

# **Mortality amenable to Health Care in Scotland 1981-2004**

**Grant I, Munoz-Arroyo R, Oduro S, Whyte B and Fischbacher C**  
**Scottish Public Health Observatory Programme**  
Information Services Division

June 2006



## **Background**

Amenable mortality is based on the concept that deaths from certain causes should not occur in the presence of timely and effective health care. Following a recent review which evaluated the conditions considered amenable to medical intervention (Nolte & McKee 2003, 2004), we aimed to estimate amenable mortality in Scotland by NHS Board and to assess its potential contribution to understanding health system performance in Scotland.

## **Methods**

Mortality and population data, between 1981 and 2004 were obtained from the General Register Office for Scotland (GROS).

Using the list published by Nolte and McKee (2003, 2004) (see Table 1), we identified the number of deaths registered by the GROS in Scotland during 1981-2004 (combined and by individual cause of death) which were amenable to health care.

To calculate mortality from conditions amenable to health care, we combined the causes of death (Table1). We computed age and sex standardised death rates per 100 000 population for both sexes combined, by direct standardisation to the European Standard population. Following the approach by Nolte and McKee (2003), we included only 50% of deaths, under the age of 75, from Ischaemic Heart Disease in the analysis.

Amenable mortality rates are provided for Scotland and for NHS Boards for the period 1981 to 2004. In addition, we have compared trends in amenable mortality rates for Scotland and selected European Union countries between 1980 and 1998. Some initial analysis on the effect of deprivation on amenable mortality and its relationship to all cause mortality is also presented.

Table 1: Causes of death considered amenable to health care (from Nolte and McKee, 2003)

Causes of death considered amenable to health care			
Cause of death	Age	International classification of diseases	
		9th revision	10th revision
Intestinal infections	0-14	001-9	A00-9
Tuberculosis	0-74	010-8, 137	A15-9, B90
Other infections (diphtheria, tetanus, poliomyelitis)	0-74	032, 037, 045	A36, A35, A80
Whooping cough	0-14	033	A37
Septicaemia	0-74	038	A40-1
Measles	1-14	055	B05
Malignant neoplasm of colon and rectum	0-74	153-4	C18-21
Malignant neoplasm of skin	0-74	173	C44
Malignant neoplasm of breast	0-74	174	C50
Malignant neoplasm of cervix uteri	0-74	180	C53
Malignant neoplasm of cervix uteri and body of uterus	0-44	179, 182	C54, C55
Malignant neoplasm of testis	0-74	186	C62
Hodgkin's disease	0-74	201	C81
Leukaemia	0-44	204-8	C91-5
Diseases of the thyroid	0-74	240-6	E00-7
Diabetes mellitus	0-49	250	E10-4
Epilepsy	0-74	345	G40-1
Chronic rheumatic heart disease	0-74	393-8	I05-9
Hypertensive disease	0-74	401-5	I10-3, I15
Cerebrovascular disease	0-74	430-8	I60-9
All respiratory diseases (excluding pneumonia and influenza)	1-14	460-79, 488-519	J00-9, J20-99
Influenza	0-74	487	J10-1
Pneumonia	0-74	480-6	J12-8
Peptic ulcer	0-74	531-3	K25-7
Appendicitis	0-74	540-3	K35-8
Abdominal hernia	0-74	550-3	K40-6
Cholelithiasis and cholecystitis	0-74	574-5.1	K80-1
Nephritis and nephrosis	0-74	580-9	N00-7, N17-9, N25-7
Benign prostatic hyperplasia	0-74	600	N40
Maternal death	All	630-76	O00-99
Congenital cardiovascular anomalies	0-74	746-7	Q20-8
Perinatal deaths, all causes, excluding stillbirths	All	760-79	P00-96, A33
Misadventures to patients during surgical and medical care	All	E870-6, E878-9	Y60-9, Y83-4
Ischaemic heart disease*	0-74	410-4	I20-5

\* See text.

## Results

Table 2 shows the number of amenable deaths by all causes for Scotland during 2000-2004. Overall, almost 34,000 deaths were categorised as amenable (around 6,800 per annum). The diseases that had the highest number of amenable deaths were Ischaemic heart disease, cerebrovascular disease, malignant neoplasm of colon and rectum, malignant neoplasm of breast, and pneumonia. These five diseases accounted for 82% of all amenable deaths in Scotland during the 5-year period.

Table 2: Number of amenable deaths by disease, Scotland, 2000-2004 combined

Disease	Age range	Deaths	Age and Sex Standardised Rate per 100 000, per year**
Ischaemic heart disease	Half of deaths in 0-74	11,200	16.3
Cerebrovascular disease	0-74	7,300	5.1
Malignant neoplasm of colon and rectum	0-74	3,904	2.8
Malignant neoplasm of breast	0-74	3,336	2.4
Pneumonia	0-74	2,022	1.5
Perinatal deaths, all causes, excluding stillbirths	All	773	0.8
Hypertensive disease	0-74	678	0.5
Peptic ulcer	0-74	667	0.5
Septicaemia	0-74	610	0.4
Nephritis and nephrosis	0-74	603	0.4
Epilepsy	0-74	482	0.4
Malignant neoplasm of cervix uteri	0-74	399	0.3
Chronic rheumatic heart disease	0-74	339	0.2
Misadventures to patients during surgical and medical care	All ages	296	0.0
Congenital cardiovascular anomalies	0-74	280	0.3
Diabetes	0-50	203	0.2
Leukaemia	0-44	170	0.1
Tuberculosis	0-74	150	0.1
Cholelithiasis and cholecystitis	0-74	111	0.1
Malignant neoplasm of skin	0-74	92	*
Abdominal hernia	0-74	78	*
Hodgkins disease	0-74	73	*
Malignant neoplasm of testis	0-74	45	*
Maternal deaths	All	30	*
All respiratory diseases	1-14	28	*
Disease of thyroid	0-74	24	*
Influenza	0-74	24	*
Appendicitis	0-74	16	*
Benign prostatic hyperplasia	0-74	8	*
Malignant neoplasm of cervix uteri and body of uterus	0-44	5	*
Intestinal infections	0-14	1	*
Whooping cough	0-14	1	*
<b>Total amenable (including Ischaemic heart disease)</b>		<b>33,948</b>	
<b>Total amenable (excluding Ischaemic heart disease)</b>		<b>22,748</b>	

\* Small numbers

\*\* Standardised to European population

The numbers of amenable deaths broken down by NHS Board<sup>1</sup> are shown in Table 3, and the corresponding European age- and sex- standardised deaths rates in ages 0-74 years are shown in Table 4. Rates of amenable mortality and numbers of deaths from such causes have been decreasing in Scotland and across all NHS Boards since 1981.

<sup>1</sup> NHS Boards in their pre-April 2006 configuration prior to the dissolution of Argyll and Clyde.

Table 3. Number of amenable deaths in Scotland from 1981-2004,, by NHS Boards and five year bands<sup>2</sup>.

	1981-1985	1986-1990	1991-1995	1996-2000	2001-2004
Argyll & Clyde	6,015	5,045	4,513	3,852	2,541
Ayrshire and Arran	5,177	4,445	3,829	3,214	2,169
Borders	1,340	1,034	923	720	532
Dumfries & Galloway	1,976	1,750	1,484	1,182	788
Fife	4,182	3,815	3,302	2,564	1,723
Forth Valley	3,374	3,022	2,730	2,076	1,459
Grampian	5,145	4,382	4,011	3,298	2,212
Greater Glasgow	13,929	11,693	10,171	8,312	5,310
Highland	2,371	2,086	1,788	1,573	1,088
Lanarkshire	7,055	6,158	5,755	4,728	3,223
Lothian	8,368	7,290	6,341	5,342	3,338
Orkney Islands	215	220	153	130	78
Shetland Islands	240	184	190	146	95
Tayside	4,778	4,187	3,729	3,101	2,008
Western Isles	430	342	313	237	165
Scotland	64,589	55,649	49,227	40,471	26,724

Table 4: Directly age- and sex- standardised amenable mortality rates per 100,000 population per year, 1981-2004 (standardised to the European Standard Population), by NHS Board and disease

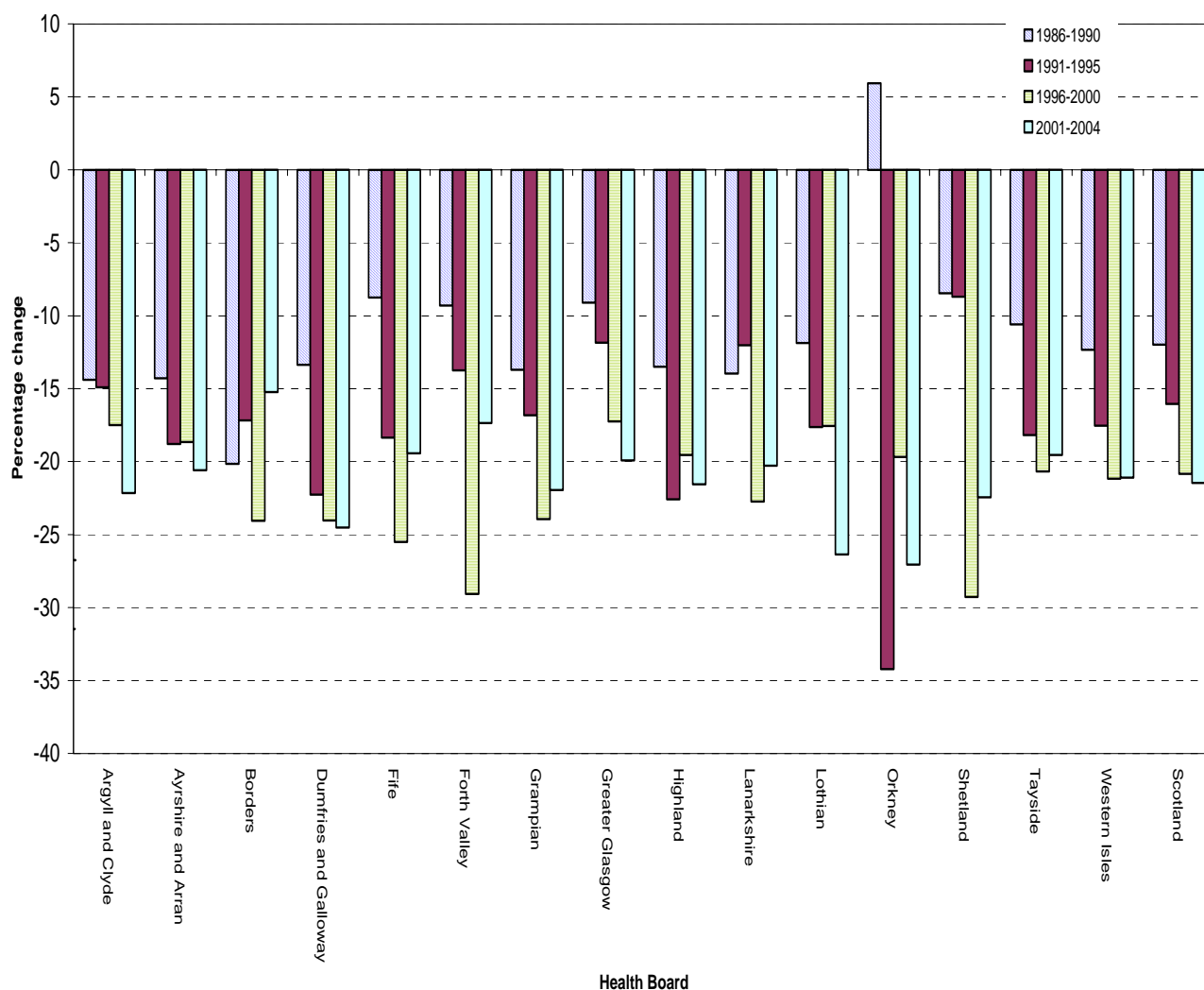
	1981-1985	1986-1990	1991-1995	1996-2000	2001-2004
Argyll and Clyde	256.79	216.36	190.76	162.24	131.92
Ayrshire and Arran	253.36	215.39	178.65	149.81	123.81
Borders	208.30	164.75	140.62	108.35	97.99
Dumfries and Galloway	229.43	199.77	159.81	124.31	101.47
Fife	226.15	205.32	170.74	131.68	108.32
Forth Valley	236.76	213.60	182.77	136.61	116.16
Grampian	204.52	175.43	149.93	118.77	96.82
Greater Glasgow	256.07	229.70	206.57	177.22	145.70
Highland	231.42	200.11	157.90	130.10	106.22
Lanarkshire	261.14	223.38	199.89	159.68	132.64
Lothian	212.45	188.93	160.25	135.01	103.06
Orkney	191.27	201.22	137.97	114.84	83.30
Shetland	215.73	179.25	178.58	131.08	103.53
Tayside	209.19	187.07	160.76	133.29	106.96
Western Isles	243.86	208.92	178.28	141.62	123.66
Scotland	235.30	205.89	177.12	144.98	117.80

Trend data for each NHS Board is available in graph and table format in Appendix 1.

Based on age and sex standardised rates in Table 4, we have calculated the percentage change in five year bands (relative to the previous year band), in amenable mortality for Scotland and by NHS Board (Figure 1). Across Scotland, rates of amenable mortality have been in decline since 1981 and for most NHS Boards these rates of decline have accelerated over the last twenty years.

<sup>2</sup> Totals in Table 2 and Table 3 will not match because different time periods have been used; 2000-2004 and 2001-2004 respectively.

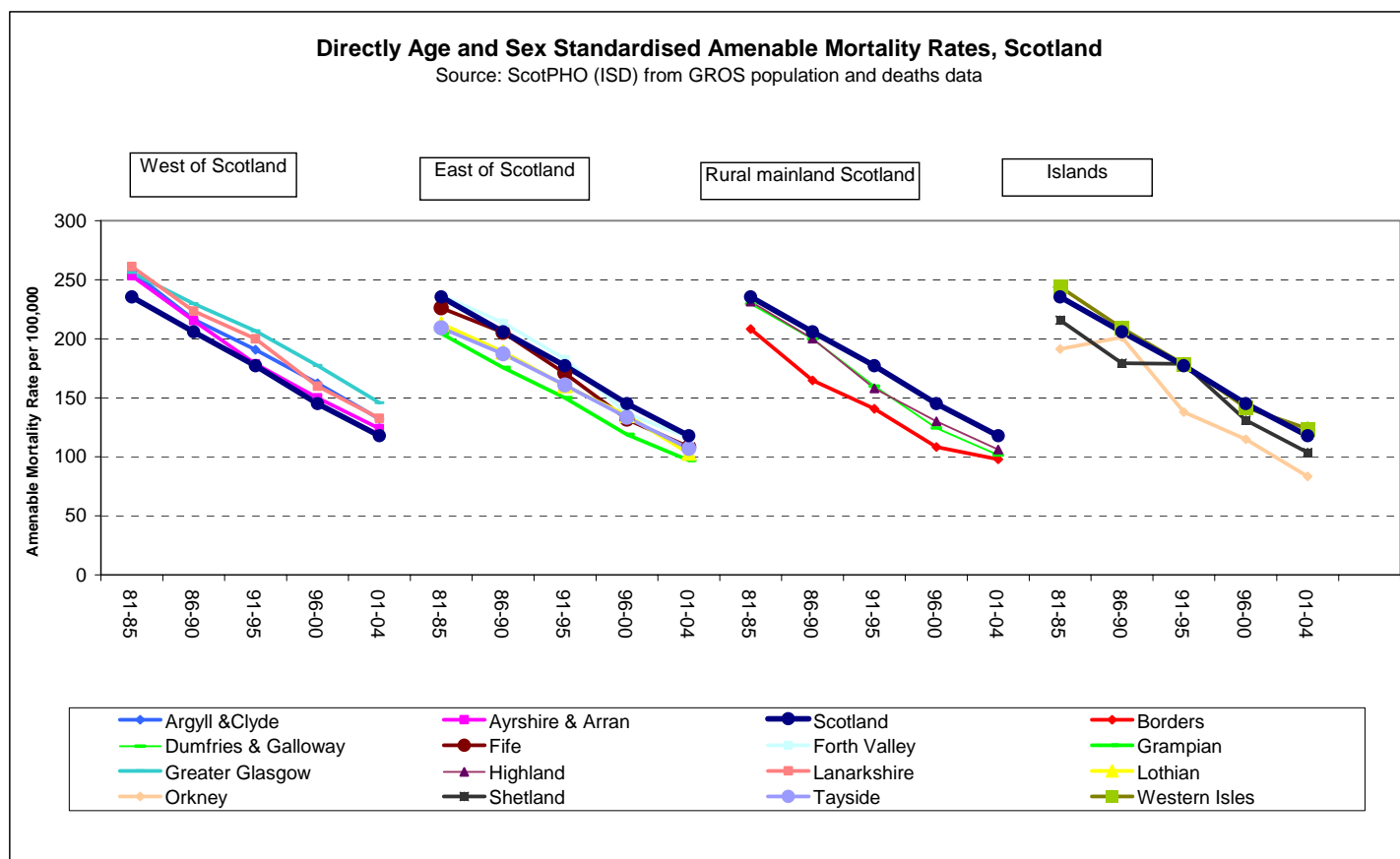
Figure 1 Five years average percentage change, in age and sex standardised amenable mortality rates, relative to the previous period



To facilitate further comparison of amenable mortality rates in Scotland, we have calculated age and sex standardised amenable mortality rates, per 100 000, from 1981 to 2004 for the following geographies (Figure 2 and Appendix 1):

- East Scotland comprising Fife, Forth Valley, Grampian, Lothian and Tayside NHS Boards
- West Scotland comprising Argyll and Clyde, Ayrshire and Arran, Greater Glasgow and Lanarkshire NHS Boards
- Rural mainland Scotland comprising Borders, Dumfries and Galloway and Highland NHS Boards
- Islands comprising Shetland, Orkney and the Western Isles NHS Boards

Figure 2. Directly Age and Sex Standardised Amenable Mortality Rates for Scotland, per 100 000, 1981-2000, for NHS Boards grouped by regional geography



### Scotland and European Comparisons

Age standardised amenable mortality rates for Scotland and selected European countries are presented in Figures 3 and 4. Between 1980 and 1998, Scotland has had the highest age standardised amenable mortality rates for both men (Figure 3) and women (Figure 4).

We have calculated that by 2008, UK amenable mortality rates will have decreased for men, from 149 to 117 per 100 000 population and for women from 112 to 89 per 100 000 population<sup>3</sup>. If Scotland were to achieve amenable mortality rates similar to the UK by 2008, rates for men and women would have to decrease by 34% and 28% respectively (compared to decreases in amenable mortality rates in Scotland, between 1990 and 1998, of 20% in men and 23% in women respectively).

<sup>3</sup> Projected rate of decrease from 1998 to 2008 is based on percentage change in the UK between 1990 and 1998 i.e. 22% for men and 21% for women.

Figure 3 Male age standardised death rates (per 100 000) for amenable causes in selected EU countries, 1980, 1990, 1998 (Source: Nolte&McKee 2004, ISD ScotPHO/GROS)

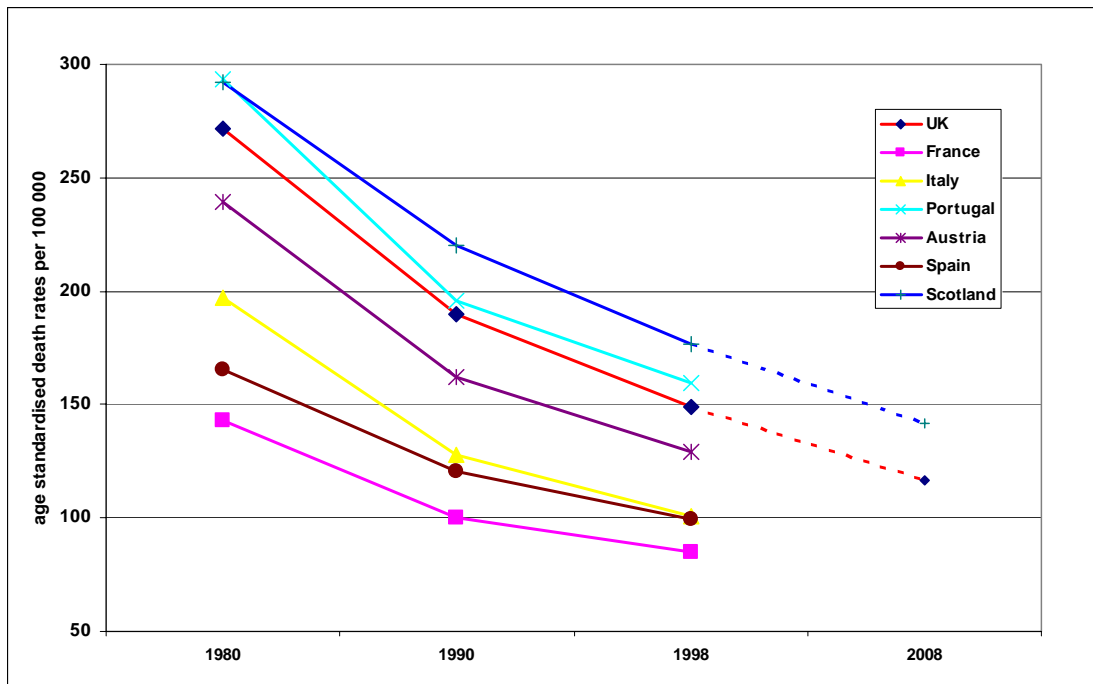


Figure 4 Female age standardised death rates (per 100 000) for amenable causes in selected EU countries, 1980, 1990, 1998 (Source: Nolte&McKee 2004, ISD ScotPHO/GROS)

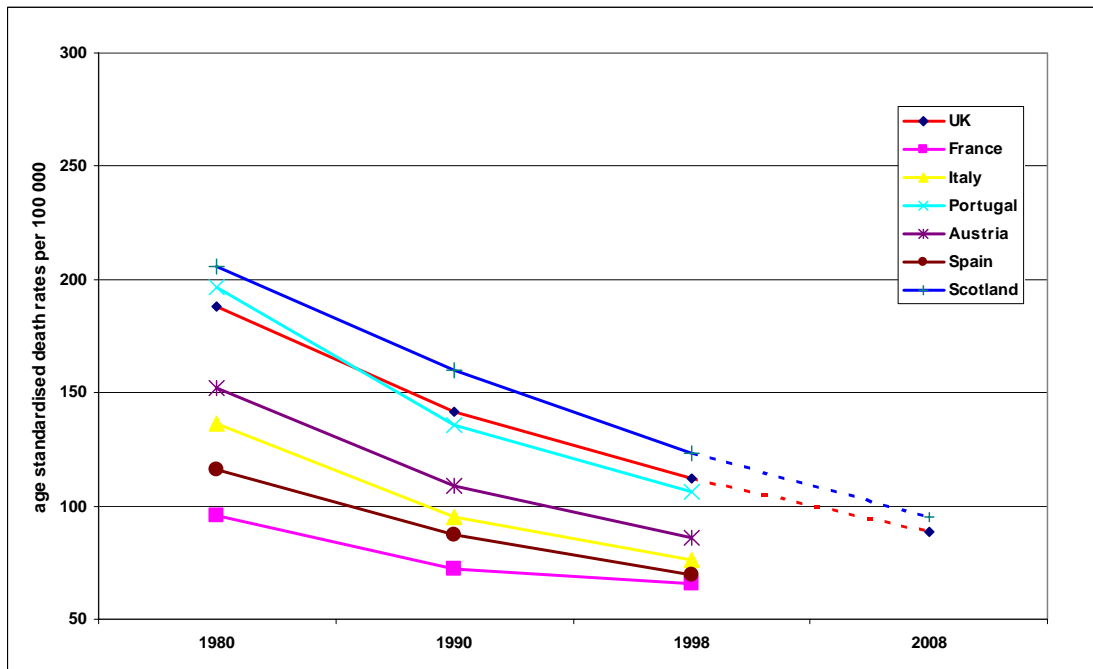




Table 5 Age standardised death rates (per 100 000) for amenable causes in selected EU countries, 1980, 1990, and 1998

	Men			Women		
	1980	1990	1998	1980	1990	1998
UK	271.52	189.72	148.68	188.085	141.475	111.90
France	142.91	100.28	85.22	95.97	72.48	65.445
Italy	196.90	127.80	100.51	136.1	95.42	76.46
Portugal	293.32	195.57	159.77	196.37	135.885	106.35
Austria	239.11	162.28	129.24	152.225	108.855	85.735
Spain	165.69	120.79	99.54	116.225	87.615	69.335
Scotland	291.77	220.51	176.67	205.46	159.89	123.52

**Source notes:**

1. Scottish data calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. European data obtained from McKee and Nolte (2004)
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease

**Amenable Mortality and Deprivation**

We have undertaken some initial analysis to explore the effect of deprivation on amenable mortality. These results would suggest that amenable mortality rates are strongly correlated with deprivation e.g. for the period 2000 to 2004, rates of amenable mortality were over twice as high in quintile 5 (most deprived) than in quintile 1 (least deprived) (Figure 5). Figure 6 shows that amenable mortality rates across all deprivation quintiles have been in decline since 2001, however the ratio between the most deprived and least deprived quintile has remained the same (Figure 6).

Figure 5. Age and sex direct standardised amenable mortality rates and 95% CI per 100,000 population by SIMD quintiles, (2001-2004 combined) Scotland

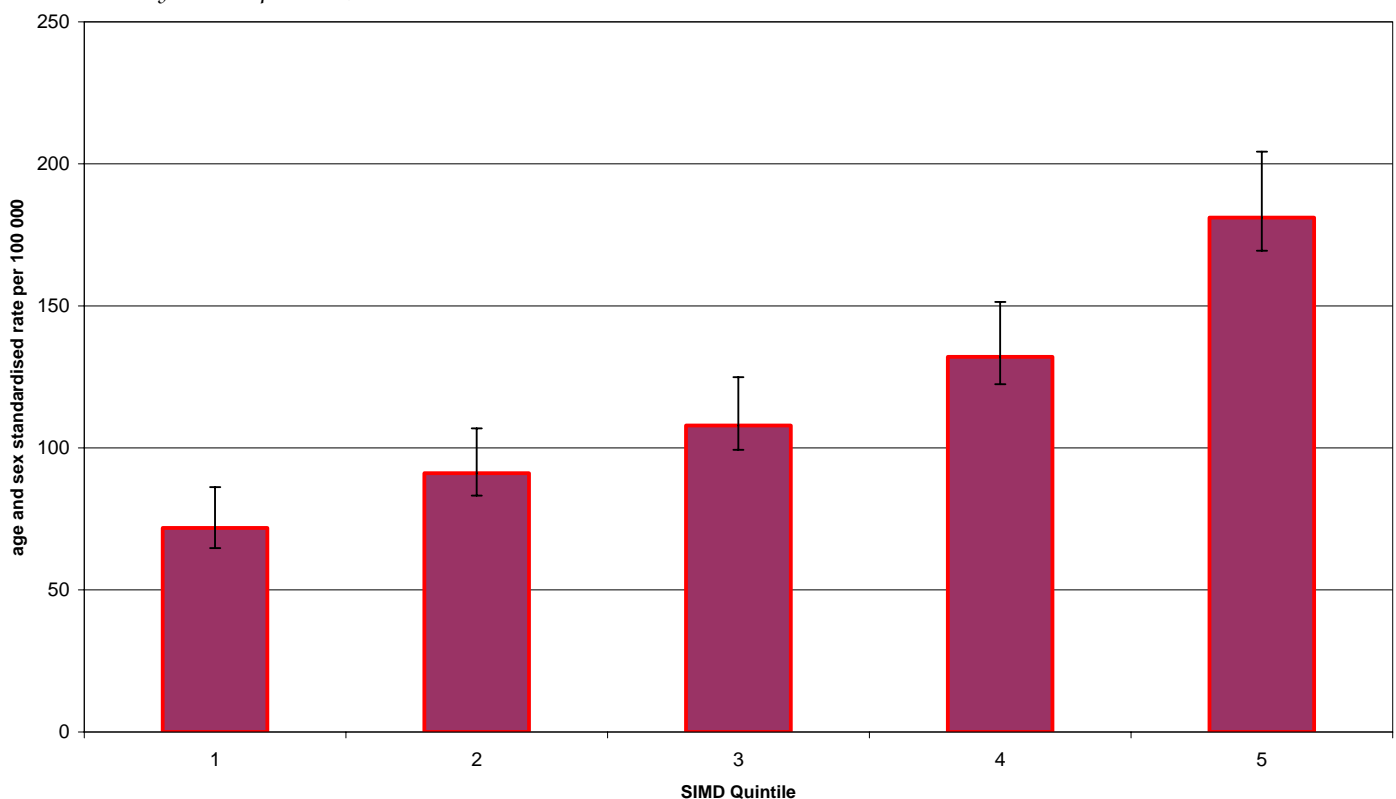


Figure 6 Age and sex direct standardised amenable mortality rates per 100,000 population by SIMD quintiles, Scotland, 2001 to 2004.

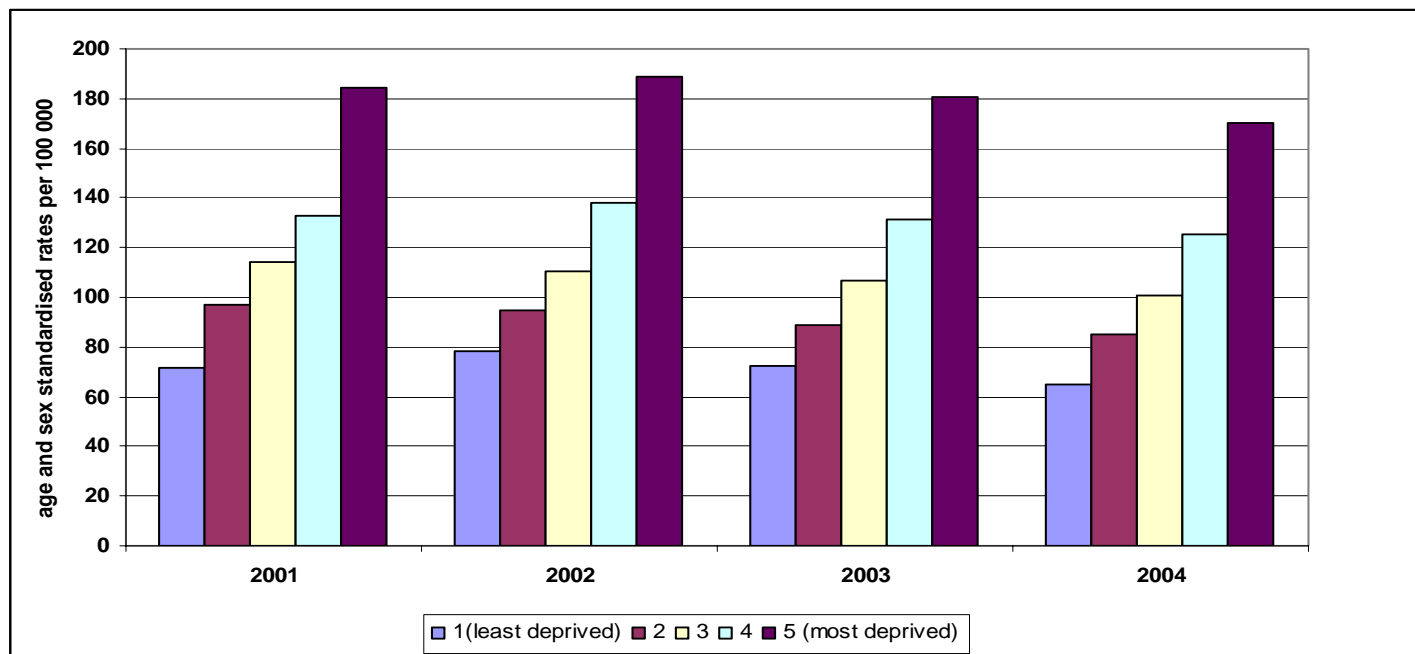


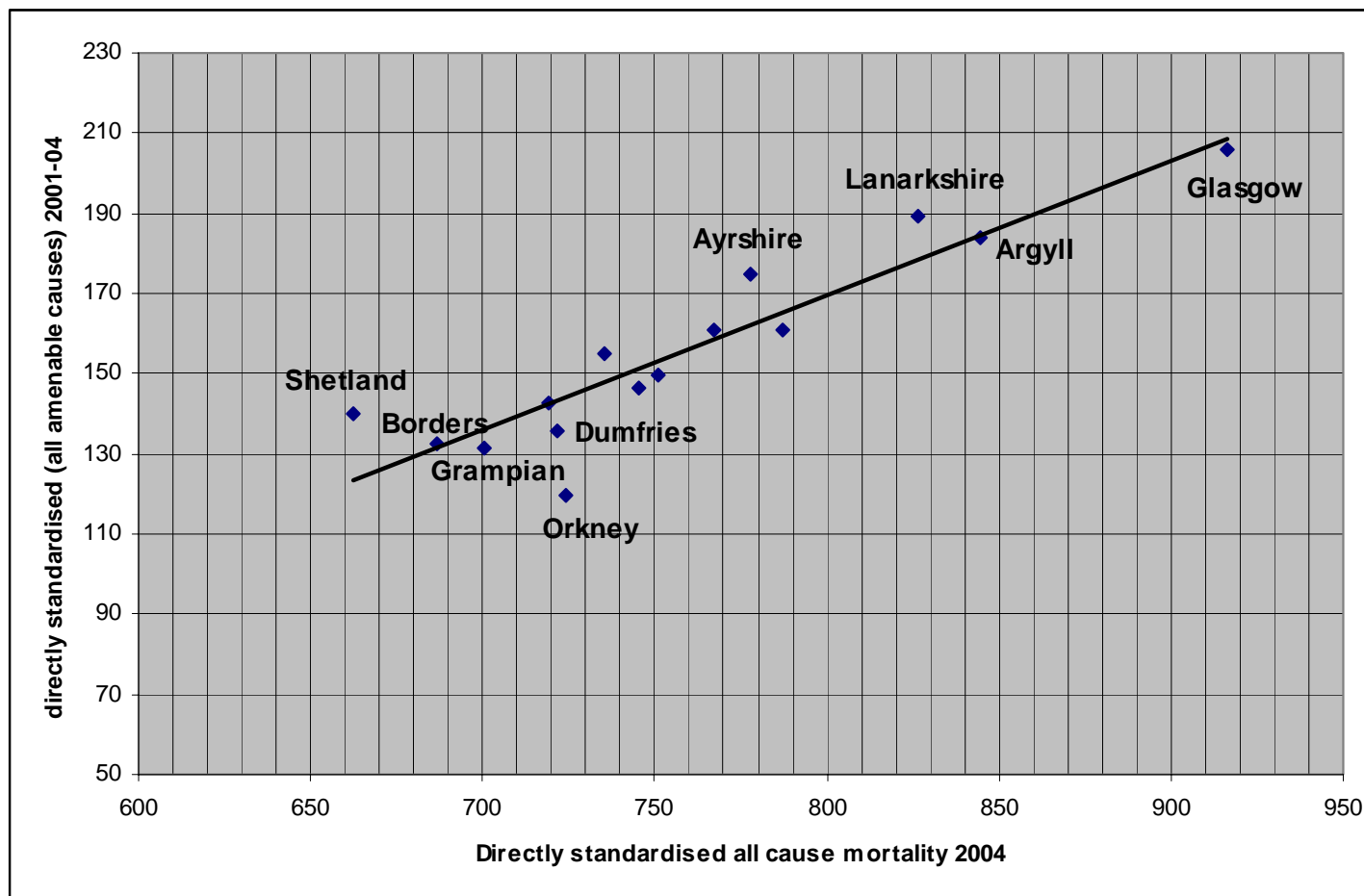
Table 6 Directly Age and Sex Standardised (European Standard Pop) Amenable Mortality Rates per 100,000 population, Scotland 2001 to 2004

Quintile	Age and Sex Standardised Rate	Lower Confidence Limit	Upper Confidence Limit
1 (least deprived)	71.88	64.71	79.06
2	91.13	83.24	99.02
3	107.86	99.33	116.39
4	132.08	122.42	141.74
5 (most deprived)	181.06	169.45	192.67

### Amenable and All Cause Mortality

Amenable mortality is highly correlated with all cause mortality e.g. Glasgow has the highest age and sex standardised rates for amenable mortality but also has the highest rates for all cause mortality. Conversely Borders and Grampian have some of the lowest amenable mortality rates as well the lowest rates for all cause mortality (Figure 7).

Figure 7. Amenable Mortality and All Cause Mortality, age and sex standardised, 2000-2004



## Summary

Age and sex standardised amenable mortality rates have been presented for Scotland and by NHS Board for the period 1981 to 2004. These figures show considerable variation across Scotland. In examining the reasons for this variation, some initial analysis has also been presented on the effect of deprivation and the relationship of amenable mortality to all cause mortality. A comparison between Scotland and selected countries in the European Union is also provided.

Further work is required to assess the contribution of amenable mortality in measuring the effectiveness of health care interventions. This potentially would include a more detailed analysis of the effect of deprivation on amenable mortality across NHS Boards in Scotland and an investigation of trends and variations in single diseases and groups of diseases that comprise amenable mortality.

## References

Nolte E and McKee M, (2003), Measuring the health of nations: an analysis of mortality amenable to health care, *British Medical Journal* 327:1129-1134.

<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=261807>

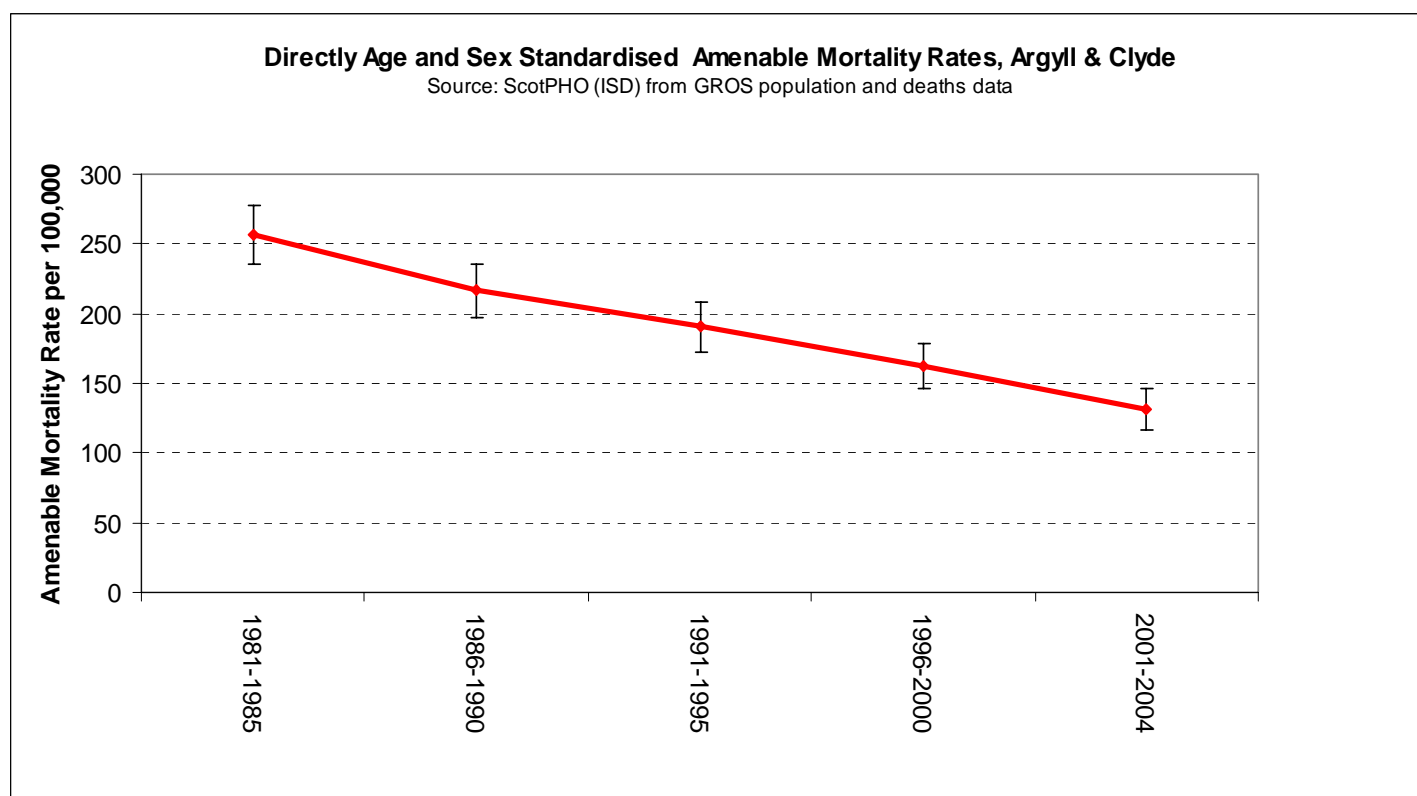
Nolte E and McKee M (2004) *Does Health Care Save Lives? Avoidable Mortality revisited*. The Nuffield Trust, London.

<http://www.nuffieldtrust.org.uk/ecomms/files/21404avoidablemortality2.pdf>

**APPENDIX 1.**

**DIRECTLY AGE AND SEX STANDARDISED AMENABLE MORTALITY  
RATES (with 95% confidence intervals), 1981-2004, BY NHS BOARD and  
REGIONAL GEOGRAPHIES, SCOTLAND**

## ARGYLL AND CLYDE



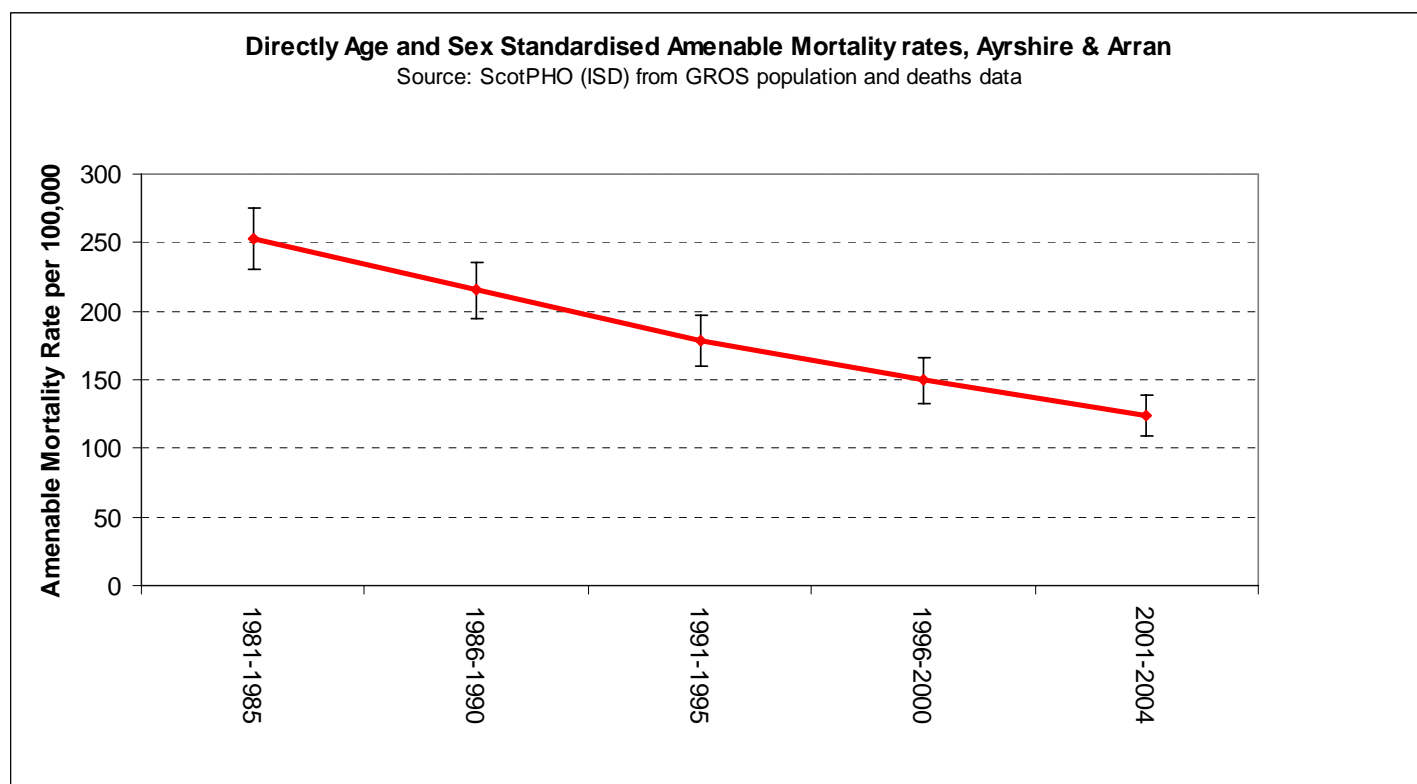
**Table. Directly Age and Sex Standardised Amenable Mortality rates, Argyll and Clyde, 1981-2004**

Interval	EASR	Number of Deaths
1981-1985	256.79	6015
1986-1990	216.36	5045
1991-1995	190.76	4513
1996-2000	162.24	3852
2001-2004	131.92	2541

**Source notes:**

1. Calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. Causes of death categorised as 'amenable' based on Nolte and McKee's (2003) classification- *Measuring the health of nations: analysis of mortality amenable to healthcare*
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease

## AYRSHIRE AND ARRAN NHS BOARD



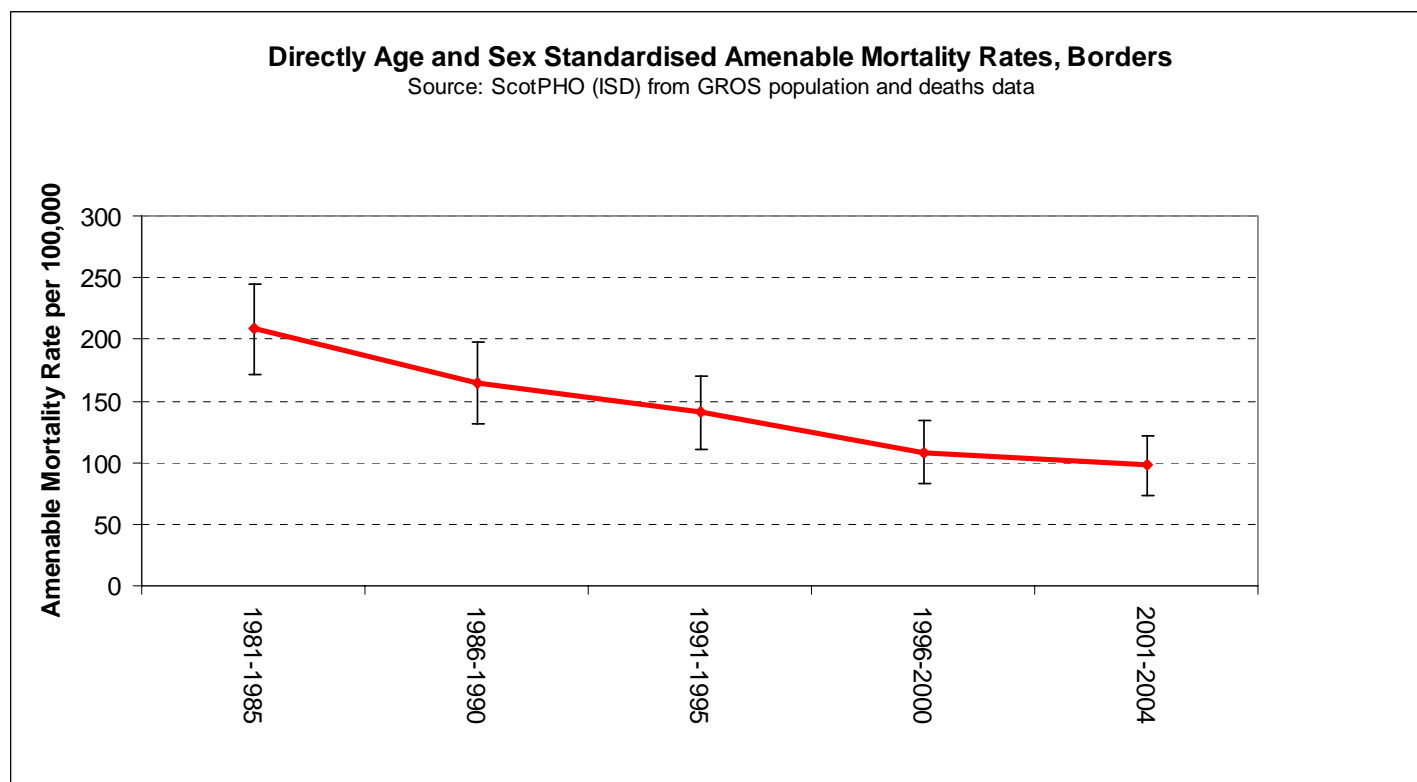
**Table. Directly Age and Sex Standardised Amenable Mortality rates, Ayrshire & Arran, 1981-2004**

Interval	EASR	Number of Deaths
1981-1985	253.36	5177
1986-1990	215.39	4445
1991-1995	178.65	3829
1996-2000	149.81	3124
2001-2004	123.81	2169

**Source notes:**

1. Calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. Causes of death categorised as 'amenable' based on Nolte and McKee's (2003) classification- *Measuring the health of nations: analysis of mortality amenable to healthcare*
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease

## BORDERS NHS BOARD



**Table. Directly Age and Sex Standardised Amenable Mortality rates, Borders, 1981-2004**

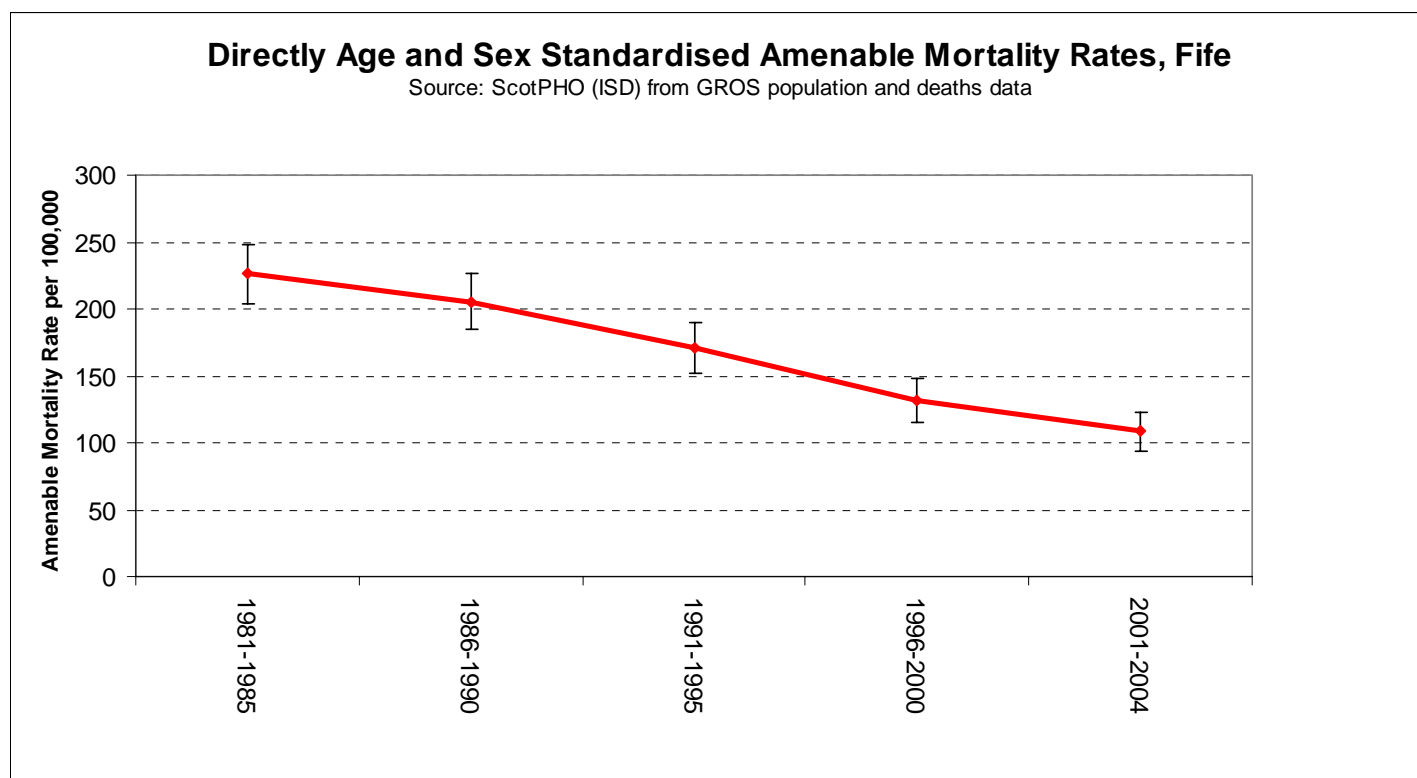
Interval	EASR	Number of Deaths
1981-1985	208.30	1340
1986-1990	164.75	1034
1991-1995	140.62	923
1996-2000	108.35	720
2001-2004	97.99	532

**Source notes:**

1. Calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. Causes of death categorised as 'amenable' based on Nolte and McKee's (2003) classification- *Measuring the health of nations: analysis of mortality amenable to healthcare*
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease



## FIFE NHS BOARD



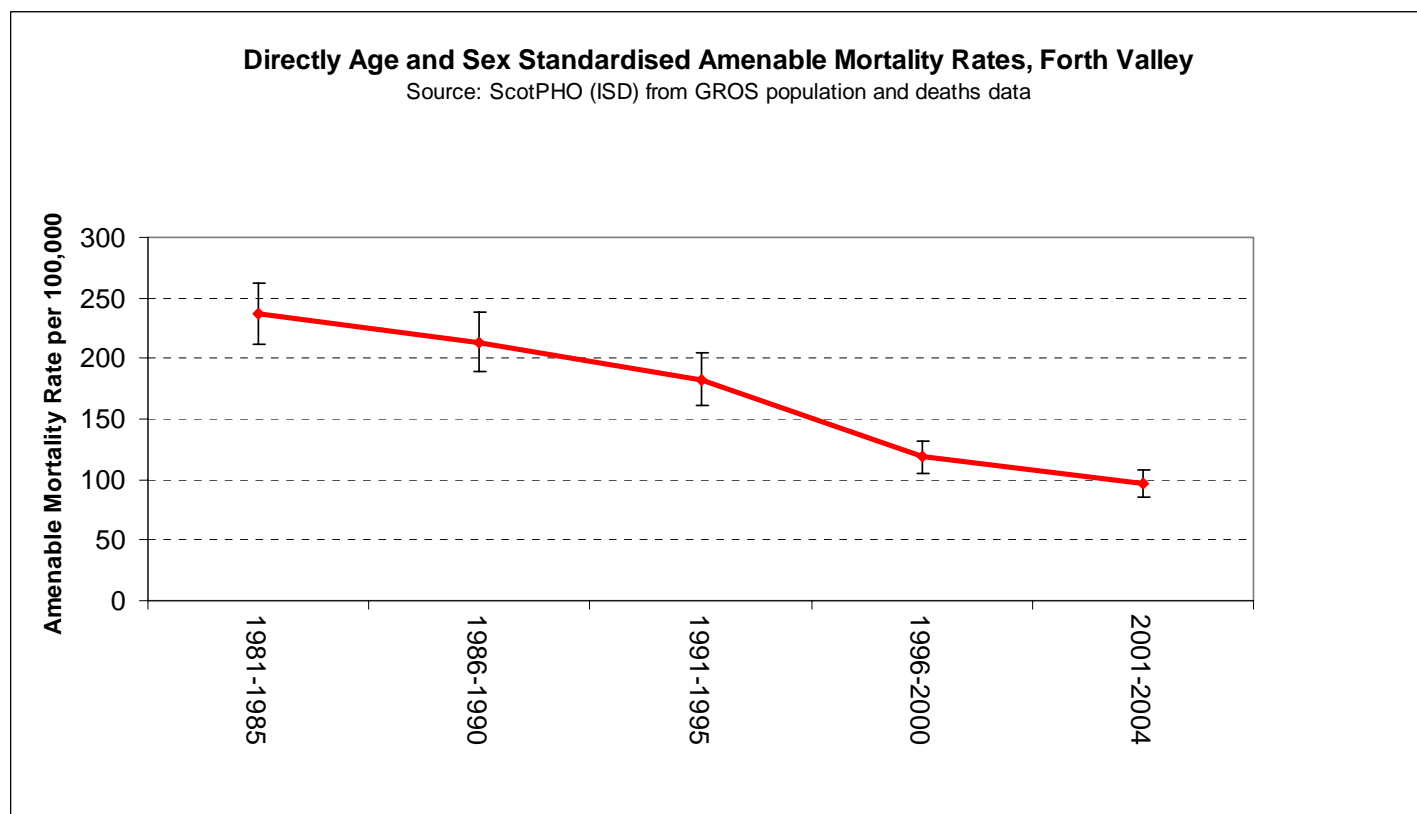
**Table. Directly Age and Sex Standardised Amenable Mortality rates, Fife, 1981-2004**

Interval	EASR	Number of Deaths
1981-1985	226.15	4182
1986-1990	205.32	3815
1991-1995	170.74	3302
1996-2000	131.68	2564
2001-2004	108.32	1723

**Source notes:**

1. Calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. Causes of death categorised as 'amenable' based on Nolte and McKee's (2003) classification- *Measuring the health of nations: analysis of mortality amenable to healthcare*
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease

## FORTH VALLEY NHS BOARD



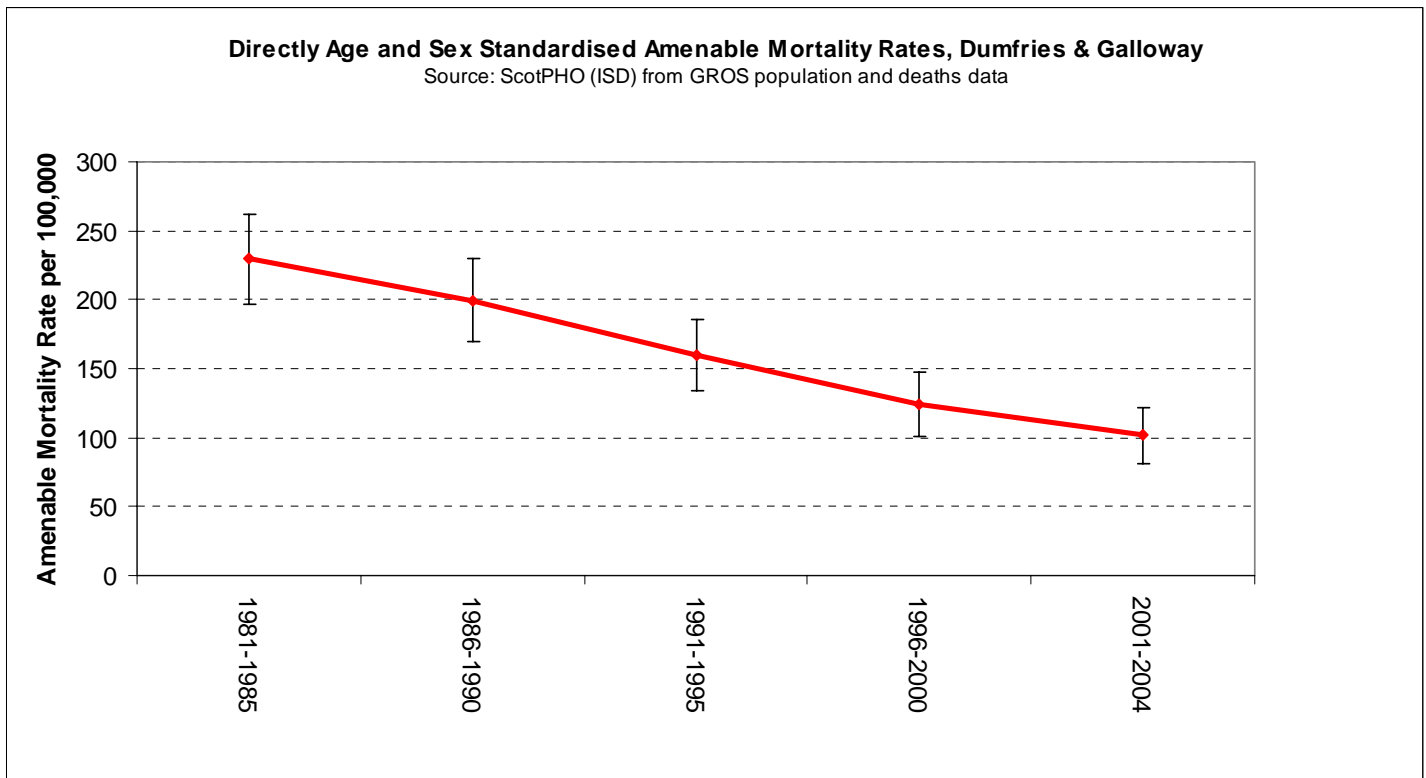
**Table. Directly Age and Sex Standardised Amenable Mortality rates, Forth Valley, 1981-2004**

Interval	EASR	Number of Deaths
1981-1985	236.76	3374
1986-1990	213.60	3022
1991-1995	182.77	2730
1996-2000	118.77	2076
2001-2004	96.82	1458

**Source notes:**

1. Calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. Causes of death categorised as 'amenable' based on Nolte and McKee's (2003) classification- *Measuring the health of nations: analysis of mortality amenable to healthcare*
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease

## DUMFRIES AND GALLOWAY



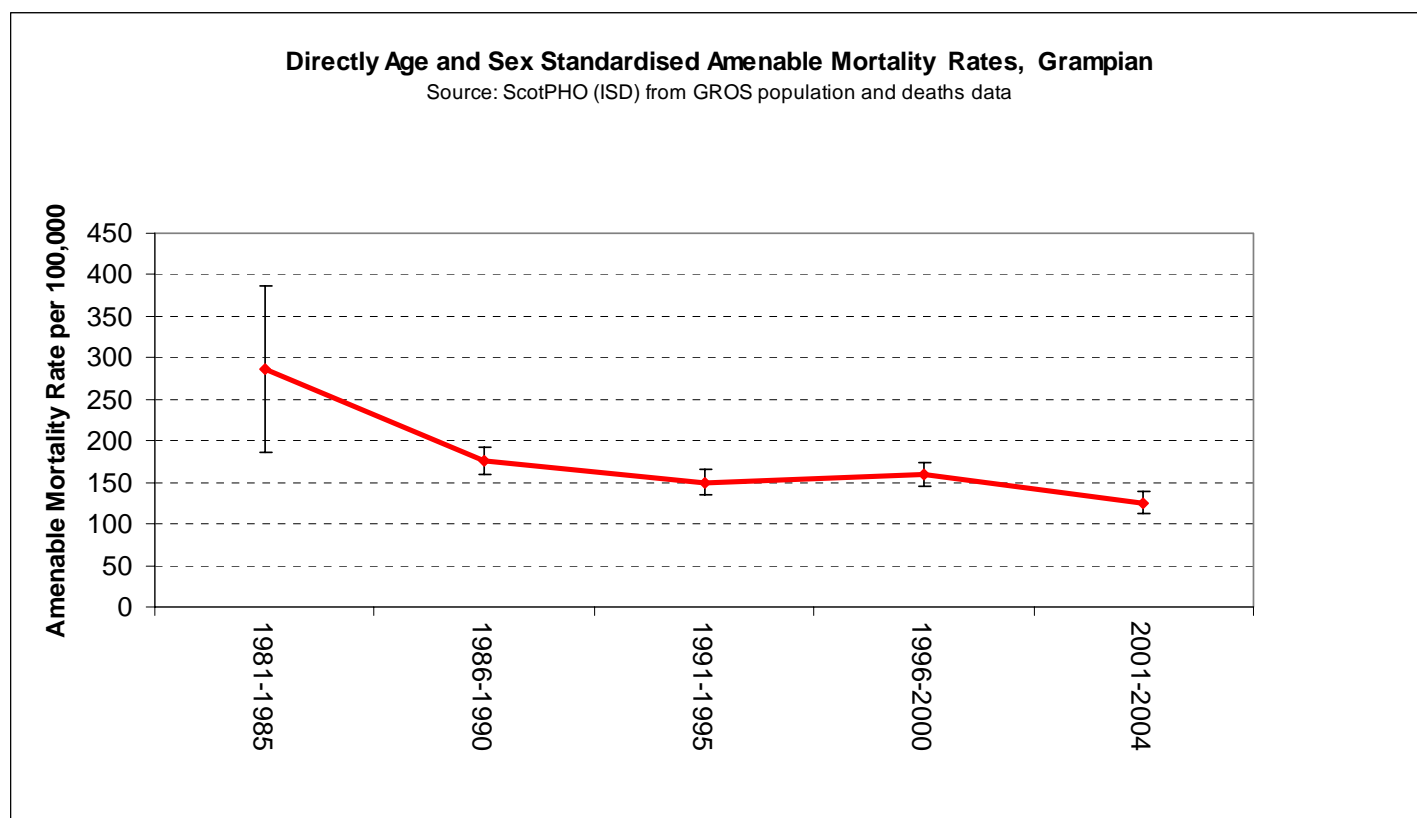
**Table. Directly Age and Sex Standardised Amenable Mortality rates, Dumfries and Galloway, 1981-2004**

Interval	EASR	Number of Deaths
1981-1985	229.43	1976
1986-1990	199.77	1750
1991-1995	159.81	1484
1996-2000	124.31	1182
2001-2004	101.47	788

**Source notes:**

1. Calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. Causes of death categorised as 'amenable' based on Nolte and McKee's (2003) classification-  
*Measuring the health of nations: analysis of mortality amenable to healthcare*
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease

## GRAMPIAN



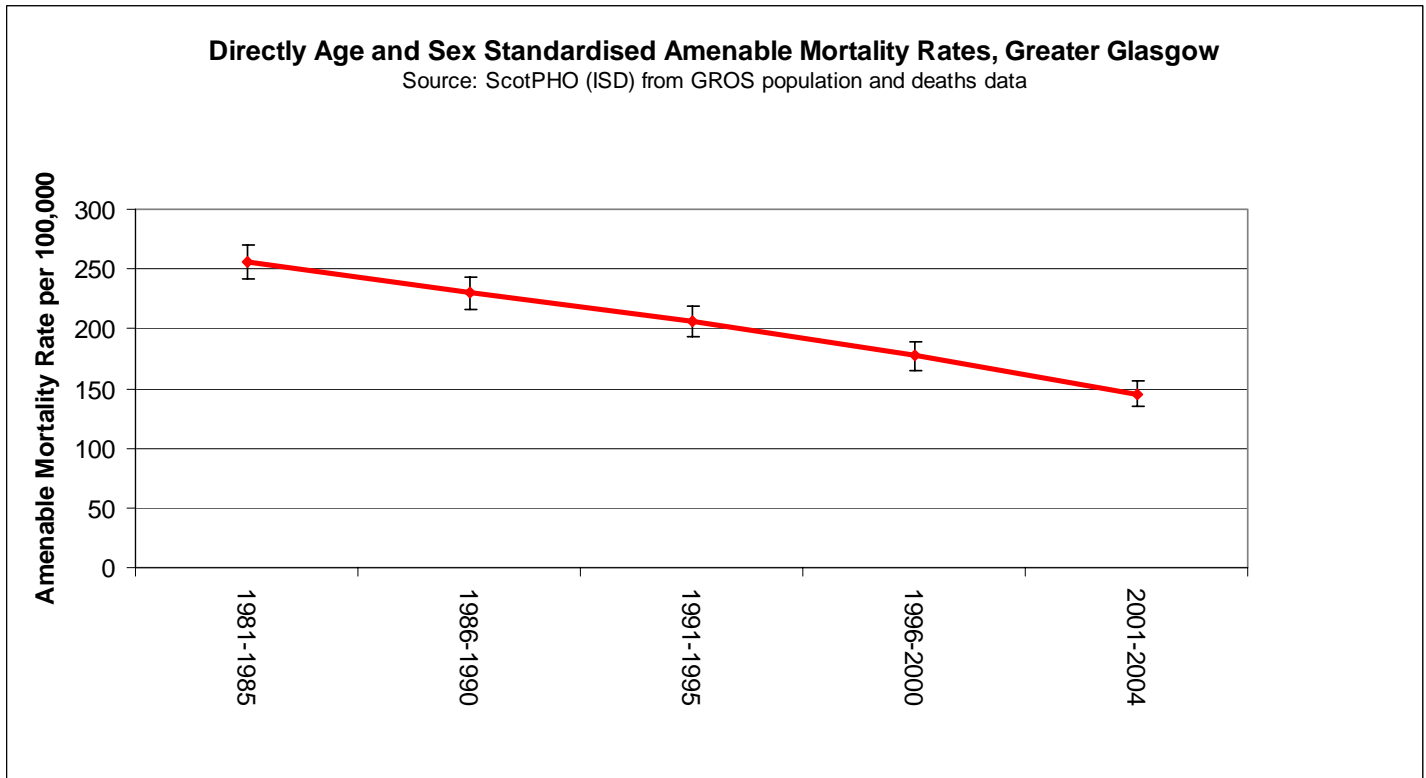
**Table. Directly Age and Sex Standardised Amenable Mortality rates, Grampian, 1981-2004**

Interval	EASR	Number of Deaths
1981-1985	286.33	5145
1986-1990	175.43	4382
1991-1995	149.93	4011
1996-2000	159.48	3298
2001-2004	125.30	2212

**Source notes:**

1. Calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. Causes of death categorised as 'amenable' based on Nolte and McKee's (2003) classification- *Measuring the health of nations: analysis of mortality amenable to healthcare*
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease

## GREATER GLASGOW NHS BOARD



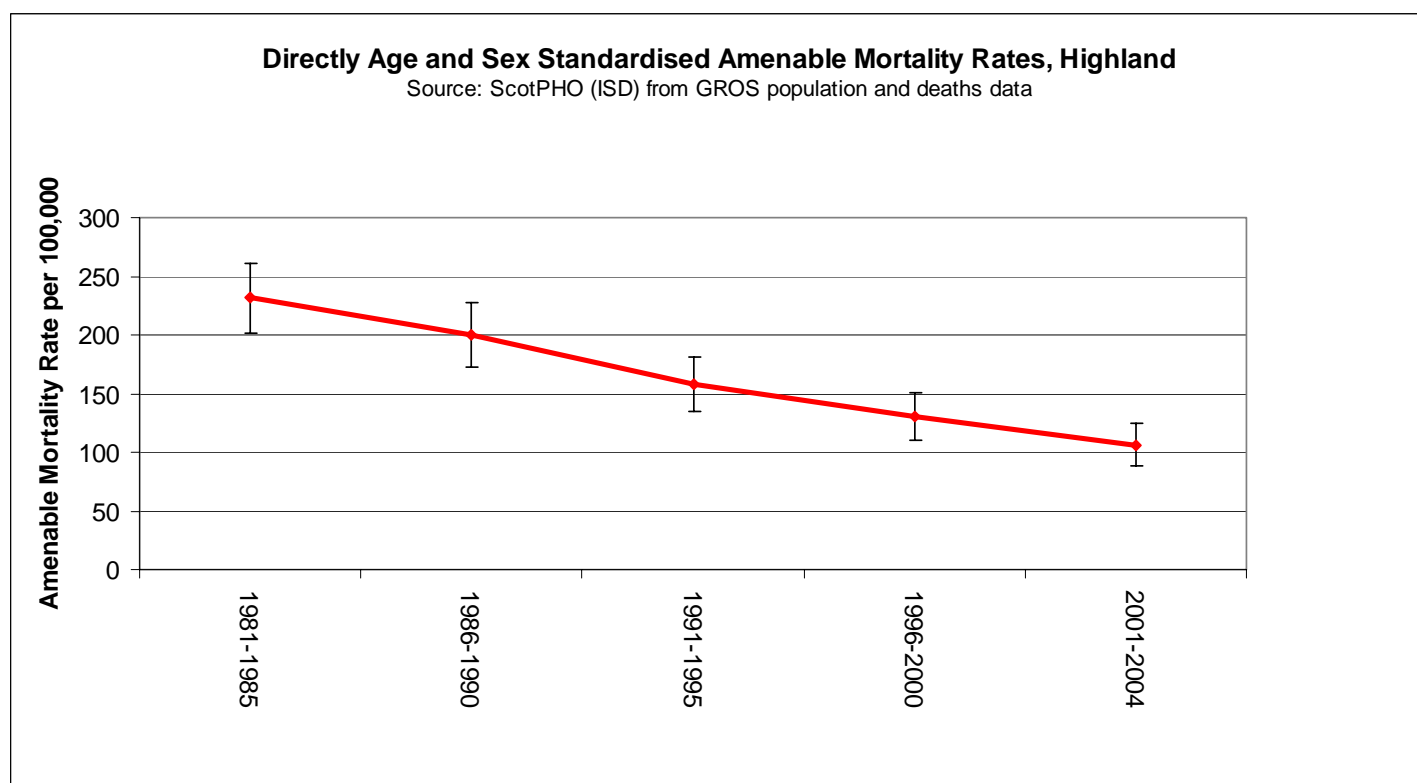
**Table. Directly Age and Sex Standardised Amenable Mortality rates, Greater Glasgow, 1981-2004**

Interval	EASR	Number of Deaths
1981-1985	256.07	13929
1986-1990	229.70	11693
1991-1995	206.57	10171
1996-2000	177.22	8312
2001-2004	145.70	5310

**Source notes:**

1. Calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. Causes of death categorised as 'amenable' based on Nolte and McKee's (2003) classification- *Measuring the health of nations: analysis of mortality amenable to healthcare*
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease

## HIGHLAND NHS BOARD



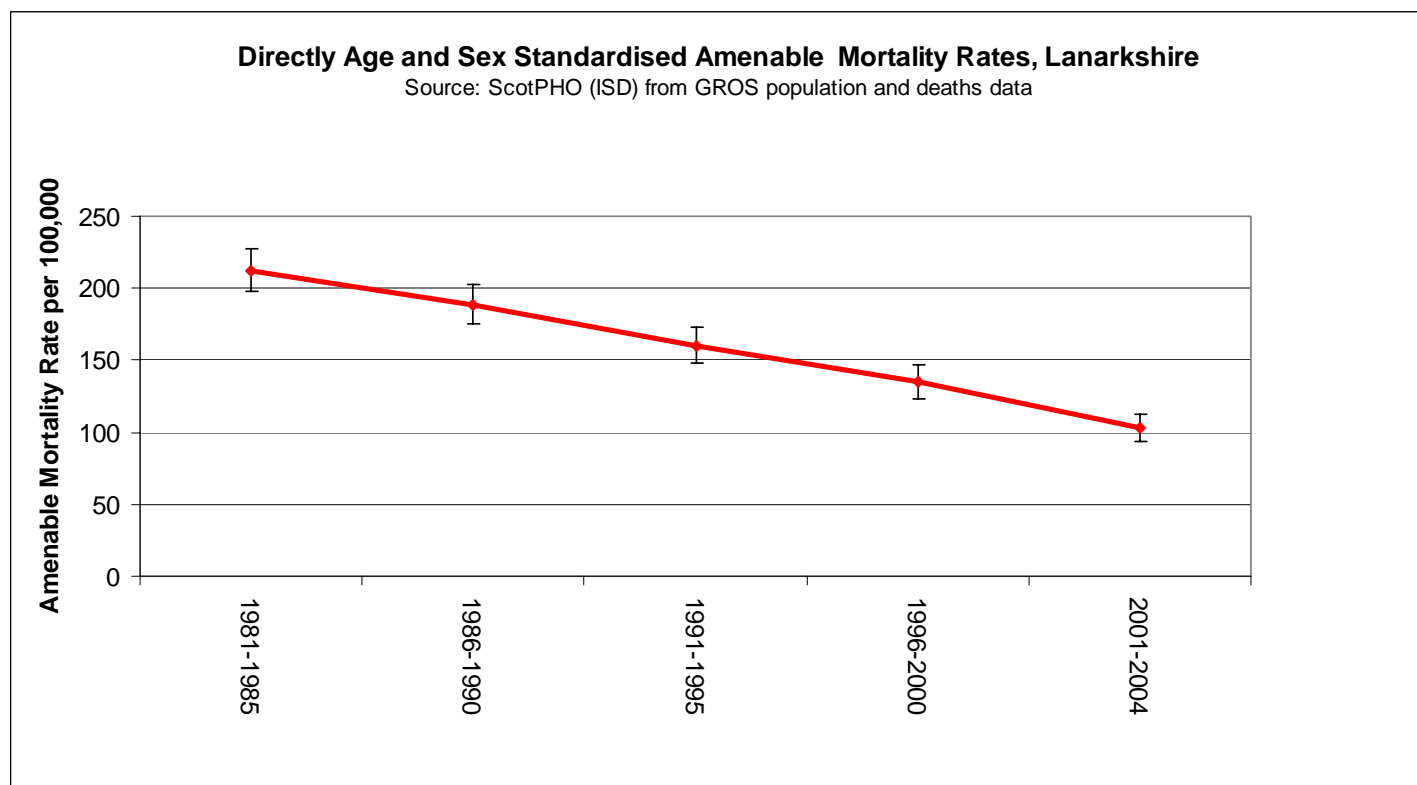
**Table. Directly Age and Sex Standardised Amenable Mortality rates, Highland, 1981-2004**

Interval	EASR	Number of Deaths
1981-1985	231.42	2371
1986-1990	200.11	2086
1991-1995	157.90	1788
1996-2000	130.10	1573
2001-2004	106.22	1088

**Source notes:**

1. Calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. Causes of death categorised as 'amenable' based on Nolte and McKee's (2003) classification-  
*Measuring the health of nations: analysis of mortality amenable to healthcare*
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease

## LANARKSHIRE NHS BOARD



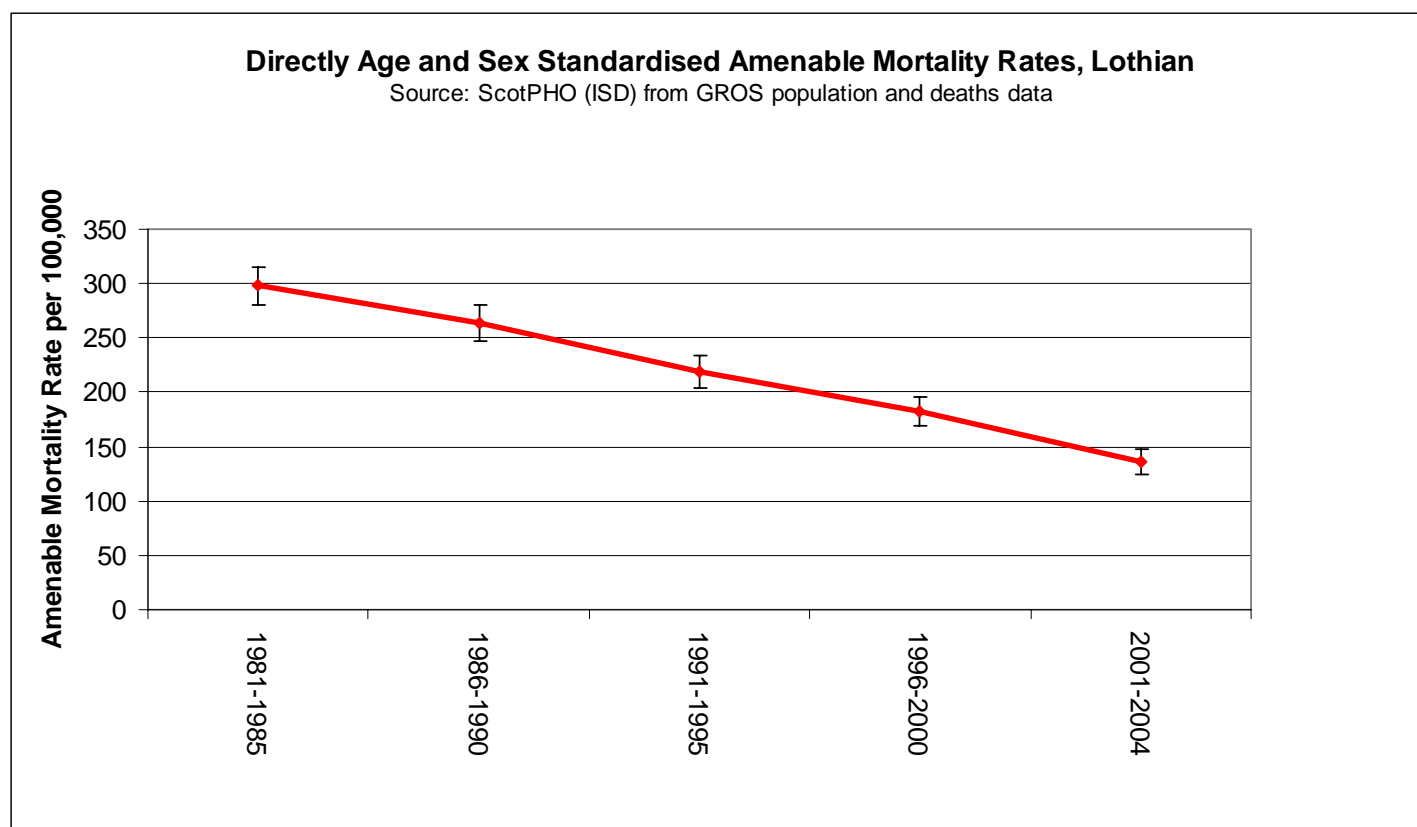
**Table. Directly Age and Sex Standardised Amenable Mortality rates, Lanarkshire, 1981-2004**

Interval	EASR	Number of Deaths
1981-1985	212.45	7055
1986-1990	188.93	6158
1991-1995	160.25	5755
1996-2000	135.01	4728
2001-2004	103.06	3223

**Source notes:**

1. Calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. Causes of death categorised as 'amenable' based on Nolte and McKee's (2003) classification- *Measuring the health of nations: analysis of mortality amenable to healthcare*
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease

## LOTHIAN NHS BOARD



**Table. Directly Age and Sex Standardised Amenable Mortality rates, Lothian, 1981-2004**

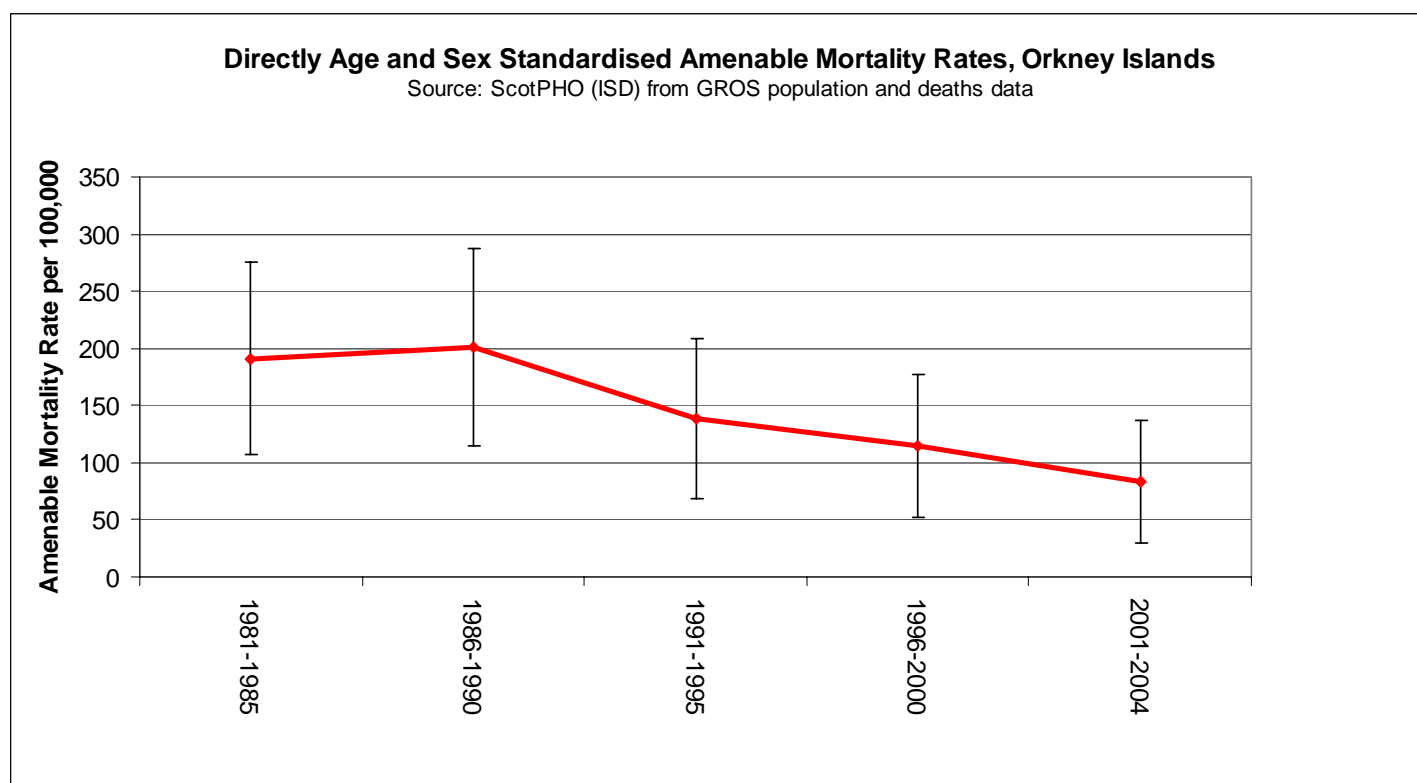
Interval	EASR	Number of Deaths
1981-1985	297.97	8368
1986-1990	263.43	7290
1991-1995	219.07	6341
1996-2000	181.91	5342
2001-2004	135.40	3338

**Source notes:**

1. Calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. Causes of death categorised as 'amenable' based on Nolte and McKee's (2003) classification- *Measuring the health of nations: analysis of mortality amenable to healthcare*
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease



## ORKNEY NHS BOARD



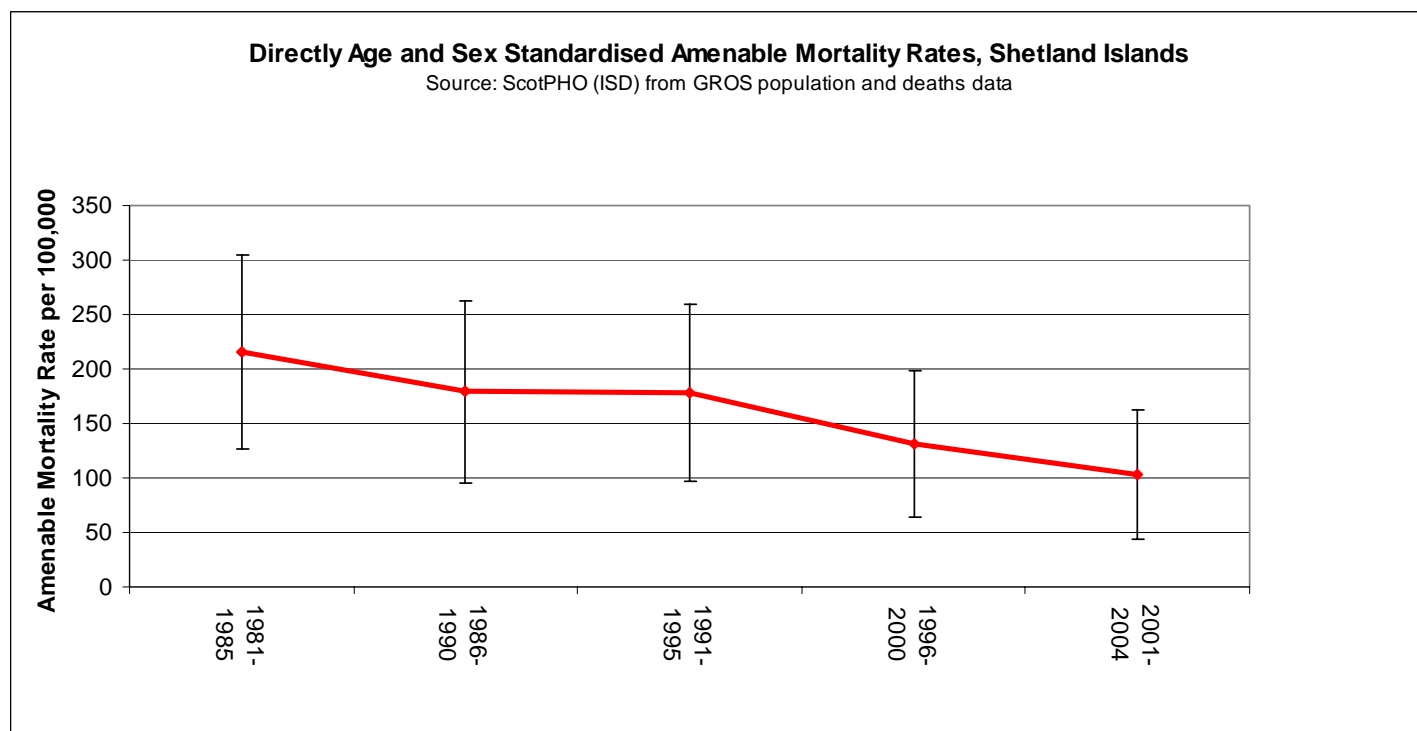
**Table. Directly Age and Sex Standardised Amenable Mortality rates, Orkney, 1981-2004**

Interval	EASR	Number of Deaths
1981-1985	191.27	215
1986-1990	201.22	220
1991-1995	137.97	153
1996-2000	114.84	130
2001-2004	83.30	78

**Source notes:**

1. Calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. Causes of death categorised as 'amenable' based on Nolte and McKee's (2003) classification- *Measuring the health of nations: analysis of mortality amenable to healthcare*
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease

## SHETLAND NHS BOARD



**Table. Directly Age and Sex Standardised Amenable Mortality rates, Shetland, 1981-2004**

Interval	EASR	Number of Deaths
1981-1985	215.73	240
1986-1990	179.25	184
1991-1995	178.58	190
1996-2000	131.08	146
2001-2004	103.53	95

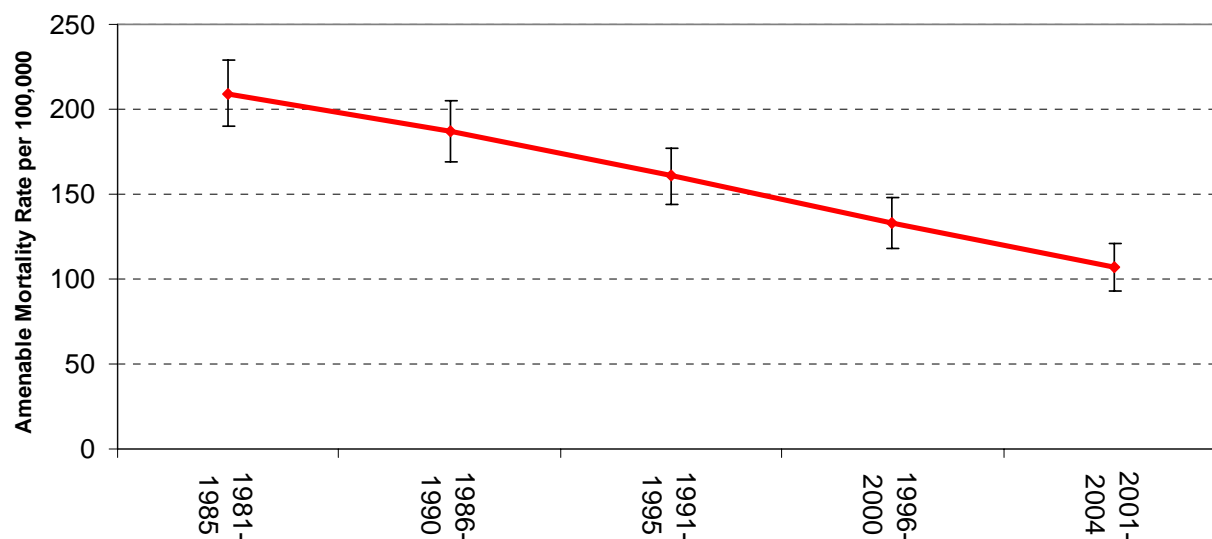
**Source notes:**

1. Calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. Causes of death categorised as 'amenable' based on Nolte and McKee's (2003) classification- *Measuring the health of nations: analysis of mortality amenable to healthcare*
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease

## TAYSIDE

### Directly Age and Sex Standardised Amenable Mortality Rates, Tayside

Source: ScotPHO (ISD) from GROS population and deaths data



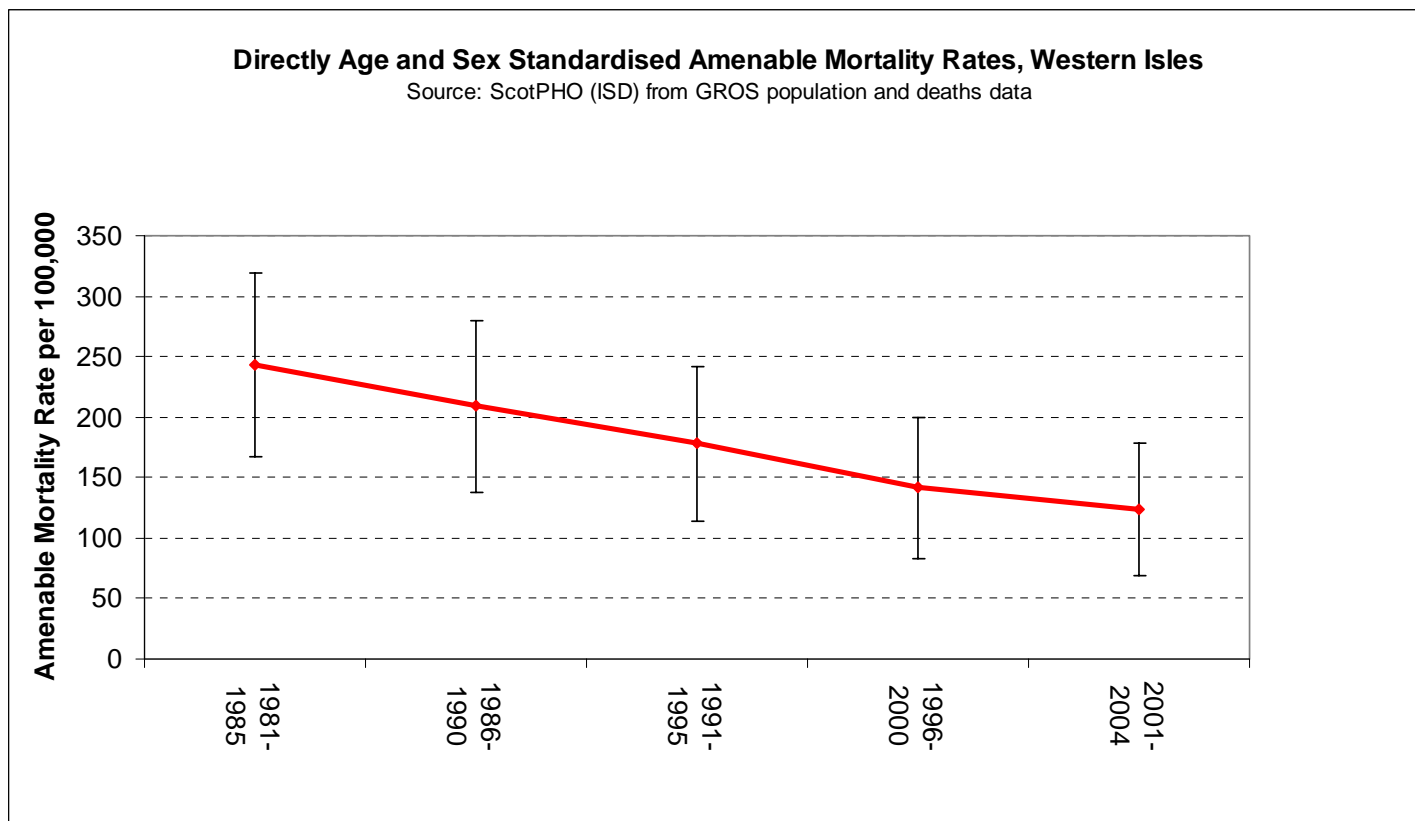
**Table. Directly Age and Sex Standardised Amenable Mortality rates, Tayside, 1981-2004**

Interval	EASR	Number of Deaths
1981-1985	209.19	4778
1986-1990	187.07	4187
1991-1995	160.76	3729
1996-2000	133.29	3101
2001-2004	106.96	2008

**Source notes:**

1. Calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. Causes of death categorised as 'amenable' based on Nolte and McKee's (2003) classification- *Measuring the health of nations: analysis of mortality amenable to healthcare*
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease

## WESTERN ISLES



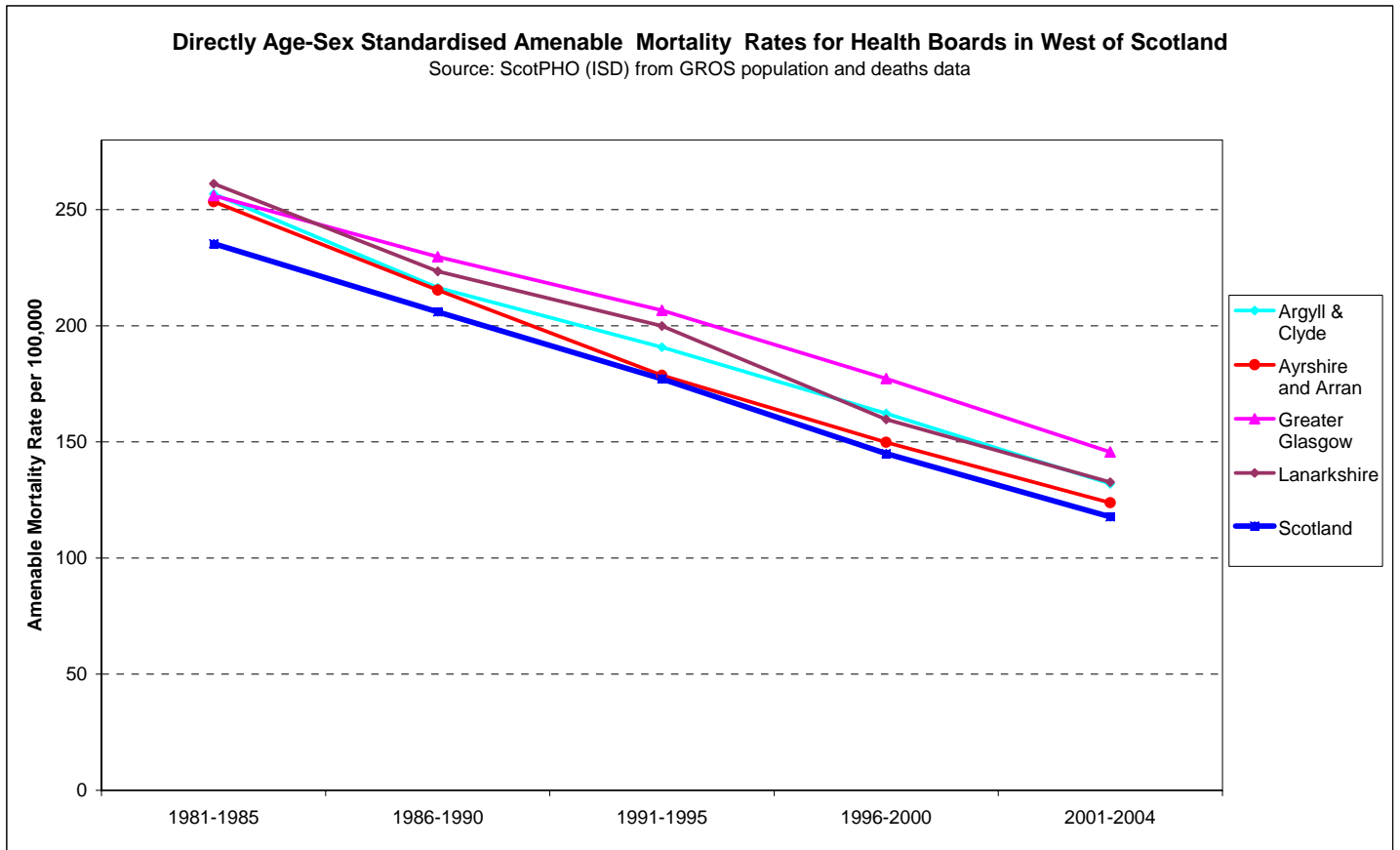
**Table. Directly Age and Sex Standardised Amenable Mortality rates, Western Isles, 1981-2004**

Interval	EASR	Number of Deaths
1981-1985	243.86	430
1986-1990	208.92	342
1991-1995	178.28	313
1996-2000	141.62	237
2001-2004	123.66	165

**Source notes:**

1. Calculated by ScotPHO team at ISD, using data provided by the General Register Office for Scotland (GROS)
2. Causes of death categorised as 'amenable' based on Nolte and McKee's (2003) classification-  
*Measuring the health of nations: analysis of mortality amenable to healthcare*
3. Direct standardisation used applying European Standard Population
4. Number of deaths includes half of cases due to Ischaemic Heart Disease

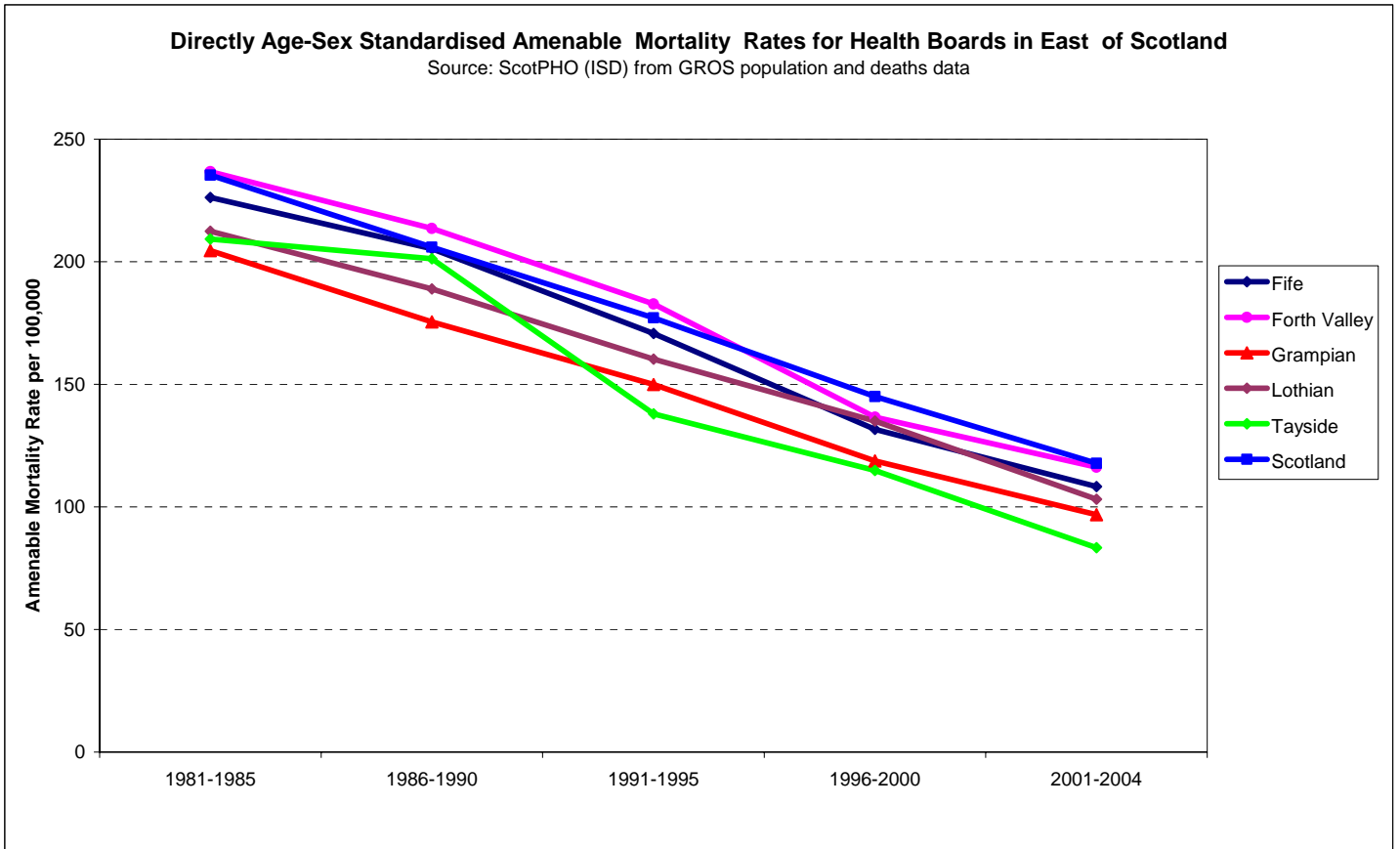
# WEST SCOTLAND



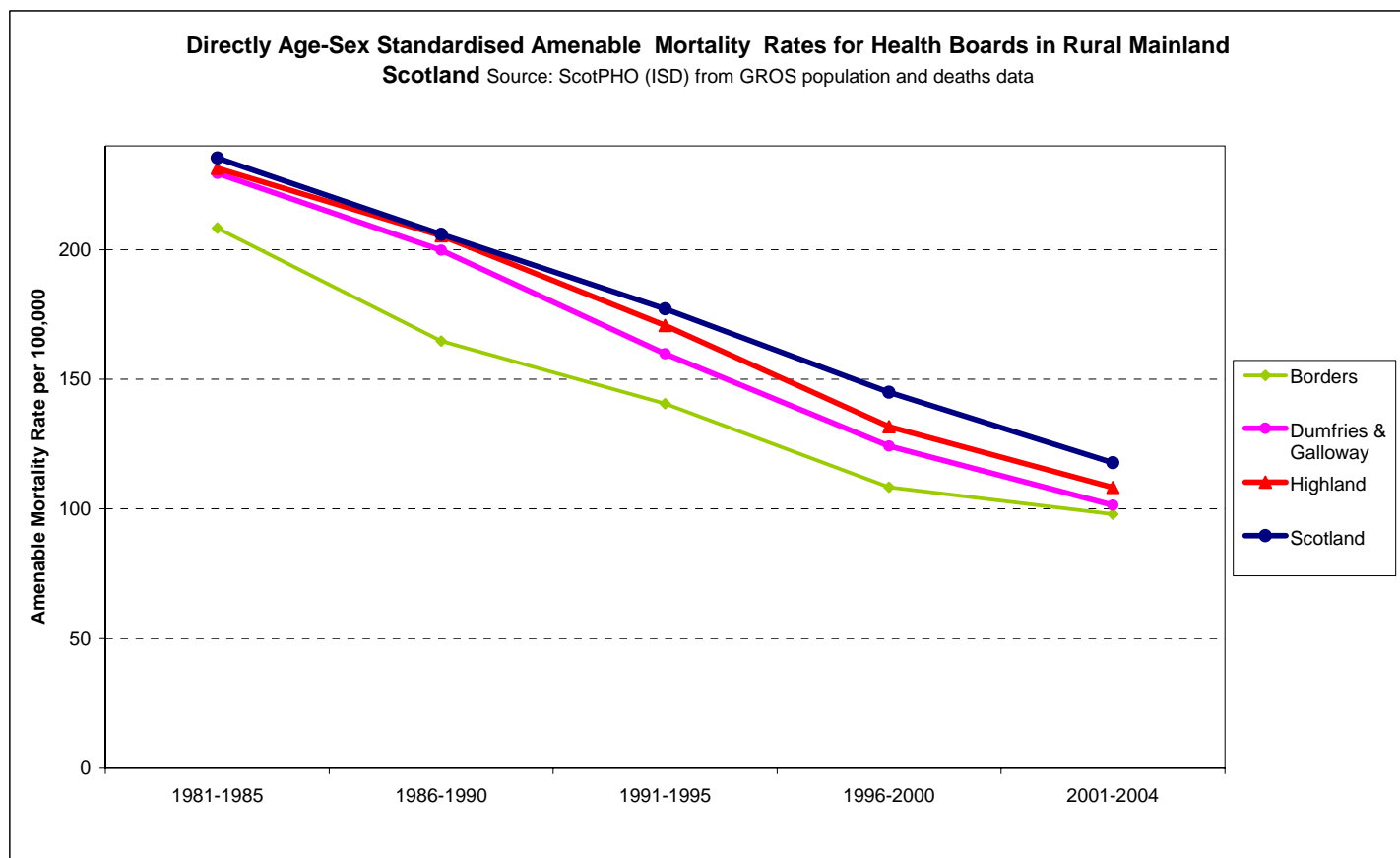
# EAST SCOTLAND

**Directly Age-Sex Standardised Amenable Mortality Rates for Health Boards in East of Scotland**

Source: ScotPHO (ISD) from GROS population and deaths data



## RURAL MAINLAND SCOTLAND



# ISLANDS

