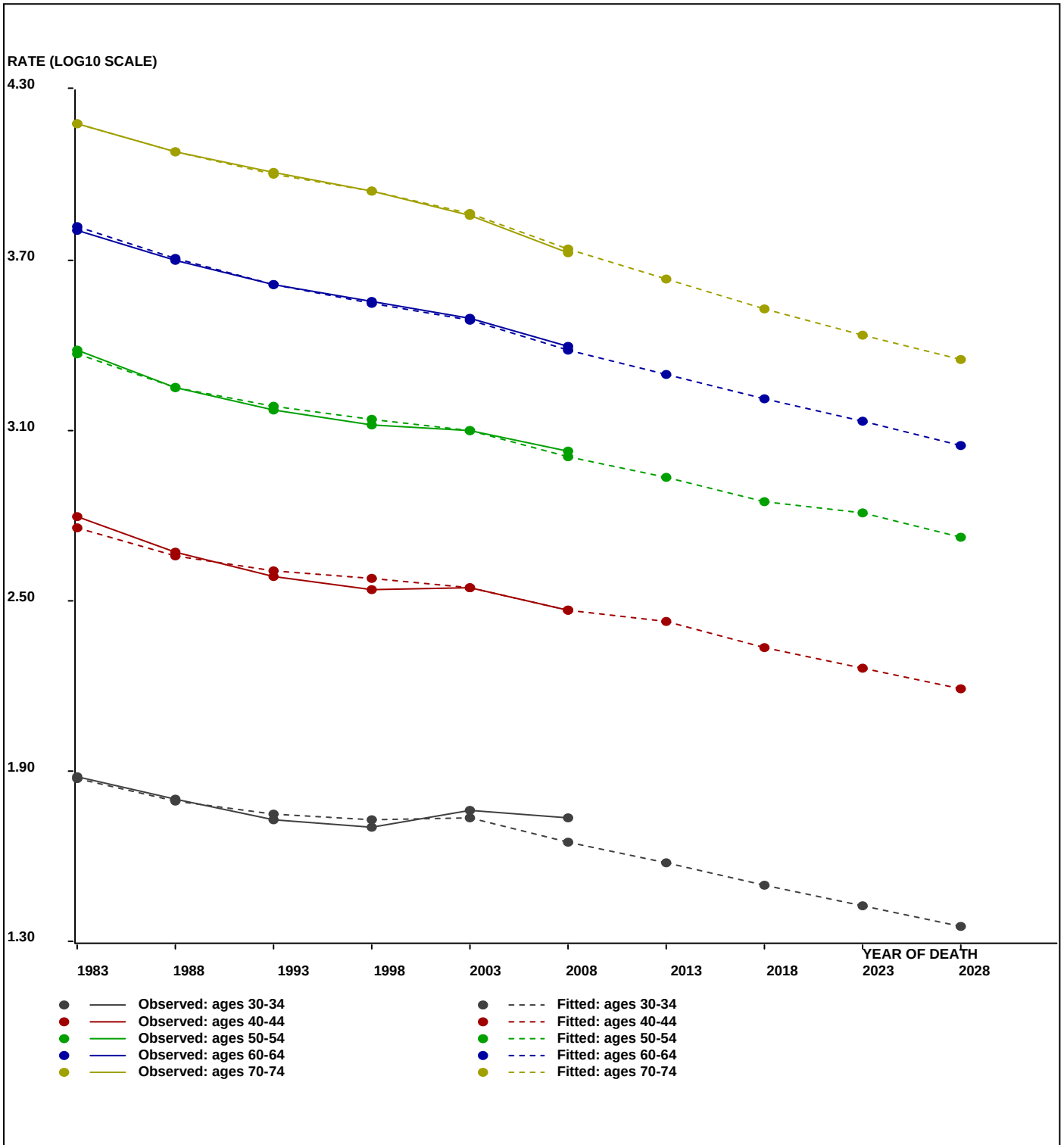


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

USA IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

USA IHD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	37.8	107.4	266.8	487.5	854.5	1319.0	1968.5	2827.5	4292.0	6560.3
2016	PRE	31.8	90.5	218.0	445.8	708.4	1100.5	1615.0	2299.8	3362.1	5181.5
2021	PRE	26.8	76.2	183.6	364.2	647.8	912.4	1347.5	1886.9	2734.6	4058.8
2026	PRE	22.6	64.2	154.7	306.8	529.3	834.3	1117.2	1574.3	2243.6	3301.4

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	2012.9	5477.6	13685.0	26249.8	47430.1	68052.9	86636.7	97439.8	103834.7	113144.0
2016	PRE	1804.5	4873.6	11140.7	22715.6	37489.3	59289.0	79614.5	94394.5	104032.3	105447.2
2021	PRE	1591.9	4369.4	9919.8	18527.8	32538.5	47030.6	69642.7	87249.3	101451.3	106838.1
2026	PRE	1339.4	3854.4	8894.5	16511.0	26590.3	40942.3	55453.9	76677.6	94455.6	105052.3

Osmond and Gardner Modelling

USA Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	10032.40	196.71	51	P, C	98.94	53809.00	0.0000
AGE-PERIOD	434.63	9.66	45	Cohort	75.52	2306.96	0.0000
AGE-COHORT	346.35	9.62	36	Period	69.28	1836.99	0.0000
PERIOD-COHORT	208.48	5.21	40	Age	48.96	1106.13	0.0000
FULL AGE-PERIOD-COHORT	106.41	3.33	32			564.34	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.432980	27.100658
35	1.726084	53.221126
40	1.990501	97.836411
45	2.231429	170.383975
50	2.433631	271.413331
55	2.627232	423.868970
60	2.835217	684.252679
65	3.053538	1131.196233
70	3.296212	1977.936784
75	3.540415	3470.681449

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.084454	1.214658
1986	0.032446	1.077571
1991	0.010694	1.024928
1996	0.003733	1.008633
2001	-0.047718	0.895945
2006	-0.120727	0.757309

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.113491	1.298647
1911	0.085147	1.216597
1916	0.048879	1.119126
1921	0.018409	1.043300
1926	-0.007410	0.983082
1931	-0.039578	0.912897
1936	-0.057241	0.876515
1941	-0.060626	0.869709
1946	-0.073073	0.845137
1951	-0.051861	0.887440
1956	-0.047106	0.897209
1961	-0.064586	0.861815
1966	-0.083364	0.825345
1971	-0.061662	0.867636
1976	-0.054743	0.881571

Osmond and Gardner Modelling

USA Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	1464.0	1569.0	1336.0	1090.0	967.0	911.0
EXP	1404.5	1412.2	1346.4	1213.7	1070.6	911.0
CHI	2.5	17.4	0.1	12.6	10.0	0.0
35 - OBS	2305.0	2619.0	2681.0	2377.0	1979.0	1886.0
EXP	2199.6	2453.2	2650.8	2643.0	2141.3	1790.1
CHI	5.1	11.2	0.3	26.8	12.3	5.1
40 - OBS	3285.0	3760.0	4377.0	4468.0	4137.0	3580.0
EXP	3337.3	3610.1	4273.7	4798.5	4300.1	3317.0
CHI	0.8	6.2	2.5	22.8	6.2	20.9
45 - OBS	5228.0	5112.0	6176.0	6884.0	6884.0	6678.0
EXP	5138.3	5096.5	5869.7	7273.6	7363.5	6268.7
CHI	1.6	0.0	16.0	20.9	31.2	26.7
50 - OBS	8277.0	7151.0	7652.0	8790.0	9804.0	10348.0
EXP	8303.5	7102.1	7554.5	9113.4	10201.9	9777.5
CHI	0.1	0.3	1.3	11.5	15.5	33.3
55 - OBS	13449.0	11243.0	10306.0	11188.0	11948.0	13537.0
EXP	13893.5	10980.4	10097.5	11258.2	12356.1	13111.5
CHI	14.2	6.3	4.3	0.4	13.5	13.8
60 - OBS	20968.0	18437.0	16018.0	15633.0	15422.0	16302.0
EXP	21632.5	18494.2	15785.3	15272.0	15454.2	16158.8
CHI	20.4	0.2	3.4	8.5	0.1	1.3
65 - OBS	31656.0	28226.0	25793.0	23554.0	20964.0	20193.0
EXP	31541.8	28277.7	26110.6	23468.8	20837.4	20152.6
CHI	0.4	0.1	3.9	0.3	0.8	0.1
70 - OBS	46184.0	40370.0	38910.0	38270.0	32455.0	26371.0
EXP	45394.6	40284.9	39379.4	38438.7	31864.4	27227.1
CHI	13.7	0.2	5.6	0.7	10.9	26.9
75 - OBS	56303.0	52431.0	51258.0	54761.0	48878.0	37515.0
EXP	56303.0	53233.3	51458.0	53601.0	47909.4	38688.0
CHI	0.0	12.1	0.8	25.1	19.6	35.6

Osmond and Gardner Modelling

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 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	27.100658
35	53.221126
40	97.836411
45	170.383975
50	271.413331
55	423.868970
60	684.252679
65	1131.196233
70	1977.936784
75	3470.681449

PERIOD	EFFECT	LOWER	UPPER
% Period Change	84.5263	81.5263	87.5263

1981	1.214658		
1986	1.077571		
1991	1.024928		
1996	1.008633		
2001	0.895945		
2006	0.757309		
2011	0.640126	0.617406	0.662845
2016	0.541074	0.503348	0.580163
2021	0.457350	0.410361	0.507796
2026	0.386581	0.334552	0.444455

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.298647	1.000000	
1911	1.216597	2.000000	
1916	1.119126	4.000000	
1921	1.043300	8.000000	
1926	0.983082	16.000000	
1931	0.912897	32.000000	
1936	0.876515	64.000000	
1941	0.869709	128.000000	
1946	0.845137	256.000000	
1951	0.887440	512.000000	
1956	0.897209	1024.000000	
1961	0.861815	2048.000000	
1966	0.825345	4096.000000	
1971	0.867636	8192.000000	
1976	0.851741	EXTRAPOLATION	0.881571
1981	0.848322	EXTRAPOLATION	
1986	0.844916	EXTRAPOLATION	
1991	0.841524	EXTRAPOLATION	
1996	0.838145	EXTRAPOLATION	

Osmond and Gardner Modelling

**USA Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	30.5	29.1	23.8	20.3	19.0	18.1	-	-	-	-
	EXP	29.2	26.2	23.9	22.6	21.1	17.5	14.7*	12.4*	10.4*	8.8*
	Elow							14.2	11.5	9.4	7.6
	Eup							15.2	13.3	11.6	10.1
35	OBS	57.3	54.3	49.5	41.6	36.4	36.8	-	-	-	-
	EXP	54.6	50.9	48.9	46.3	39.4	35.0	29.0*	24.4*	20.6*	17.3*
	Elow							28.0	22.7	18.5	15.0
	Eup							30.0	26.2	22.8	19.9
40	OBS	101.7	92.8	91.1	82.4	72.7	66.0	-	-	-	-
	EXP	103.4	89.1	89.0	88.5	75.5	61.2	54.3*	45.1*	38.0*	32.0*
	Elow							52.4	41.9	34.1	27.7
	Eup							56.3	48.3	42.1	36.7
45	OBS	184.6	160.2	155.3	144.3	128.0	118.5	-	-	-	-
	EXP	181.4	159.7	147.6	152.5	137.0	111.2	90.0*	80.0*	66.4*	55.9*
	Elow							86.8	74.4	59.6	48.4
	Eup							93.2	85.8	73.7	64.2
50	OBS	300.0	258.1	245.1	223.2	207.4	195.2	-	-	-	-
	EXP	301.0	256.4	241.9	231.4	215.8	184.4	149.7*	121.2*	107.7*	89.4*
	Elow							144.4	112.8	96.6	77.3
	Eup							155.0	130.0	119.6	102.7
55	OBS	490.0	426.9	388.7	369.5	310.4	294.1	-	-	-	-
	EXP	506.1	417.0	380.8	371.8	321.0	284.9	243.4*	197.7*	160.0*	142.2*
	Elow							234.8	183.9	143.6	123.0
	Eup							252.1	211.9	177.6	163.5
60	OBS	840.5	722.6	649.7	619.2	532.1	441.8	-	-	-	-
	EXP	867.1	724.9	640.2	604.9	533.2	437.9	388.7*	332.2*	269.7*	218.3*
	Elow							374.9	309.0	242.0	188.9
	Eup							402.5	356.2	299.4	251.0
65	OBS	1543.3	1269.4	1125.9	1045.4	893.7	746.5	-	-	-	-
	EXP	1537.7	1271.7	1139.8	1041.6	888.3	745.0	612.0*	543.2*	464.2*	376.9*
	Elow							590.3	505.3	416.5	326.1
	Eup							633.7	582.4	515.4	433.3
70	OBS	2973.7	2390.3	2089.8	1952.7	1647.8	1271.7	-	-	-	-
	EXP	2922.9	2385.3	2115.0	1961.3	1617.8	1312.9	1101.2*	904.5*	802.8*	686.0*
	Elow							1062.1	841.4	720.3	593.7
	Eup							1140.2	969.8	891.3	788.7
75	OBS	5474.7	4481.4	3965.5	3731.3	3118.7	2326.7	-	-	-	-
	EXP	5474.7	4550.0	3981.0	3652.2	3056.9	2399.4	1947.3*	1633.2*	1341.5*	1190.7*
	Elow							1878.2	1519.3	1203.7	1030.4
	Eup							2016.4	1751.2	1489.5	1368.9
30-79	OBS	689.2	573.6	513.4	480.0	409.5	335.8	-	-	-	-
	EXP	689.6	573.5	512.9	480.0	409.7	336.0	280.3*	236.0*	199.2*	169.4*
	Elow							270.3	219.6	178.8	146.6
	Eup							290.2	253.1	221.2	194.7

Osmond and Gardner Modelling

**USA Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

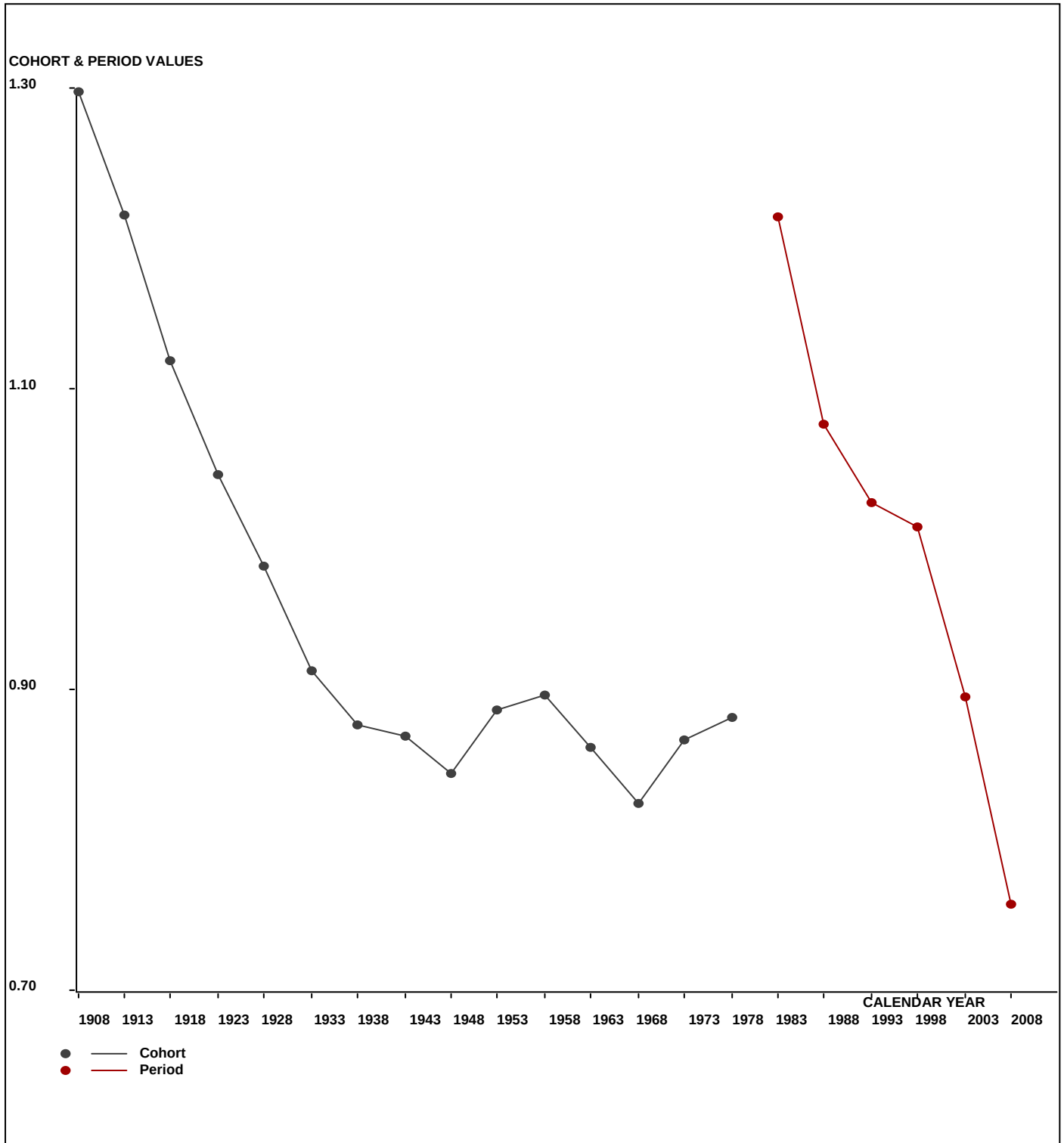
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	1464.0	1569.0	1336.0	1090.0	967.0	911.0	-	-	-	-
	EXP	1404.5	1412.2	1346.4	1213.7	1070.6	880.2	784.6*	702.9*	619.7*	521.0*
	CHI	2.525	17.400	0.080	12.610	10.032	1.080	-	-	-	-
35 -	OBS	2305.0	2619.0	2681.0	2377.0	1979.0	1886.0	-	-	-	-
	EXP	2199.6	2453.2	2650.8	2643.0	2141.3	1790.1	1479.7*	1315.6*	1178.7*	1039.1*
	CHI	5.054	11.212	0.345	26.764	12.304	5.140	-	-	-	-
40 -	OBS	3285.0	3760.0	4377.0	4468.0	4137.0	3580.0	-	-	-	-
	EXP	3337.3	3610.1	4273.7	4798.5	4300.1	3317.0	2787.6*	2304.7*	2050.7*	1837.5*
	CHI	0.820	6.221	2.498	22.762	6.185	20.856	-	-	-	-
45 -	OBS	5228.0	5112.0	6176.0	6884.0	6884.0	6678.0	-	-	-	-
	EXP	5138.3	5096.5	5869.7	7273.6	7363.5	6268.7	4847.4*	4075.9*	3376.3*	3006.7*
	CHI	1.567	0.047	15.979	20.868	31.224	26.724	-	-	-	-
50 -	OBS	8277.0	7151.0	7652.0	8790.0	9804.0	10348.0	-	-	-	-
	EXP	8303.5	7102.1	7554.5	9113.4	10201.9	9777.5	8311.5*	6414.3*	5409.6*	4489.5*
	CHI	0.084	0.337	1.258	11.475	15.517	33.285	-	-	-	-
55 -	OBS	13449.0	11243.0	10306.0	11188.0	11948.0	13537.0	-	-	-	-
	EXP	13893.5	10980.4	10097.5	11258.2	12356.1	13111.5	12560.4*	10648.9*	8247.7*	6976.6*
	CHI	14.223	6.280	4.304	0.438	13.478	13.806	-	-	-	-
60 -	OBS	20968.0	18437.0	16018.0	15633.0	15422.0	16302.0	-	-	-	-
	EXP	21632.5	18494.2	15785.3	15272.0	15454.2	16158.8	17107.8*	16374.8*	13939.1*	10837.0*
	CHI	20.413	0.177	3.429	8.533	0.067	1.270	-	-	-	-
65 -	OBS	31656.0	28226.0	25793.0	23554.0	20964.0	20193.0	-	-	-	-
	EXP	31541.8	28277.7	26110.6	23468.8	20837.4	20152.6	21089.4*	22293.8*	21463.0*	18355.7*
	CHI	0.414	0.094	3.863	0.309	0.769	0.081	-	-	-	-
70 -	OBS	46184.0	40370.0	38910.0	38270.0	32455.0	26371.0	-	-	-	-
	EXP	45394.6	40284.9	39379.4	38438.7	31864.4	27227.1	26640.0*	27987.2*	29782.3*	28881.5*
	CHI	13.726	0.180	5.596	0.740	10.948	26.916	-	-	-	-
75 -	OBS	56303.0	52431.0	51258.0	54761.0	48878.0	37515.0	-	-	-	-
	EXP	56303.0	53233.3	51458.0	53601.0	47909.4	38688.0	33585.0*	33237.4*	35311.8*	37888.6*
	CHI	0.000	12.091	0.777	25.103	19.583	35.563	-	-	-	-
30-79	OBS	189119.0	170918.0	164507.0	167015.0	153438.0	137321.0	-	-	-	-
	EXP	189148.5	170944.6	164525.9	167080.9	153498.9	137371.3	129193.3*	125355.6*	121378.8*	113833.3*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

USA Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

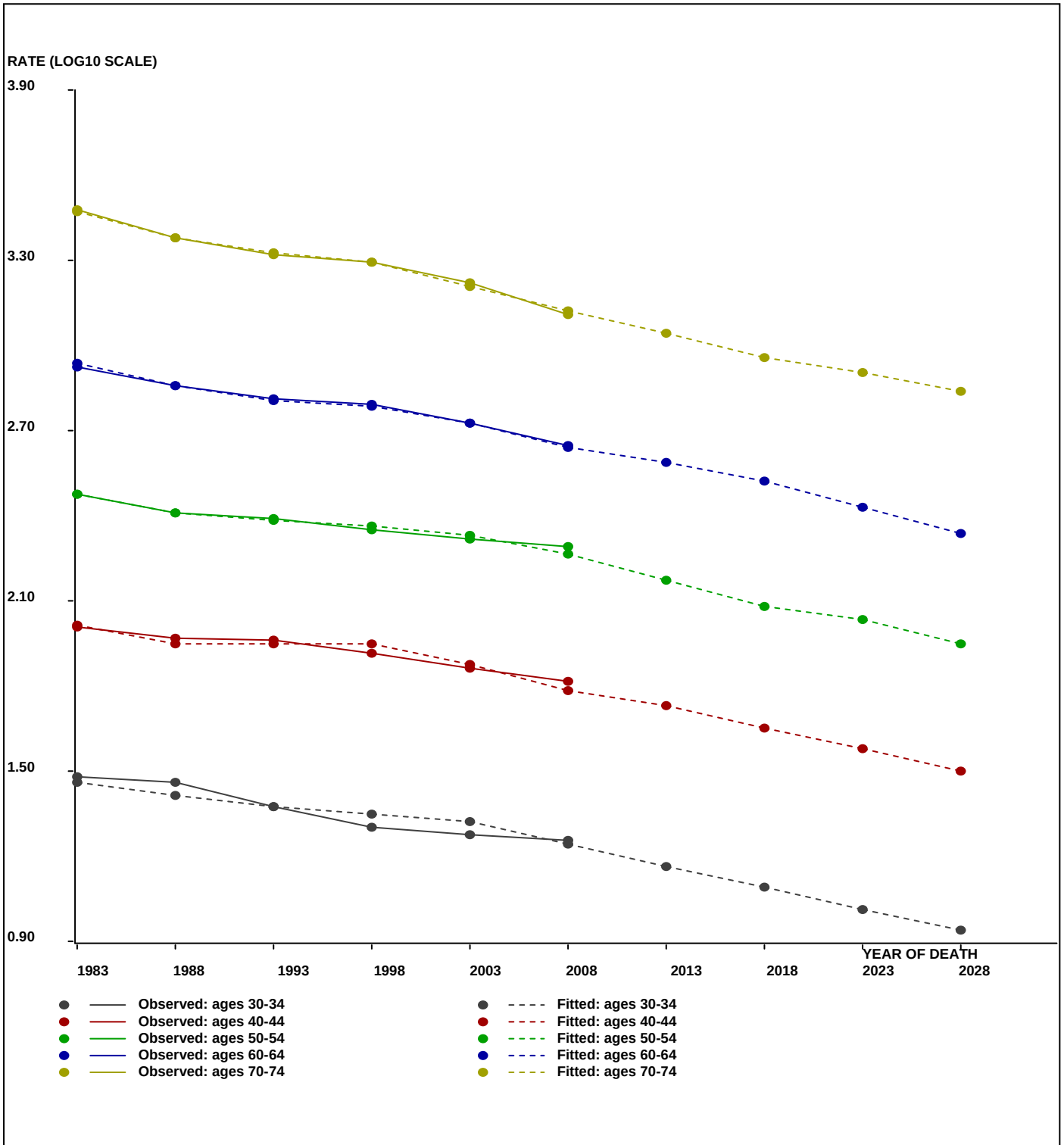


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

USA Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

USA Stroke, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	14.7	29.0	54.3	90.0	149.7	243.4	388.7	612.0	1101.2	1947.3
2016	PRE	12.4	24.4	45.1	80.0	121.2	197.7	332.2	543.2	904.5	1633.2
2021	PRE	10.4	20.6	38.0	66.4	107.7	160.0	269.7	464.2	802.8	1341.5
2026	PRE	8.8	17.3	32.0	55.9	89.4	142.2	218.3	376.9	686.0	1190.7

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	784.6	1479.7	2787.6	4847.4	8311.5	12560.4	17107.8	21089.4	26640.0	33585.0
2016	PRE	702.9	1315.6	2304.7	4075.9	6414.3	10648.9	16374.8	22293.8	27987.2	33237.4
2021	PRE	619.7	1178.7	2050.7	3376.3	5409.6	8247.7	13939.1	21463.0	29782.3	35311.8
2026	PRE	521.0	1039.1	1837.5	3006.7	4489.5	6976.6	10837.0	18355.7	28881.5	37888.6

Osmond and Gardner Modelling

USA Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	13993.29	274.38	51	P, C	99.73	74851.62	0.0000
AGE-PERIOD	3025.10	67.22	45	Cohort	98.76	16069.99	0.0000
AGE-COHORT	196.20	5.45	36	Period	80.87	1040.42	0.0000
PERIOD-COHORT	698.27	17.46	40	Age	94.62	3705.29	0.0000
FULL AGE-PERIOD-COHORT	37.54	1.17	32			199.05	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.296169	19.777368
35	1.808432	64.332739
40	2.260066	181.997556
45	2.623433	420.177418
50	2.922307	836.193526
55	3.159231	1442.883928
60	3.347310	2224.899712
65	3.492627	3109.043305
70	3.597489	3958.121908
75	3.664779	4621.455083

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.020379	1.048042
1986	0.026369	1.062598
1991	0.019974	1.047066
1996	-0.005052	0.988434
2001	-0.022694	0.949087
2006	-0.044456	0.902700

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.023293	1.055099
1911	0.043471	1.105277
1916	0.052486	1.128459
1921	0.055203	1.135541
1926	0.058868	1.145164
1931	0.033161	1.079347
1936	-0.015048	0.965944
1941	-0.058883	0.873207
1946	-0.140323	0.723897
1951	-0.203439	0.625980
1956	-0.228202	0.591286
1961	-0.279332	0.525615
1966	-0.416362	0.383388
1971	-0.503914	0.313391
1976	-0.483898	0.328172

Osmond and Gardner Modelling

USA Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	541.0	666.0	617.0	459.0	315.0	295.0
EXP	623.8	669.8	612.2	403.2	299.0	295.0
CHI	11.0	0.0	0.0	7.7	0.9	0.0
35 - OBS	2044.0	2003.0	2129.0	1870.0	1334.0	915.0
EXP	1965.0	2062.6	2157.3	1909.4	1273.7	931.6
CHI	3.2	1.7	0.4	0.8	2.9	0.3
40 - OBS	5462.0	5625.0	5569.0	5793.0	5377.0	3293.0
EXP	5378.1	5672.3	5728.9	5764.8	5168.0	3416.5
CHI	1.3	0.4	4.5	0.1	8.5	4.5
45 - OBS	12517.0	12499.0	12521.0	12146.0	12718.0	11058.0
EXP	12048.6	12443.5	12666.4	12399.1	12677.0	11238.4
CHI	18.2	0.2	1.7	5.2	0.1	2.9
50 - OBS	26436.0	24239.0	23512.0	23013.0	23623.0	23626.0
EXP	26097.6	23778.0	23872.9	23567.8	23485.6	23663.5
CHI	4.4	8.9	5.5	13.1	0.8	0.1
55 - OBS	47216.0	43931.0	38743.0	36997.0	38381.0	37931.0
EXP	47535.1	43579.3	38698.0	37707.4	38164.1	37527.1
CHI	2.1	2.8	0.1	13.4	1.2	4.3
60 - OBS	65526.0	68816.0	62420.0	53639.0	53357.0	54084.0
EXP	66057.0	69076.3	61996.6	53628.7	53445.2	53644.1
CHI	4.3	1.0	2.9	0.0	0.1	3.6
65 - OBS	75221.0	82903.0	85218.0	75004.0	66475.0	67290.0
EXP	75423.3	83415.9	85401.1	74736.8	66857.4	66287.6
CHI	0.5	3.2	0.4	1.0	2.2	15.2
70 - OBS	71351.0	80308.0	87967.0	88287.0	79362.0	70952.0
EXP	71208.2	80158.5	87623.5	87808.7	79863.1	71571.6
CHI	0.3	0.3	1.3	2.6	3.1	5.4
75 - OBS	52556.0	63360.0	70636.0	76821.0	79001.0	71710.0
EXP	52556.0	63503.1	70583.6	76128.1	78720.3	72602.2
CHI	0.0	0.3	0.0	6.3	1.0	11.0

Osmond and Gardner Modelling

USA Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	19.777368
35	64.332739
40	181.997556
45	420.177418
50	836.193526
55	1442.883928
60	2224.899712
65	3109.043305
70	3958.121908
75	4621.455083

PERIOD	EFFECT	LOWER	UPPER
% Period Change	95.1125	92.1125	98.1125
1981	1.048042		
1986	1.062598		
1991	1.047066		
1996	0.988434		
2001	0.949087		
2006	0.902700		
2011	0.858581	0.831500	0.885662
2016	0.816618	0.765915	0.868945
2021	0.776705	0.705503	0.852543
2026	0.738744	0.649857	0.836451

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.055099	1.000000	
1911	1.105277	2.000000	
1916	1.128459	4.000000	
1921	1.135541	8.000000	
1926	1.145164	16.000000	
1931	1.079347	32.000000	
1936	0.965944	64.000000	
1941	0.873207	128.000000	
1946	0.723897	256.000000	
1951	0.625980	512.000000	
1956	0.591286	1024.000000	
1961	0.525615	2048.000000	
1966	0.383388	4096.000000	
1971	0.313391	8192.000000	
1976	0.266639	EXTRAPOLATION	0.328172
1981	0.221783	EXTRAPOLATION	
1986	0.184473	EXTRAPOLATION	
1991	0.153439	EXTRAPOLATION	
1996	0.127626	EXTRAPOLATION	

Osmond and Gardner Modelling

**USA Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	11.3	12.4	11.0	8.5	6.2	5.9	-	-	-	-
	EXP	13.0	12.4	10.9	7.5	5.9	4.8	3.8*	3.0*	2.4*	1.9*
	Elow							3.6	2.8	2.1	1.6
	Eup							3.9	3.2	2.6	2.1
35	OBS	50.8	41.6	39.3	32.7	24.5	17.9	-	-	-	-
	EXP	48.8	42.8	39.8	33.4	23.4	18.2	14.7*	11.7*	9.2*	7.3*
	Elow							14.3	10.9	8.4	6.4
	Eup							15.2	12.4	10.1	8.3
40	OBS	169.2	138.8	116.0	106.9	94.5	60.7	-	-	-	-
	EXP	166.6	140.0	119.3	106.4	90.8	63.0	49.0*	39.6*	31.4*	24.8*
	Elow							47.4	37.2	28.5	21.8
	Eup							50.5	42.2	34.4	28.1
45	OBS	441.9	391.6	314.8	254.7	236.6	196.2	-	-	-	-
	EXP	425.4	389.9	318.5	260.0	235.8	199.4	138.3*	107.5*	87.0*	68.8*
	Elow							133.9	100.9	79.0	60.6
	Eup							142.7	114.4	95.5	77.9
50	OBS	958.2	874.9	753.0	584.2	499.7	445.6	-	-	-	-
	EXP	945.9	858.3	764.5	598.3	496.8	446.3	377.4*	261.8*	203.5*	164.7*
	Elow							365.5	245.5	184.9	144.9
	Eup							389.3	278.6	223.4	186.5
55	OBS	1720.1	1668.2	1461.0	1221.9	997.0	824.1	-	-	-	-
	EXP	1731.7	1654.9	1459.3	1245.4	991.3	815.3	732.5*	619.3*	429.7*	334.0*
	Elow							709.4	580.9	390.3	293.9
	Eup							755.6	659.0	471.6	378.2
60	OBS	2626.6	2697.2	2531.6	2124.7	1840.8	1465.8	-	-	-	-
	EXP	2647.8	2707.4	2514.5	2124.3	1843.9	1453.9	1195.8*	1074.3*	908.3*	630.1*
	Elow							1158.1	1007.6	825.0	554.3
	Eup							1233.5	1143.1	997.0	713.5
65	OBS	3667.1	3728.4	3719.9	3328.8	2834.0	2487.7	-	-	-	-
	EXP	3677.0	3751.4	3727.9	3316.9	2850.3	2450.7	1932.3*	1589.3*	1427.8*	1207.2*
	Elow							1871.4	1490.6	1297.0	1062.0
	Eup							1993.3	1691.1	1567.3	1366.9
70	OBS	4594.2	4755.0	4724.6	4504.7	4029.2	3421.4	-	-	-	-
	EXP	4585.0	4746.2	4706.2	4480.3	4054.7	3451.3	2967.5*	2339.8*	1924.4*	1728.9*
	Elow							2873.9	2194.6	1748.0	1520.9
	Eup							3061.1	2489.8	2112.4	1957.6
75	OBS	5110.4	5415.5	5464.6	5234.4	5040.8	4447.5	-	-	-	-
	EXP	5110.4	5427.7	5460.6	5187.2	5022.9	4502.8	3832.8*	3295.4*	2598.4*	2137.1*
	Elow							3711.9	3090.8	2360.2	1880.0
	Eup							3953.7	3506.6	2852.1	2419.8
30-79	OBS	1337.2	1340.4	1273.6	1130.2	994.9	844.9	-	-	-	-
	EXP	1336.6	1339.4	1273.7	1131.2	995.4	844.5	704.6*	582.2*	475.2*	387.6*
	Elow							682.4	546.0	431.6	341.0
	Eup							726.8	619.5	521.6	438.9

Osmond and Gardner Modelling

**USA Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

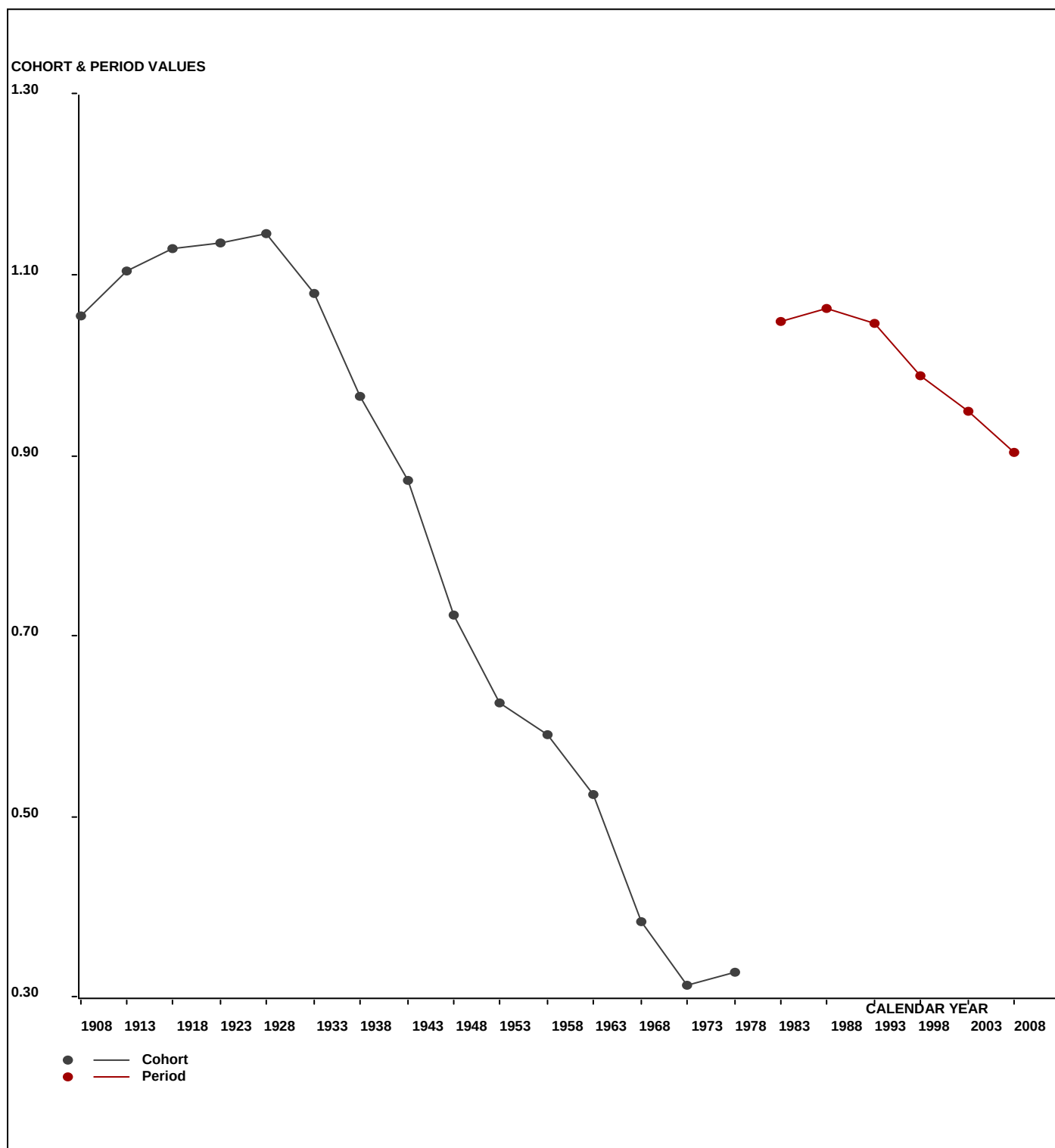
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	541.0	666.0	617.0	459.0	315.0	295.0	-	-	-	-
	EXP	623.8	669.8	612.2	403.2	299.0	239.7	200.8*	169.0*	140.0*	110.6*
	CHI	10.989	0.021	0.038	7.722	0.861	12.765	-	-	-	-
35 -	OBS	2044.0	2003.0	2129.0	1870.0	1334.0	915.0	-	-	-	-
	EXP	1965.0	2062.6	2157.3	1909.4	1273.7	931.6	751.0*	627.5*	528.3*	437.6*
	CHI	3.177	1.723	0.370	0.815	2.858	0.296	-	-	-	-
40 -	OBS	5462.0	5625.0	5569.0	5793.0	5377.0	3293.0	-	-	-	-
	EXP	5378.1	5672.3	5728.9	5764.8	5168.0	3416.5	2512.2*	2025.6*	1693.7*	1426.2*
	CHI	1.309	0.395	4.461	0.137	8.454	4.464	-	-	-	-
45 -	OBS	12517.0	12499.0	12521.0	12146.0	12718.0	11058.0	-	-	-	-
	EXP	12048.6	12443.5	12666.4	12399.1	12677.0	11238.4	7447.8*	5479.5*	4426.5*	3704.4*
	CHI	18.206	0.247	1.669	5.165	0.133	2.897	-	-	-	-
50 -	OBS	26436.0	24239.0	23512.0	23013.0	23623.0	23626.0	-	-	-	-
	EXP	26097.6	23778.0	23872.9	23567.8	23485.6	23663.5	20947.1*	13854.5*	10223.4*	8274.6*
	CHI	4.389	8.936	5.457	13.060	0.804	0.059	-	-	-	-
55 -	OBS	47216.0	43931.0	38743.0	36997.0	38381.0	37931.0	-	-	-	-
	EXP	47535.1	43579.3	38698.0	37707.4	38164.1	37527.1	37794.0*	33367.2*	22148.3*	16392.6*
	CHI	2.142	2.838	0.052	13.386	1.233	4.347	-	-	-	-
60 -	OBS	65526.0	68816.0	62420.0	53639.0	53357.0	54084.0	-	-	-	-
	EXP	66057.0	69076.3	61996.6	53628.7	53445.2	53644.1	52629.2*	52958.6*	46945.0*	31279.5*
	CHI	4.269	0.981	2.891	0.002	0.146	3.608	-	-	-	-
65 -	OBS	75221.0	82903.0	85218.0	75004.0	66475.0	67290.0	-	-	-	-
	EXP	75423.3	83415.9	85401.1	74736.8	66857.4	66287.6	66591.5*	65231.3*	66022.4*	58798.6*
	CHI	0.543	3.154	0.393	0.955	2.187	15.158	-	-	-	-
70 -	OBS	71351.0	80308.0	87967.0	88287.0	79362.0	70952.0	-	-	-	-
	EXP	71208.2	80158.5	87623.5	87808.7	79863.1	71571.6	71790.9*	72401.5*	71394.5*	72787.1*
	CHI	0.286	0.279	1.347	2.606	3.144	5.364	-	-	-	-
75 -	OBS	52556.0	63360.0	70636.0	76821.0	79001.0	71710.0	-	-	-	-
	EXP	52556.0	63503.1	70583.6	76128.1	78720.3	72602.2	66102.5*	67065.1*	68397.5*	68005.9*
	CHI	0.000	0.322	0.039	6.306	1.001	10.964	-	-	-	-
30-79	OBS	358870.0	384350.0	389332.0	374029.0	359943.0	341154.0	-	-	-	-
	EXP	358892.8	384359.4	389340.4	374054.0	359953.3	341122.3	326766.9*	313179.8*	291919.7*	261217.2*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

USA Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

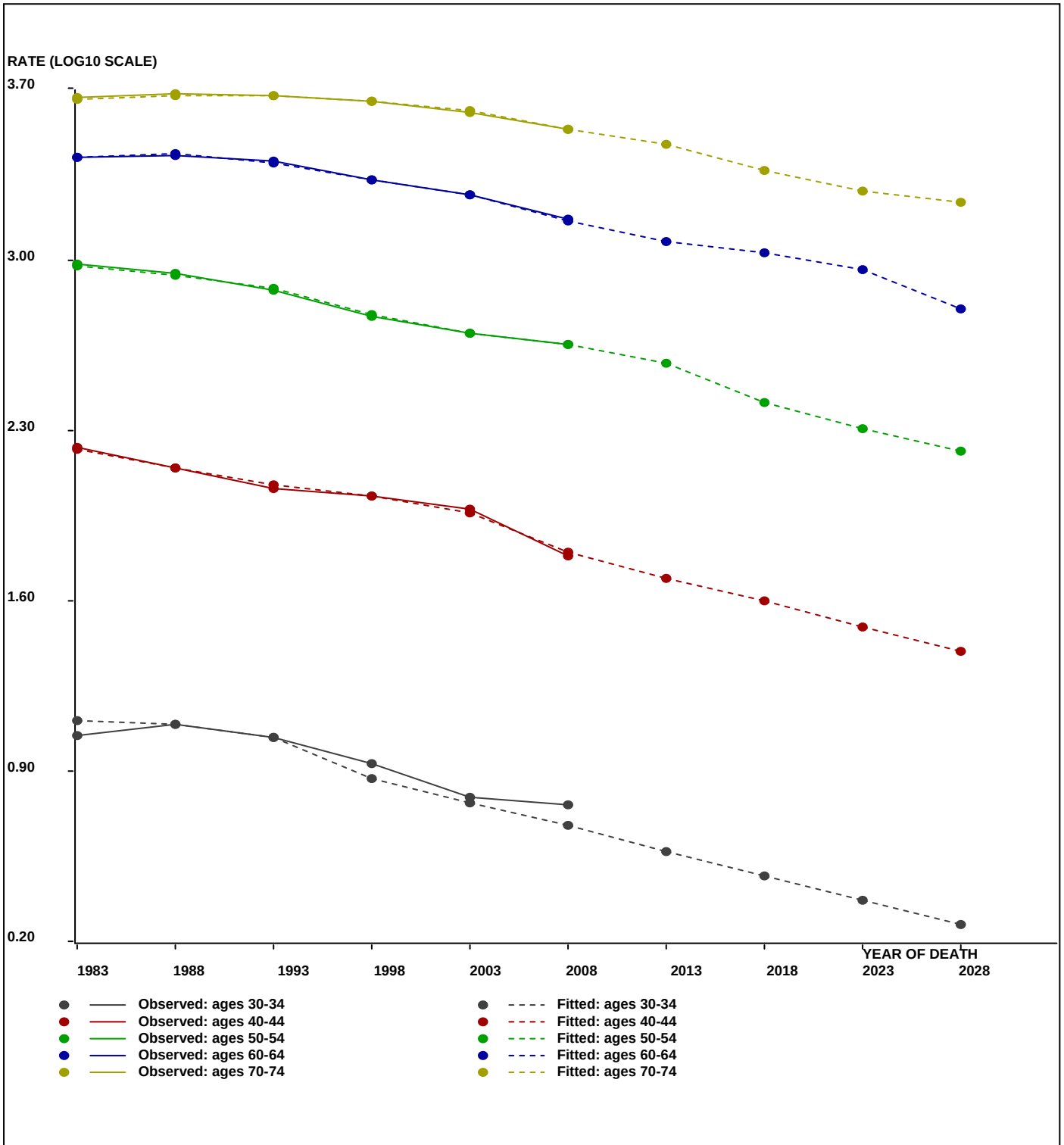


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

USA Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

USA Lung Cancers, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	3.8	14.7	49.0	138.3	377.4	732.5	1195.8	1932.3	2967.5	3832.8
2016	PRE	3.0	11.7	39.6	107.5	261.8	619.3	1074.3	1589.3	2339.8	3295.4
2021	PRE	2.4	9.2	31.4	87.0	203.5	429.7	908.3	1427.8	1924.4	2598.4
2026	PRE	1.9	7.3	24.8	68.8	164.7	334.0	630.1	1207.2	1728.9	2137.1

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	200.8	751.0	2512.2	7447.8	20947.1	37794.0	52629.2	66591.5	71790.9	66102.5
2016	PRE	169.0	627.5	2025.6	5479.5	13854.5	33367.2	52958.6	65231.3	72401.5	67065.1
2021	PRE	140.0	528.3	1693.7	4426.5	10223.4	22148.3	46945.0	66022.4	71394.5	68397.5
2026	PRE	110.6	437.6	1426.2	3704.4	8274.6	16392.6	31279.5	58798.6	72787.1	68005.9

Osmond and Gardner Modelling

USA COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	1524.72	29.90	51	P, C	98.81	8095.87	0.0000
AGE-PERIOD	223.59	4.97	45	Cohort	91.90	1186.56	0.0000
AGE-COHORT	44.94	1.25	36	Period	59.72	238.29	0.0000
PERIOD-COHORT	50.50	1.26	40	Age	64.16	268.18	0.0000
FULL AGE-PERIOD-COHORT	18.10	0.57	32			96.00	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.920710	8.331238
35	1.128268	13.435941
40	1.424038	26.548363
45	1.798155	62.828258
50	2.184169	152.816068
55	2.556268	359.971235
60	2.881713	761.574766
65	3.155548	1430.699361
70	3.391164	2461.296521
75	3.584613	3842.493603

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.012622	1.029490
1986	0.012500	1.029201
1991	0.007333	1.017027
1996	0.006106	1.014159
2001	-0.009521	0.978316
2006	-0.026063	0.941754

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.022463	1.053084
1911	0.037270	1.089608
1916	0.031026	1.074054
1921	0.017770	1.041766
1926	0.014538	1.034042
1931	-0.006614	0.984886
1936	-0.037410	0.917465
1941	-0.050648	0.889923
1946	-0.082050	0.827847
1951	-0.072440	0.846370
1956	-0.018135	0.959102
1961	-0.004384	0.989955
1966	-0.009063	0.979348
1971	-0.015104	0.965819
1976	-0.014592	0.966959

Osmond and Gardner Modelling

USA COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	307.0	408.0	491.0	462.0	435.0	382.0
EXP	349.0	443.3	471.8	445.2	400.1	382.0
CHI	5.1	2.8	0.8	0.6	3.1	0.0
35 - OBS	456.0	606.0	699.0	750.0	729.0	588.0
EXP	461.0	564.1	709.8	770.6	700.4	625.6
CHI	0.1	3.1	0.2	0.6	1.2	2.3
40 - OBS	733.0	1002.0	1110.0	1342.0	1514.0	1281.0
EXP	785.4	916.5	1097.5	1399.5	1463.6	1328.1
CHI	3.5	8.0	0.1	2.4	1.7	1.7
45 - OBS	1661.0	1796.0	2134.0	2611.0	3210.0	3251.0
EXP	1680.9	1836.7	2103.8	2572.0	3169.4	3301.9
CHI	0.2	0.9	0.4	0.6	0.5	0.8
50 - OBS	4496.0	4015.0	4242.0	4841.0	5962.0	7378.0
EXP	4274.9	3997.7	4318.8	5053.7	5981.9	7318.2
CHI	11.4	0.1	1.4	9.0	0.1	0.5
55 - OBS	10606.0	9759.0	9024.0	9628.0	11109.0	13170.0
EXP	10518.8	9608.9	8906.8	9836.9	11223.7	13206.1
CHI	0.7	2.3	1.5	4.4	1.2	0.1
60 - OBS	20221.0	20558.0	18927.0	17803.0	19254.0	22114.0
EXP	20376.6	20679.2	18808.5	17889.4	19218.5	21907.4
CHI	1.2	0.7	0.7	0.4	0.1	1.9
65 - OBS	32301.0	33968.0	34283.0	32438.0	30017.0	32769.0
EXP	32449.7	34109.0	34467.9	32198.7	30121.8	32432.7
CHI	0.7	0.6	1.0	1.8	0.4	3.5
70 - OBS	42983.0	46089.0	48515.0	50534.0	46485.0	44176.0
EXP	42879.3	45951.1	48553.6	50587.3	46711.0	44100.8
CHI	0.3	0.4	0.0	0.1	1.1	0.1
75 - OBS	42842.0	50311.0	54265.0	59914.0	61191.0	56951.0
EXP	42842.0	50415.0	54254.7	59580.6	60920.8	57464.9
CHI	0.0	0.2	0.0	1.9	1.2	4.6

Osmond and Gardner Modelling

USA COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	8.331238
35	13.435941
40	26.548363
45	62.828258
50	152.816068
55	359.971235
60	761.574766
65	1430.699361
70	2461.296521
75	3842.493603

PERIOD	EFFECT	LOWER	UPPER
% Period Change	96.2627	93.2627	99.2627

1981	1.029490		
1986	1.029201		
1991	1.017027		
1996	1.014159		
2001	0.978316		
2006	0.941754		
2011	0.906558	0.878305	0.934811
2016	0.872678	0.819132	0.927919
2021	0.840063	0.763945	0.921077
2026	0.808668	0.712475	0.914286

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.053084	1.000000	
1911	1.089608	2.000000	
1916	1.074054	4.000000	
1921	1.041766	8.000000	
1926	1.034042	16.000000	
1931	0.984886	32.000000	
1936	0.917465	64.000000	
1941	0.889923	128.000000	
1946	0.827847	256.000000	
1951	0.846370	512.000000	
1956	0.959102	1024.000000	
1961	0.989955	2048.000000	
1966	0.979348	4096.000000	
1971	0.965819	8192.000000	
1976	0.986956	EXTRAPOLATION	0.966959
1981	0.998232	EXTRAPOLATION	
1986	1.009636	EXTRAPOLATION	
1991	1.021170	EXTRAPOLATION	
1996	1.032836	EXTRAPOLATION	

Osmond and Gardner Modelling

**USA COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	6.4	7.6	8.7	8.6	8.6	7.6	-	-	-	-
	EXP	7.3	8.2	8.4	8.3	7.9	7.7	7.5*	7.3*	7.1*	7.0*
	Elow							7.3	6.9	6.5	6.1
	Eup							7.8	7.8	7.8	7.9
35	OBS	11.3	12.6	12.9	13.1	13.4	11.5	-	-	-	-
	EXP	11.5	11.7	13.1	13.5	12.9	12.2	12.0*	11.7*	11.4*	11.1*
	Elow							11.6	11.0	10.4	9.8
	Eup							12.4	12.4	12.5	12.5
40	OBS	22.7	24.7	23.1	24.8	26.6	23.6	-	-	-	-
	EXP	24.3	22.6	22.9	25.8	25.7	24.5	23.2*	22.9*	22.3*	21.7*
	Elow							22.5	21.5	20.2	19.1
	Eup							24.0	24.3	24.4	24.5
45	OBS	58.6	56.3	53.7	54.7	59.7	57.7	-	-	-	-
	EXP	59.3	57.5	52.9	53.9	59.0	58.6	55.8*	53.0*	52.1*	50.7*
	Elow							54.0	49.7	47.4	44.7
	Eup							57.5	56.3	57.1	57.3
50	OBS	163.0	144.9	135.9	122.9	126.1	139.2	-	-	-	-
	EXP	154.9	144.3	138.3	128.3	126.5	138.0	137.1*	130.6*	124.0*	122.0*
	Elow							132.9	122.6	112.8	107.5
	Eup							141.4	138.9	135.9	137.9
55	OBS	386.4	370.6	340.3	318.0	288.6	286.1	-	-	-	-
	EXP	383.2	364.9	335.9	324.9	291.5	286.9	313.0*	311.0*	296.2*	281.1*
	Elow							303.2	291.9	269.3	247.7
	Eup							322.7	330.7	324.7	317.9
60	OBS	810.5	805.7	767.6	705.2	664.3	599.3	-	-	-	-
	EXP	816.8	810.5	762.8	708.6	663.0	593.7	584.3*	637.4*	633.3*	603.1*
	Elow							566.1	598.3	576.0	531.4
	Eup							602.6	677.8	694.4	681.9
65	OBS	1574.7	1527.6	1496.5	1439.6	1279.7	1211.5	-	-	-	-
	EXP	1582.0	1534.0	1504.6	1429.0	1284.2	1199.1	1073.7*	1056.7*	1152.7*	1145.3*
	Elow							1040.3	991.9	1048.3	1009.1
	Eup							1107.2	1123.6	1263.9	1294.9
70	OBS	2767.6	2728.9	2605.7	2578.4	2360.1	2130.3	-	-	-	-
	EXP	2760.9	2720.8	2607.8	2581.1	2371.5	2126.6	1985.7*	1778.1*	1750.0*	1909.0*
	Elow							1923.8	1669.0	1591.4	1681.9
	Eup							2047.6	1890.7	1918.8	2158.3
75	OBS	4165.8	4300.2	4198.1	4082.4	3904.4	3532.1	-	-	-	-
	EXP	4165.8	4309.1	4197.3	4059.7	3887.1	3564.0	3195.9*	2984.1*	2672.2*	2629.9*
	Elow							3096.3	2801.0	2430.1	2317.1
	Eup							3295.5	3173.0	2929.9	2973.4
30-79	OBS	566.2	561.3	540.3	521.1	485.5	448.9	-	-	-	-
	EXP	565.9	561.3	540.3	521.5	485.7	448.8	419.9*	402.9*	393.9*	395.6*
	Elow							406.8	378.2	358.3	348.5
	Eup							433.0	428.4	431.9	447.3

Osmond and Gardner Modelling

**USA COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

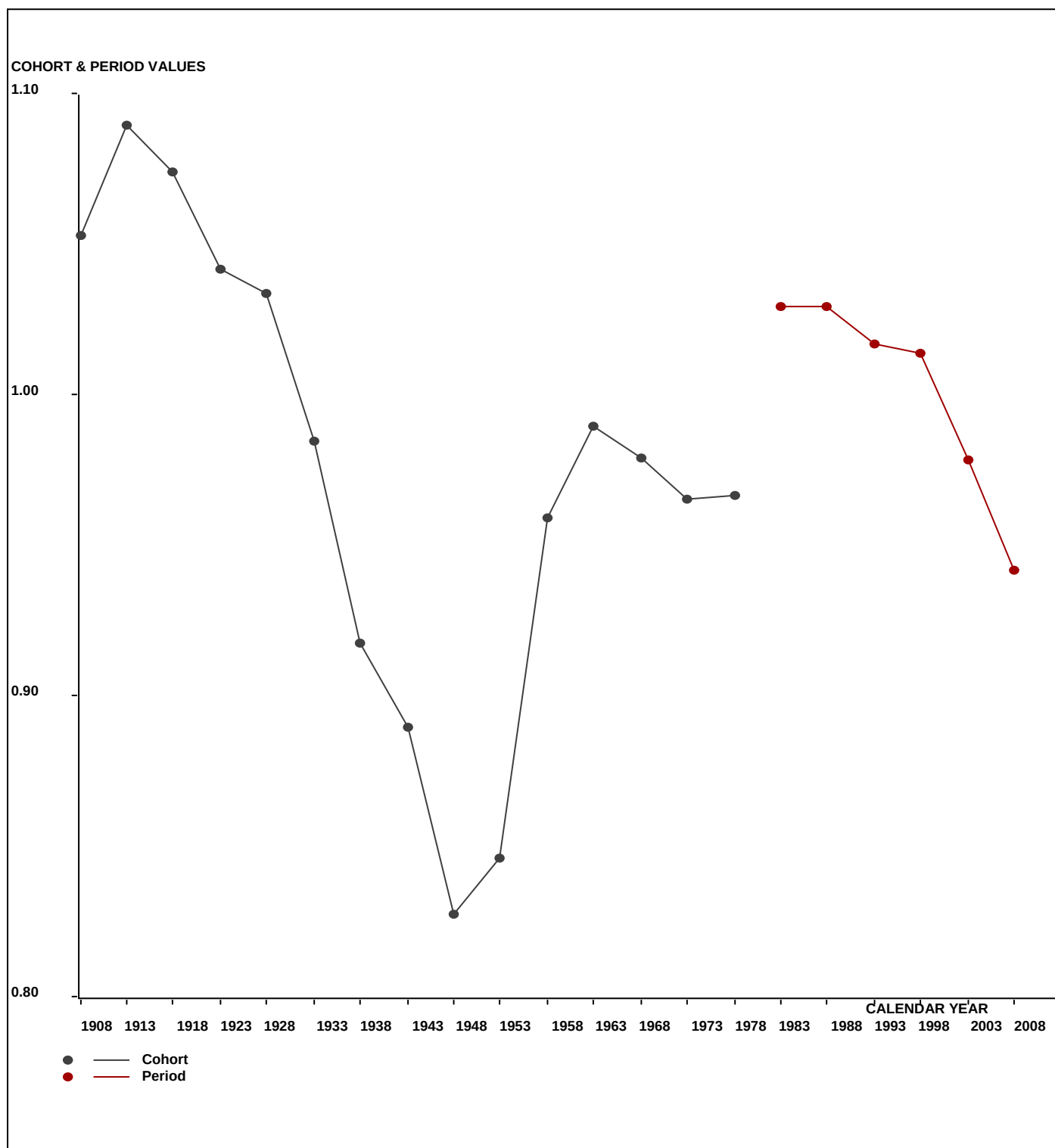
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	307.0	408.0	491.0	462.0	435.0	382.0	-	-	-	-
	EXP	349.0	443.3	471.8	445.2	400.1	389.9	402.0*	416.4*	424.6*	412.9*
	CHI	5.054	2.806	0.784	0.637	3.051	0.160	-	-	-	-
35 -	OBS	456.0	606.0	699.0	750.0	729.0	588.0	-	-	-	-
	EXP	461.0	564.1	709.8	770.6	700.4	625.6	613.0*	630.3*	653.1*	665.9*
	CHI	0.054	3.106	0.166	0.553	1.165	2.257	-	-	-	-
40 -	OBS	733.0	1002.0	1110.0	1342.0	1514.0	1281.0	-	-	-	-
	EXP	785.4	916.5	1097.5	1399.5	1463.6	1328.1	1192.5*	1168.8*	1202.8*	1246.4*
	CHI	3.493	7.974	0.143	2.366	1.738	1.673	-	-	-	-
45 -	OBS	1661.0	1796.0	2134.0	2611.0	3210.0	3251.0	-	-	-	-
	EXP	1680.9	1836.7	2103.8	2572.0	3169.4	3301.9	3003.7*	2698.4*	2649.8*	2729.1*
	CHI	0.236	0.901	0.433	0.592	0.520	0.786	-	-	-	-
50 -	OBS	4496.0	4015.0	4242.0	4841.0	5962.0	7378.0	-	-	-	-
	EXP	4274.9	3997.7	4318.8	5053.7	5981.9	7318.2	7612.8*	6911.7*	6227.6*	6127.2*
	CHI	11.431	0.075	1.365	8.955	0.066	0.489	-	-	-	-
55 -	OBS	10606.0	9759.0	9024.0	9628.0	11109.0	13170.0	-	-	-	-
	EXP	10518.8	9608.9	8906.8	9836.9	11223.7	13206.1	16148.8*	16754.8*	15266.2*	13796.5*
	CHI	0.723	2.345	1.543	4.435	1.173	0.099	-	-	-	-
60 -	OBS	20221.0	20558.0	18927.0	17803.0	19254.0	22114.0	-	-	-	-
	EXP	20376.6	20679.2	18808.5	17889.4	19218.5	21907.4	25718.4*	31422.5*	32733.7*	29939.0*
	CHI	1.188	0.710	0.747	0.417	0.066	1.948	-	-	-	-
65 -	OBS	32301.0	33968.0	34283.0	32438.0	30017.0	32769.0	-	-	-	-
	EXP	32449.7	34109.0	34467.9	32198.7	30121.8	32432.7	37002.2*	43372.3*	53301.0*	55784.4*
	CHI	0.682	0.583	0.992	1.778	0.365	3.487	-	-	-	-
70 -	OBS	42983.0	46089.0	48515.0	50534.0	46485.0	44176.0	-	-	-	-
	EXP	42879.3	45951.1	48553.6	50587.3	46711.0	44100.8	48039.0*	55021.3*	64922.4*	80366.0*
	CHI	0.251	0.414	0.031	0.056	1.093	0.128	-	-	-	-
75 -	OBS	42842.0	50311.0	54265.0	59914.0	61191.0	56951.0	-	-	-	-
	EXP	42842.0	50415.0	54254.7	59580.6	60920.8	57464.9	55119.4*	60729.7*	70340.2*	83686.9*
	CHI	0.000	0.214	0.002	1.865	1.199	4.596	-	-	-	-
30-79	OBS	156606.0	168512.0	173690.0	180323.0	179906.0	182060.0	-	-	-	-
	EXP	156617.6	168521.4	173693.1	180333.9	179911.2	182075.7	194851.8*	219126.3*	247721.5*	274754.2*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

USA COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

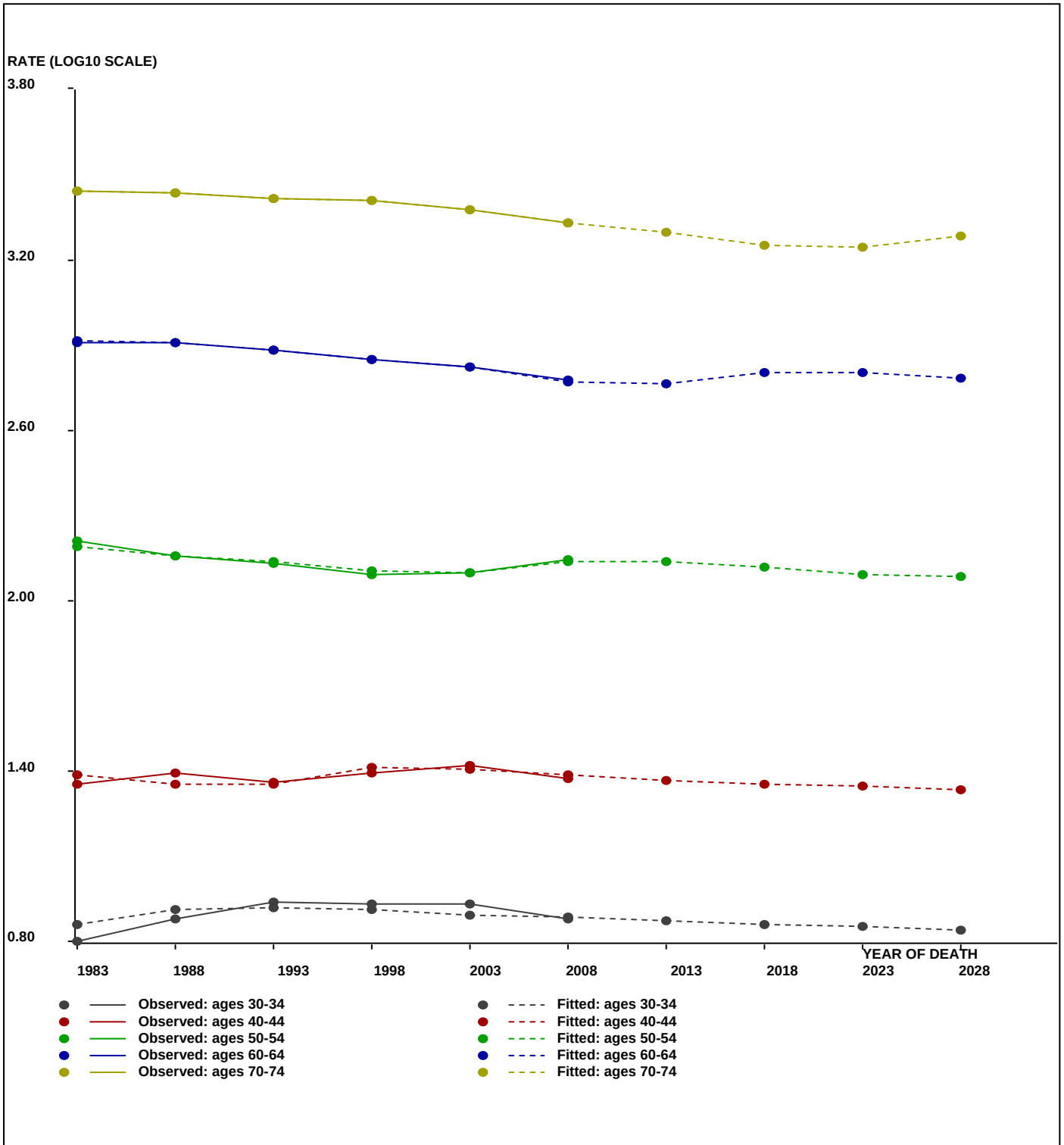


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

USA COPD, Males, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

USA COPD, Males, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	7.5	12.0	23.2	55.8	137.1	313.0	584.3	1073.7	1985.7	3195.9
2016	PRE	7.3	11.7	22.9	53.0	130.6	311.0	637.4	1056.7	1778.1	2984.1
2021	PRE	7.1	11.4	22.3	52.1	124.0	296.2	633.3	1152.7	1750.0	2672.2
2026	PRE	7.0	11.1	21.7	50.7	122.0	281.1	603.1	1145.3	1909.0	2629.9

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	402.0	613.0	1192.5	3003.7	7612.8	16148.8	25718.4	37002.2	48039.0	55119.4
2016	PRE	416.4	630.3	1168.8	2698.4	6911.7	16754.8	31422.5	43372.3	55021.3	60729.7
2021	PRE	424.6	653.1	1202.8	2649.8	6227.6	15266.2	32733.7	53301.0	64922.4	70340.2
2026	PRE	412.9	665.9	1246.4	2729.1	6127.2	13796.5	29939.0	55784.4	80366.0	83686.9

Osmond and Gardner Modelling

USA IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	41241.62	808.66	51	P, C	99.85	222445.06	0.0000
AGE-PERIOD	1342.51	29.83	45	Cohort	95.38	7156.19	0.0000
AGE-COHORT	957.18	26.59	36	Period	93.53	5077.14	0.0000
PERIOD-COHORT	511.22	12.78	40	Age	87.88	2720.52	0.0000
FULL AGE-PERIOD-COHORT	61.96	1.94	32			328.59	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.292897	19.628965
35	1.721975	52.719998
40	2.124714	133.264488
45	2.458344	287.305767
50	2.758413	573.341592
55	3.017390	1040.855176
60	3.256538	1805.253168
65	3.460773	2889.170620
70	3.667770	4653.397395
75	3.881051	7604.160918

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.088840	1.226988
1986	0.037943	1.091296
1991	-0.000095	0.999781
1996	-0.012513	0.971599
2001	-0.048051	0.895260
2006	-0.154416	0.700784

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.117313	1.310125
1911	0.091216	1.233718
1916	0.057000	1.140249
1921	0.020111	1.047397
1926	-0.018072	0.959242
1931	-0.051992	0.887173
1936	-0.088063	0.816463
1941	-0.116322	0.765030
1946	-0.141673	0.721650
1951	-0.139402	0.725435
1956	-0.094226	0.804960
1961	-0.028976	0.935458
1966	0.001144	1.002638
1971	0.046349	1.112625
1976	0.091625	1.234880

Osmond and Gardner Modelling

USA IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	863.0	957.0	1052.0	991.0	975.0	854.0
EXP	859.6	938.0	1033.6	1021.9	985.9	854.0
CHI	0.0	0.4	0.3	0.9	0.1	0.0
35 - OBS	2085.0	2008.0	2336.0	2645.0	2597.0	2130.0
EXP	1958.0	2063.3	2326.3	2752.6	2588.5	2119.2
CHI	8.2	1.5	0.0	4.2	0.0	0.1
40 - OBS	4696.0	4402.0	4749.0	5333.0	6374.0	5181.0
EXP	4208.9	4424.6	4778.5	5748.3	6458.9	5159.2
CHI	56.4	0.1	0.2	30.0	1.1	0.1
45 - OBS	8996.0	8037.0	8425.0	9504.0	11363.0	11072.0
EXP	8470.3	7990.5	8621.3	10010.1	11435.6	10902.1
CHI	32.6	0.3	4.5	25.6	0.5	2.6
50 - OBS	18573.0	14682.0	14278.0	16345.0	18487.0	18290.0
EXP	18354.3	14859.6	14447.4	16709.3	18445.2	17851.9
CHI	2.6	2.1	2.0	7.9	0.1	10.7
55 - OBS	37052.0	28654.0	24478.0	25051.0	27616.0	26509.0
EXP	37524.5	28874.5	24113.8	25130.6	27746.3	25982.5
CHI	6.0	1.7	5.5	0.3	0.6	10.7
60 - OBS	66044.0	55313.0	44138.0	40313.0	39553.0	37449.0
EXP	67154.7	55659.7	44189.9	39642.6	39306.6	36877.6
CHI	18.4	2.2	0.1	11.3	1.5	8.9
65 - OBS	102745.090893.0	76850.0	66043.0	56033.0	46757.0	
EXP	103108.790445.5	76922.8	65365.0	56167.5	47320.5	
CHI	1.3	2.2	0.1	7.0	0.3	6.7
70 - OBS	152188.0133295.0120234.0109135.088423.0	64058.0				
EXP	151665.3132469.5119649.0109090.389134.8	65344.5				
CHI	1.8	5.1	2.9	0.0	5.7	25.3
75 - OBS	200090.0187196.0167793.0164198.0142524.099680.0					
EXP	200090.0187720.3168258.7164131.6141683.399601.0					
CHI	0.0	1.5	1.3	0.0	5.0	0.1

Osmond and Gardner Modelling

USA IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	19.628965
35	52.719998
40	133.264488
45	287.305767
50	573.341592
55	1040.855176
60	1805.253168
65	2889.170620
70	4653.397395
75	7604.160918

PERIOD	EFFECT	LOWER	UPPER
% Period Change	78.2771	75.2771	81.2771

1981	1.226988		
1986	1.091296		
1991	0.999781		
1996	0.971599		
2001	0.895260		
2006	0.700784		
2011	0.548553	0.527530	0.569577
2016	0.429391	0.397109	0.462935
2021	0.336115	0.298932	0.376260
2026	0.263101	0.225027	0.305813

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.310125	1.000000	
1911	1.233718	2.000000	
1916	1.140249	4.000000	
1921	1.047397	8.000000	
1926	0.959242	16.000000	
1931	0.887173	32.000000	
1936	0.816463	64.000000	
1941	0.765030	128.000000	
1946	0.721650	256.000000	
1951	0.725435	512.000000	
1956	0.804960	1024.000000	
1961	0.935458	2048.000000	
1966	1.002638	4096.000000	
1971	1.112625	8192.000000	
1976	1.185627	EXTRAPOLATION	1.234880
1981	1.282069	EXTRAPOLATION	
1986	1.386357	EXTRAPOLATION	
1991	1.499128	EXTRAPOLATION	
1996	1.621072	EXTRAPOLATION	

Osmond and Gardner Modelling

**USA IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	17.5	17.6	18.7	18.5	19.3	17.0	-	-	-	-
	EXP	17.5	17.2	18.4	19.1	19.6	16.3	13.8*	11.7*	9.9*	8.4*
	Elow							13.3	10.8	8.8	7.2
	Eup							14.3	12.6	11.1	9.7
35	OBS	49.7	40.6	42.6	46.0	47.5	41.3	-	-	-	-
	EXP	46.7	41.7	42.4	47.9	47.3	41.1	34.3*	29.0*	24.6*	20.8*
	Elow							33.0	26.8	21.8	17.8
	Eup							35.6	31.3	27.5	24.2
40	OBS	139.6	104.4	96.1	96.7	110.1	94.0	-	-	-	-
	EXP	125.1	105.0	96.7	104.2	111.6	93.6	81.3*	67.8*	57.4*	48.6*
	Elow							78.2	62.7	51.1	41.6
	Eup							84.5	73.1	64.3	56.5
45	OBS	305.7	241.3	202.6	192.3	205.7	191.3	-	-	-	-
	EXP	287.8	239.9	207.3	202.5	207.0	188.3	158.0*	137.3*	114.5*	96.9*
	Elow							152.0	126.9	101.8	82.9
	Eup							164.1	148.0	128.2	112.6
50	OBS	631.5	504.7	433.4	393.2	373.2	331.4	-	-	-	-
	EXP	624.1	510.8	438.5	402.0	372.4	323.4	294.2*	246.8*	214.4*	178.8*
	Elow							282.9	228.3	190.7	153.0
	Eup							305.5	266.1	240.0	207.9
55	OBS	1209.6	1000.0	862.5	771.2	669.3	539.9	-	-	-	-
	EXP	1225.1	1007.7	849.6	773.7	672.5	529.1	459.6*	418.1*	350.8*	304.7*
	Elow							442.0	386.7	312.0	260.6
	Eup							477.2	450.7	392.7	354.2
60	OBS	2281.6	1878.0	1599.3	1456.3	1244.2	927.1	-	-	-	-
	EXP	2320.0	1889.8	1601.2	1432.1	1236.4	913.0	718.4*	624.0*	567.6*	476.2*
	Elow							690.8	577.1	504.8	407.3
	Eup							745.9	672.7	635.4	553.5
65	OBS	4027.9	3318.7	2768.2	2516.2	2106.8	1530.5	-	-	-	-
	EXP	4042.2	3302.4	2770.8	2490.4	2111.8	1548.9	1143.7*	900.0*	781.7*	711.1*
	Elow							1099.9	832.3	695.2	608.2
	Eup							1187.6	970.3	875.1	826.5
70	OBS	7068.4	5826.5	4896.7	4338.7	3666.4	2610.1	-	-	-	-
	EXP	7044.1	5790.5	4872.9	4337.0	3696.0	2662.5	1952.8*	1442.0*	1134.6*	985.5*
	Elow							1878.0	1333.5	1009.1	842.9
	Eup							2027.7	1554.6	1270.2	1145.5
75	OBS	12223.7	10209.3	8644.7	7741.5	6569.0	4731.4	-	-	-	-
	EXP	12223.7	10237.9	8668.7	7738.4	6530.2	4727.6	3405.7*	2497.9*	1844.4*	1451.4*
	Elow							3275.2	2310.1	1640.4	1241.3
	Eup							3536.2	2693.1	2064.7	1687.0
30-79	OBS	1608.0	1325.9	1123.2	1012.7	874.4	654.8	-	-	-	-
	EXP	1607.4	1326.4	1123.0	1012.4	874.9	654.9	503.0*	400.0*	329.2*	279.8*
	Elow							483.7	369.9	292.8	239.3
	Eup							522.3	431.2	368.6	325.2

Osmond and Gardner Modelling

**USA IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

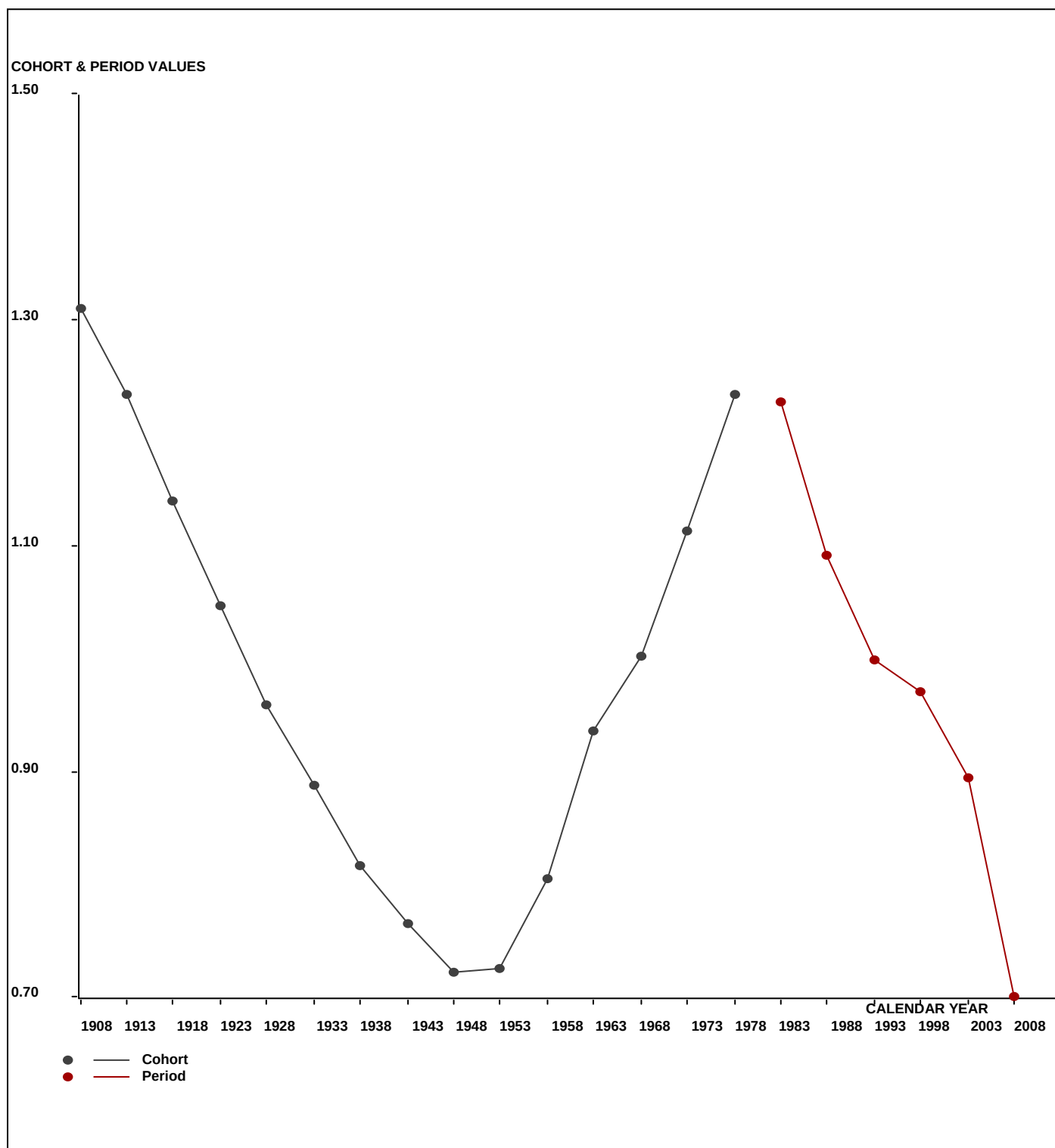
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	863.0	957.0	1052.0	991.0	975.0	854.0	-	-	-	-
	EXP	859.6	938.0	1033.6	1021.9	985.9	819.9	730.4*	649.4*	570.4*	484.5*
	CHI	0.014	0.383	0.329	0.933	0.120	1.415	-	-	-	-
35 -	OBS	2085.0	2008.0	2336.0	2645.0	2597.0	2130.0	-	-	-	-
	EXP	1958.0	2063.3	2326.3	2752.6	2588.5	2119.2	1758.6*	1559.2*	1385.9*	1216.9*
	CHI	8.234	1.484	0.040	4.210	0.028	0.055	-	-	-	-
40 -	OBS	4696.0	4402.0	4749.0	5333.0	6374.0	5181.0	-	-	-	-
	EXP	4208.9	4424.6	4778.5	5748.3	6458.9	5159.2	4232.7*	3503.6*	3107.1*	2761.1*
	CHI	56.378	0.115	0.182	30.004	1.115	0.092	-	-	-	-
45 -	OBS	8996.0	8037.0	8425.0	9504.0	11363.0	11072.0	-	-	-	-
	EXP	8470.3	7990.5	8621.3	10010.1	11435.6	10902.1	8702.2*	7135.1*	5913.1*	5244.6*
	CHI	32.631	0.270	4.471	25.591	0.461	2.647	-	-	-	-
50 -	OBS	18573.0	14682.0	14278.0	16345.0	18487.0	18290.0	-	-	-	-
	EXP	18354.3	14859.6	14447.4	16709.3	18445.2	17851.9	16946.0*	13478.7*	11071.7*	9183.1*
	CHI	2.606	2.123	1.987	7.941	0.095	10.750	-	-	-	-
55 -	OBS	37052.0	28654.0	24478.0	25051.0	27616.0	26509.0	-	-	-	-
	EXP	37524.5	28874.5	24113.8	25130.6	27746.3	25982.5	25086.3*	23691.3*	18882.6*	15534.5*
	CHI	5.951	1.684	5.499	0.252	0.612	10.669	-	-	-	-
60 -	OBS	66044.0	55313.0	44138.0	40313.0	39553.0	37449.0	-	-	-	-
	EXP	67154.7	55659.7	44189.9	39642.6	39306.6	36877.6	34438.5*	33149.8*	31375.5*	25057.7*
	CHI	18.371	2.160	0.061	11.337	1.544	8.855	-	-	-	-
65 -	OBS	102745.0	90893.0	76850.0	66043.0	56033.0	46757.0	-	-	-	-
	EXP	103108.7	90445.5	76922.8	65365.0	56167.5	47320.5	44323.1*	41264.8*	39855.3*	37817.9*
	CHI	1.283	2.214	0.069	7.033	0.322	6.710	-	-	-	-
70 -	OBS	152188.0	133295.0	120234.0	109135.0	88423.0	64058.0	-	-	-	-
	EXP	151665.3	132469.5	119649.0	109090.3	89134.8	65344.5	55454.5*	51996.5*	48604.7*	47149.3*
	CHI	1.801	5.144	2.860	0.018	5.685	25.330	-	-	-	-
75 -	OBS	200090.0	187196.0	167793.0	164198.0	142524.0	99680.0	-	-	-	-
	EXP	200090.0	187720.3	168258.7	164131.6	141683.3	99601.0	73608.4*	62964.5*	59483.7*	55896.7*
	CHI	0.000	1.464	1.289	0.027	4.989	0.063	-	-	-	-
30-79	OBS	593332.0	525437.0	464333.0	439558.0	393945.0	311980.0	-	-	-	-
	EXP	593394.3	525445.5	464341.4	439602.3	393952.5	311978.5	265280.8*	239392.9*	220250.0*	200346.2*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

USA IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

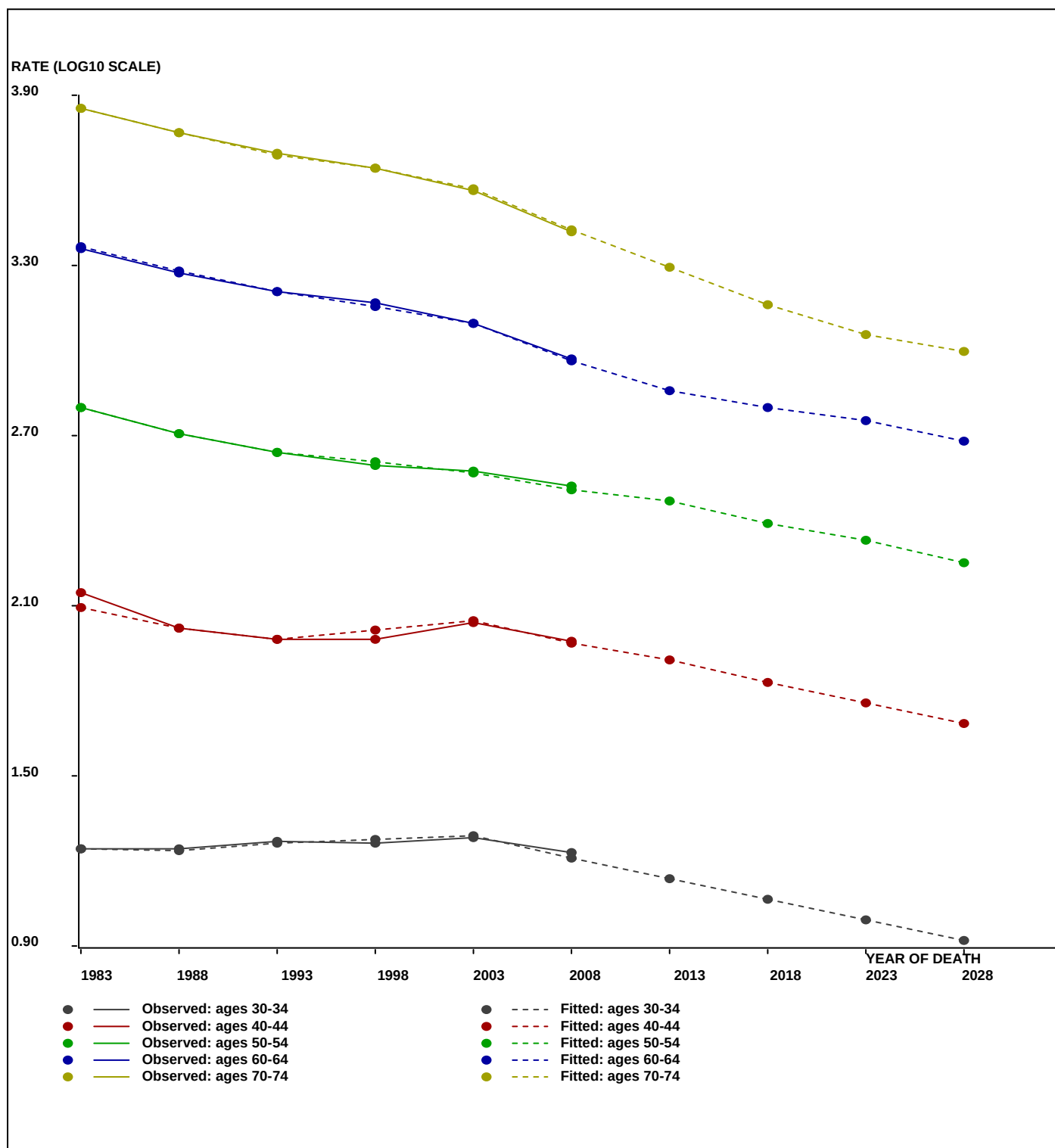


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

USA IHD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

USA IHD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	13.8	34.3	81.3	158.0	294.2	459.6	718.4	1143.7	1952.8	3405.7
2016 PRE	11.7	29.0	67.8	137.3	246.8	418.1	624.0	900.0	1442.0	2497.9
2021 PRE	9.9	24.6	57.4	114.5	214.4	350.8	567.6	781.7	1134.6	1844.4
2026 PRE	8.4	20.8	48.6	96.9	178.8	304.7	476.2	711.1	985.5	1451.4

Predicted deaths (5 year periods)

	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011 PRE	730.4	1758.6	4232.7	8702.2	16946.0	25086.3	34438.5	44323.1	55454.5	73608.4
2016 PRE	649.4	1559.2	3503.6	7135.1	13478.7	23691.3	33149.8	41264.8	51996.5	62964.5
2021 PRE	570.4	1385.9	3107.1	5913.1	11071.7	18882.6	31375.5	39855.3	48604.7	59483.7
2026 PRE	484.5	1216.9	2761.1	5244.6	9183.1	15534.5	25057.7	37817.9	47149.3	55896.7

Osmond and Gardner Modelling

USA Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	8170.21	160.20	51	P, C	99.40	43713.72	0.0000
AGE-PERIOD	128.20	2.85	45	Cohort	61.85	680.11	0.0000
AGE-COHORT	298.59	8.29	36	Period	83.62	1583.49	0.0000
PERIOD-COHORT	85.61	2.14	40	Age	42.87	454.04	0.0000
FULL AGE-PERIOD-COHORT	48.91	1.53	32			259.35	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	1.386328	24.340421
35	1.649524	44.619476
40	1.915784	82.372923
45	2.131302	135.301332
50	2.318545	208.230803
55	2.487220	307.057622
60	2.691792	491.803990
65	2.922772	837.089388
70	3.196567	1572.413431
75	3.482802	3039.499638

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	0.106230	1.277116
1986	0.041723	1.100837
1991	0.000378	1.000870
1996	-0.006243	0.985729
2001	-0.056672	0.877663
2006	-0.141619	0.721740

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	0.042987	1.104044
1911	0.025585	1.060682
1916	0.017910	1.042101
1921	0.012108	1.028272
1926	-0.000344	0.999208
1931	-0.012306	0.972061
1936	-0.025916	0.942071
1941	-0.034564	0.923499
1946	-0.053545	0.884006
1951	-0.048787	0.893743
1956	-0.020874	0.953072
1961	-0.003610	0.991722
1966	-0.036921	0.918500
1971	-0.046150	0.899186
1976	-0.052299	0.886546

Osmond and Gardner Modelling

USA Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	1390.0	1468.0	1378.0	1093.0	927.0	783.0
EXP	1366.8	1389.3	1360.2	1177.7	968.6	783.0
CHI	0.4	4.5	0.2	6.1	1.8	0.0
35 - OBS	2179.0	2216.0	2406.0	2408.0	1831.0	1533.0
EXP	2112.9	2170.3	2333.7	2505.7	1967.4	1492.9
CHI	2.1	1.0	2.2	3.8	9.5	1.1
40 - OBS	3337.0	3358.0	3665.0	4079.0	4050.0	3215.0
EXP	3268.8	3379.5	3642.9	4268.1	4149.2	3008.7
CHI	1.4	0.1	0.1	8.4	2.4	14.1
45 - OBS	4813.0	4636.0	5038.0	5761.0	6066.0	5779.0
EXP	4790.6	4582.2	4978.9	5892.3	6250.9	5605.7
CHI	0.1	0.6	0.7	2.9	5.5	5.4
50 - OBS	7548.0	6324.0	6530.0	7335.0	7900.0	8116.0
EXP	7602.3	6281.5	6340.9	7542.0	8091.1	7906.1
CHI	0.4	0.3	5.6	5.7	4.5	5.6
55 - OBS	11453.0	9531.0	8553.0	9080.0	9678.0	9950.0
EXP	12002.3	9414.8	8217.0	9079.5	9829.7	9725.7
CHI	25.1	1.4	13.7	0.0	2.3	5.2
60 - OBS	18348.0	15918.0	13513.0	12712.0	12397.0	12922.0
EXP	18694.7	15933.2	13204.9	12642.5	12672.3	12674.8
CHI	6.4	0.0	7.2	0.4	6.0	4.8
65 - OBS	28414.0	26128.0	22875.0	21414.0	18276.0	17002.0
EXP	28418.0	25951.5	23241.0	21052.3	18408.1	17045.2
CHI	0.0	1.2	5.8	6.2	0.9	0.1
70 - OBS	46611.0	41541.0	39348.0	38665.0	32343.0	25891.0
EXP	45860.9	41267.0	39735.2	38956.6	32352.5	26239.1
CHI	12.3	1.8	3.8	2.2	0.0	4.6
75 - OBS	70152.0	64314.0	61262.0	65894.0	59026.0	44190.0
EXP	70152.0	65074.7	61533.5	65344.7	57833.0	44925.9
CHI	0.0	8.9	1.2	4.6	24.6	12.1

Osmond and Gardner Modelling

USA Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	24.340421
35	44.619476
40	82.372923
45	135.301332
50	208.230803
55	307.057622
60	491.803990
65	837.089388
70	1572.413431
75	3039.499638

PERIOD	EFFECT	LOWER	UPPER
% Period Change	82.2344	79.2344	85.2344

1981	1.277116		
1986	1.100837		
1991	1.000870		
1996	0.985729		
2001	0.877663		
2006	0.721740		
2011	0.593518	0.571866	0.615171
2016	0.488076	0.453114	0.524337
2021	0.401366	0.359022	0.446915
2026	0.330061	0.284469	0.380925

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	1.104044	1.000000	
1911	1.060682	2.000000	
1916	1.042101	4.000000	
1921	1.028272	8.000000	
1926	0.999208	16.000000	
1931	0.972061	32.000000	
1936	0.942071	64.000000	
1941	0.923499	128.000000	
1946	0.884006	256.000000	
1951	0.893743	512.000000	
1956	0.953072	1024.000000	
1961	0.991722	2048.000000	
1966	0.918500	4096.000000	
1971	0.899186	8192.000000	
1976	0.897515	EXTRAPOLATION	0.886546
1981	0.887079	EXTRAPOLATION	
1986	0.876765	EXTRAPOLATION	
1991	0.866570	EXTRAPOLATION	
1996	0.856494	EXTRAPOLATION	

Osmond and Gardner Modelling

**USA Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	28.3	27.0	24.5	20.5	18.4	15.6	-	-	-	-
	EXP	27.8	25.5	24.2	22.0	19.2	15.8	12.8*	10.4*	8.5*	6.9*
	Elow							12.3	9.7	7.6	5.9
	Eup							13.3	11.2	9.4	7.9
35	OBS	51.9	44.8	43.9	41.9	33.5	29.7	-	-	-	-
	EXP	50.4	43.9	42.6	43.6	36.0	29.0	23.8*	19.3*	15.7*	12.8*
	Elow							22.9	17.9	14.0	11.0
	Eup							24.6	20.8	17.5	14.7
40	OBS	99.2	79.7	74.1	74.0	70.0	58.3	-	-	-	-
	EXP	97.2	80.2	73.7	77.4	71.7	54.6	44.0*	36.1*	29.3*	23.8*
	Elow							42.4	33.5	26.2	20.5
	Eup							45.6	38.8	32.7	27.5
45	OBS	163.5	139.2	121.1	116.5	109.8	99.8	-	-	-	-
	EXP	162.8	137.6	119.7	119.2	113.2	96.8	73.8*	59.4*	48.7*	39.6*
	Elow							71.1	55.1	43.6	34.1
	Eup							76.4	63.8	54.3	45.7
50	OBS	256.7	217.4	198.2	176.5	159.5	147.0	-	-	-	-
	EXP	258.5	215.9	192.5	181.5	163.3	143.2	122.6*	93.3*	75.2*	61.7*
	Elow							118.1	86.7	67.2	53.2
	Eup							127.0	100.3	83.7	71.2
55	OBS	373.9	332.6	301.4	279.5	234.6	202.6	-	-	-	-
	EXP	391.8	328.6	289.5	279.5	238.2	198.1	173.7*	148.6*	113.2*	91.1*
	Elow							167.4	138.0	101.3	78.5
	Eup							180.0	159.7	126.0	105.2
60	OBS	633.9	540.5	489.6	459.2	390.0	319.9	-	-	-	-
	EXP	645.8	541.0	478.5	456.7	398.6	313.8	260.9*	228.8*	195.8*	149.1*
	Elow							251.4	212.4	175.1	128.5
	Eup							270.4	245.8	218.0	172.1
65	OBS	1113.9	954.0	824.0	815.9	687.2	556.5	-	-	-	-
	EXP	1114.1	947.6	837.2	802.1	692.1	557.9	439.2*	365.2*	320.2*	274.0*
	Elow							423.2	339.0	286.4	236.2
	Eup							455.2	392.3	356.6	316.2
70	OBS	2164.9	1815.8	1602.5	1537.2	1341.1	1054.9	-	-	-	-
	EXP	2130.0	1803.8	1618.3	1548.7	1341.5	1069.1	861.9*	678.4*	564.1*	494.6*
	Elow							830.4	629.8	504.5	426.3
	Eup							893.3	728.8	628.1	570.9
75	OBS	4285.7	3507.6	3156.2	3106.7	2720.5	2097.5	-	-	-	-
	EXP	4285.7	3549.0	3170.2	3080.8	2665.5	2132.4	1699.5*	1370.0*	1078.4*	896.6*
	Elow							1637.5	1271.9	964.7	772.8
	Eup							1761.5	1471.8	1200.8	1034.8
30-79	OBS	529.7	446.1	398.3	383.0	332.9	270.1	-	-	-	-
	EXP	530.4	445.4	397.1	383.3	334.0	269.8	218.7*	178.2*	146.0*	121.4*
	Elow							210.7	165.4	130.6	104.7
	Eup							226.6	191.4	162.6	140.1

Osmond and Gardner Modelling

**USA Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

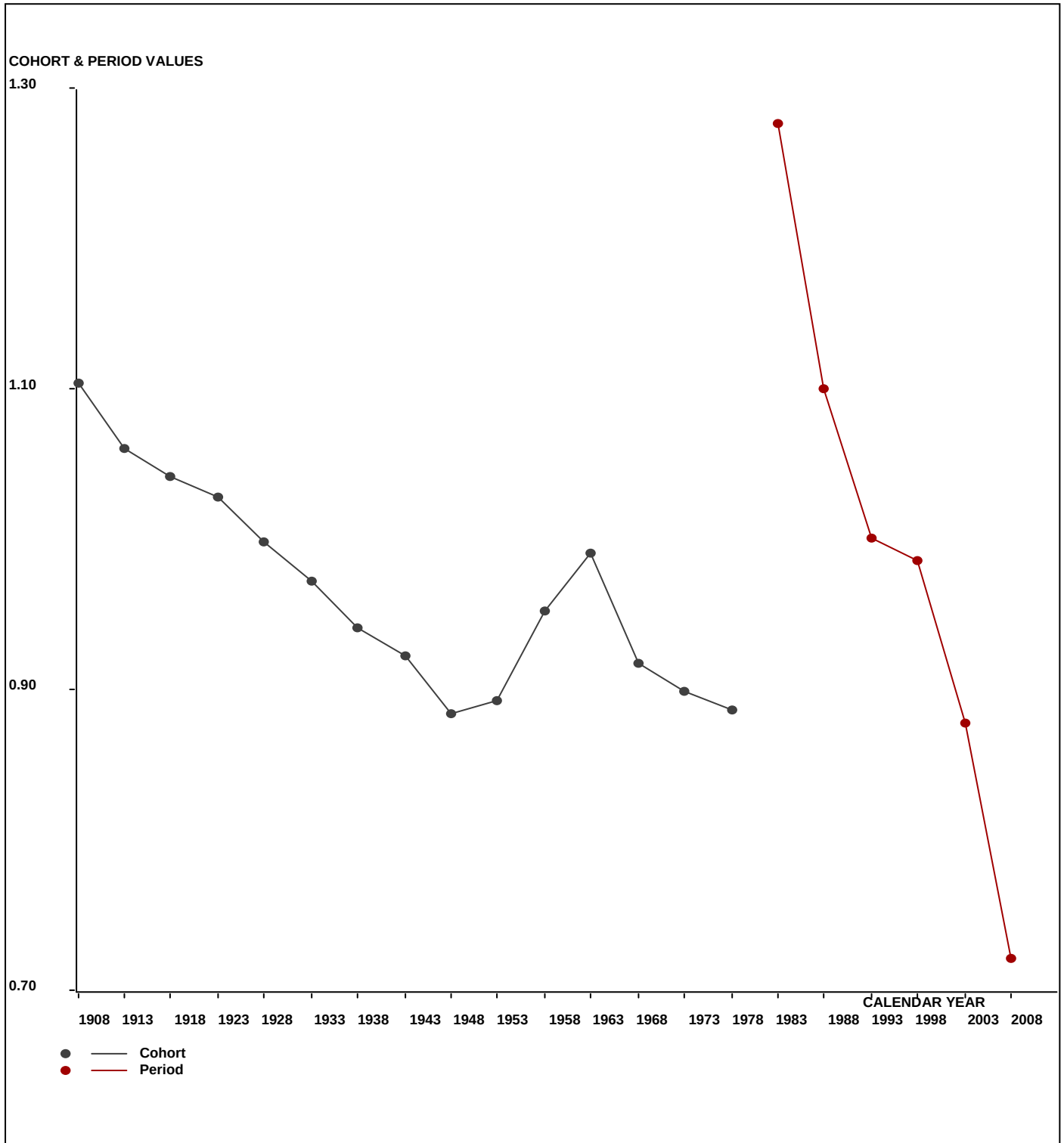
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	1390.0	1468.0	1378.0	1093.0	927.0	783.0	-	-	-	-
	EXP	1366.8	1389.3	1360.2	1177.7	968.6	792.7	678.1*	578.9*	488.3*	398.2*
	CHI	0.394	4.463	0.233	6.091	1.784	0.118	-	-	-	-
35 -	OBS	2179.0	2216.0	2406.0	2408.0	1831.0	1533.0	-	-	-	-
	EXP	2112.9	2170.3	2333.7	2505.7	1967.4	1492.9	1219.1*	1037.8*	885.8*	746.8*
	CHI	2.065	0.964	2.242	3.812	9.463	1.079	-	-	-	-
40 -	OBS	3337.0	3358.0	3665.0	4079.0	4050.0	3215.0	-	-	-	-
	EXP	3268.8	3379.5	3642.9	4268.1	4149.2	3008.7	2287.7*	1863.5*	1586.8*	1354.0*
	CHI	1.424	0.136	0.134	8.375	2.374	14.140	-	-	-	-
45 -	OBS	4813.0	4636.0	5038.0	5761.0	6066.0	5779.0	-	-	-	-
	EXP	4790.6	4582.2	4978.9	5892.3	6250.9	5605.7	4062.0*	3086.7*	2517.2*	2143.9*
	CHI	0.105	0.633	0.701	2.924	5.471	5.357	-	-	-	-
50 -	OBS	7548.0	6324.0	6530.0	7335.0	7900.0	8116.0	-	-	-	-
	EXP	7602.3	6281.5	6340.9	7542.0	8091.1	7906.1	7059.6*	5097.4*	3880.6*	3167.3*
	CHI	0.388	0.287	5.638	5.683	4.514	5.570	-	-	-	-
55 -	OBS	11453.0	9531.0	8553.0	9080.0	9678.0	9950.0	-	-	-	-
	EXP	12002.3	9414.8	8217.0	9079.5	9829.7	9725.7	9480.5*	8422.1*	6093.7*	4646.2*
	CHI	25.136	1.435	13.736	0.000	2.342	5.172	-	-	-	-
60 -	OBS	18348.0	15918.0	13513.0	12712.0	12397.0	12922.0	-	-	-	-
	EXP	18694.7	15933.2	13204.9	12642.5	12672.3	12674.8	12506.3*	12154.0*	10820.9*	7845.2*
	CHI	6.428	0.015	7.189	0.382	5.982	4.821	-	-	-	-
65 -	OBS	28414.0	26128.0	22875.0	21414.0	18276.0	17002.0	-	-	-	-
	EXP	28418.0	25951.5	23241.0	21052.3	18408.1	17045.2	17020.5*	16742.8*	16326.3*	14572.5*
	CHI	0.001	1.200	5.763	6.215	0.948	0.110	-	-	-	-
70 -	OBS	46611.0	41541.0	39348.0	38665.0	32343.0	25891.0	-	-	-	-
	EXP	45860.9	41267.0	39735.2	38956.6	32352.5	26239.1	24474.1*	24464.3*	24162.5*	23664.3*
	CHI	12.269	1.819	3.773	2.183	0.003	4.619	-	-	-	-
75 -	OBS	70152.0	64314.0	61262.0	65894.0	59026.0	44190.0	-	-	-	-
	EXP	70152.0	65074.7	61533.5	65344.7	57833.0	44925.9	36731.7*	34533.3*	34780.1*	34532.1*
	CHI	0.000	8.892	1.197	4.618	24.611	12.054	-	-	-	-
30-79	OBS	194245.0	175434.0	164568.0	168441.0	152494.0	129381.0	-	-	-	-
	EXP	194269.3	175443.9	164588.2	168461.3	152522.9	129416.9	115519.6*	107980.8*	101542.2*	93070.4*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

USA Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

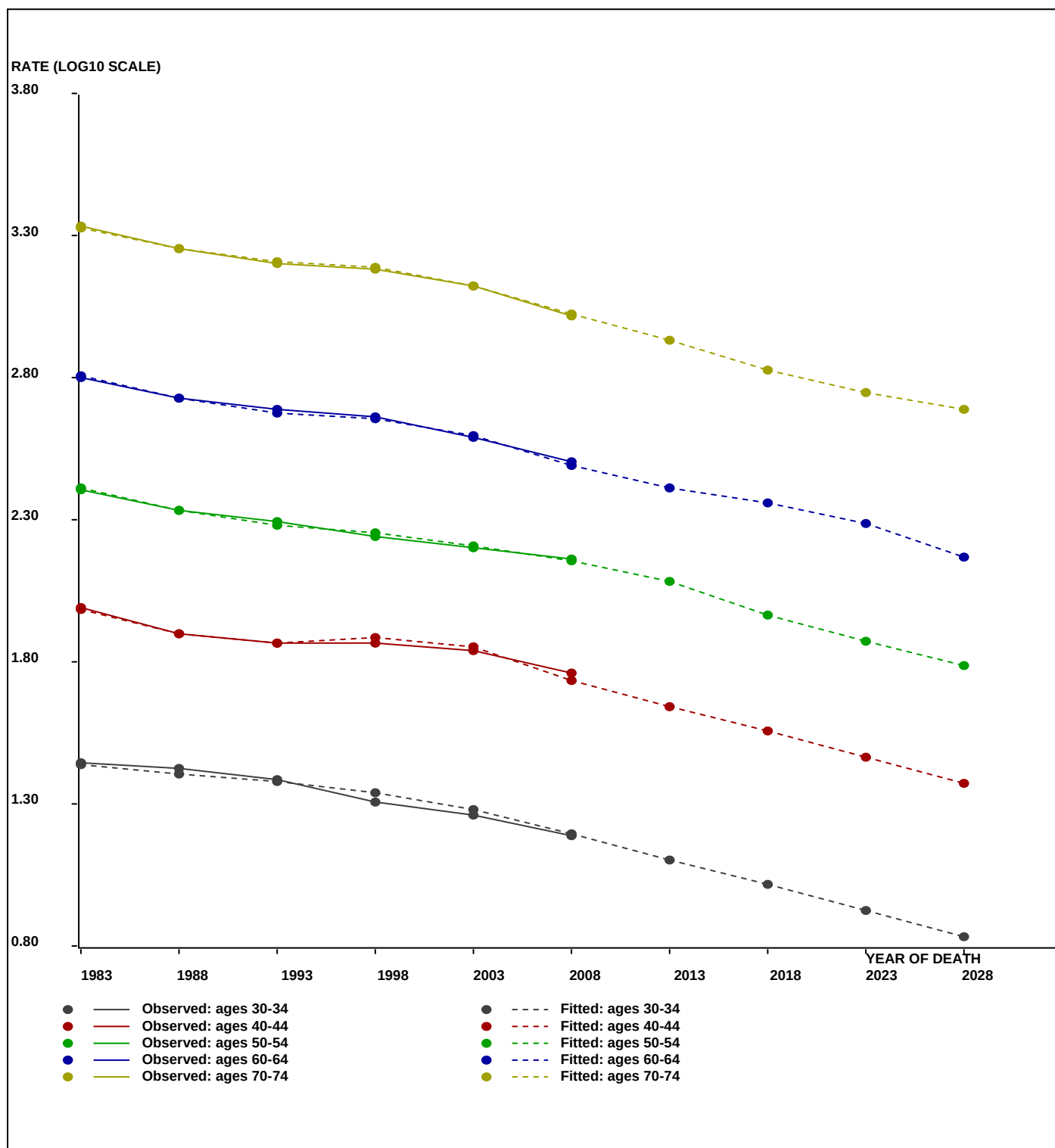


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

USA Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

USA Stroke, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	12.8	23.8	44.0	73.8	122.6	173.7	260.9	439.2	861.9	1699.5
2016	PRE	10.4	19.3	36.1	59.4	93.3	148.6	228.8	365.2	678.4	1370.0
2021	PRE	8.5	15.7	29.3	48.7	75.2	113.2	195.8	320.2	564.1	1078.4
2026	PRE	6.9	12.8	23.8	39.6	61.7	91.1	149.1	274.0	494.6	896.6

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	678.1	1219.1	2287.7	4062.0	7059.6	9480.5	12506.3	17020.5	24474.1	36731.7
2016	PRE	578.9	1037.8	1863.5	3086.7	5097.4	8422.1	12154.0	16742.8	24464.3	34533.3
2021	PRE	488.3	885.8	1586.8	2517.2	3880.6	6093.7	10820.9	16326.3	24162.5	34780.1
2026	PRE	398.2	746.8	1354.0	2143.9	3167.3	4646.2	7845.2	14572.5	23664.3	34532.1

Osmond and Gardner Modelling

USA Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	7351.57	144.15	51	P, C	99.43	39564.87	0.0000
AGE-PERIOD	5098.38	113.30	45	Cohort	99.18	27221.23	0.0000
AGE-COHORT	282.15	7.84	36	Period	85.21	1496.36	0.0000
PERIOD-COHORT	709.14	17.73	40	Age	94.11	3765.57	0.0000
FULL AGE-PERIOD-COHORT	41.74	1.30	32			221.32	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.990952	9.793812
35	1.521969	33.263582
40	1.950916	89.313195
45	2.309707	204.035998
50	2.592776	391.539895
55	2.823308	665.745786
60	3.019301	1045.443952
65	3.179743	1512.664829
70	3.310331	2043.293586
75	3.403200	2530.460610

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.020710	0.953432
1986	0.006680	1.015501
1991	0.021186	1.049993
1996	0.009014	1.020971
2001	-0.000430	0.999010
2006	-0.020121	0.954727

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.315568	0.483539
1911	-0.180363	0.660142
1916	-0.073237	0.844818
1921	-0.008001	0.981746
1926	0.041013	1.099038
1931	0.061141	1.151174
1936	0.058714	1.144758
1941	0.036978	1.088874
1946	-0.028997	0.935412
1951	-0.094949	0.803620
1956	-0.069203	0.852701
1961	-0.054073	0.882931
1966	-0.148959	0.709645
1971	-0.272713	0.533687
1976	-0.290166	0.512666

Osmond and Gardner Modelling

USA Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	397.0	412.0	492.0	419.0	258.0	241.0
EXP	369.2	461.4	511.2	379.2	263.3	241.0
CHI	2.1	5.3	0.7	4.2	0.1	0.0
35 - OBS	1339.0	1336.0	1565.0	1660.0	1320.0	879.0
EXP	1244.3	1342.0	1632.9	1722.6	1289.9	873.8
CHI	7.2	0.0	2.8	2.3	0.7	0.0
40 - OBS	3181.0	3549.0	3595.0	4322.0	4690.0	3261.0
EXP	3119.7	3576.7	3725.9	4288.3	4559.1	3334.1
CHI	1.2	0.2	4.6	0.3	3.8	1.6
45 - OBS	6912.0	7540.0	8175.0	8035.0	9655.0	9903.0
EXP	6553.7	7515.8	8334.8	8275.3	9599.8	9955.7
CHI	19.6	0.1	3.1	7.0	0.3	0.3
50 - OBS	13032.0	13517.0	14293.0	15213.0	15641.0	17618.0
EXP	12638.1	13239.9	14748.0	15542.6	15571.1	17594.0
CHI	12.3	5.8	14.0	7.0	0.3	0.0
55 - OBS	21583.0	22468.0	22637.0	23402.0	25717.0	25352.0
EXP	21368.2	22299.9	22711.4	24040.7	25669.6	25081.1
CHI	2.2	1.3	0.2	17.0	0.1	2.9
60 - OBS	27996.0	34215.0	34806.0	33745.0	36411.0	38078.0
EXP	28325.4	34365.7	34873.9	33824.3	36153.3	37713.4
CHI	3.8	0.7	0.1	0.2	1.8	3.5
65 - OBS	30567.0	40960.0	48218.0	47173.0	45856.0	48769.0
EXP	31079.8	41303.0	48460.8	46663.1	46010.0	48041.2
CHI	8.5	2.8	1.2	5.6	0.5	11.0
70 - OBS	27351.0	39865.0	52174.0	58203.0	56593.0	54466.0
EXP	27689.7	40103.1	51717.7	57671.1	56671.0	54807.8
CHI	4.1	1.4	4.0	4.9	0.1	2.1
75 - OBS	19096.0	31439.0	44308.0	54007.0	59921.0	57649.0
EXP	19096.0	31104.2	43568.3	53796.6	60279.8	58592.2
CHI	0.0	3.6	12.6	0.8	2.1	15.2

Osmond and Gardner Modelling

USA Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
 Effects for extending model to project rates to 2011 to 2030
 Projections using parameters Log Transformed

AGE	EFFECT
30	9.793812
35	33.263582
40	89.313195
45	204.035998
50	391.539895
55	665.745786
60	1045.443952
65	1512.664829
70	2043.293586
75	2530.460610

PERIOD	EFFECT	LOWER	UPPER
% Period Change	95.5674	92.5674	98.5674
1981	0.953432		
1986	1.015501		
1991	1.049993		
1996	1.020971		
2001	0.999010		
2006	0.954727		
2011	0.912408	0.883766	0.941050
2016	0.871965	0.818080	0.927568
2021	0.833314	0.757275	0.914280
2026	0.796376	0.700990	0.901182

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.483539	1.000000	
1911	0.660142	2.000000	
1916	0.844818	4.000000	
1921	0.981746	8.000000	
1926	1.099038	16.000000	
1931	1.151174	32.000000	
1936	1.144758	64.000000	
1941	1.088874	128.000000	
1946	0.935412	256.000000	
1951	0.803620	512.000000	
1956	0.852701	1024.000000	
1961	0.882931	2048.000000	
1966	0.709645	4096.000000	
1971	0.533687	8192.000000	
1976	0.499458	EXTRAPOLATION	0.512666
1981	0.437999	EXTRAPOLATION	
1986	0.384103	EXTRAPOLATION	
1991	0.336838	EXTRAPOLATION	
1996	0.295390	EXTRAPOLATION	

Osmond and Gardner Modelling

**USA Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	8.1	7.6	8.7	7.8	5.1	4.8	-	-	-	-
	EXP	7.5	8.5	9.1	7.1	5.2	4.7	3.9*	3.3*	2.7*	2.3*
	Elow							3.8	3.1	2.5	2.0
	Eup							4.0	3.5	3.0	2.6
35	OBS	31.9	27.0	28.5	28.9	24.1	17.0	-	-	-	-
	EXP	29.7	27.1	29.8	30.0	23.6	16.9	15.2*	12.7*	10.6*	8.9*
	Elow							14.7	11.9	9.7	7.9
	Eup							15.6	13.5	11.7	10.1
40	OBS	94.5	84.2	72.7	78.4	81.0	59.2	-	-	-	-
	EXP	92.7	84.8	75.4	77.8	78.8	60.5	43.5*	38.9*	32.6*	27.3*
	Elow							42.1	36.5	29.6	24.0
	Eup							44.9	41.4	35.8	30.9
45	OBS	234.9	226.3	196.6	162.5	174.8	171.1	-	-	-	-
	EXP	222.7	225.6	200.4	167.4	173.8	172.0	132.1*	94.9*	84.9*	71.2*
	Elow							128.0	89.1	77.2	62.6
	Eup							136.3	101.0	93.2	80.5
50	OBS	443.1	464.7	433.8	366.0	315.7	319.2	-	-	-	-
	EXP	429.7	455.2	447.7	373.9	314.3	318.8	315.4*	242.3*	174.1*	155.7*
	Elow							305.5	227.3	158.2	137.1
	Eup							325.3	257.7	191.0	176.2
55	OBS	704.6	784.1	797.6	720.5	623.3	516.3	-	-	-	-
	EXP	697.6	778.3	800.2	740.1	622.1	510.8	518.0*	512.5*	393.7*	283.0*
	Elow							501.7	480.9	357.8	249.1
	Eup							534.2	545.2	431.9	320.2
60	OBS	967.2	1161.7	1261.2	1219.0	1145.3	942.7	-	-	-	-
	EXP	978.6	1166.8	1263.7	1221.9	1137.2	933.6	766.6*	777.3*	769.2*	590.8*
	Elow							742.5	729.3	699.0	520.1
	Eup							790.6	826.9	843.9	668.6
65	OBS	1198.3	1495.5	1736.8	1797.3	1724.1	1596.4	-	-	-	-
	EXP	1218.4	1508.1	1745.6	1777.9	1729.9	1572.5	1291.0*	1060.0*	1074.9*	1063.6*
	Elow							1250.5	994.5	976.8	936.2
	Eup							1331.6	1127.6	1179.3	1203.6
70	OBS	1270.3	1742.6	2124.9	2313.9	2346.6	2219.3	-	-	-	-
	EXP	1286.1	1753.0	2106.3	2292.8	2349.9	2233.2	2030.0*	1666.6*	1368.3*	1387.5*
	Elow							1966.3	1563.6	1243.5	1221.3
	Eup							2093.7	1772.9	1501.3	1570.1
75	OBS	1166.6	1714.6	2282.8	2546.3	2761.8	2736.3	-	-	-	-
	EXP	1166.6	1696.4	2244.7	2536.4	2778.3	2781.1	2643.0*	2402.6*	1972.5*	1619.5*
	Elow							2560.1	2254.1	1792.5	1425.5
	Eup							2726.0	2555.8	2164.1	1832.6
30-79	OBS	467.1	560.4	621.1	620.9	602.4	551.4	-	-	-	-
	EXP	465.8	559.9	622.7	621.9	602.1	550.8	491.8*	431.8*	376.2*	330.3*
	Elow							476.4	405.2	341.9	290.7
	Eup							507.3	459.4	412.8	373.8

Osmond and Gardner Modelling

**USA Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

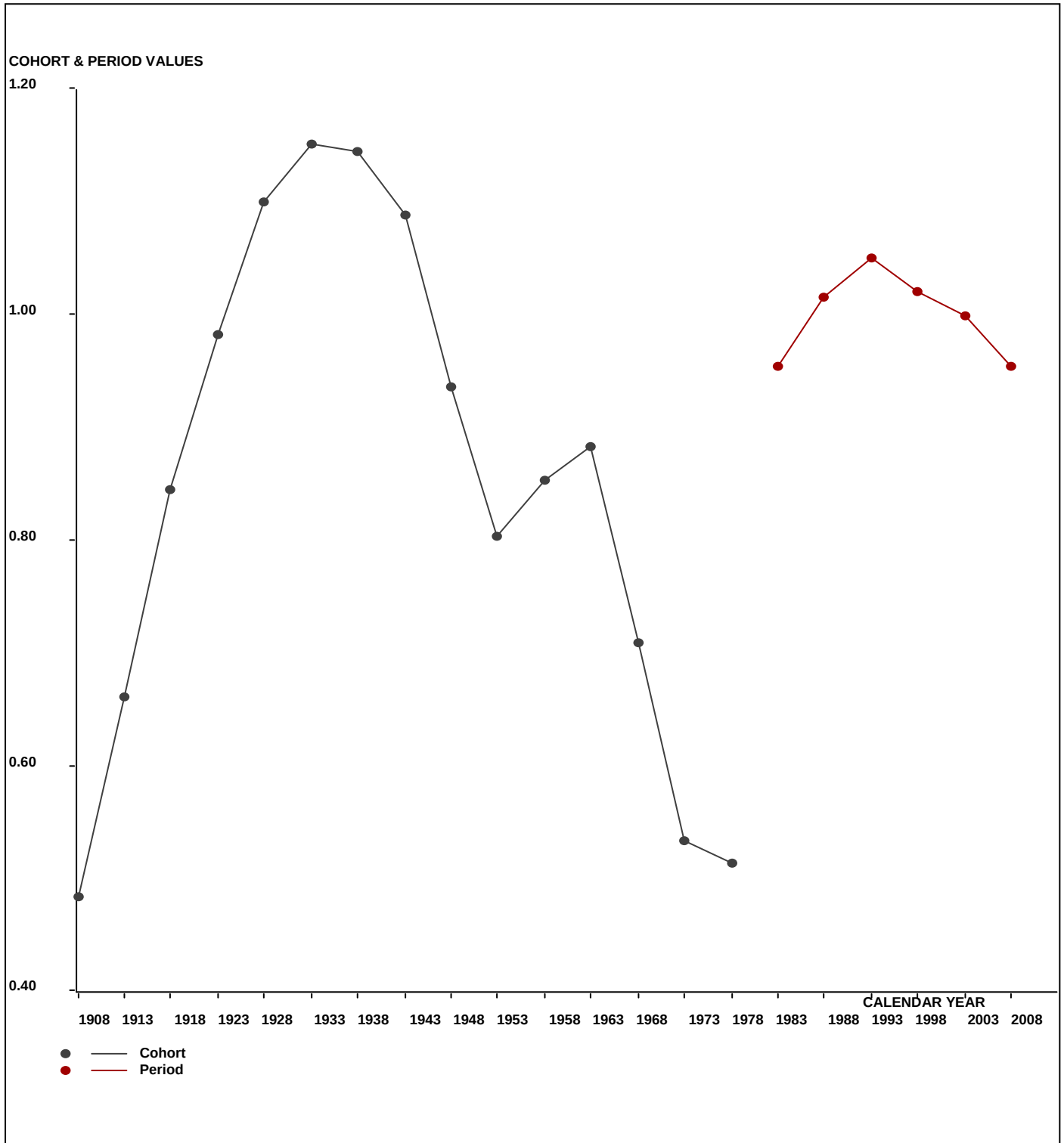
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	397.0	412.0	492.0	419.0	258.0	241.0	-	-	-	-
	EXP	369.2	461.4	511.2	379.2	263.3	234.8	207.1*	182.3*	158.5*	133.3*
	CHI	2.098	5.280	0.720	4.176	0.106	0.164	-	-	-	-
35 -	OBS	1339.0	1336.0	1565.0	1660.0	1320.0	879.0	-	-	-	-
	EXP	1244.3	1342.0	1632.9	1722.6	1289.9	873.8	777.5*	682.5*	600.7*	522.2*
	CHI	7.201	0.027	2.825	2.272	0.703	0.031	-	-	-	-
40 -	OBS	3181.0	3549.0	3595.0	4322.0	4690.0	3261.0	-	-	-	-
	EXP	3119.7	3576.7	3725.9	4288.3	4559.1	3334.1	2263.2*	2008.7*	1763.8*	1551.8*
	CHI	1.204	0.215	4.596	0.264	3.758	1.602	-	-	-	-
45 -	OBS	6912.0	7540.0	8175.0	8035.0	9655.0	9903.0	-	-	-	-
	EXP	6553.7	7515.8	8334.8	8275.3	9599.8	9955.7	7275.5*	4935.7*	4385.8*	3851.6*
	CHI	19.589	0.078	3.063	6.975	0.317	0.279	-	-	-	-
50 -	OBS	13032.0	13517.0	14293.0	15213.0	15641.0	17618.0	-	-	-	-
	EXP	12638.1	13239.9	14748.0	15542.6	15571.1	17594.0	18167.8*	13229.8*	8991.6*	7996.5*
	CHI	12.276	5.799	14.039	6.988	0.314	0.033	-	-	-	-
55 -	OBS	21583.0	22468.0	22637.0	23402.0	25717.0	25352.0	-	-	-	-
	EXP	21368.2	22299.9	22711.4	24040.7	25669.6	25081.1	28271.4*	29043.9*	21193.3*	14426.1*
	CHI	2.160	1.267	0.243	16.968	0.087	2.926	-	-	-	-
60 -	OBS	27996.0	34215.0	34806.0	33745.0	36411.0	38078.0	-	-	-	-
	EXP	28325.4	34365.7	34873.9	33824.3	36153.3	37713.4	36747.7*	41296.4*	42518.4*	31088.3*
	CHI	3.832	0.661	0.132	0.186	1.837	3.524	-	-	-	-
65 -	OBS	30567.0	40960.0	48218.0	47173.0	45856.0	48769.0	-	-	-	-
	EXP	31079.8	41303.0	48460.8	46663.1	46010.0	48041.2	50031.8*	48601.3*	54802.2*	56567.2*
	CHI	8.460	2.849	1.216	5.572	0.515	11.027	-	-	-	-
70 -	OBS	27351.0	39865.0	52174.0	58203.0	56593.0	54466.0	-	-	-	-
	EXP	27689.7	40103.1	51717.7	57671.1	56671.0	54807.8	57645.8*	60097.5*	58615.5*	66382.5*
	CHI	4.143	1.413	4.026	4.907	0.107	2.132	-	-	-	-
75 -	OBS	19096.0	31439.0	44308.0	54007.0	59921.0	57649.0	-	-	-	-
	EXP	19096.0	31104.2	43568.3	53796.6	60279.8	58592.2	57124.6*	60560.4*	63612.6*	62371.0*
	CHI	0.000	3.604	12.557	0.823	2.135	15.185	-	-	-	-
30-79	OBS	151454.0	195301.0	230263.0	246179.0	256062.0	256216.0	-	-	-	-
	EXP	151484.2	195311.7	230284.8	246203.6	256066.9	256228.2	258512.4*	260638.5*	256642.3*	244890.6*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

USA Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

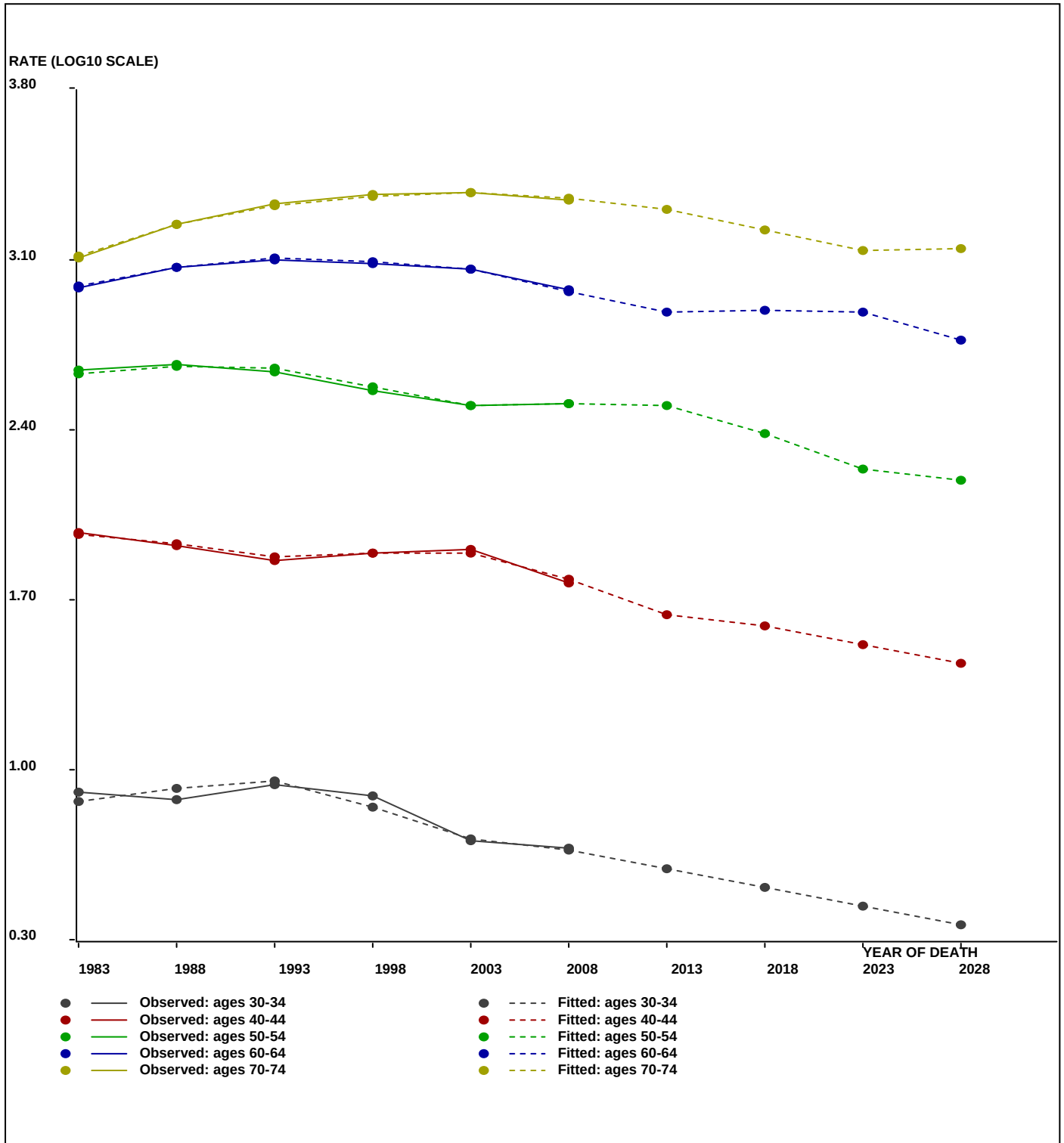


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

USA Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Osmond and Gardner Modelling

USA Lung Cancers, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	3.9	15.2	43.5	132.1	315.4	518.0	766.6	1291.0	2030.0	2643.0
2016	PRE	3.3	12.7	38.9	94.9	242.3	512.5	777.3	1060.0	1666.6	2402.6
2021	PRE	2.7	10.6	32.6	84.9	174.1	393.7	769.2	1074.9	1368.3	1972.5
2026	PRE	2.3	8.9	27.3	71.2	155.7	283.0	590.8	1063.6	1387.5	1619.5

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	207.1	777.5	2263.2	7275.5	18167.8	28271.4	36747.7	50031.8	57645.8	57124.6
2016	PRE	182.3	682.5	2008.7	4935.7	13229.8	29043.9	41296.4	48601.3	60097.5	60560.4
2021	PRE	158.5	600.7	1763.8	4385.8	8991.6	21193.3	42518.4	54802.2	58615.5	63612.6
2026	PRE	133.3	522.2	1551.8	3851.6	7996.5	14426.1	31088.3	56567.2	66382.5	62371.0

Osmond and Gardner Modelling

USA COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the Age, Period, Cohort Models

Model	RSS	MRSS	DF	Factor	%Account	ChiSq	P
AGE-ONLY	5238.86	102.72	51	P, C	99.51	28236.62	0.0000
AGE-PERIOD	1123.87	24.97	45	Cohort	97.73	5977.63	0.0000
AGE-COHORT	256.29	7.12	36	Period	90.05	1359.40	0.0000
PERIOD-COHORT	100.54	2.51	40	Age	74.64	533.29	0.0000
FULL AGE-PERIOD-COHORT	25.50	0.80	32			135.21	0.0000

AGE-GROUP	LOG (AGE-VALUE)	AGE-VALUE
30	0.888046	7.727623
35	1.097700	12.522744
40	1.384770	24.253247
45	1.723433	52.897224
50	2.074989	118.847105
55	2.403952	253.484713
60	2.704423	506.317799
65	2.966725	926.243931
70	3.198017	1577.673861
75	3.394424	2479.842072

PERIOD	LOG (PERIOD-VALUE)	PERIOD-VALUE
1981	-0.081525	0.828849
1986	-0.031257	0.930558
1991	0.005365	1.012430
1996	0.022512	1.053202
2001	0.021697	1.051227
2006	0.012638	1.029527

COHORT	LOG (COHORT-VALUE)	COHORT-VALUE
1906	-0.224698	0.596077
1911	-0.119077	0.760191
1916	-0.043667	0.904342
1921	-0.005463	0.987500
1926	0.027043	1.064248
1931	0.039778	1.095918
1936	0.039272	1.094641
1941	0.029640	1.070630
1946	-0.016011	0.963804
1951	-0.037304	0.917690
1956	0.024197	1.057298
1961	0.060819	1.150320
1966	0.026908	1.063917
1971	-0.022730	0.949008
1976	-0.062959	0.865049

Osmond and Gardner Modelling

USA COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Fitting the FULL AGE-PERIOD-COHORT Model
Matrix of observed and expected deaths and (O-E)**2/E Values

	1981-	1986-	1991-	1996-	2001-	2006-
30 - OBS	312.0	399.0	485.0	459.0	404.0	346.0
EXP	289.2	413.6	506.7	462.7	388.7	346.0
CHI	1.8	0.5	0.9	0.0	0.6	0.0
35 - OBS	443.0	543.0	719.0	822.0	806.0	615.0
EXP	419.6	528.7	735.0	871.6	766.1	630.8
CHI	1.3	0.4	0.3	2.8	2.1	0.4
40 - OBS	727.0	894.0	1161.0	1532.0	1663.0	1426.0
EXP	724.1	917.0	1114.0	1489.5	1697.3	1463.7
CHI	0.0	0.6	2.0	1.2	0.7	1.0
45 - OBS	1547.0	1729.0	2063.0	2526.0	3110.0	3728.0
EXP	1412.4	1755.6	2146.8	2527.3	3247.3	3626.2
CHI	12.8	0.4	3.3	0.0	5.8	2.9
50 - OBS	3316.0	3659.0	4098.0	4861.0	5567.0	7261.0
EXP	3174.8	3521.4	4244.1	5014.4	5679.4	7140.6
CHI	6.3	5.4	5.0	4.7	2.2	2.0
55 - OBS	6939.0	7667.0	7973.0	8967.0	10527.0	11786.0
EXP	6849.0	7407.1	7973.0	9284.3	10596.8	11759.6
CHI	1.2	9.1	0.0	10.8	0.5	0.1
60 - OBS	11813.0	14684.0	15600.0	15963.0	18178.0	20593.0
EXP	11995.6	14768.7	15503.8	16158.7	18115.9	20293.8
CHI	2.8	0.5	0.6	2.4	0.2	4.4
65 - OBS	17589.0	22836.0	27645.0	28239.0	28404.0	31604.0
EXP	17709.9	23311.3	27706.5	28060.3	28347.8	31190.0
CHI	0.8	9.7	0.1	1.1	0.1	5.5
70 - OBS	21278.0	30448.0	38863.0	44451.0	43923.0	43493.0
EXP	21403.0	30373.6	38729.5	44480.8	43834.0	43636.0
CHI	0.7	0.2	0.5	0.0	0.2	0.5
75 - OBS	20055.0	32290.0	44116.0	55219.0	60279.0	58168.0
EXP	20055.0	32165.6	44070.0	54703.5	60194.0	58946.8
CHI	0.0	0.5	0.0	4.9	0.1	10.3

Osmond and Gardner Modelling

USA COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT
Effects for extending model to project rates to 2011 to 2030
Projections using parameters Log Transformed

AGE	EFFECT
30	7.727623
35	12.522744
40	24.253247
45	52.897224
50	118.847105
55	253.484713
60	506.317799
65	926.243931
70	1577.673861
75	2479.842072

PERIOD	EFFECT	LOWER	UPPER
% Period Change	97.9357	94.9357	100.9357

1981	0.828849		
1986	0.930558		
1991	1.012430		
1996	1.053202		
2001	1.051227		
2006	1.029527		
2011	1.008274	0.977388	1.039160
2016	0.987460	0.927890	1.048883
2021	0.967076	0.880899	1.058698
2026	0.947113	0.836288	1.068604

COHORT	EFFECT	WEIGHT	ORIGINAL
1906	0.596077	1.000000	
1911	0.760191	2.000000	
1916	0.904342	4.000000	
1921	0.987500	8.000000	
1926	1.064248	16.000000	
1931	1.095918	32.000000	
1936	1.094641	64.000000	
1941	1.070630	128.000000	
1946	0.963804	256.000000	
1951	0.917690	512.000000	
1956	1.057298	1024.000000	
1961	1.150320	2048.000000	
1966	1.063917	4096.000000	
1971	0.949008	8192.000000	
1976	0.962766	EXTRAPOLATION	0.865049
1981	0.940855	EXTRAPOLATION	
1986	0.919442	EXTRAPOLATION	
1991	0.898517	EXTRAPOLATION	
1996	0.878068	EXTRAPOLATION	

Osmond and Gardner Modelling

**USA COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

**Matrix of observed and expected rates including predictions (shown by *)
Total over ages standardized using: The 1976 European Standard Population**

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30	OBS	6.3	7.3	8.6	8.6	8.0	6.9	-	-	-	-
	EXP	5.9	7.6	9.0	8.7	7.7	7.7	7.3*	7.0*	6.7*	6.4*
	Elow							7.1	6.6	6.1	5.7
	Eup							7.6	7.5	7.4	7.3
35	OBS	10.6	11.0	13.1	14.3	14.7	11.9	-	-	-	-
	EXP	10.0	10.7	13.4	15.2	14.0	12.2	12.2*	11.6*	11.1*	10.7*
	Elow							11.8	10.9	10.1	9.4
	Eup							12.5	12.4	12.2	12.0
40	OBS	21.6	21.2	23.5	27.8	28.7	25.9	-	-	-	-
	EXP	21.5	21.8	22.5	27.0	29.3	26.6	23.2*	23.1*	22.1*	21.1*
	Elow							22.5	21.7	20.1	18.6
	Eup							23.9	24.5	24.2	23.8
45	OBS	52.6	51.9	49.6	51.1	56.3	64.4	-	-	-	-
	EXP	48.0	52.7	51.6	51.1	58.8	62.6	56.7*	49.6*	49.3*	47.1*
	Elow							55.0	46.6	44.9	41.6
	Eup							58.5	52.7	53.9	53.2
50	OBS	112.8	125.8	124.4	116.9	112.4	131.5	-	-	-	-
	EXP	108.0	121.1	128.8	120.6	114.7	129.4	137.8*	124.9*	109.1*	108.4*
	Elow							133.6	117.3	99.4	95.7
	Eup							142.1	132.6	119.4	122.3
55	OBS	226.5	267.6	280.9	276.1	255.1	240.0	-	-	-	-
	EXP	223.6	258.5	280.9	285.8	256.8	239.5	270.2*	287.9*	260.8*	227.8*
	Elow							261.9	270.6	237.6	201.2
	Eup							278.5	305.8	285.5	257.1
60	OBS	408.1	498.6	565.3	576.7	571.8	509.8	-	-	-	-
	EXP	414.4	501.4	561.8	583.7	569.8	502.4	468.5*	528.6*	563.3*	510.2*
	Elow							454.1	496.7	513.1	450.5
	Eup							482.8	561.5	616.6	575.6
65	OBS	689.5	833.8	995.8	1075.9	1068.0	1034.5	-	-	-	-
	EXP	694.3	851.1	998.0	1069.1	1065.8	1020.9	900.1*	839.3*	947.1*	1009.1*
	Elow							872.5	788.7	862.7	891.0
	Eup							927.7	891.6	1036.8	1138.6
70	OBS	988.3	1330.9	1582.8	1767.2	1821.3	1772.2	-	-	-	-
	EXP	994.1	1327.7	1577.3	1768.4	1817.6	1778.0	1703.1*	1501.5*	1400.1*	1579.9*
	Elow							1650.9	1410.9	1275.4	1395.0
	Eup							1755.3	1594.9	1532.8	1782.5
75	OBS	1225.2	1761.0	2272.9	2603.4	2778.3	2761.0	-	-	-	-
	EXP	1225.2	1754.2	2270.5	2579.1	2774.4	2797.9	2737.0*	2621.7*	2311.4*	2155.4*
	Elow							2653.2	2463.5	2105.4	1903.2
	Eup							2820.8	2784.8	2530.4	2431.9
30-79	OBS	236.4	299.4	351.3	379.7	385.9	375.5	-	-	-	-
	EXP	235.9	299.1	351.6	380.6	385.9	375.1	360.2*	345.3*	334.2*	333.8*
	Elow							349.1	324.4	304.4	294.8
	Eup							371.2	366.7	365.8	376.7

Osmond and Gardner Modelling

**USA COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT**

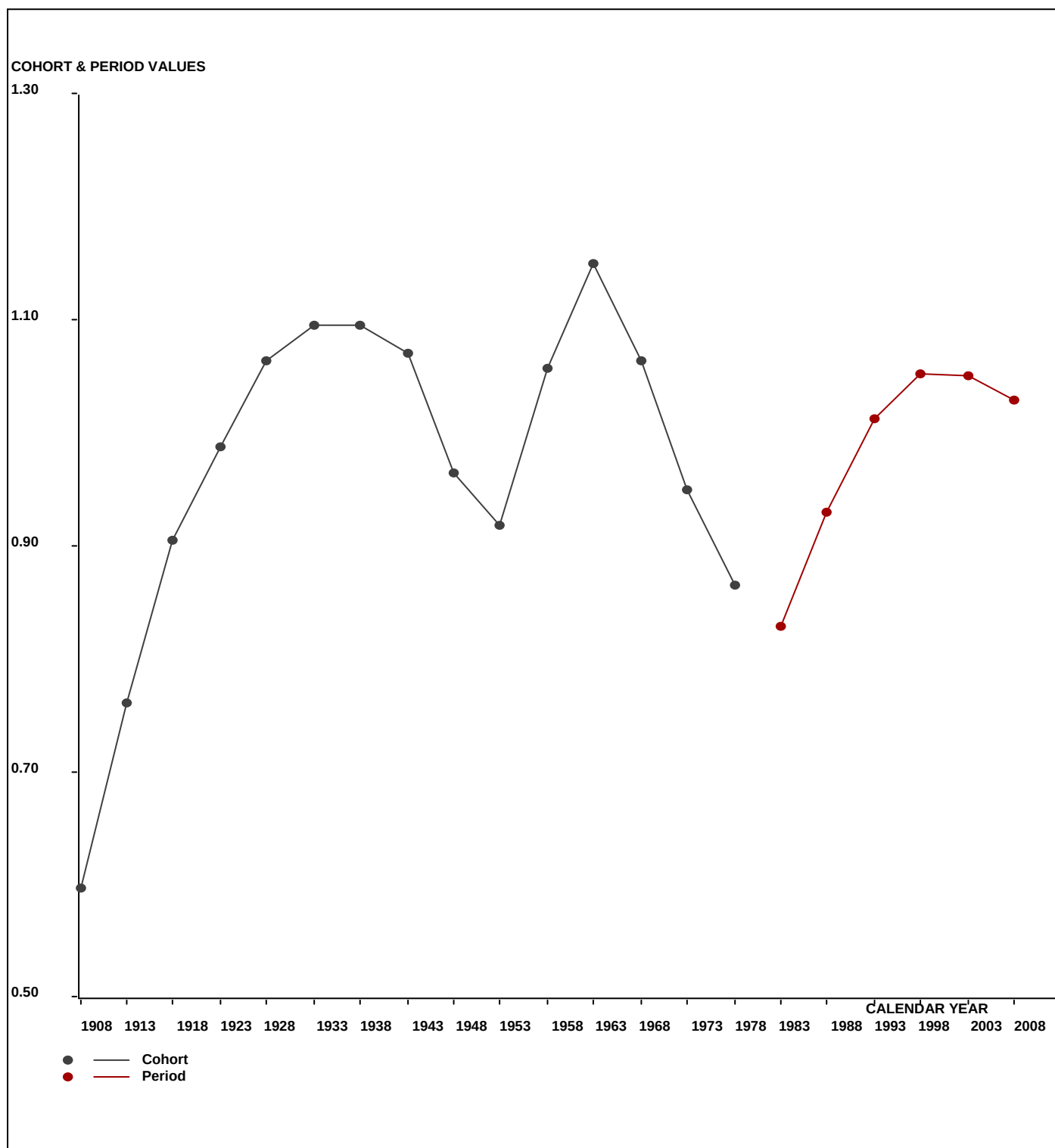
Matrix of observed and expected deaths including predictions

		1981-	1986-	1991-	1996-	2001-	2006-	2011-	2016-	2021-	2026-
30 -	OBS	312.0	399.0	485.0	459.0	404.0	346.0	-	-	-	-
	EXP	289.2	413.6	506.7	462.7	388.7	385.1	387.9*	389.9*	387.3*	371.9*
	CHI	1.802	0.516	0.928	0.030	0.600	3.967	-	-	-	-
35 -	OBS	443.0	543.0	719.0	822.0	806.0	615.0	-	-	-	-
	EXP	419.6	528.7	735.0	871.6	766.1	630.8	623.5*	625.0*	628.2*	623.6*
	CHI	1.304	0.388	0.347	2.817	2.080	0.394	-	-	-	-
40 -	OBS	727.0	894.0	1161.0	1532.0	1663.0	1426.0	-	-	-	-
	EXP	724.1	917.0	1114.0	1489.5	1697.3	1463.7	1207.7*	1190.7*	1194.0*	1199.7*
	CHI	0.011	0.579	1.979	1.212	0.692	0.972	-	-	-	-
45 -	OBS	1547.0	1729.0	2063.0	2526.0	3110.0	3728.0	-	-	-	-
	EXP	1412.4	1755.6	2146.8	2527.3	3247.3	3626.2	3124.9*	2576.8*	2543.6*	2550.9*
	CHI	12.828	0.403	3.269	0.001	5.802	2.860	-	-	-	-
50 -	OBS	3316.0	3659.0	4098.0	4861.0	5567.0	7261.0	-	-	-	-
	EXP	3174.8	3521.4	4244.1	5014.4	5679.4	7140.6	7939.6*	6818.0*	5632.3*	5564.4*
	CHI	6.279	5.375	5.030	4.693	2.225	2.029	-	-	-	-
55 -	OBS	6939.0	7667.0	7973.0	8967.0	10527.0	11786.0	-	-	-	-
	EXP	6849.0	7407.1	7973.0	9284.3	10596.8	11759.6	14749.6*	16315.9*	14039.8*	11616.1*
	CHI	1.183	9.121	0.000	10.845	0.460	0.059	-	-	-	-
60 -	OBS	11813.0	14684.0	15600.0	15963.0	18178.0	20593.0	-	-	-	-
	EXP	11995.6	14768.7	15503.8	16158.7	18115.9	20293.8	22458.8*	28083.8*	31134.6*	26845.3*
	CHI	2.780	0.485	0.597	2.371	0.213	4.412	-	-	-	-
65 -	OBS	17589.0	22836.0	27645.0	28239.0	28404.0	31604.0	-	-	-	-
	EXP	17709.9	23311.3	27706.5	28060.3	28347.8	31190.0	34882.2*	38485.4*	48287.4*	53668.9*
	CHI	0.825	9.689	0.137	1.139	0.111	5.494	-	-	-	-
70 -	OBS	21278.0	30448.0	38863.0	44451.0	43923.0	43493.0	-	-	-	-
	EXP	21403.0	30373.6	38729.5	44480.8	43834.0	43636.0	48362.1*	54143.9*	59978.5*	75583.0*
	CHI	0.730	0.182	0.460	0.020	0.181	0.469	-	-	-	-
75 -	OBS	20055.0	32290.0	44116.0	55219.0	60279.0	58168.0	-	-	-	-
	EXP	20055.0	32165.6	44070.0	54703.5	60194.0	58946.8	59155.5*	66083.9*	74542.7*	83011.0*
	CHI	0.000	0.481	0.048	4.857	0.120	10.288	-	-	-	-
30-79	OBS	84019.0	115149.0	142723.0	163039.0	172861.0	179020.0	-	-	-	-
	EXP	84032.6	115162.6	142729.4	163053.1	172867.3	179072.6	192891.8*	214713.3*	238368.2*	261034.8*
	O/E	1.000	1.000	1.000	1.000	1.000	1.000	-	-	-	-

Osmond and Gardner Modelling

USA COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

O&G Cohort and Period parameter values

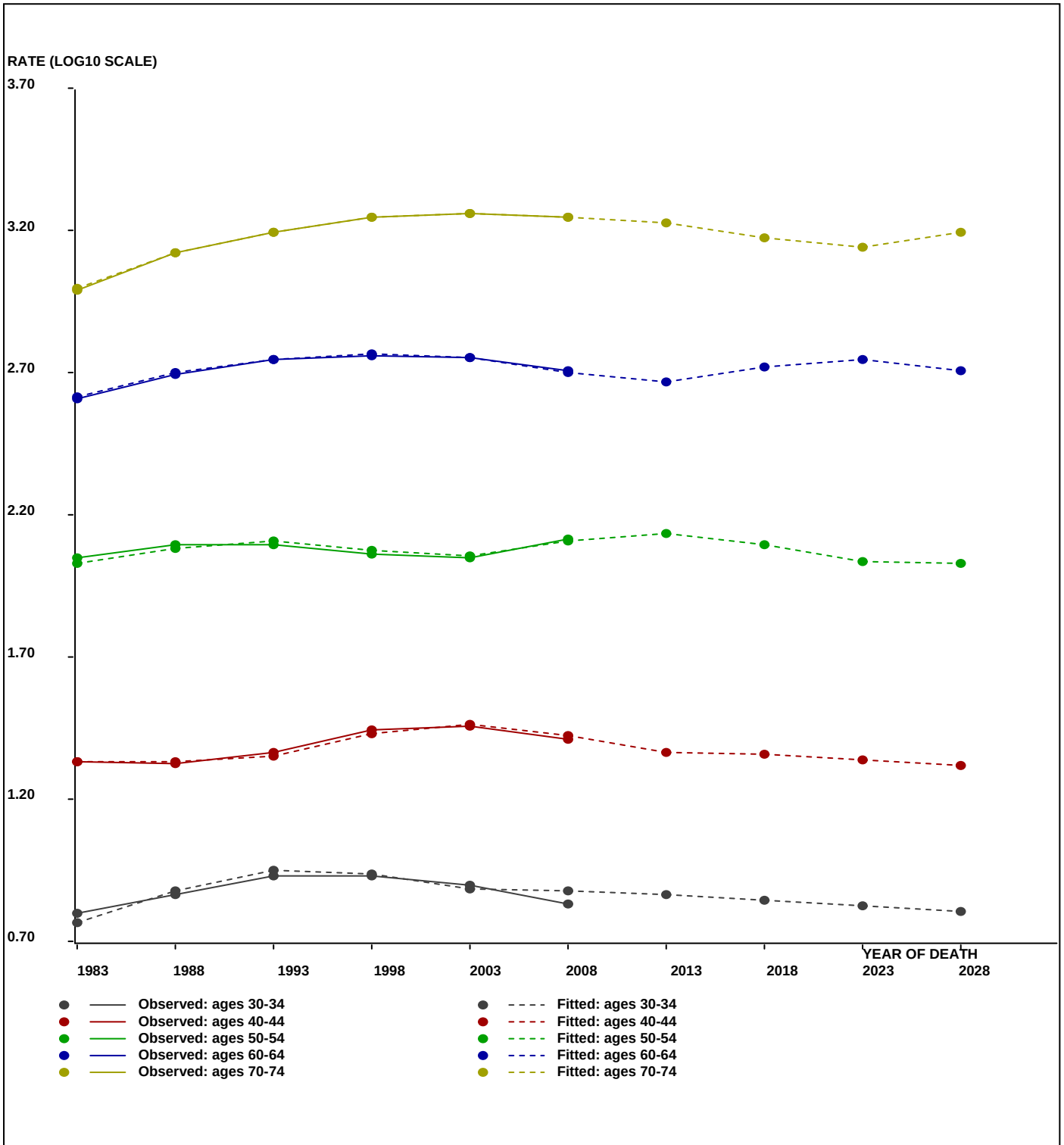


Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

USA COPD, Females, based on 1981-2010 (UN) Replace last cohort value
 Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Observed and fitted rates for selected age groups



Run by JS Fry on 14-MAY-14

Osmond and Gardner Modelling

USA COPD, Females, based on 1981-2010 (UN) Replace last cohort value
Predictions of rates and deaths for future years from model: FULL AGE-PERIOD-COHORT

Predicted rates (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	7.3	12.2	23.2	56.7	137.8	270.2	468.5	900.1	1703.1	2737.0
2016	PRE	7.0	11.6	23.1	49.6	124.9	287.9	528.6	839.3	1501.5	2621.7
2021	PRE	6.7	11.1	22.1	49.3	109.1	260.8	563.3	947.1	1400.1	2311.4
2026	PRE	6.4	10.7	21.1	47.1	108.4	227.8	510.2	1009.1	1579.9	2155.4

Predicted deaths (5 year periods)

		30-	35-	40-	45-	50-	55-	60-	65-	70-	75-
2011	PRE	387.9	623.5	1207.7	3124.9	7939.6	14749.6	22458.8	34882.2	48362.1	59155.5
2016	PRE	389.9	625.0	1190.7	2576.8	6818.0	16315.9	28083.8	38485.4	54143.9	66083.9
2021	PRE	387.3	628.2	1194.0	2543.6	5632.3	14039.8	31134.6	48287.4	59978.5	74542.7
2026	PRE	371.9	623.6	1199.7	2550.9	5564.4	11616.1	26845.3	53668.9	75583.0	83011.0

