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Web supplement

Report: **Death registrations in England and Wales: 2006, causes.**

Delays in receiving 2006 registrations data from registrars meant that ONS was not able to produce this report in time for the print deadline for publication in *Health Statistics Quarterly* **34**.

ONS apologises for any inconvenience this has caused.

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Report:

Death registrations in England and Wales: 2006, causes

This report presents numbers of deaths registered in England and Wales in 2006 by age, sex and selected underlying causes of death. It also compares mortality rates in 2006 with those for previous years. In addition, causes of death have been ranked to provide a summary of the ten leading causes of death for both males and females.

Deaths by sex and age of deceased

- There were 502,599 deaths registered in 2006, compared with 512,993 registered in 2005, a decrease of 2.0 per cent. This is the lowest annual number of death registrations since 1954 when the number of deaths registered was 501,896.

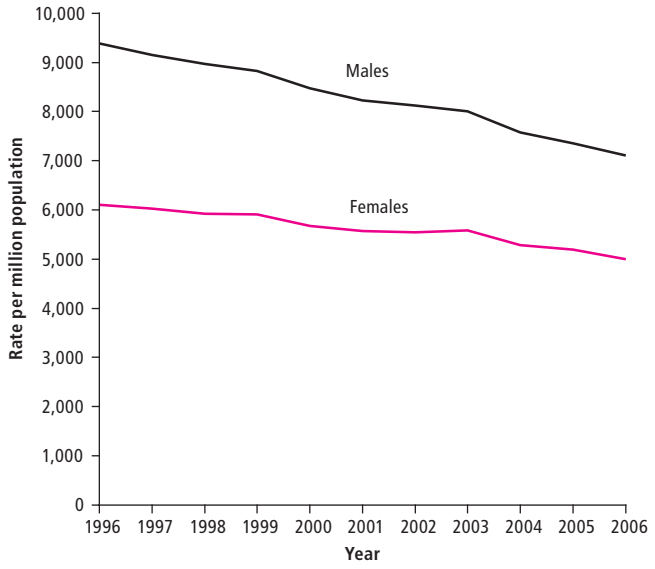
Table 1 **Death rates (registrations): by sex and age, 1996, 2005 and 2006**

England and Wales

Age group	1996[1]		2005[1]		2006[2]		Percentage change 2005–2006		Percentage change 1996–2006	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Age-standardised all age mortality rate[3]	9,390	6,102	7,361	5,189	7,111	4,997	–3.4	–3.7	–24.3	–18.1
Age-specific rates per 1,000 population										
Under 1[4]	6.9	5.4	5.7	4.3	5.4	4.6	–4.2	5.8	–20.6	–14.7
1–4	0.3	0.3	0.2	0.2	0.2	0.2	–3.6	17.7	–27.4	–12.8
5–9	0.1	0.1	0.1	0.1	0.1	0.1	14.6	2.2	–13.2	–17.9
10–14	0.2	0.1	0.2	0.1	0.2	0.1	–2.4	–9.2	–18.3	–13.1
15–19	0.6	0.3	0.5	0.2	0.5	0.2	–2.1	0.1	–20.9	–21.3
20–24	0.8	0.3	0.7	0.3	0.7	0.3	–2.2	–8.1	–19.8	–18.5
25–29	0.9	0.4	0.8	0.4	0.8	0.3	2.5	–3.1	–14.0	–12.5
30–34	1.1	0.5	1.0	0.5	1.0	0.4	–1.5	–7.4	–8.2	–16.9
35–39	1.4	0.8	1.3	0.7	1.3	0.7	0.3	0.7	–4.7	–12.5
40–44	2.0	1.3	1.8	1.1	1.8	1.1	–2.7	–1.7	–12.0	–13.2
45–49	3.2	2.0	2.9	1.9	2.8	1.8	–2.6	–2.0	–11.9	–9.5
50–54	5.1	3.4	4.4	3.0	4.5	2.9	0.9	–2.6	–12.2	–13.9
55–59	8.9	5.5	6.8	4.5	6.9	4.4	0.7	–1.6	–22.5	–18.8
60–64	15.3	8.8	11.5	7.0	11.2	6.9	–3.2	–1.5	–26.9	–21.7
65–69	26.3	15.4	18.3	11.7	17.8	11.1	–2.9	–4.6	–32.2	–27.7
70–74	44.5	26.2	30.9	19.4	29.1	18.8	–5.9	–3.3	–34.6	–28.2
75–79	68.6	42.2	52.5	35.4	50.2	33.7	–4.3	–4.8	–26.8	–20.2
80–84	112.6	74.0	89.1	63.2	85.8	60.4	–3.7	–4.5	–23.8	–18.4
85 and over	199.9	159.9	171.0	152.3	164.1	145.1	–4.1	–4.7	–17.9	–9.3

1 Figures vary from previous rates published. For 2005, the population projections used to calculate rates have been replaced with 2005 mid-year estimates. For 1996, the mid-year estimates used in the rates have been revised following the 2001 Census.
2 Provisional rates based on 2004-based population projections for 2006 and 2006 live births.
3 These rates are standardised to the European Standard Population, expressed per million population; they allow comparisons between populations with different age structures, including between males and females and over time.
4 Deaths per 1,000 live births.

Figure 1 Age-standardised, all age mortality rates[1] (per million population), all causes: by sex, 1996–2006



1 These rates are standardised to the European Standard Population, expressed per million population; they allow comparisons between populations with different age structures, including between males and females and over time.

- The total number of deaths in 2006 comprised 240,889 male and 261,710 female deaths. Compared to 2005, the number of deaths decreased by 1.2 per cent and 2.8 per cent for males and females respectively.

- In 2006, there were 3,368 infant deaths (under one year of age) registered in England and Wales, giving a rate of 5.0 per 1,000 live births. This is unchanged from the rate in 2005 which was the lowest ever recorded in England and Wales.

Table 1 shows death rates by age and sex, for the years 1996, 2005 and 2006, together with percentage changes.

- The provisional age-standardised, all age mortality rates (standardised to the European Standard Population) were 7,111 per million population for males and 4,997 per million for females. The rate for females is 3.7 per cent lower than in 2005, while that for males is 3.4 per cent lower.

- The largest percentage decrease in female age-specific rates between 2005 and 2006 was among girls aged 10–14 years, with a fall of 9.2 per cent. The largest decrease for males was among those aged 70–74 (5.9 per cent).

- The largest percentage increase was among females aged 1–4 with a 17.7 per cent rise. For males, the largest percentage rise of 14.6 per cent was among those in the 5–9 age group. It should be noted that the rates for the younger age groups are based on small numbers of deaths, and relatively small changes in such numbers can result in large percentage changes.

- At the older ages, where most deaths occur, between 2005 and 2006 there were falls in age–specific rates among both men and women aged over 70. The largest decrease for females was for those aged 75–79 with a fall of 4.8 per cent, although similar percentage reductions occurred in the 80–84 and 85 and above age groups (4.5 per cent and 4.7 per cent respectively). The pattern was the same for older males with a 3.7 per cent decrease among those aged 80–84 and a 4.1 per cent fall for those aged 85 and above.

- Figure 1 shows the downward trend in all age mortality rates between 1996 and 2006: rates decreased by 24.3 per cent for males and 18.1 per cent for females over this period.

- Between 1996 and 2006, age-specific mortality rates fell in every age group, with the greatest decreases at older ages. For both sexes the biggest fall was in the 70–74 age group (decreases of 34.6 per cent and 28.2 per cent for males and females respectively).

Deaths by underlying cause

Table 2 presents deaths by age and sex for selected underlying causes of death, grouped according to the International Classification of Diseases, Tenth Revision (ICD-10).

The chapters (broad disease groups) of ICD-10 with the largest numbers of deaths in 2006 were circulatory diseases, which includes deaths from ischaemic heart disease and strokes (accounting for 34.7 per cent of all deaths), followed by cancers (neoplasms) which accounted for 27.6 per cent of all deaths and respiratory diseases, which includes deaths from pneumonia (13.7 per cent of all deaths).

Figure 2 shows the trends in all age mortality rates (standardised to the European Standard Population) for these three cause of death groups between 1996 and 2006. Throughout the period, the highest death rate among males was for circulatory diseases, despite a fall in the rate of 40.3 per cent to 2,421 per million population since 1996. The female death rate for circulatory disease also fell over the same period by more than a third (37.7 per cent) to 1,531 per million population, and by 2006 was lower than the death rate for cancer (1,546 per million). The fall in mortality rates for cancer has been more gradual, with death rates 17.6 and 13.4 per cent lower in 2006 than in 1996 for males and females respectively.

The rate for respiratory diseases in males decreased by 19.6 per cent over the same period, while the rate for females was 6.6 per cent lower in 2006 than in 1996. Respiratory disease mortality rates in a given year are strongly influenced by the seasonal pattern of mortality in that year and so differences between two years should always be examined in the context of long-term trends. Comparability ratios have been applied to the figures for each of the three cause of death groups for 1996 to 2000 in order to produce a consistent trend that adjusts for the change to ICD-10 in 2001; see the Explanatory Notes.

Leading causes of death

Both Table 3 and Figure 3 show the ten leading underlying causes of death in 2006 for males and females. These are ranked according to a World Health Organization (WHO) list which categorises causes using ICD10 groups specifically designed for determining the leading causes of death; see the Explanatory Notes. Figure 3 also shows how mortality rates for the leading causes of death in 2006 have changed since 2001.

The leading cause of death for both sexes was ischaemic heart diseases which accounted for approximately one in five male deaths and one in seven female deaths during 2006. Cerebrovascular diseases (strokes) were the second leading cause of death for both sexes and accounted for a higher proportion of female deaths (11.3 per cent) than males (7.8 per cent). The difference between the top two causes of death, ischaemic heart and cerebrovascular diseases, was greater among males (a difference of around 27,500 deaths) than females (just over 6,600 deaths). A further five causes of death appear in both the male and female top ten underlying causes but not at the same ranks.

Table 2 Deaths: by age, sex and underlying cause, 2006 registrations

England and Wales — Numbers

ICD-10 code	Causes of death[1]		Age group: All ages	Under 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over
A00–R99, V01–Y89	**All causes, all ages**	**M**	**240,889**	**1,863**	**292**	**448**	**2,056**	**3,132**	**6,315**	**12,256**	**27,551**	**48,881**	**81,913**	**56,182**
		F	**261,710**	**1,505**	**267**	**304**	**825**	**1,382**	**3,802**	**8,098**	**17,948**	**34,501**	**81,210**	**111,868**
	All causes, ages under 28 days	**M**	**1,306**	**1,306**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
		F	**1,039**	**1,039**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
A00–R99, V01–Y89	**All causes, ages 28 days and over**	**M**	**239,583**	**557**	**292**	**448**	**2,056**	**3,132**	**6,315**	**12,256**	**27,551**	**48,881**	**81,913**	**56,182**
		F	**260,671**	**466**	**267**	**304**	**825**	**1,382**	**3,802**	**8,098**	**17,948**	**34,501**	**81,210**	**111,868**
A00–B99	Certain infectious and parasitic diseases	M	**3,254**	41	25	13	17	59	125	190	285	495	1,059	945
		F	**4,369**	26	22	13	21	45	91	97	183	443	1,428	2,000
A00–A09	Intestinal infectious diseases	M	**1,228**	1	2	-	-	2	2	11	31	162	483	534
		F	**2,399**	1	-	-	2	3	6	8	39	175	815	1,350
A15–A16	Respiratory tuberculosis	M	**171**	-	-	-	1	3	9	17	16	36	65	24
		F	**107**	-	-	-	1	4	8	8	12	23	37	14
A17–A19	Other tuberculosis	M	**55**	1	1	-	-	4	4	6	7	15	10	7
		F	**44**	1	-	-	2	3	3	1	6	5	10	13
A39	Meningococcal infection	M	**25**	4	9	2	5	-	1	1	2	-	1	-
		F	**27**	6	6	-	5	1	-	4	4	-	-	1
A40–A41	Septicaemia	M	**1,058**	18	4	2	3	8	19	36	96	178	384	310
		F	**1,329**	9	9	4	5	6	24	43	71	168	459	531
B15–B19	Viral hepatitis	M	**139**	-	1	-	1	3	17	47	36	19	13	2
		F	**67**	-	-	1	1	2	1	9	14	24	12	3
B20–B24	Human immunodeficiency virus [HIV] disease	M	**155**	1	-	1	3	26	50	38	24	12	-	-
		F	**71**	-	-	1	1	20	28	11	5	3	2	-
B90	Sequelae of tuberculosis	M	**23**	-	-	-	-	-	-	4	2	3	11	3
		F	**26**	-	-	-	-	-	-	-	1	4	12	9
C00–D48	Neoplasms	M	**72,551**	12	46	116	198	387	1,090	3,610	11,362	19,691	25,073	10,966
		F	**66,197**	5	44	64	113	351	1,560	4,020	9,779	14,940	21,574	13,747
C00–C97	Malignant neoplasms	M	**71,001**	8	41	109	186	375	1,066	3,547	11,213	19,389	24,480	10,587
		F	**64,589**	3	38	61	107	334	1,528	3,977	9,665	14,705	21,017	13,154
C00–C14	Malignant neoplasms of lip, oral cavity and pharynx	M	**1,090**	-	-	2	5	13	31	139	312	306	186	96
		F	**607**	-	-	-	1	5	25	57	106	122	157	134
C15	Malignant neoplasm of oesophagus	M	**4,266**	-	-	-	1	4	55	307	865	1,246	1,348	440
		F	**2,226**	-	-	-	-	3	19	95	292	451	825	541
C16	Malignant neoplasm of stomach	M	**2,829**	-	-	-	1	11	42	122	358	783	1,092	420
		F	**1,728**	-	-	-	2	3	40	60	137	313	659	514
C18	Malignant neoplasm of colon	M	**4,483**	-	-	-	5	18	53	196	600	1,213	1,650	748
		F	**4,462**	-	-	-	2	17	61	175	469	854	1,556	1,328
C19–C21	Malignant neoplasm of rectosigmoid junction, rectum and anus	M	**2,984**	-	-	-	2	13	44	164	524	876	980	381
		F	**2,085**	-	-	-	2	8	24	116	257	450	679	549
C22	Malignant neoplasm of liver and intrahepatic bile ducts	M	**1,619**	-	2	1	3	12	29	126	278	484	515	169
		F	**1,036**	-	-	-	1	5	10	51	138	262	370	199
C23–C24	Malignant neoplasm of gallbladder and biliary tract	M	**178**	-	-	-	-	-	3	6	31	49	63	26
		F	**370**	-	-	-	-	-	3	15	42	81	138	91
C25	Malignant neoplasm of pancreas	M	**3,258**	-	-	-	1	6	37	217	673	975	990	359
		F	**3,314**	-	-	-	-	3	20	134	459	838	1,174	686
C32	Malignant neoplasm of larynx	M	**535**	-	-	-	-	-	9	42	129	128	156	71
		F	**141**	-	-	-	-	-	2	11	31	34	46	17
C33–C34	Malignant neoplasm of trachea, bronchus and lung	M	**16,964**	-	-	-	3	14	136	788	2,985	5,215	5,941	1,882
		F	**12,350**	-	-	2	2	10	123	644	2,111	3,450	4,451	1,557
C43	Malignant melanoma of skin	M	**949**	-	-	-	5	34	80	106	205	251	203	65
		F	**700**	-	-	-	3	18	42	72	123	163	169	110

1 The figures for individual cause categories exclude deaths at ages under 28 days.

Table 2 continued **Deaths: by age, sex and underlying cause, 2006 registrations**

England and Wales — Numbers

ICD-10 code	Causes of death[1]		Age group: All ages	Under 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over
C44	Other malignant neoplasms of skin	M	**252**	-	-	-	-	-	3	8	16	45	101	79
		F	**207**	-	-	-	-	-	3	3	14	27	55	105
C45	Mesothelioma	M	**1,532**	-	-	-	-	1	8	52	317	539	503	112
		F	**274**	-	-	-	-	-	2	6	71	78	89	28
C46	Kaposi's sarcoma	M	**6**	-	-	-	1	2	-	3	-	-	-	-
		F	**1**	-	-	-	-	-	1	-	-	-	-	-
C50	Malignant neoplasm of breast	M	**69**	-	-	-	-	-	2	4	13	15	17	18
		F	**10,942**	-	-	-	2	67	550	1,218	2,081	2,093	2,721	2,210
C53	Malignant neoplasm of cervix uteri	F	**831**	-	-	-	4	52	105	135	134	123	173	105
C54–C55	Malignant neoplasm of other and unspecified parts of uterus	F	**1,468**	-	-	-	-	-	15	73	243	399	458	280
C56	Malignant neoplasm of ovary	F	**3,794**	-	-	-	2	14	71	282	844	1,045	1,067	469
C61	Malignant neoplasm of prostate	M	**9,061**	-	-	-	1	1	5	62	546	1,924	3,904	2,618
C62	Malignant neoplasm of testis	M	**63**	-	-	1	3	7	18	11	11	3	3	6
C64	Malignant neoplasm of kidney, except renal pelvis	M	**1,970**	-	-	3	4	5	32	161	425	554	574	212
		F	**1,129**	2	2	3	3	3	21	58	146	304	362	225
C67	Malignant neoplasm of bladder	M	**2,844**	-	-	1	-	3	13	58	285	657	1,141	686
		F	**1,457**	-	-	-	-	2	10	36	104	272	576	457
C71	Malignant neoplasm of brain	M	**1,825**	3	13	34	31	65	151	233	456	474	311	54
		F	**1,286**	-	12	21	23	34	87	145	277	321	276	90
C81	Hodgkin's disease	M	**164**	-	1	-	8	15	15	12	27	40	34	12
		F	**138**	-	-	-	5	10	14	7	15	32	42	13
C82–C85	Non-Hodgkin's lymphoma	M	**2,120**	-	1	8	16	18	75	134	362	554	697	255
		F	**1,861**	-	-	1	7	9	44	78	226	456	646	394
C90	Multiple myeloma and malignant plasma cell neoplasms	M	**1,209**	-	-	-	1	2	13	60	219	354	416	144
		F	**1,091**	-	-	-	-	-	6	34	114	292	412	233
C91–C95	Leukaemia	M	**2,231**	4	10	32	37	42	46	120	319	582	729	310
		F	**1,627**	-	12	13	21	24	59	80	156	283	530	449
C97	Malignant neoplasms of independent (primary) multiple sites	M	**513**	-	-	-	1	2	5	14	64	116	192	119
		F	**404**	-	-	1	-	2	5	18	49	107	139	83
D00–D48	In situ and benign neoplasms, and neoplasms of uncertain or unknown behaviour	M	**1,550**	4	5	7	12	12	24	63	149	302	593	379
		F	**1,608**	2	6	3	6	17	32	43	114	235	557	593
D50–D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	M	**444**	6	6	4	9	12	19	32	68	70	123	95
		F	**570**	8	3	4	6	7	21	16	44	75	148	238
D50–D64	Anaemias	M	**177**	-	1	2	4	8	4	5	15	23	46	69
		F	**308**	-	-	3	3	5	3	4	13	28	71	178
E00–E90	Endocrine, nutritional and metabolic diseases	M	**3,197**	15	10	26	38	49	109	180	310	677	1,065	718
		F	**3,957**	10	14	21	37	54	84	136	244	541	1,240	1,576
E10–E14	Diabetes mellitus	M	**2,567**	-	-	-	11	21	72	116	219	570	925	633
		F	**2,924**	-	-	1	11	20	42	70	159	415	1,001	1,205
F00–F99	Mental and behavioural disorders	M	**4,880**	-	1	-	90	287	303	173	152	328	1,550	1,996
		F	**9,985**	-	-	1	22	39	80	74	103	332	2,491	6,843
F01,F03	Vascular and unspecified dementia	M	**3,781**	-	-	-	-	-	1	6	38	267	1,503	1,966
		F	**9,511**	-	-	-	-	-	-	4	40	306	2,420	6,741
F10–F19	Mental and behavioural disorders due to psychoactive substance use	M	**1,019**	-	-	-	88	285	301	163	108	51	19	4
		F	**267**	-	-	1	16	36	71	62	57	12	8	4

1 The figures for individual cause categories exclude deaths at ages under 28 days.

Table 2 continued **Deaths: by age, sex and underlying cause, 2006 registrations**

England and Wales — Numbers

ICD-10 code	Causes of death[1]		Age group: All ages	Under 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over
G00–G99	Diseases of the nervous system	M	**7,076**	47	41	59	156	117	263	388	642	1,265	2,521	1,577
		F	**8,114**	35	30	42	97	82	158	347	589	1,007	2,565	3,162
G00–G03	Meningitis (excluding meningococcal)	M	**81**	6	2	4	1	4	15	11	10	17	5	6
		F	**83**	9	4	2	5	3	5	13	6	10	17	9
G12.2	Motor neuron disease	M	**930**	-	-	-	1	4	20	74	188	314	261	68
		F	**725**	1	-	-	1	1	8	43	147	215	258	51
G20	Parkinson's disease	M	**2,391**	-	-	-	1	-	1	6	40	383	1,239	721
		F	**1,713**	-	-	-	-	-	2	1	16	175	740	779
G30	Alzheimer's disease	M	**1,501**	-	-	-	-	-	-	4	49	203	660	585
		F	**3,401**	-	-	-	-	-	1	7	59	239	1,127	1,968
G35	Multiple sclerosis	M	**307**	-	-	-	1	6	28	64	82	68	49	9
		F	**625**	-	-	-	2	4	46	134	181	121	99	38
H00–H59	Diseases of the eye and adnexa	M	**2**	-	-	-	-	-	-	-	-	-	1	1
		F	**5**	-	-	-	-	-	-	-	-	2	-	3
H60–H95	Diseases of the ear and mastoid process	M	**10**	-	1	-	-	1	-	1	-	5	2	-
		F	**7**	-	-	-	-	-	1	-	1	1	2	2
I00–I99	Diseases of the circulatory system	M	**84,214**	23	15	27	101	337	1,299	3,700	8,781	16,871	31,274	21,786
		F	**90,410**	30	12	33	58	148	549	1,325	3,314	9,673	30,183	45,085
I05–I09	Chronic rheumatic heart diseases	M	**313**	-	-	-	-	6	5	7	32	77	127	59
		F	**739**	1	1	-	2	1	8	20	39	144	284	239
I10–I15	Hypertensive diseases	M	**1,653**	-	-	-	-	8	37	98	211	325	540	434
		F	**2,362**	-	-	-	-	-	13	38	115	226	764	1,206
I20–I25	Ischaemic heart diseases	M	**46,316**	1	-	-	7	92	697	2,410	5,908	10,365	16,759	10,077
		F	**36,272**	-	-	5	1	24	153	491	1,566	4,628	12,840	16,564
I21–I22	Acute myocardial infarction	M	**18,845**	-	-	-	7	45	323	1,029	2,505	4,315	6,864	3,757
		F	**14,347**	-	-	2	-	11	77	219	658	2,004	5,326	6,050
I26–I51	Other heart diseases	M	**9,353**	13	11	18	61	126	250	422	777	1,463	3,138	3,074
		F	**13,757**	23	11	21	37	52	131	229	466	1,161	3,911	7,715
I60–I69	Cerebrovascular diseases	M	**18,744**	9	2	4	24	64	186	499	1,099	2,838	7,591	6,428
		F	**29,650**	5	-	7	9	45	174	422	791	2,436	9,533	16,228
I60–I62	Intracranial haemorrhage	M	**3,108**	3	-	2	20	47	141	327	470	646	958	494
		F	**4,076**	-	-	4	6	36	143	312	454	677	1,415	1,029
I63	Cerebral infarction	M	**1,988**	-	-	1	2	12	18	67	148	353	803	584
		F	**2,808**	-	-	-	2	7	11	38	89	255	930	1,476
I64	Stroke, not specified as haemorrhage or infarction	M	**9,177**	-	-	-	2	3	20	88	403	1,374	3,932	3,355
		F	**15,599**	-	-	1	-	2	14	57	206	1,161	5,032	9,126
I70	Atherosclerosis	M	**268**	-	-	-	-	-	-	3	21	29	100	115
		F	**442**	-	-	-	-	-	-	2	8	25	116	291
I71	Aortic aneurysm and dissection	M	**4,774**	-	1	-	1	19	45	84	392	1,163	2,051	1,018
		F	**3,167**	-	-	-	2	5	7	13	104	451	1,421	1,164
J00–J99	Diseases of the respiratory system	M	**31,472**	45	24	39	34	81	216	572	2,122	5,312	12,150	10,877
		F	**37,172**	35	25	28	37	54	129	426	1,488	3,995	12,008	18,947
J10–J11	Influenza	M	**7**	1	-	3	-	-	1	-	-	-	2	-
		F	**10**	2	-	-	2	-	-	-	-	-	2	4
J12–J18	Pneumonia	M	**11,504**	14	13	4	10	41	105	222	568	1,294	3,847	5,386
		F	**17,202**	18	7	7	14	23	59	140	380	926	4,373	11,255
J40–J44	Bronchitis, emphysema and other chronic obstructive pulmonary disease	M	**12,333**	-	1	1	1	3	29	190	1,053	2,742	5,422	2,891
		F	**10,989**	1	-	-	2	3	7	123	757	2,172	4,908	3,016

1 The figures for individual cause categories exclude deaths at ages under 28 days.

Table 2 continued **Deaths: by age, sex and underlying cause, 2006 registrations**

England and Wales — Numbers

ICD-10 code	Causes of death[1]		Age group: All ages	Under 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over
J45–J46	Asthma	M	**308**	-	2	20	10	10	22	31	46	39	70	58
		F	**773**	-	2	9	7	13	22	43	65	81	223	308
K00–K93	Diseases of the digestive system	M	**12,116**	27	16	9	21	155	774	1,640	2,055	2,249	3,148	2,022
		F	**13,672**	19	9	8	17	103	469	838	1,185	1,838	4,188	4,998
K25–K27	Gastric and duodenal ulcer	M	**1,548**	-	-	1	1	6	35	74	209	347	535	340
		F	**1,594**	-	-	1	4	3	18	29	79	236	546	678
K40–K46	Hernia	M	**357**	1	1	-	-	-	3	10	30	53	152	107
		F	**485**	-	1	1	-	-	2	15	19	55	189	203
K57	Diverticular disease of intestine	M	**468**	-	-	-	1	-	1	13	41	94	170	148
		F	**1,390**	-	-	-	-	-	2	10	49	167	558	604
K70–K76	Diseases of the liver	M	**4,549**	3	1	2	5	114	606	1,275	1,291	786	382	84
		F	**2,737**	1	2	1	4	71	355	626	678	501	372	126
L00–L99	Diseases of the skin and subcutaneous tissue	M	**583**	-	-	-	1	4	12	21	38	93	221	193
		F	**1,229**	1	-	-	-	4	9	16	42	134	386	637
M00–M99	Diseases of the musculoskeletal system and connective tissue	M	**1,292**	2	1	1	4	8	20	40	116	241	457	402
		F	**2,947**	-	2	1	7	15	30	56	145	316	910	1,465
M05–M06, M08	Rheumatoid arthritis and juvenile arthritis	M	**176**	-	-	-	-	-	1	5	24	56	70	20
		F	**566**	-	-	-	-	-	1	9	46	112	247	151
M80–M81	Osteoporosis	M	**285**	-	-	-	-	-	-	-	5	15	98	167
		F	**1,107**	-	-	-	-	-	-	1	7	30	273	796
N00–N99	Diseases of the genitourinary system	M	**4,392**	4	3	3	4	13	40	74	195	533	1,657	1,866
		F	**6,335**	2	-	1	4	18	45	90	177	543	1,925	3,530
N00–N15	Glomerular and renal tubulo-interstitial diseases	M	**350**	2	2	-	2	2	10	12	31	49	126	114
		F	**402**	1	-	-	-	6	11	15	26	51	150	142
N17–N19	Renal failure	M	**1,400**	2	1	1	2	6	18	36	69	184	503	578
		F	**1,532**	-	-	1	3	3	13	26	42	137	473	834
N40	Hyperplasia of prostate	M	**171**	-	-	-	-	-	-	-	4	16	64	87
O00–O99	Pregnancy, childbirth and the puerperium	F	**41**	-	-	-	10	20	10	1	-	-	-	-
P00–P96	Certain conditions originating in the perinatal period	M	**80**	71	5	2	1	-	1	-	-	-	-	-
		F	**80**	71	7	2	-	-	-	-	-	-	-	-
Q00–Q99	Congenital malformations, deformations and chromosomal abnormalities	M	**638**	125	31	28	41	44	53	70	117	64	47	18
		F	**576**	117	43	18	26	26	54	48	84	67	62	31
Q20–Q28	Congenital malformations of the circulatory system	M	**263**	57	13	14	25	23	23	30	35	20	20	3
		F	**221**	44	15	6	13	13	24	18	20	29	26	13
R00–R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	M	**2,659**	115	7	6	35	71	144	169	166	111	285	1,550
		F	**8,228**	88	11	3	16	34	57	68	61	80	676	7,134
R54	Senility	M	**1,692**	-	-	-	-	-	-	-	-	4	206	1,482
		F	**7,479**	-	-	-	-	-	-	-	-	7	573	6,899
R95	Sudden infant death syndrome	M	**83**	83	-	-	-	-	-	-	-	-	-	-
		F	**60**	59	1	-	-	-	-	-	-	-	-	-
R99	Other ill-defined and unspecified causes of mortality	M	**747**	31	7	6	24	61	127	162	160	99	52	18
		F	**388**	29	10	3	11	28	53	61	57	56	59	21
V01–Y89	External causes of morbidity and mortality	M	**10,723**	24	60	115	1,306	1,507	1,847	1,396	1,142	876	1,280	1,170
		F	**6,777**	19	45	65	354	382	455	540	509	514	1,424	2,470
V01–X59	Accidents	M	**6,500**	16	44	91	832	791	832	663	578	553	1,036	1,064
		F	**5,194**	10	34	44	225	180	194	254	264	358	1,268	2,363

1 The figures for individual cause categories exclude deaths at ages under 28 days.

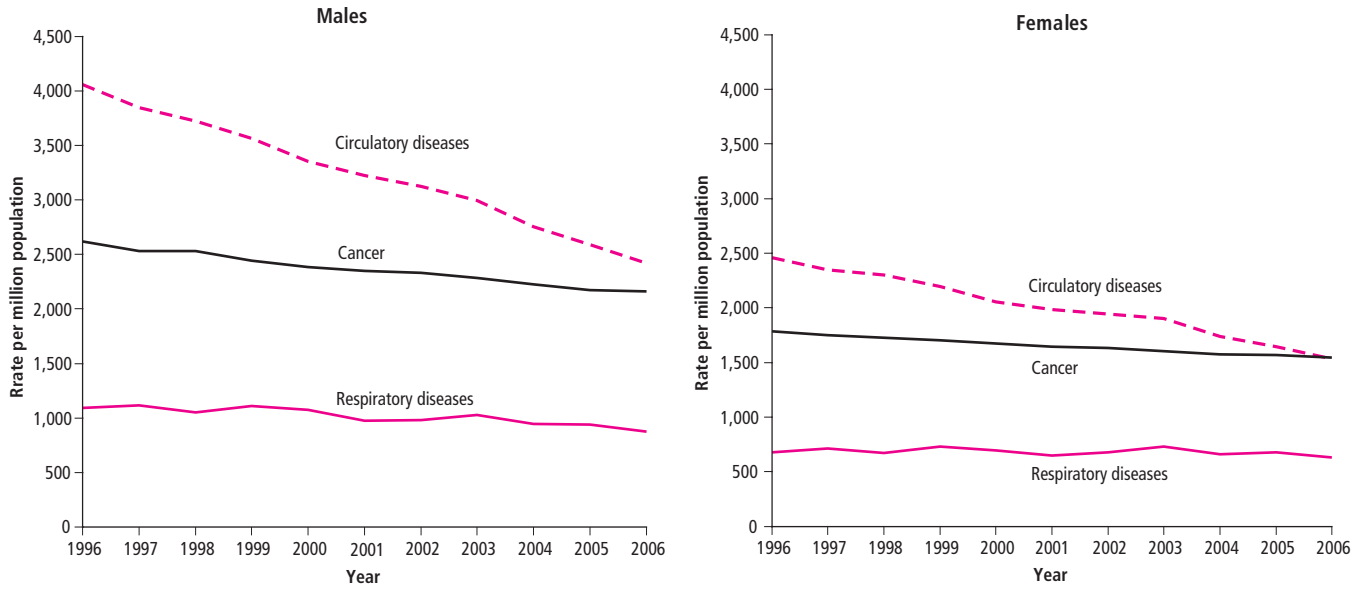
Table 2 continued **Deaths: by age, sex and underlying cause, 2006 registrations**

England and Wales — Numbers

ICD-10 code	Causes of death[1]		Age group: All ages	Under 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over
V01–V99, Y85	Transport accidents[2]	M	**2,309**	2	14	56	623	464	387	251	189	115	144	64
		F	**728**	1	12	30	163	88	69	69	64	60	113	59
V01–V89	Land transport accidents involving pedestrians, pedal cyclists, motor cyclists and occupants of motor vehicles	M	**2,230**	2	14	54	620	451	364	239	173	110	139	64
		F	**716**	1	12	30	162	87	66	67	61	59	112	59
W00–W19	Falls	M	**1,587**	1	2	8	34	36	81	133	181	232	462	417
		F	**1,639**	1	3	1	2	6	30	58	76	142	531	789
W65–W74	Accidental drowning and submersion	M	**137**	1	8	6	31	17	13	25	18	7	9	2
		F	**53**	1	4	2	6	3	4	11	5	5	6	6
X00–X09	Exposure to smoke, fire and flames	M	**187**	-	10	6	7	13	24	25	28	28	27	19
		F	**132**	-	4	4	3	6	4	20	17	19	38	17
X40–X49	Accidental poisoning by and exposure to noxious substances	M	**746**	-	1	1	90	203	238	127	46	25	10	5
		F	**323**	-	-	2	37	62	63	65	43	21	21	9
X41	Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified	M	**71**	-	-	-	13	15	22	17	2	1	-	1
		F	**54**	-	-	-	7	13	8	12	7	4	3	-
X42	Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified	M	**336**	-	1	-	47	118	118	41	6	2	1	2
		F	**78**	-	-	-	13	30	14	9	6	2	3	1
X44	Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances	M	**152**	-	-	-	19	49	49	12	12	6	3	2
		F	**86**	-	-	-	9	13	13	20	15	4	5	7
X59	Accidental exposure to unspecified factor	M	**1,103**	-	-	-	15	17	32	35	57	106	327	514
		F	**2,055**	-	-	-	5	6	12	11	35	88	492	1,406
X60–X84	Intentional self-harm	M	**2,562**	-	-	2	218	430	667	507	365	191	125	57
		F	**769**	-	-	1	55	111	140	172	147	63	52	28
X85–Y09	Assault	M	**78**	2	2	1	21	14	15	9	6	3	2	3
		F	**35**	1	1	1	10	6	5	5	4	-	-	2
Y10–Y34	Event of undetermined intent	M	**1,329**	6	12	20	228	256	313	203	147	74	55	15
		F	**553**	8	9	16	61	82	105	97	71	45	42	17
X60–X84, Y10–Y34, excl Y33.9	Intentional self-harm; and event of undetermined intent, excluding other specified events of undetermined intent	M	**3,381**	-	2	8	311	589	860	646	482	245	169	69
		F	**1,129**	3	1	3	88	160	203	245	208	94	84	40
X85–Y09, Y33.9	Assault; and other specified events of undetermined intent	M	**588**	8	12	15	156	111	135	73	36	23	13	6
		F	**228**	6	9	15	38	39	47	29	14	14	10	7

1 The figures for individual cause categories exclude deaths at ages under 28 days.
2 Including sequelae of transport accidents.

Figure 2 Age-standardised, all age mortality rates[1] for the three categories[2] of cause of death (per million population), 1996–2006



1 These rates are standardised to the European Standard Population, expressed per million population; they allow comparisons between populations with different age structures, including between males and females and over time.

2 These categories correspond to the three chapters of ICD-10 with the largest number of deaths in England and Wales.

Note: The Tenth Revision of the *International Classification of Diseases and Related Health Problems* (ICD-10) came into operation in 2001. Comparability ratios have been applied to data for 1994 to 2000. See the Explanatory Notes.

For both sexes, lung cancer (malignant neoplasm of trachea, bronchus and lung) was the most common cancer appearing third in the underlying cause of death list for males and fifth for females. The list also contained three other cancers for males and two for females, including ones which are sex-specific (prostate cancer and female breast cancer).

In Table 3 the leading causes are ranked by number of deaths. If causes were ranked by their all age mortality rates instead, the ranking for males would not change. This is not the cases for females, however, where dementia and Alzheimer's disease, for example, is ranked fourth on number of deaths but would be ranked seventh if considering mortality rates. This is because the age-standardisation process gives less weight to deaths at older ages (where most of the dementia and Alzheimer deaths occur).

Figure 3 shows how the age standardised, all age mortality rates for the ten leading underlying causes in 2006 have changed since 2001. For males, all of the mortality rates for the leading underlying causes in 2006 have shown a decrease since 2001. The largest percentage falls in male mortality rates were for ischaemic heart diseases and cerebrovascular diseases which fell by 27.9 and 24.8 per cent respectively. The smallest decrease in mortality rates was for malignant neoplasm of lymphoid, haematopoietic and related tissue which fell by just 5.3 per cent

Unlike for males, the mortality rates for females did not decrease for all of the ten leading causes of death over the same period. Whilst all age mortality rates for ischaemic heart diseases showed the largest decrease between 2001 and 2006, (28.3 per cent), rates for malignant neoplasm of trachea, bronchus and lung increased by 5.8 per cent. One other cause of death, dementia and Alzheimer's disease, also showed a small increase in mortality rate of 2.0 per cent over the same period.

Explanatory Notes

Registrations and occurrences

The year in which a death is registered may not correspond to the year in which the death occurred. Up to 1992, Office for National Statistics (ONS) publications gave numbers of deaths registered in the data year. However, since 1993 most of ONS published figures represent the number of deaths that occurred in the data year. In most years (and for most causes of death) this change has little effect on annual totals. However, figures based on date of occurrence provide a more reliable basis for assessing the impact on mortality of external factors (such as 'flu outbreaks or cold weather), while registrations are more timely.[1] Two annual extracts are, therefore, taken from the ONS deaths database.

- The first annual extract, produced in April following the data year, comprises deaths that were registered in that year. Outputs produced using this extract include this report and a report on deaths by area of residence first published in the summer edition of *Population Trends* and reproduced in the autumn edition of *Health Statistics Quarterly*. Annual vital statistics tables, released via CD-Rom, are also based on deaths registered in each year.

- The second extract, produced in the September following the data year, comprises deaths that occurred in that year. This extract forms the basis for the mortality annual reference volumes in the DH series.

A change was made in 2004 regarding the basis for presenting underlying cause of death. The cause of death data in this report are based on the cause of death as given in the death register and based on the doctor's or coroner's certificate of cause of death; this is known as the **original** underlying cause of death. Previously, all ONS mortality statistics were based on **final** underlying cause of death, which takes account of any additional information provided by medical practitioners or coroners after the death has been registered. The underlying cause of death only changes in a very small number of deaths, for example, in 2004 there were around 900 deaths with a different final underlying cause to that originally given on the cause of death certificate. In general, all registrations outputs showing data for 2004 to 2006 will use original cause as the basis for presenting cause of death data, while occurrence-based data (for example, ONS annual reference volumes) will be based on final cause.

Table 3 Leading causes of mortality: by sex, 2006

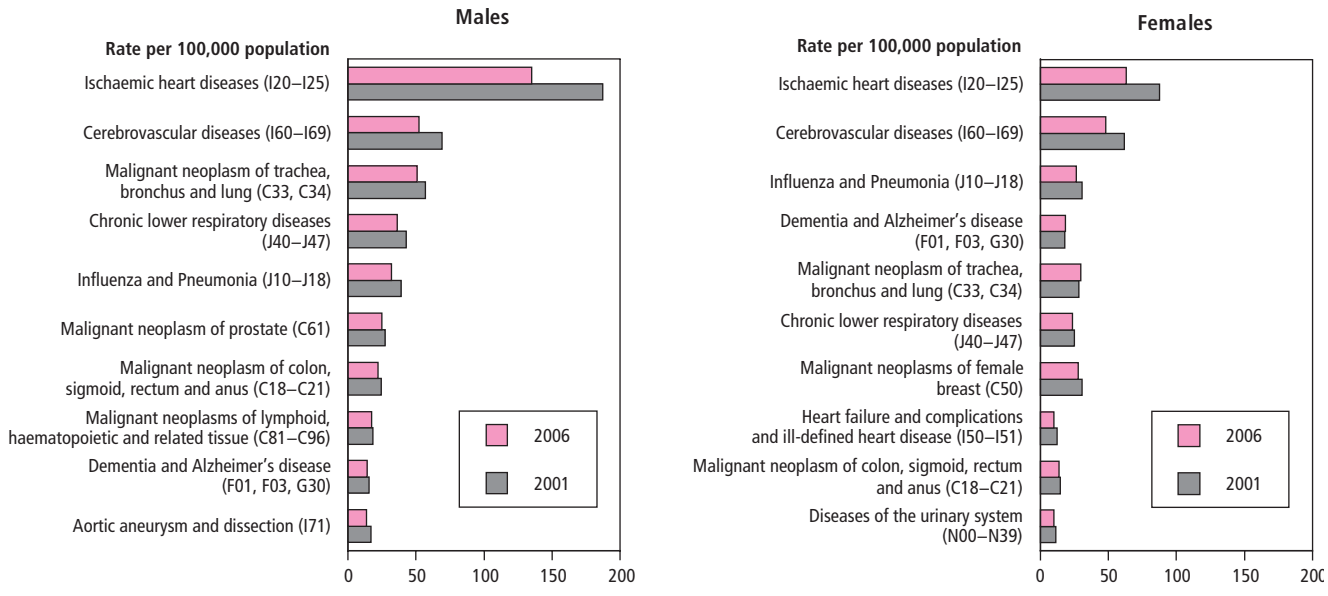
England and Wales — Numbers

Underlying cause of death[1]		Number of deaths	Percentage of all deaths	Age-standardised all age mortality rate per 100,000 population
Males				
Rank				
1	Ischaemic heart diseases (I20–I25)	46,316	19.2	135.0
2	Cerebrovascular diseases (I60–I69)	18,744	7.8	52.0
3	Malignant neoplasm of trachea, bronchus and lung (C33, C34)	16,964	7.0	50.7
4	Chronic lower respiratory diseases (J40–J47)	13,007	5.4	36.3
5	Influenza and Pneumonia (J10–J18)	11,511	4.8	32.1
6	Malignant neoplasm of prostate (C61)	9,061	3.8	24.9
7	Malignant neoplasm of colon, sigmoid, rectum and anus (C18–C21)	7,467	3.1	22.1
8	Malignant neoplasms of lymphoid, haematopoietic and related tissue (C81–C96)	5,777	2.4	17.5
9	Dementia and Alzheimer's disease (F01, F03, G30)	5,282	2.2	14.0
10	Aortic aneurysm and dissection (I71)	4,774	2.0	13.4
	All deaths	**240,889**	**100.0**	
Females				
Rank				
1	Ischaemic heart diseases (I20–I25)	36,272	13.9	63.0
2	Cerebrovascular diseases (I60–I69)	29,650	11.3	48.0
3	Influenza and Pneumonia (J10–J18)	17,212	6.6	26.3
4	Dementia and Alzheimer's disease (F01, F03, G30)	12,912	4.9	18.5
5	Malignant neoplasm of trachea, bronchus and lung (C33, C34)	12,350	4.7	29.9
6	Chronic lower respiratory diseases (J40–J47)	12,281	4.7	23.9
7	Malignant neoplasms of female breast (C50)	10,942	4.2	27.7
8	Heart failure and complications and ill-defined heart disease (I50–I51)	6,567	2.5	9.9
9	Malignant neoplasm of colon, sigmoid, rectum and anus (C18–C21)	6,547	2.5	13.9
10	Diseases of the urinary system (N00–N39)	6,181	2.4	10.0
	All deaths	**261,710**	**100.0**	

1 The cause of death groups used here are based on a list provided developed by the WHO, modified for use in England and Wales. For more information see Griffiths C, Rooney C and Brock A. Leading causes of death in England and Wales – how should we group causes? *Health Statistics Quarterly* **28**, 6–17.

Figure 3 Age-standardised, all age mortality rates (per 100,000 population) for the ten leading causes of deaths:[1] by sex, 2006 and comparison rate for 2001[2]

England and Wales



1 The cause of death groups used here are based on a list provided developed by WHO, modified for use in England and Wales. For more information see Griffiths C, Rooney C and Brock A. Leading causes of death in England and Wales – how should we group causes? *Health Statistics Quarterly* **28**, 6–17.
2 For 2001 the mortality rates are given for the top ten causes of death in 2006 as a comparison.

The exception is where registration-based cause data is presented in the same table as occurrences, for example, Table 6.3 in the reference tables in *Health Statistics Quarterly*, when all data will be presented as final cause for comparative purposes.

As noted in In Brief of *Health Statistics Quarterly* 34, ONS are currently undertaking a public consultation on mortality outputs. As part of this exercise, ONS are inviting data users to give their views on changing the reporting basis for the majority of mortality outputs from occurrences to registrations. This consultation will close on Friday 13 July 2007. More information on this consultation, including how to respond, can be found at the following web address:

www.statistics.gov.uk/about/consultations/mortality_outputs.asp

Coding underlying cause of death

Since January 2001 cause of death has been coded to the Tenth Revision of the *International Classification of Diseases and Related Health Problems* (ICD-10).[2] This was introduced on the recommendation of the WHO and replaced the Ninth Revision (ICD-9),[3] which had been in use since 1979. ICD-10 represents the largest change in the ICD in over 50 years. The major changes have been described in detail in *Health Statistics Quarterly* 08[4] and 13[5] and also on the National Statistics website (www.statistics.gov.uk/icd10mortality).

Cause of death is assigned by an automated coding system with the exception of deaths due to external causes (ICD-10 codes V01–Y89). These are coded clerically using information from coroners' certificates (including inquest verdicts) to produce consistent figures on suicides, homicides and other deaths not from natural causes.

Comparability ratios

In order to help quantify the changes arising as a result of the change to ICD-10, ONS carried out a bridge coding study.[6] All deaths registered in 1999 were independently coded to both ICD-9 and ICD-10 and the causes in each revision were compared using internationally agreed groups of equivalent codes. Comparability ratios were produced for selected causes of death, including each ICD cause chapter, to indicate the net effect of the change in classification on a particular cause. The ratios were calculated by dividing the number of deaths coded to a particular cause in ICD-10 by the number coded to that cause in ICD-9. These ratios can then be applied to England and Wales data (from 1993 onwards) coded to ICD-9 in order to examine trends over time. For a particular cause, the number of deaths coded to the equivalent cause in ICD-9 is multiplied by the comparability ratio in order to give an 'expected' number of deaths that would have been coded to this cause in ICD-10. The ratios can also be applied directly to rates, to give an 'expected' rate.

Population estimates

In this Report, the population figures used to calculate mortality rates for 2006 are the 2005-based population projections for 2006. These are available on the Government Actuary's Department website (www.gad.gov.uk). The population figures used to calculate mortality rates for 2005 and earlier years are ONS mid-year population estimates.

The population estimates used were the most up-to-date at the time of publication of this Report. Population estimates for mid-2005 were published on 24 August 2006. Revised population estimates for mid-2004 were published on 20 December 2005. Estimates for 2003 and revised data for 2001 to 2002 were published on 9 September 2004. Revised estimates for 1992 to 2000 were published on 7 October 2004. All these estimates incorporate the findings of the local authority population studies, the results of which were published in July 2004. Further information on population estimates can be found on the National Statistics website (www.statistics.gov.uk/popest).

Leading Causes of Death in England and Wales

The cause of death groups used here are based on a list developed by the World Health Organization (WHO) which categorises causes using ICD-10 groups specifically designed for determining the leading causes of death. The list has been modified for use in England and Wales. The use of this ranking list was agreed after a period of public consultation which ended on 13 March 2006. Further information on the rationale behind ranking leading causes of death and how causes are grouped can be found in an article published on this subject in *Health Statistics Quarterly* 28.[7]

References

1. Office for National Statistics (2006) *Mortality Statistics: cause 2005*, series DH2 no **32**, section 2.2.
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3. World Health Organisation (1977–1978) *International Statistical Classification of Diseases, Injuries and Causes of Death*, Ninth Revision. Volumes 1 and 2, World Health Organisation: Geneva.
4. Rooney C and Smith S (2000) Implementation of ICD-10 for mortality in England and Wales from January 2000. *Health Statistics Quarterly* **08**, 40–50.
5. Rooney C, Griffiths C and Cook L (2002) The implementation of ICD-10 for cause of death coding – some preliminary results from the bridge coding study. *Health Statistics Quarterly* **13**, 31–41.
6. Office for National Statistics (2002) Report: Results of the ICD-10 bridge coding study, England and Wales, 1999. *Health Statistics Quarterly* **14**, 75–83.
7. Griffiths C, Rooney C and Brock A. (2005) Leading causes of death in England and Wales – how should we group causes? *Health Statistics Quarterly* **28**, 6–17.