

THE BURDEN OF LUNG DISEASE



A Statistics
Report from the
British Thoracic
Society

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Foreword

The Burden of Lung Disease is an historic document. It brings together, for the first time in one publication, statistics which show the huge health and economic burden of respiratory illnesses in the UK.

The report, which includes data on morbidity, mortality and treatment, dramatically portrays how respiratory disease now kills more people than coronary heart disease – that is one in four people in the UK. It also shows that it is the most common long-term illness among children, the most common illness responsible for an emergency admission to hospital, and costs the NHS more than any other disease area.

The diversity of respiratory disease is often not appreciated by those who do not work in the speciality. In the UK, and many countries around the world, chest physicians treat everything from tuberculosis and the pulmonary complications of HIV to asthma, chronic obstructive pulmonary disease (COPD), cystic fibrosis, lung cancer and many others.

Lung problems are not just smoking-related – there is a wide variety of other causes ranging from genetic influences to nutritional, environmental and poverty-related factors. It is not a simple picture and different diseases require different approaches and treatments.

We hope that this publication will provide a vital resource for anyone with an interest in the area – especially those, working at national or local levels, who are developing policies and services to help reduce the toll of respiratory disease in the UK.

The report shows how much more must be done at all levels – by the Government, the NHS, respiratory specialists and the community. It is imperative that we all work together to provide a better and uniform National Health Service for those with lung disease.

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Chairman
British Thoracic Society



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Summary

Mortality

- ▶ More people die from respiratory disease in the UK than from coronary heart disease or cancer
- ▶ The UK has one of the highest death rates from respiratory disease in Europe – death rates are nearly twice the EU average and well above the European average
- ▶ In Europe, only four countries of the former Soviet Union (Kyrgyzstan, Kazakhstan, Turkmenistan and Uzbekistan) and Ireland have death rates from respiratory disease higher than the UK
- ▶ The relative burden of respiratory disease in the UK is increasing, as the burden of heart disease is decreasing
- ▶ **Respiratory disease kills one in four people in the UK**
- ▶ Lung cancer is the biggest cancer killer in the UK
- ▶ Lung cancer now kills more women in the UK than breast cancer
- ▶ The number of deaths from occupational lung disease is rising rapidly
- ▶ 44% of all deaths from respiratory disease are associated with social class inequalities
- ▶ Social inequality causes a higher proportion of deaths in respiratory disease than in any other disease

Summary (continued)

Morbidity

- ▶ The most commonly reported long-term illnesses in children are conditions of the respiratory system
- ▶ Lung cancer is the most common cancer in men and the third most common cancer in women
- ▶ Survival rates for lung cancer are very low – the one year survival rate is 20% and the five year survival rate is 5%
- ▶ Respiratory tuberculosis has risen dramatically during the 1990s – an overall increase of 22%

Treatment

- ▶ Respiratory disease is the most common illness responsible for an emergency admission to hospital
- ▶ Respiratory disease is the most common reason to visit the GP – almost a third of people will visit their GP at least once a year because of a respiratory condition
- ▶ Cases of chronic obstructive lung disease and pneumonia (including acute lower respiratory infections) take up more than 2,800,000 hospital bed days a year
- ▶ Drug prescription rates for respiratory disease are exceeded only by drug prescription rates for diseases of the cardiovascular and central nervous systems

Costs

- ▶ Respiratory disease costs the NHS more than any other disease area
- ▶ Respiratory disease cost the NHS £2,576 million in 2000

Introduction

Background

While respiratory disease causes a huge health and economic burden in the UK, the precise scale of this burden has remained uncertain until now. Although statistics on a number of individual diseases of the respiratory system are available, for example, from the Lung and Asthma Information Agency (LAIA), no data which combines the full range of respiratory diseases routinely exists. *The Burden of Lung Disease* has been compiled by researchers at the Department of Public Health at the University of Oxford to fill this gap, and quantify for the first time the burden of respiratory disease in the UK today.

Aims

The Burden of Lung Disease aims to:

- quantify the amount of death and disease caused by respiratory disease in the UK today;
- compare the burden of respiratory disease with that of the other major killers – coronary heart disease and cancer;
- highlight recent trends in respiratory disease;
- describe current levels of treatment for respiratory disease;
- identify health inequalities in respiratory disease; and
- provide information on the economic costs of respiratory disease.

The report is divided into four main sections: mortality, morbidity, treatment and economic costs.

Defining respiratory disease

The World Health Organisation's (WHO) International Classification of Diseases (ICD) includes a chapter of disease called 'Respiratory disease'¹. While this includes a broad range of respiratory diseases (including acute respiratory infections, pneumonia and influenza, bronchitis, emphysema, pleurisy and pneumoconiosis), it does not include many of the conditions which affect the respiratory system² and which are routinely treated and managed by respiratory health professionals in the National Health Service (NHS).

In this report respiratory disease is defined as in the WHO's respiratory disease chapter, plus tuberculosis, cancers of the respiratory system, pulmonary circulatory disease, congenital and perinatal respiratory disease and disease due to a foreign body in the respiratory system.

Not all sources of data used to compile *The Burden of Lung Disease* allow us to combine the comprehensive range of respiratory diseases listed above. Some data are restricted to the WHO chapter 'Respiratory disease', and will thus be underestimates of the full burden of respiratory disease. In particular, we have been unable to quantify the burden of sleep apnoea because it has only just been added into ICD codes. Because of these limitations in our data sources, every table clearly indicates which diseases were combined to produce the 'all respiratory disease' figure.

¹ Chapter VIII in ICD9 (9th revision) and Chapter J in ICD10 (10th revision).

² The respiratory system consists of the nasal cavities, pharynx, larynx, trachea, bronchus and lung.

Mortality

Total mortality

Diseases of the respiratory system are the cause of one in four deaths in the UK today. In 1999, respiratory disease caused over 153,000 deaths: around 74,000 deaths in men and 79,000 in women (Table 1.1 and Figs 1.1a, 1.1b and 1.1c).

More people die from respiratory disease in the UK than coronary heart disease, (which accounted for 132,000 deaths in 1999), or non-respiratory cancer (119,000). This excess of respiratory deaths is particularly marked in women, where 24% of all mortality is due to respiratory disease, compared to 18% from coronary heart disease (CHD) and 19% from non-respiratory cancer (Table 1.1 and Figs 1.1a, 1.1b and 1.1c).

Mortality by type of respiratory disease

Around two fifths (43%) of deaths from respiratory disease are from pneumonia, which is the major respiratory killer. Over 66,000 people died from pneumonia in the UK in 1999 (Table and Fig 1.2).

Cancers of the respiratory system are the second largest cause of respiratory death, accounting for just under one quarter (23%) of total respiratory mortality. These include cancers of the nasal cavities (105 deaths), larynx (874), pleura (641), and most importantly, the trachea, bronchus and lung¹ (34,235) (Table and Fig 1.2).

Chronic obstructive lung disease, mainly chronic obstructive pulmonary disease, is the third biggest cause of respiratory death, and accounts for one fifth (20%) of respiratory mortality (Table and Fig 1.2).

The remaining one eighth of respiratory deaths (18,500 in 1999) are caused by a wide range of respiratory diseases, including tuberculosis, cystic fibrosis, acute respiratory infections, congenital anomalies, pneumoconiosis and foreign bodies in the respiratory system (Table 1.2).

Mortality from lung cancer

Lung cancer is the biggest cancer killer in the UK, with around one in five of cancer deaths due to lung cancer. In 1999, 26% of cancer mortality in men and 17% of cancer mortality in women was due to lung cancer (Table 1.3).

The number of women in the UK dying from lung cancer (13,110) exceeds the number dying from breast cancer (13,019) (Table and Fig 1.3).

Trends in death rates in the UK

Death rates from respiratory disease have fallen by just under a third (31%) since 1968. Over the same period reported death rates from CHD fell by 53% and death rates from all cancers (excluding lung cancer) rose by 3% (Table 1.4).

However, the fall in respiratory disease since the late 1960s is due in part to changes to the rules on how pneumonia deaths are recorded in the UK. These coding changes came into force in 1984 and were associated with a sharp fall in the death rate for respiratory disease between 1983 and 1984.

¹ Cancer of the trachea, bronchus and lung is commonly known as lung cancer and will be referred to as such throughout this report.

Since the coding changes in 1984, while death rates from respiratory disease have remained at the same level, death rates from CHD have fallen by over one third (37%) and from cancer (excluding lung cancer) by 9% (Table and Figure 1.4). In women, death rates from respiratory disease have increased by 28% during this period.

The relative burden of respiratory disease in the UK is therefore increasing as the burden from coronary heart disease is decreasing.

Occupational lung disease

In 1998, there were just under 2,000 deaths in Great Britain due to occupational lung disease. Over three quarters of these deaths were from mesothelioma, a type of cancer of the lining of the lung (pleura), caused by the inhalation of asbestos dust (Table 1.5).

The number of deaths due to occupational lung disease has risen rapidly since the late 1980s. This is primarily due to a 75% increase in the number of mesothelioma deaths over this period: from 872 in 1988 to 1,527 in 1998 (Table and Fig 1.5).

Socio-economic differences

There are clear social class gradients in respiratory disease mortality. Social class gradients are steeper for respiratory disease mortality than for mortality in general, with deaths from chronic obstructive pulmonary disease and tuberculosis showing the most marked social class differentials. Men aged 20-64 employed in unskilled manual occupations are around 14 times more likely to die from chronic obstructive pulmonary disease, and 9 times more likely to die from tuberculosis, than men employed in professional roles (Table 1.6).

Social inequality causes a higher proportion of deaths in respiratory disease than in any other disease area.

It is estimated that in the early 1990s, 3,800 deaths and 29,000 working years were lost each year in men aged 20-64 years due to social class inequalities in death rates from respiratory disease. It is also estimated that 44% of all deaths from respiratory disease are associated with social class inequalities, and would have been prevented if all men had the same death rate for respiratory disease as men employed in professional and managerial classes (Table 1.7).

International comparisons

Data from the World Health Organization shows that death rates from diseases of the respiratory system in the UK are well above the European average and around twice the European Union (EU) average. The gap between the UK and other countries of the EU is particularly marked for women: females in Germany and France have death rates from respiratory disease around one third the level of those found in the UK (Table 1.8).

Only four countries of the former USSR (Kyrgyzstan, Kazakhstan, Turkmenistan and Uzbekistan) together with Ireland have death rates from respiratory disease higher than the UK (Table and Fig 1.8).

WHO trend data show that between 1970 and 1997 death rates from respiratory disease fell by a third (32%) in the UK compared to bigger falls in Europe (46%) and the EU (44%) (Table and Fig 1.9).

Death rates from lung cancer in women in the UK are twice the European and EU average and only exceeded by the rates found in Iceland and Denmark (Table 1.10).

Table 1.1 Deaths from different causes, sex and age, 1999, UK

		All ages	Under 35	35-44	45-54	55-64	65-74	75 & over
All causes	Men	300368	10504	6946	15849	33338	73736	159995
	Women	331694	5450	4372	10430	21045	52240	238157
	Total	632062	15954	11318	26279	54383	125976	398152
All diseases of the lung (010-012, 018, 135, 137, 161-163, 277.0 415-417, 460-519, 748, 768-770, 933, 934)	Men	74414	674	574	2329	7109	18512	45216
	Women	78754	494	492	1672	4458	12893	58745
	Total	153168	1168	1066	4001	11567	31405	103961
Pneumonia and influenza (480-487)	Men	26186	220	204	487	1197	3695	20383
	Women	40395	141	152	291	812	2925	36074
	Total	66581	361	356	778	2009	6620	56457
Cancers of the respiratory system (160-163, 212)	Men	22415	17	172	1214	3847	8072	9093
	Women	13464	10	152	819	2047	4571	5865
	Total	35879	27	324	2033	5894	12643	14958
Chronic obstructive lung disease (490-496)	Men	17627	73	54	333	1391	4933	10843
	Women	14528	62	68	290	1106	3968	9034
	Total	32155	135	122	623	2497	8901	19877
Pulmonary circulatory disease (415-417)	Men	2395	39	55	115	251	651	1284
	Women	3905	55	59	166	252	704	2669
	Total	6300	94	114	281	503	1355	3953
All diseases of the circulatory system (excluding pulmonary disease) (390-459 excluding 415-417)	Men	117335	511	1531	5268	12846	30642	66537
	Women	126868	318	609	1813	5128	18189	100811
	Total	244203	829	2140	7081	17974	48831	167348
Coronary heart disease (410-414)	Men	72374	123	952	3792	9385	20591	37531
	Women	59650	41	211	793	2863	10226	45516
	Total	132024	164	1163	4585	12248	30817	83047
Stroke (430-438)	Men	23824	130	250	677	1670	5001	16096
	Women	40691	122	240	606	1310	4532	33881
	Total	64515	252	490	1283	2980	9533	49977
All cancer (excluding cancers of the respiratory system) (140-239 excluding 160-163, 212)	Men	57437	875	1031	3795	8608	16905	26223
	Women	61485	834	1731	4691	8361	14574	31294
	Total	118922	1709	2762	8486	16969	31479	57517
Colo-rectal cancer (153-154)	Men	8582	34	92	499	1366	2748	3843
	Women	8133	29	108	360	851	1893	4892
	Total	16715	63	200	859	2217	4641	8735
Breast cancer (174, 175)	Men	66	0	0	8	5	13	40
	Women	13019	140	686	1742	2267	2798	5386
	Total	13085	140	686	1750	2272	2811	5426
Digestive diseases (520-579)	Men	11428	235	688	1492	1705	2452	4856
	Women	13564	156	399	769	1073	2159	9008
	Total	24992	391	1087	2261	2778	4611	13864
Injuries and poisoning (excluding foreign body in respiratory system) (800-999 excluding 933-934)	Men	12217	4288	2013	1610	1136	1037	2133
	Women	7056	1126	572	548	484	703	3623
	Total	19273	5414	2585	2158	1620	1740	5756
All other causes	Men	27537	3921	1109	1355	1934	4188	15030
	Women	43967	2522	569	937	1541	3722	34676
	Total	71504	6443	1678	2292	3475	7910	49706

ICD codes (9th revision) in parentheses.

Sources: Office for National Statistics (2000) Mortality statistics by cause Series DH2 no. 26. The Stationery Office: London;
General Register Office (2000) Annual Report 1999. General Register Office: Edinburgh;
General Register Office (2000) Annual Report 1999. Statistics and Research Agency: Northern Ireland.

Figure 1.1a Deaths by cause, 1999, UK

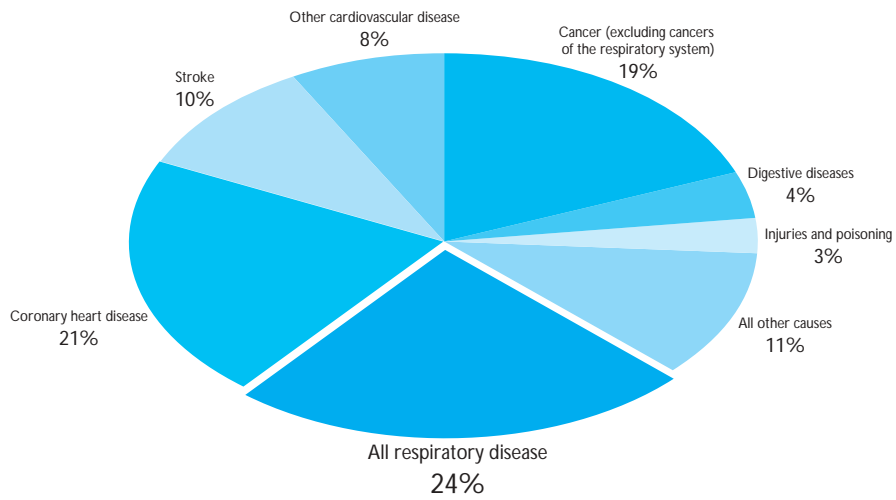


Figure 1.1b Deaths by cause, men, 1999, UK

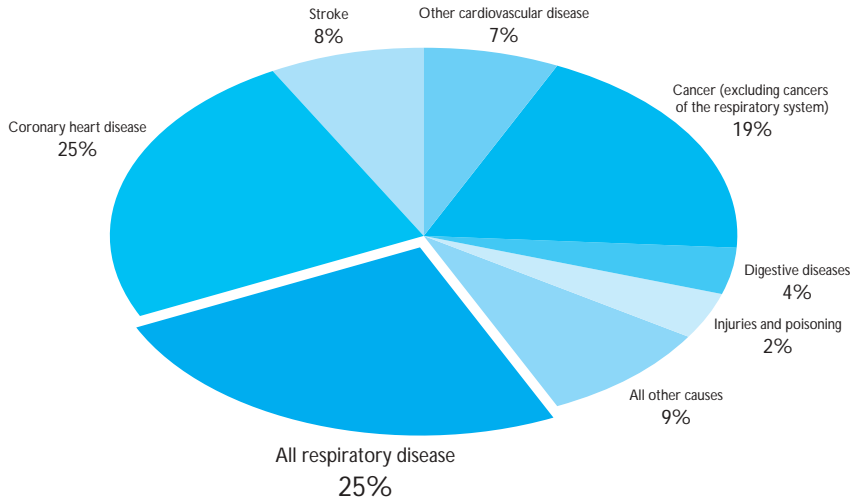


Figure 1.1c Deaths by cause, women, 1999, UK

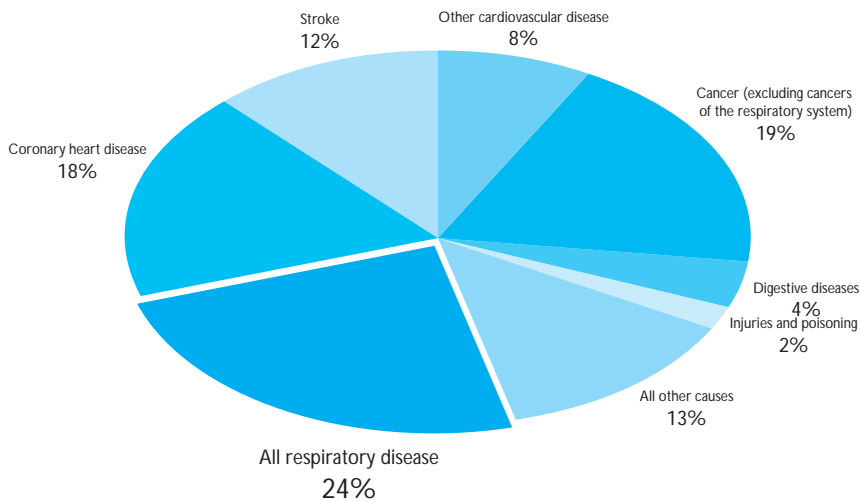


Table 1.2 Respiratory disease deaths by cause, sex and age, 1999, UK

		All ages	Under 35	35-44	45-54	55-64	65-74	75 & over
All respiratory disease (010-012, 018, 135, 137, 161-163, 277.0 415-417, 460-519, 748, 768-770, 933, 934)	Men	74414	674	574	2329	7109	18512	45216
	Women	78754	494	492	1672	4458	12893	58745
	Total	153168	1168	1066	4001	11567	31405	103961
Tuberculosis (010-012, 018, 137)	Men	297	8	13	17	32	84	143
	Women	153	8	5	4	9	40	87
	Total	450	16	18	21	41	124	230
Respiratory tuberculosis (010-012)	Men	242	8	12	15	32	64	111
	Women	106	5	4	3	6	26	62
	Total	348	13	16	18	38	90	17
Miliary tuberculosis (018)	Men	14	0	1	2	0	2	9
	Women	17	3	1	1	1	2	9
	Total	31	3	2	3	1	4	18
Late effects of tuberculosis (137)	Men	41	0	0	0	0	18	23
	Women	30	0	0	0	2	12	16
	Total	71	0	0	0	2	30	39
Cancers of the respiratory system (160-163, 212)	Men	22415	17	172	1214	3847	8072	9093
	Women	13464	10	152	819	2047	4571	5865
	Total	35879	27	324	2033	5894	12643	14958
Cancer of the nasal cavities (160)	Men	65	0	3	13	18	15	16
	Women	40	0	2	5	8	5	20
	Total	105	0	5	18	26	20	36
Cancer of the larynx (161)	Men	681	2	10	58	166	216	22
	Women	193	0	1	13	36	64	79
	Total	874	2	11	71	202	280	308
Cancer of the trachea, bronchus and lung (162)	Men	21125	12	158	1115	3524	7648	8668
	Women	13110	10	148	794	1980	4458	5720
	Total	34235	22	306	1909	5504	12106	14388
Cancer of the pleura (163)	Men	534	1	1	27	138	192	175
	Women	107	0	1	6	20	40	40
	Total	641	1	2	33	158	232	215
Benign tumours of the respiratory system (212)	Men	10	2	0	1	1	1	5
	Women	14	0	0	1	3	4	6
	Total	24	2	0	2	4	5	11
Pulmonary circulatory disease (415-417)	Men	2395	39	55	115	251	651	1284
	Women	3905	55	59	166	252	704	2669
	Total	6300	94	114	281	503	1355	3953
Acute pulmonary heart disease (415)	Men	2164	23	51	102	225	582	1181
	Women	3632	32	49	142	213	632	2564
	Total	5796	55	100	244	438	1214	3745
Chronic pulmonary heart disease (416)	Men	229	16	4	13	25	68	103
	Women	261	22	8	23	38	69	101
	Total	490	38	12	36	63	137	204
Other diseases of the pulmonary circulation (417)	Men	2	0	0	0	1	1	0
	Women	12	1	2	1	1	3	4
	Total	14	1	2	1	2	4	4
Acute respiratory infections (460-466)	Men	213	28	10	18	24	32	101
	Women	347	18	3	20	19	47	240
	Total	560	46	13	38	43	79	341
Pneumonia and influenza (480-487)	Men	26186	220	204	487	1197	3695	20383
	Women	40395	141	152	291	812	2925	36074
	Total	66581	361	356	778	2009	6620	56457
Pneumonia (480-486)	Men	25946	210	201	481	1183	3659	20212
	Women	39983	137	150	287	801	2894	35714
	Total	65929	347	351	768	1984	6553	55926
Influenza (487)	Men	240	10	3	6	14	36	171
	Women	412	4	2	4	11	31	360
	Total	652	14	5	10	25	67	531
Chronic obstructive lung disease (490-492, 494-496)	Men	17071	13	25	275	1304	4804	10650
	Women	13563	12	25	218	992	3757	8559
	Total	30634	25	50	493	2296	8561	19209
Asthma (493)	Men	556	60	29	58	87	129	193
	Women	965	50	43	72	114	211	475
	Total	1521	110	72	130	201	340	668
Pneumoconioses (500-508)	Men	819	7	8	22	48	183	551
	Women	396	10	6	11	10	44	315
	Total	1215	17	14	33	58	227	866

Congenital and perinatal respiratory disease (748, 768-770)	Men	114	112	0	0	1	0	1
	Women	67	64	1	0	0	2	0
	Total	181	176	1	0	1	2	1
Congenital anomalies of the respiratory system (748)	Male	25	23	0	0	1	0	1
	Female	18	16	0	0	0	2	0
	Total	43	39	0	0	1	2	1
Respiratory disorders specific to the perinatal period (768-770)	Male	89	89	0	0	0	0	0
	Female	49	48	1	0	0	0	0
	Total	138	137	1	0	0	0	0
Foreign body in the respiratory system (933-934)	Men	155	31	24	19	20	19	42
	Women	148	14	6	8	15	16	89
	Total	303	45	30	27	35	35	131
Foreign body in pharynx or larynx (933)	Men	139	28	19	18	19	18	37
	Women	137	10	6	8	14	14	85
	Total	276	38	25	26	33	32	122
Foreign body in trachea, bronchus or lung (934)	Men	16	3	5	1	1	1	5
	Women	11	4	0	0	1	2	4
	Total	27	7	5	1	2	3	9
Other respiratory disease (135, 277.0,470-478,510-519)	Men	4193	139	34	104	298	843	2775
	Women	5351	112	40	63	188	576	4372
	Total	9544	251	74	167	486	1419	7147
Sarcoidosis (135)	Men	53	3	3	20	11	6	10
	Women	62	1	3	4	15	30	9
	Total	115	4	6	24	26	36	19
Cystic fibrosis (277.0)	Men	75	58	4	2	3	5	3
	Women	79	62	6	2	2	5	2
	Total	154	120	10	4	5	10	5
Other conditions of the upper respiratory tract (470-478)	Men	28	2	1	5	7	4	9
	Women	27	2	1	1	3	4	16
	Total	55	4	2	6	10	8	25
Other respiratory disease (510-519)	Men	4037	76	26	77	277	828	2753
	Women	5183	47	30	56	168	537	4345
	Total	9220	123	56	133	445	1365	7098

ICD codes (9th revision) in parentheses.

Sources: Office for National Statistics (2000) Mortality statistics by cause Series DH2 no. 26. The Stationery Office: London;
General Register Office (2000) Annual Report 1999. General Register Office: Edinburgh;
General Register Office (2000) Annual Report 1999. Statistics and Research Agency: Northern Ireland.

Figure 1.2 Respiratory disease deaths by cause, 1999, UK

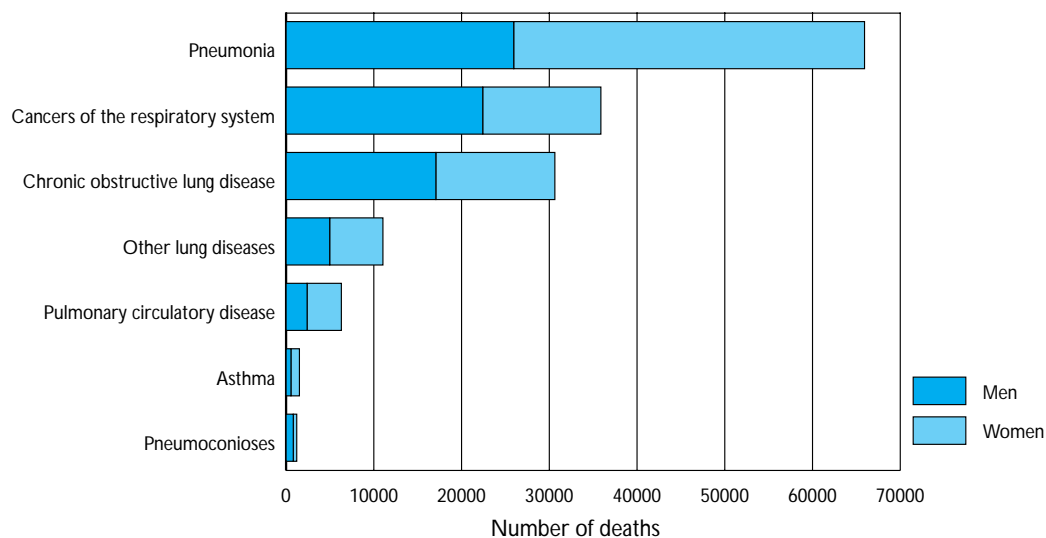


Table 1.3 Cancer deaths by type of cancer, sex and age, 1999, UK

		All ages	Under 35	35-44	45-54	55-64	65-74	75 and over
All cancer (140-239)	Men	79852	892	1203	5009	12455	24977	35316
	Women	74949	844	1883	5510	10408	19145	37159
	Total	154801	1736	3086	10519	22863	44122	72475
Oesophagus (150)	Men	4272	11	66	394	815	1390	1596
	Women	2705	4	15	118	263	668	1637
	Total	6977	15	81	512	1078	2058	3233
Stomach (151)	Men	4302	22	49	210	609	1407	2005
	Women	2674	16	30	91	241	612	1684
	Total	6976	38	79	301	850	2019	3689
Colon (153)	Men	5446	25	53	306	820	1741	2501
	Women	5786	17	69	227	609	1377	3487
	Total	11232	42	122	533	1429	3118	5988
Rectum (154)	Men	3136	9	39	193	546	1007	1342
	Women	2347	12	39	133	242	516	1405
	Total	5483	21	78	326	788	1523	2747
Liver (155)	Men	1319	16	28	114	231	413	517
	Women	952	7	17	54	121	243	510
	Total	2271	23	45	168	352	656	1027
Pancreas (157)	Men	3143	4	54	244	601	1038	1202
	Women	3529	4	35	172	432	923	1963
	Total	6672	8	89	416	1033	1961	3165
Lung (162)	Men	21125	12	158	1115	3524	7648	8668
	Women	13110	10	148	794	1980	4458	5720
	Total	34235	22	306	1909	5504	12106	14388
Pleura (163)	Men	534	1	1	27	138	192	175
	Women	107	0	1	6	20	40	40
	Total	641	1	2	33	158	232	215
Melanoma of skin (172)	Men	849	41	64	136	173	205	230
	Women	791	28	56	91	128	160	328
	Total	1640	69	120	227	301	365	558
Breast (174)	Women	13019	140	686	1742	2267	2798	5386
	Total	13019	140	686	1742	2267	2798	5386
Uterus (179, 182)	Women	1395	1	12	65	224	371	722
	Total	1395	1	12	65	224	371	722
Cervix (180)	Women	1265	63	171	205	174	226	426
	Total	1265	63	171	205	174	226	426
Ovary (183)	Women	4476	28	101	481	942	1301	1623
	Total	4476	28	101	481	942	1301	1623
Prostate (185)	Men	9497	0	3	90	636	2344	6424
	Total	9497	0	3	90	636	2344	6424
Bladder (188)	Men	3195	4	14	74	331	939	1833
	Women	1658	3	11	32	119	369	868
	Total	4853	7	25	106	450	1308	2701
Kidney (189)	Men	1930	10	37	223	415	641	604
	Women	1190	8	26	69	165	343	579
	Total	3120	18	63	292	580	984	1183
Brain (191)	Men	1847	149	137	352	443	493	273
	Women	1350	110	88	173	275	383	321
	Total	3197	259	225	525	718	876	594
Non-Hodgkin's lymphoma (200,202)	Men	2383	77	95	240	454	662	850
	Women	2214	44	54	154	337	561	1064
	Total	4597	121	149	394	791	1223	1914
Leukaemia (204-208)	Men	2183	194	79	140	282	605	883
	Women	1914	143	71	125	222	417	936
	Total	4097	337	150	265	504	1022	1819

ICD codes (9th revision) in parentheses.

Sources: Office for National Statistics (2000) Mortality statistics by cause. Series DH2 no26. The Stationery Office: London; General Register Office (2000) Annual Report 1999. General Register Office: Edinburgh; General Register Office (2000) Annual Report 1999. Statistics and Research Agency: Northern Ireland.

Figure 1.3 Proportion of cancer deaths, by type of cancer and sex, 1999, UK

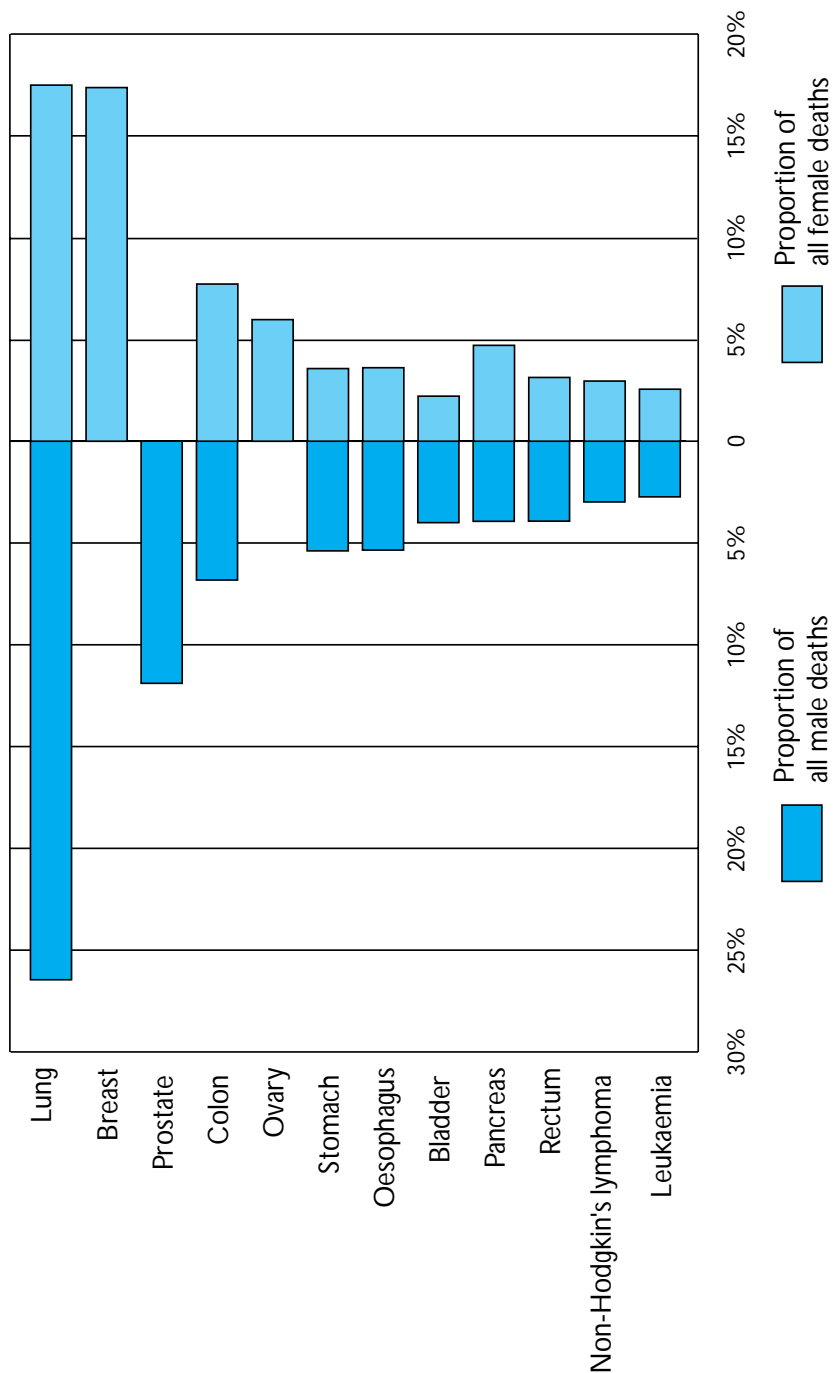


Table 1.4 Age-standardised death rates per 100,000 population from all respiratory disease, CHD and cancer (excluding lung cancer), 1968-98, UK

MEAN (1968-1998)	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98
All respiratory disease (010-012, 161-162, 460-519)	342	351	345	312	336	330	324	320	343	316	318	320	309	296	300	294	240	251	242	220	222	227	211	210	200	235	215	223	213	211	205
Coronary heart disease (410-414)	402	403	400	399	417	412	409	409	405	415	401	391	379	373	374	368	372	360	345	333	322	311	308	296	294	269	263	250	235	228	
Cancer (excluding lung cancer) (140-239 excluding 161-162)	170	171	171	168	170	169	170	169	172	170	171	179	179	177	178	180	189	189	187	189	191	192	192	193	195	191	189	188	185	180	181
WOMEN (1968-1998)	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98
All respiratory disease (010-012, 161-162, 460-519)	137	128	136	109	127	128	123	123	157	128	133	131	128	125	132	128	94	102	100	93	97	106	97	98	95	125	113	122	120	122	120
Coronary heart disease (410-414)	185	182	179	178	187	187	186	183	187	181	184	174	169	168	165	166	166	170	163	159	156	153	147	146	141	139	128	124	118	111	109
Cancer (excluding lung cancer) (140-239 excluding 161-162)	141	143	143	142	142	142	143	143	145	143	143	160	159	158	158	163	163	162	161	161	162	159	157	156	152	150	148	145	143	140	140
ALL (1968-1998)	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98
All respiratory disease (010-012, 161-162, 460-519)	239	239	240	211	232	229	224	222	250	222	226	226	218	211	216	211	167	176	171	157	160	166	162	155	152	162	174	169	171	168	166
Coronary heart disease (410-414)	294	293	289	288	302	299	299	296	298	293	300	287	280	273	269	270	267	271	262	252	245	237	229	227	218	217	199	193	184	173	168
Cancer (excluding lung cancer) (140-239 excluding 161-162)	156	157	157	155	156	156	156	158	156	157	170	169	168	168	168	169	176	176	174	175	176	177	175	174	174	173	171	168	167	164	160

ICD codes (9th Revision), age-standardised using the European Standard Population.

All respiratory disease includes respiratory tuberculosis, cancers of the larynx, tracheas, bronchus and lung, and the whole of ICD Chapter VIII Diseases of the Respiratory system. The structure of the World Health Organization Mortality database means that sarcooidosis, cancer of the pleura, cystic fibrosis, pulmonary circulatory disease, respiratory disorders specific to the perinatal period and mortality due to a foreign body in the respiratory tract, are not included.

Source: World Health Organization (2001) Mortality database. <http://www.who.ch>

Figure 1.4 Age-standardised death rates per 100,000 population from all respiratory disease, CHD and cancer (excluding lung cancer), 1968-98, UK

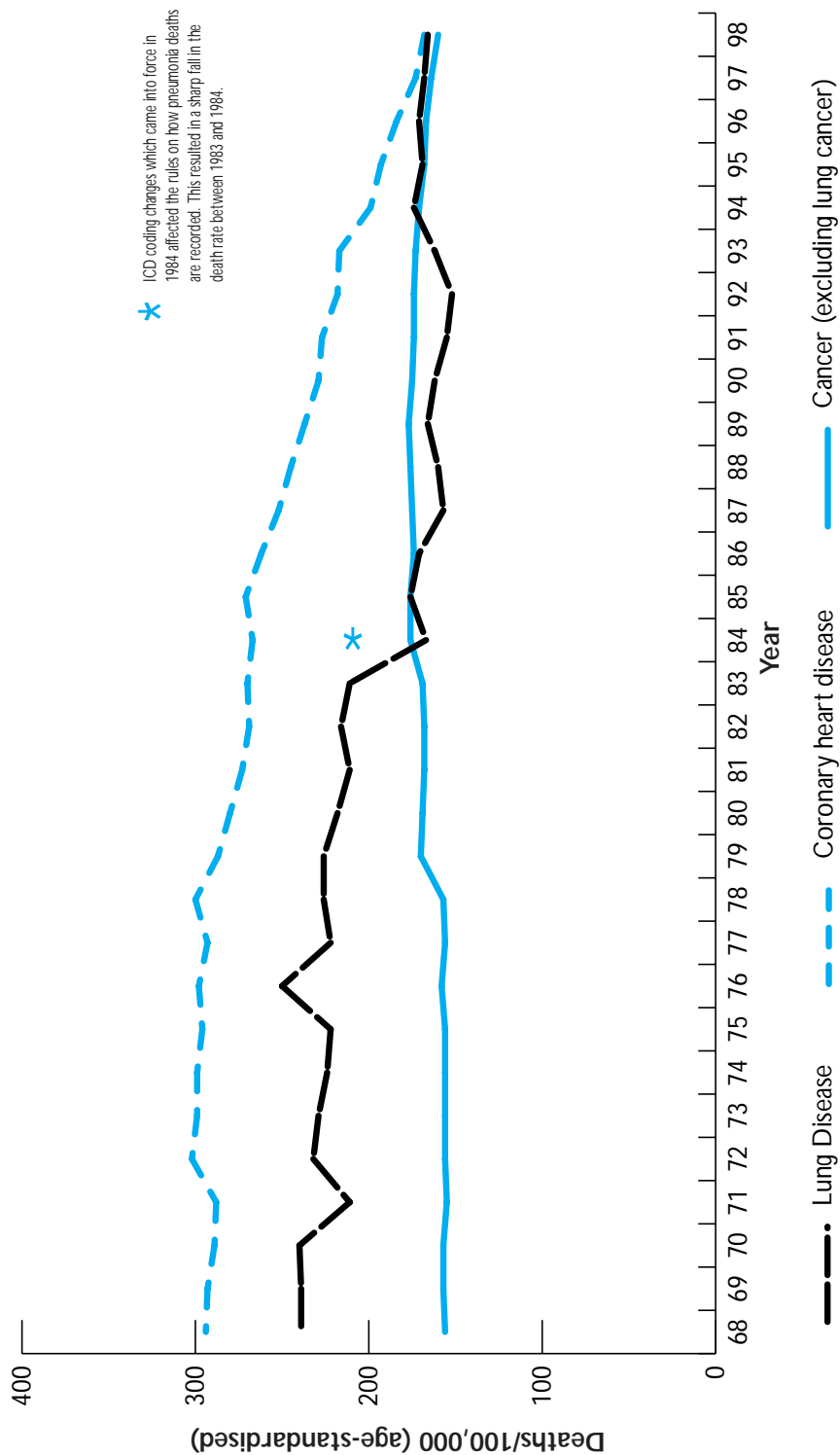


Table 1.5 Deaths due to occupational lung disease, 1988-98, Great Britain

Cause of death	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Asbestosis (without mesothelioma)	151	155	164	163	150	173	174	166	196	190	165
Mesothelioma	872	909	895	1022	1098	1153	1242	1317	1304	1341	1527
Pneumoconiosis (other than asbestosis)	281	318	328	287	274	281	276	287	223	230	268
Byssinosis	22	25	19	16	21	11	7	6	3	5	5
Farmers lung and other occupational allergic alveolitis	9	8	6	8	4	12	10	10	1	5	8
Total	1335	1415	1412	1496	1547	1630	1709	1786	1727	1771	1973

Data are derived from death certificates, with those mentioning both asbestosis and mesothelioma being counted as mesothelioma only.

Source: Office for National Statistics (2001) Annual Abstract of Statistics. The Stationery Office: London. Data from the Health and Safety Executive.

Figure 1.5 Deaths due to occupational lung disease, 1988-98, Great Britain

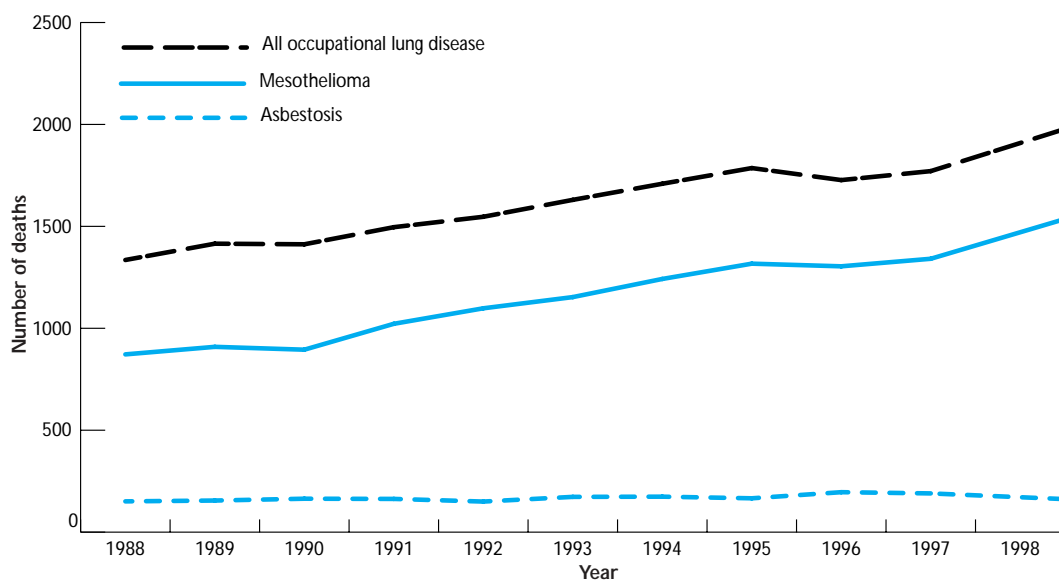


Table 1.6 Standard mortality ratios by selected diseases of the respiratory system and social class, men aged 20-64, 1991/93, England and Wales

Social class	All causes	Tuberculosis (010-018, 137)	Cancer of bronchus, trachea and lung (162)	Pneumonia (480-486)	Chronic obstructive pulmonary disease (496)	Bronchitis and emphysema (490-492)	Asthma (493)
I - Professional	66	32	45	58	21	44	51
II - Managerial and Technical	72	47	61	69	42	43	55
IIIN - Skilled (non-manual)	100	75	87	106	78	81	90
IIIM - Skilled (manual)	117	94	138	93	131	125	128
IV - Partly skilled	116	141	132	108	146	137	114
V - Unskilled	189	285	206	197	298	268	229
England and Wales	100	100	100	100	100	100	100
Ratio unskilled manual/professional	2.8	8.9	4.6	3.4	14.2	6.1	4.5
Number of deaths	175,847	252	16,082	2,916	3,095	1,331	910

ICD codes (9th revision) in parentheses.

Source: Office for National Statistics (Dover F and Whitehead M.) Health Inequalities Decennial supplement. The Stationery Office: London.

Table 1.7 Estimates of the numbers of deaths and working years lost per year associated with social class inequalities in mortality, selected causes, men aged 20-64, 1991/93, England and Wales

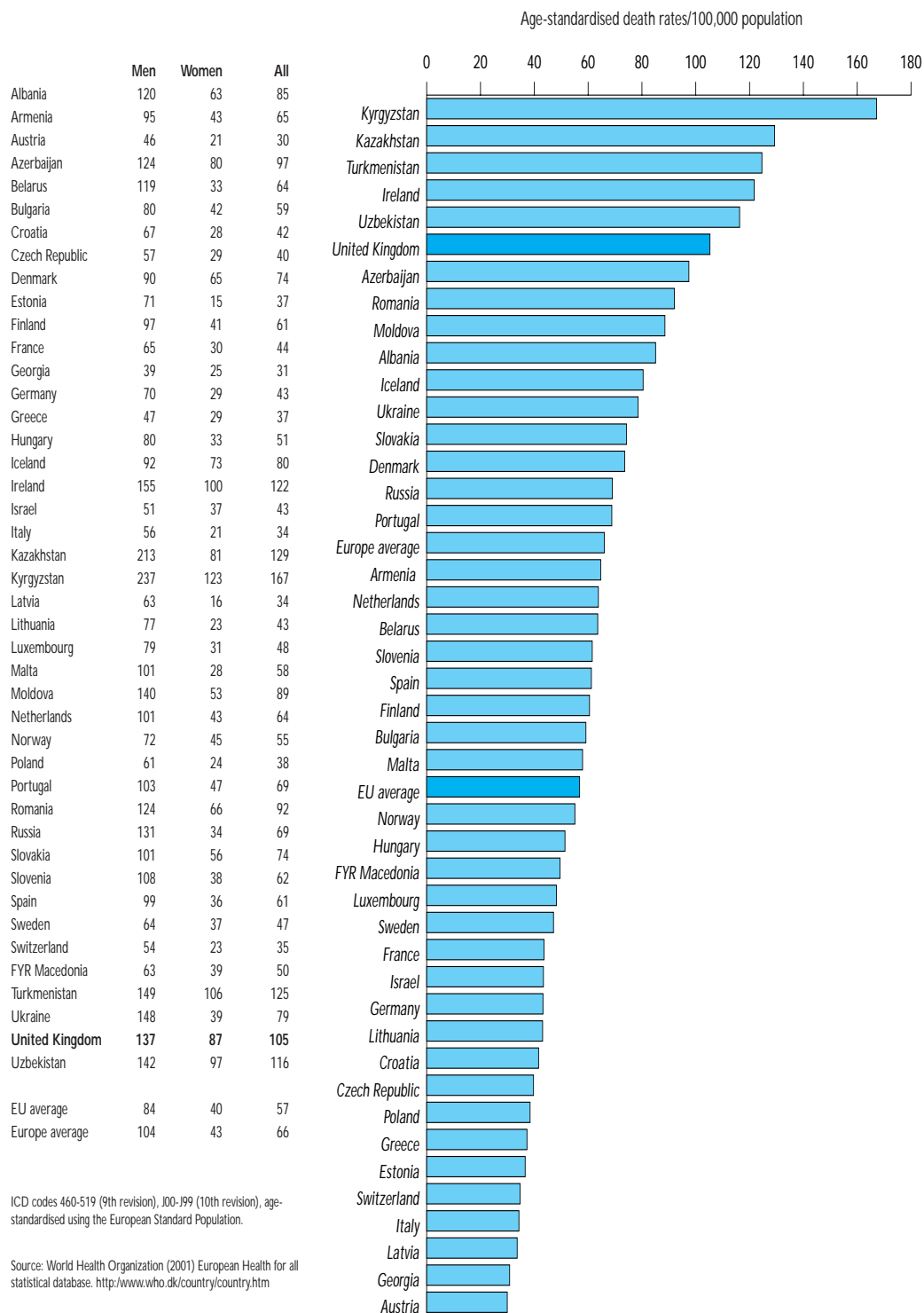
Cause of death	Numbers of deaths	Working years lost	Proportion of deaths associated with social inequalities
Respiratory disease (162, 460-519)	3,800	29,000	44%
Accidents (E800-949)	1,500	41,000	43%
Suicides (E950-959)	1,300	39,000	40%
Stroke (430-438)	900	9,000	32%
Coronary heart disease (410-414)	5,000	41,000	28%
Cancer - excluding lung cancer (140-161, 163-239)	1,700	21,000	13%
All diseases	17,200	240,000	29%

ICD codes (9th revision) in parentheses

Source: Acheson D (1998) Independent Inquiry into Inequalities in Health Report. The Stationery Office: London.

Table & Figure 1.8

Age-standardised death rates per 100,000 population from diseases of the respiratory system by sex, 1996, selected European countries



ICD codes 460-519 (9th revision), J00-J99 (10th revision), age-standardised using the European Standard Population.

Source: World Health Organization (2001) European Health for all statistical database. <http://www.who.dk/country/country.htm>

Table 1.9 Age-standardised death rates per 100,000 population from diseases of the respiratory system for UK, EU and Europe, by sex, 1970-1998

Year	MEN			WOMEN			ALL		
	EU average	Europe average	UK	EU average	Europe average	UK	EU average	Europe average	UK
1970	145	168	240	73	88	112	101	117	160
1971	131	156	203	64	79	92	90	107	133
1972	131	154	227	62	78	105	89	106	150
1973	136	160	219	65	82	104	93	111	146
1974	125	147	210	59	73	100	85	100	140
1975	132	159	208	61	79	99	88	109	139
1976	130	156	235	62	78	119	88	106	161
1977	118	148	204	54	72	101	79	100	138
1978	119	147	205	54	69	105	78	98	141
1979	110	142	204	50	66	105	72	94	141
1980	110	144	195	50	67	101	72	95	134
1981	109	135	186	49	63	98	72	89	129
1982	105	128	192	47	58	103	68	83	135
1983	109	130	184	49	59	99	71	85	130
1984	94	124	133	40	54	64	60	79	88
1985	101	129	145	43	57	71	64	82	97
1986	99	116	139	43	52	69	64	75	94
1987	87	108	121	37	47	62	55	69	83
1988	87	108	124	37	47	65	55	69	86
1989	89	105	132	39	45	73	57	67	95
1990	89	104	118	39	44	65	58	65	84
1991	85	98	118	37	41	66	55	62	84
1992	81	97	111	36	40	62	52	61	80
1993	89	109	150	42	45	92	59	69	113
1994	83	110	133	38	44	81	55	68	99
1995	86	109	144	41	44	90	58	68	109
1996	84	104	137	40	43	87	57	66	105
1997	83	100	138	41	42	90	57	64	108
1998	-	95	134	-	41	88	-	61	105

ICD codes 460-519 (9th revision), J00-J99 (10th revision), age-standardised using the European Standard Population.

Source: World Health Organisation (2001) European Health for All statistical database. <http://www.who.dk/country/country.htm>

Figure 1.9 Age-standardised death rates per 100,000 population from diseases of the respiratory system, UK, EU average and Europe average, 1970-1998

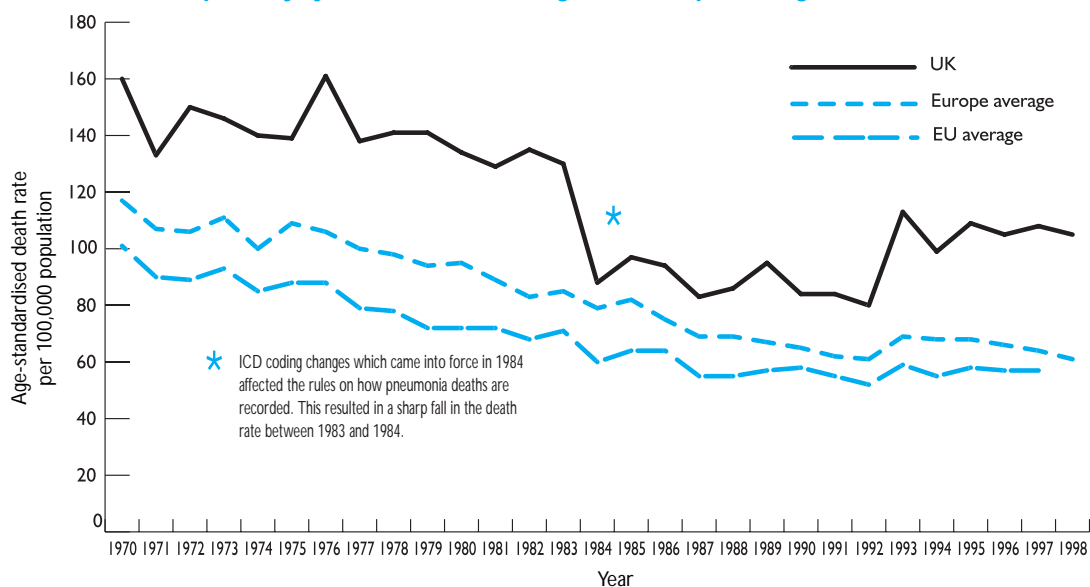


Table 1.10 Age-standardised death rates per 100,000 population from lung cancer by sex, 1996, selected European countries

Country	All	Men	Women
Albania	52	11	30
Armenia	50	6	26
Austria	61	15	34
Azerbaijan	32	5	17
Belarus	85	6	37
Bulgaria	59	10	32
Croatia	100	15	49
Czech Republic	95	17	50
Denmark	73	39	53
Estonia	90	11	41
Finland	61	11	30
France	68	9	35
Georgia	32	6	17
Germany	67	14	36
Greece	73	11	40
Hungary	123	29	68
Iceland	52	39	45
Ireland	62	25	42
Israel	39	12	24
Italy	76	12	40
Kazakhstan	87	12	42
Kyrgyzstan	35	6	18
Latvia	90	9	40
Lithuania	86	8	39
Luxembourg	83	14	43
Malta	77	10	39
Moldova	59	8	29
Netherlands	91	20	49
Norway	46	21	32
Poland	101	16	52
Portugal	44	6	23
Romania	62	10	34
Russia	93	9	41
Slovakia	90	10	43
Slovenia	87	13	43
Spain	70	6	34
Sweden	33	18	25
Switzerland	54	12	30
FYR Macedonia	57	10	32
Turkmenistan	21	6	13
Ukraine	76	8	35
United Kingdom	70	31	47
Uzbekistan	20	5	12
EU average	70	15	38
Europe average	74	13	38

^aICD codes 162 (9th revision), C33-C34 (10th revision), age-standardised using the European Standard Population.^a

Source: World Health Organization (2001) European Health for All statistical database. <http://www.who.dk/country/country.htm>

Morbidity

Self-reported long-term respiratory illness in adults

Respiratory disease is the third most commonly reported long-term illness in Great Britain. In 1998, over 7% of adults reported long-term respiratory illness (Table 2.1).

In women aged 16-44 years, respiratory disease is the most commonly reported long-term illness, with asthma more common in this age group than any other long-term condition including back pain (Table 2.1).

In England, rates of self-reported respiratory disease are slightly higher than those for Great Britain. In 1998, 9.7% men and 9.4% of women reported long-term respiratory illness (Table 2.2). Prevalence of self-reported respiratory disease increases with age, particularly in men (Table 2.1 and Table 2.2).

Prevalence of self-reported long-term respiratory disease in England has increased in recent years, up by 18% between 1991 and 1998 (Table 2.2).

Rates of self-reported respiratory morbidity vary with social class. Both men and women in manual occupations report higher rates of long-term respiratory disease than those in non-manual occupations. In 1998, manual workers report rates 46% higher than non-manual workers in men and 43% higher in women (Table 2.3).

Self-reported rates of respiratory disease are lower in the Indian and Chinese communities in England (Table 2.4). In Indian men and women, endocrine and metabolic conditions replace respiratory system problems as the third most common type of long-term illness¹.

Self-reported long-term respiratory illness in children

The most commonly reported long-term illnesses in children are conditions of the respiratory system, followed by conditions of the skin and ear complaints (Table and Fig 2.5). In England, around one in seven boys and one in eight girls aged 2-15 years report a long-term respiratory condition.

Visits to General Practitioners

The Royal College of General Practitioners' most recent survey of morbidity was carried out in 1991/92. It found that almost a third (31%) of the population of England and Wales consulted their GP for a respiratory condition at least once during the year. A higher proportion of people consulted for respiratory conditions than for diseases in any other single ICD chapter – over twice as many as for musculoskeletal (15%) and three times as many as for cardiovascular (9%) conditions (Table 2.6 and Fig 2.6).

The morbidity statistics collected by GPs show that prevalence of respiratory disease is highest in children: two thirds of children aged under 5 visit their GP with a respiratory condition at least once a year (Table 2.6).

Comparing the 1991/92 morbidity survey with the previous one carried out in 1981/82 shows there has been an increase in the prevalence rate for respiratory disorders by 14% (Table 2.7). This increase is evident in all age groups. Rates for conditions classified as 'serious'² have almost doubled between the two surveys. This is due to a rise in the prevalence of asthma by 114% in men and 165% in women (Table and Figure 2.7).

¹ See Joint Health Surveys Unit (2001) Health Survey for England. The Health of Minority Ethnic Groups 1999. The Stationery Office: London.

² Each ICD code was assigned a severity category by the Office of Population Census and Surveys. Conditions were classified as serious if they were deemed to be invariably or frequently serious or possibly life threatening, or requiring major surgery or intensive care, or with a high probability of serious complications or significant disability.

Certificated incapacity

Over 28 million days of certificated incapacity due to respiratory disease were claimed in Great Britain in 1999/2000 (Table 2.8).

Prevalence of respiratory symptoms and asthma

The Health Survey for England has collected recent data on the prevalence of respiratory symptoms and doctor-diagnosed asthma in adults and children in England.

Overall, around one third of adults (35% of men and 31% of women) and 28% of children aged 2-15 years (31% of boys and 26% of girls) have a history of wheezing. A fifth (21%) of adults and 18% of children have wheezed in the last twelve months. Just over one in ten adults (11% of men and 12% of women) and one fifth of children (23% of boys and 18% of girls) have doctor-diagnosed asthma (Tables 2.9 and 2.10).

The prevalence of doctor-diagnosed asthma is higher in men than women and decreases with age in both sexes (Table and Fig 2.9).

A number of studies in children suggest the prevalence of both wheeze and asthma have increased considerably during the past 25 years³. Morbidity statistics from General Practice support this, showing that the proportion of children under five who are consulting their GP for asthma more than doubled during the 1980s (Table 2.7).

In England the prevalence of wheeze in adults has increased from 16% in 1991⁴ to 21% in 1995/96, an increase of around one third.

Incidence of lung cancer

Lung cancer is the most common cancer in men and the third most common cancer in women in the UK. In 1996 there were 40,900 cases (25,700 in men and 15,200 in women) of lung cancer in the UK, representing 20% of all cancers in men and 12% of all cancers in women. Men in the UK currently have a 1 in 13 risk of getting lung cancer sometime during their life (Table 2.11).

The incidence of lung cancer varies by region and country in the UK, with the highest rates found in Scotland. Here rates are almost twice those found in the South and West of England (Table 2.12).

Survival rates for lung cancer are low. In both men and women the one-year survival rate is 20% and the five-year survival rate is 5%. The only common cancer with lower survival rates in the UK is cancer of the pancreas (Table and Fig 2.11).

Incidence of tuberculosis

In 2000, 5,025 cases of tuberculosis in England and Wales were notified to the Public Health Laboratory Service. The incidence of tuberculosis increased during the 1990s by 22% (Table and Fig 2.13). Much of this increase was concentrated in the London region⁵.

³ For more details on these and the burden of asthma in adults and children in the UK today, see the special supplement to the *Asthma Journal* published in September 2001. The *Asthma Journal* (2001) Vol.6. Issue 3. 'Out in the Open: A true picture of asthma in the United Kingdom today'.

⁴ Joint Health Surveys Unit (1993) *Health Survey for England 1991*. The Stationery Office: London.

⁵ See the Public Health Laboratory Service's website at <http://phls.co.uk/facts/TB>

Table 2.1 Prevalence of self-reported long-term illness by selected condition, sex and age, 1998, Great Britain

	All Ages %	16-44 %	45-64 %	65-74 %	75 & over %
MEN					
Musculoskeletal system (710-739)	15.4	9.4	19.7	22.6	26.0
Arthritis and rheumatism	6.1	1.6	8.1	14.2	14.5
Back problems	4.7	4.0	6.6	4.0	2.6
Other bone and joint problems	4.6	3.8	4.9	4.4	8.9
Heart and circulatory system (390-459)	11.3	1.9	15.5	28.1	31.0
Hypertension	3.0	0.6	4.8	6.3	5.9
Heart attack	3.2	0.3	4.0	8.9	11.1
Stroke	0.8	0.1	0.8	2.6	3.0
Other heart complaints	3.0	0.6	4.1	7.3	8.5
Respiratory system (460-519)	7.2	6.6	6.2	10.0	11.5
Asthma	4.2	4.8	3.3	4.0	4.3
Bronchitis & emphysema	1.3	0.2	1.5	3.9	3.5
Hay fever	0.6	0.9	0.4	0.2	0.2
Other respiratory complaints	1.1	0.7	0.9	1.8	3.5
Endocrine and metabolic system (240-279)	3.9	1.3	5.3	8.1	8.2
Digestive system (520-579)	3.4	2.0	4.6	5.2	5.9
Nervous system (320-359)	3.1	2.6	3.4	3.8	4.1
WOMEN					
Musculoskeletal system (710-739)	17.3	6.4	21.3	34.0	38.3
Arthritis and rheumatism	9.7	1.8	12.3	21.8	25.4
Back problems	3.9	3.0	5.5	4.8	2.9
Other bone and joint problems	3.7	1.6	3.5	7.4	10.1
Heart and circulatory system (390-459)	9.9	1.3	10.6	26.8	29.9
Hypertension	3.8	0.5	5.3	10.3	7.3
Heart attack	2.2	0.0	1.8	6.5	8.6
Stroke	0.8	0.1	0.5	1.5	4.1
Other heart complaints	2.1	0.5	2.1	5.3	6.3
Respiratory system (460-519)	7.6	7.0	7.8	8.3	8.4
Asthma	5.6	5.8	5.4	5.7	5.0
Bronchitis & emphysema	0.7	0.1	1.0	1.7	1.2
Hay fever	0.5	0.7	0.3	0.2	0.1
Other respiratory complaints	0.8	0.4	1.2	0.7	2.0
Endocrine and metabolic system (240-279)	5.0	1.8	6.5	11.4	8.6
Digestive system (520-579)	3.9	1.8	4.6	6.4	8.4
Nervous system (320-359)	3.5	3.0	4.2	3.3	4.2

ICD (9th Revision) codes in parentheses.

Source: Office for National Statistics (2000) Living in Britain. Results from the 1998 General Household Survey. The Stationery Office: London

Table 2.2 Prevalence of self-reported long-term respiratory illness by age and sex, 1991-98, England

		16-44 %	45-64 %	65 and over %	Total %
MEN					
	1991	8.9	5.2	10.6	8.2
	1995	9.1	8.1	13.1	9.6
	1996	9.1	7.8	12.0	9.3
	1998	9.2	8.6	12.7	9.7
WOMEN					
	1991	9.0	5.0	9.3	8.0
	1995	9.1	9.4	9.0	9.2
	1996	9.6	8.7	9.7	9.4
	1998	9.5	8.0	10.9	9.4

ICD (9th revision) Chapter VIII Respiratory disease (460-519).

Source: Joint Health Surveys Unit (2000) Health Survey for England 1998. The Stationery Office: London, and earlier editions.

Table 2.3 Prevalence of self-reported long-term respiratory disease by sex and manual or non-manual social class, 1998, Great Britain

Men	Manual	8.6
	Non-manual	5.9
	Ratio manual:non-manual	1.46
Women	Manual	9.0
	Non-manual	6.3
	Ratio manual:non-manual	1.43
All	Manual	8.8
	Non-manual	6.1
	Ratio manual:non-manual	1.44

ICD (9th revision) Chapter VIII Respiratory disease (460-519).

Source: Office for National Statistics (2000) Living in Britain. Results from the 1998 General Household Survey. The Stationery Office: London

Table 2.4 Prevalence of self-reported long-term respiratory disease by sex and ethnic group, 1999, England

	General population %	Black Caribbean %	Indian %	Pakistani %	Bangladeshi %	Chinese %	Irish %
Men	9.9	12.1	7.4	7.8	11.2	6.1	10.0
Base	3,558	546	625	620	532	301	537
Women	8.5	9.0	6.0	8.0	6.8	6.0	9.4
Base	4,239	748	657	643	563	361	708

ICD (9th revision) Chapter VIII Respiratory disease (460-519).

Age-standardised percentages. See source for observed values.

Adults aged 16 and above.

Source: Joint Health Surveys Unit (2001) Health Survey for England. The Health of Minority Ethnic Groups 1999. The Stationery Office: London.

Table 2.5 Prevalence of self-reported long-term illness by selected condition group by age and sex, children aged 2-15, 1995-97, England

Condition group (ICD Chapters)	Age group					Total 2-15 %
	2-3 %	4-6 %	7-9 %	10-12 %	13-15 %	
Boys						
Respiratory disease (460-519)	14.1	16.4	13.3	16.5	16.5	15.4
Skin complaints (680-709)	7.3	5.1	3.8	3.7	2.5	4.3
Ear complaints (380-389)	2.0	3.0	3.4	2.4	1.8	2.6
Musculoskeletal system (710-739)	0.8	1.0	1.5	1.4	4.5	1.8
Eye complaints (360-379)	0.3	1.2	1.3	1.1	1.3	1.1
Nervous system (320-359)	0.9	0.6	1.4	2.7	2.6	1.6
Digestive system (520-579)	1.3	1.4	0.7	0.6	0.9	1.0
Base	1,132	1,660	1,605	1,553	1,415	7,365
Girls						
Respiratory disease (460-519)	10.0	12.2	11.3	13.4	13.7	12.2
Skin complaints (680-709)	4.5	4.0	3.9	4.8	3.8	4.2
Ear complaints (380-389)	1.0	3.1	2.7	1.8	1.3	2.1
Musculoskeletal system (710-739)	0.8	0.7	0.7	2.0	3.6	1.5
Eye complaints (360-379)	0.7	1.5	1.9	1.1	0.8	1.3
Nervous system (320-359)	0.6	0.7	1.0	1.4	1.6	1.1
Digestive system (520-579)	0.9	0.7	0.6	1.2	1.0	0.9
Base	1,079	1,667	1,597	1,499	1,373	7,215

ICD (9th revision) codes in parentheses

Source: Joint Health Surveys Unit (1998) Health Survey for England. The Health of Young People 1995-1997. The Stationery Office: London.

Figure 2.5 Prevalence of self-reported long-term illness by selected condition group by age and sex, children aged 2-15, 1995-97, England

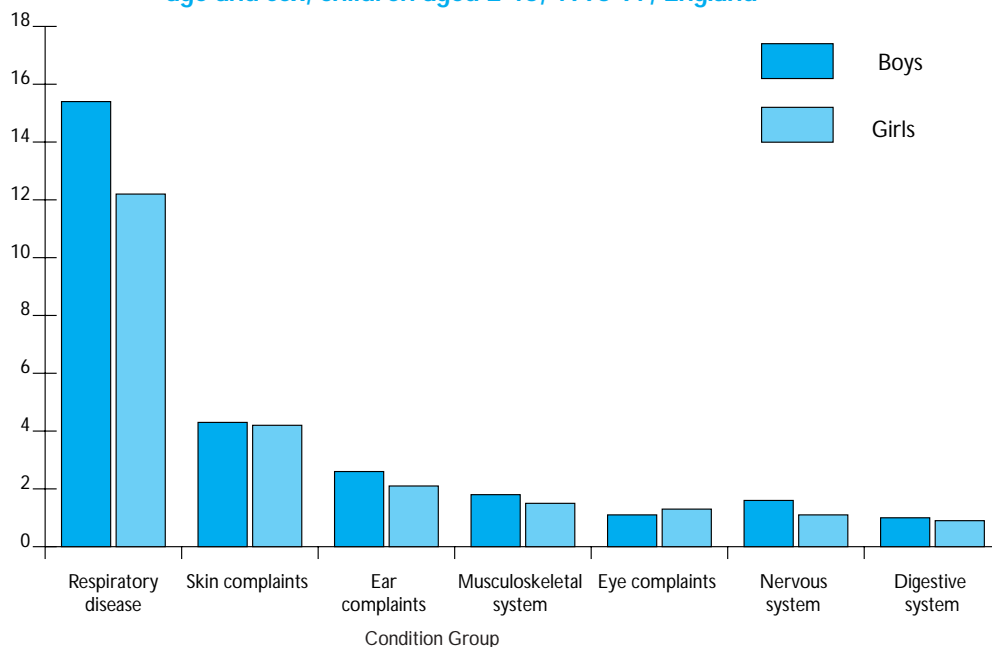


Table 2.6 Prevalence rates of GP treated disease per 100,000 population by International Classification of Diseases (ICD) chapter and age, 1991/92, England and Wales

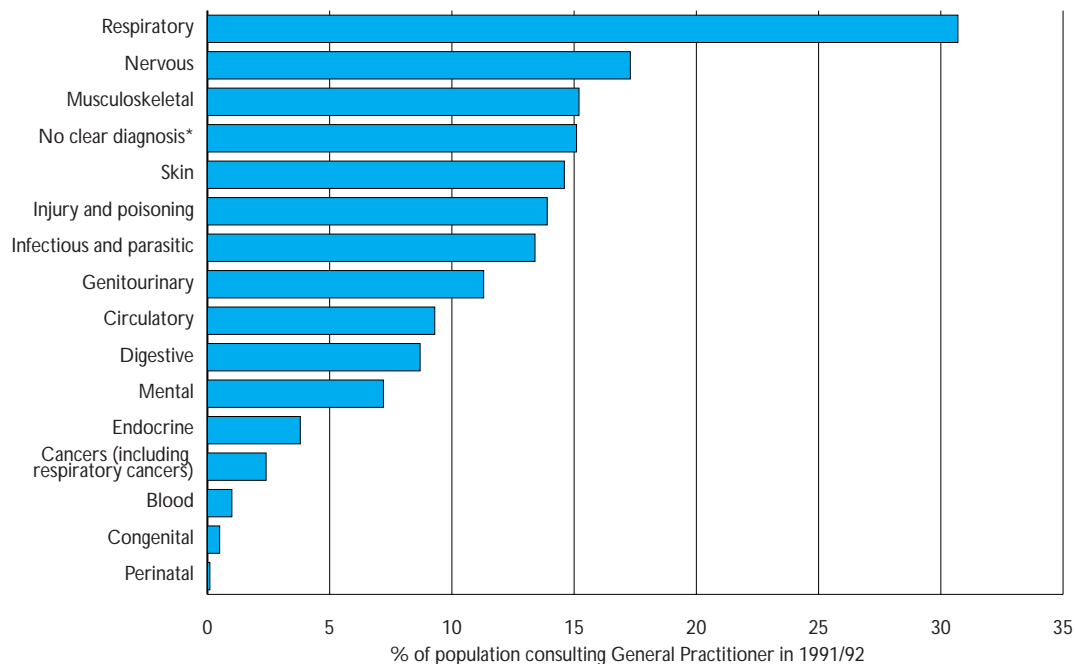
ICD Chapter	All ages	0-4	5-14	15-24	25-44	45-64	65-74	75 & over
I Infectious and parasitic	1,339	3,648	1946	1,573	1,298	789	776	819
II Cancers	239	54	86	131	218	317	452	548
III Endocrine	377	60	41	115	277	682	907	744
IV Blood	97	58	59	53	74	88	182	345
V Mental	728	228	185	584	824	946	919	1,228
VI Nervous	1,732	4,252	1,941	1,080	1,258	1,549	2,078	2,470
VII Circulatory	931	19	22	139	376	1,488	3,035	3,559
VIII Respiratory	3,070	6,471	3,715	3,134	2,546	2,405	2,817	3,038
IX Digestive	866	834	307	604	791	1,038	1,405	1,687
X Genitourinary	1,133	570	419	1,242	1,431	1,327	928	1,111
XII Skin	1,455	2,715	1354	1,732	1,288	1,177	1,387	1,504
XIII Musculoskeletal	1,521	161	462	837	1,393	2,354	2,702	2,195
XIV Congenital	53	217	60	34	34	42	46	46
XV Perinatal	13	173	0	2	2	0	0	2
XVI No clear diagnosis*	1,510	2,721	1386	1,234	1,195	1,403	1,855	2,480
XVII Injury and poisoning	1,390	1,293	1351	1,528	1,375	1,306	1,293	1,745

ICD (9th revision).

*ICD classification: 'signs', symptoms and ill-defined'.

Source: Royal College of General Practitioners, the Office of Population Censuses and Surveys, and the Department of Health (1995) Morbidity Statistics from General Practice, Fourth National Study, 1991-1992, HMSO: London.

Figure 2.6 Prevalence rates of GP treated disease per 100,000 population by International Classification of Diseases (ICD) chapter and age, 1991/92, England and Wales



* ICD classification: 'signs, symptoms and ill-defined'

Table 2.7 Prevalence rates per 100,000 population for selected GP treated diseases of the respiratory system by sex and age, 1981/82 and 1991/92, England and Wales

			All ages	0-4	5-14	15-24	25-44	45-64	65-74	75 & over
All diseases of the respiratory system (Chapter VIII 460-519)	All persons	1981 / 82	2,696	6,188	3,414	2,594	2,307	2,024	2,258	2,241
		1991 / 92	3,070	6,471	3,715	3,134	2,546	2,405	2,817	3,038
		Change	+14%	+5%	+9%	+21%	+10%	+19%	+25%	+36%
Asthma (493)	Men	1981 / 82	200	333	375	186	121	139	215	162
		1991 / 92	429	994	883	414	258	260	372	345
		Change	+114%	+198%	+135%	+123%	+113%	+87%	+73%	+113%
	Women	1981 / 82	159	183	205	147	121	181	187	129
		1991 / 92	422	722	650	470	334	342	412	295
		Change	+165%	+295%	+217%	+220%	+176%	+89%	+120%	+129%
Acute bronchitis (466, 490)	Men	1981 / 82	578	1,637	499	306	321	532	994	1,279
		1991 / 92	676	1,739	468	371	390	666	1,222	1,689
		Change	+17%	+6%	-6%	+21%	+21%	+25%	+23%	+32%
	Women	1981 / 82	584	1,308	401	326	432	635	885	907
		1991 / 92	834	1,557	426	500	642	939	1,206	1,448
		Change	+43%	+19%	+6%	+53%	+49%	+48%	+36%	+60%
Chronic bronchitis (413)	Men	1981 / 82	81	2	1	0	13	123	379	475
		1991 / 92	54	5	2	5	6	73	270	313
		Change	-33%	+150%	+100%	-	-54%	-41%	-29%	-34%
	Women	1981 / 82	40	-	0	1	14	67	136	123
		1991 / 92	37	4	3	6	9	57	130	119
		Change	-8%	-	-	+500%	-36%	-15%	-4%	-3%

ICD (9th revision) codes in parentheses.

Source: Royal College of General Practitioners, the Office of Population Censuses and Surveys, and the Department of Health 1995) Morbidity Statistics from General Practice, Fourth National Study, 1991-1992, HMSO: London.

Figure 2.7 Changes in prevalence rates in GP treated diseases of the respiratory system, men and women, between 1981/82 and 1991/92, England and Wales

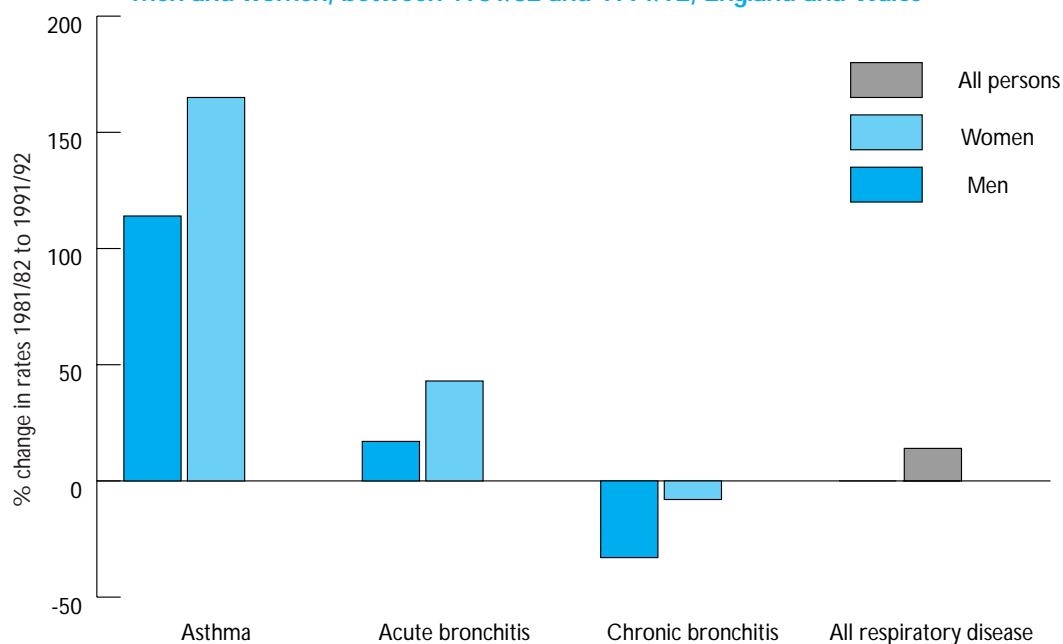


Table 2.8 Days of certified incapacity due to sickness and invalidity by cause and sex, 1999/2000, Great Britain

	Men	Women	Total (Thousands)
All causes	526,747	314,960	841,707
Mental and Behavioural Disorders (F00 - F99)	138,352	102,326	240,678
Diseases of the Musculoskeletal System and Connective Tissue (M00 - M99)	124,205	76,320	200,526
Diseases of the Circulatory System (I00 - I99)	63,623	12,660	76,283
Injuries and poisoning (S00 - U22)	37,900	15,565	53,465
Diseases of the Nervous System (G00 - G99)	22,444	18,295	40,739
Diseases of the Respiratory System (J00 - J99)	19,066	9,243	28,309
Diseases of the Digestive System (K00 - K93)	10,003	5,073	15,076
Endocrine, Nutritional and Metabolic Diseases (E00 - E90)	9,880	4,190	14,070
Neoplasms (C00 - D48)	5,643	4,413	10,056
Infectious and Parasitic Diseases (A00 - B99)	4,090	2,215	6,304
Diseases of the Skin and Subcutaneous System (L00 - L99)	3,456	1,771	5,227
All other causes	88,086	62,890	150,975

ICD codes (10th revision) in parentheses. Figures are based on a 1% sample of claims to incapacity in Great Britain.

Source: Department of Social Security, Analytical Services Division 1B, personal communication.

Table 2.9 Prevalence of respiratory symptoms and doctor-diagnosed asthma in children by age and sex, 1995/96, England

	All %	2-6 %	7-10 %	11-15 %
Boys				
Ever wheezed	31	34	28	31
Wheezed in last 12 months	20	23	14	20
Doctor-diagnosed asthma	23	23	23	23
Base	4400	1667	1287	1446
Girls				
Ever wheezed	26	27	24	25
Wheezed in last 12 months	17	18	15	18
Doctor-diagnosed asthma	18	18	17	19
Base	4253	1613	1274	1367
All children				
Ever wheezed	28	30	26	28
Wheezed in last 12 months	18	21	15	19
Doctor-diagnosed asthma	21	21	20	21
Base	8654	3280	2561	2813

Children aged 2-15 years.

Data from 1995 and 1996 Health Survey for England combined.

Source: Joint Health Surveys Unit (1998) Health Survey for England 1996. The Stationery Office: London.

Table 2.10 Prevalence of respiratory symptoms and doctor-diagnosed asthma in adults by age and sex, 1995/96, England

	All ages	16-24	25-34	35-44	45-54	55-64	65-74	75 and above
	%	%	%	%	%	%	%	%
Men								
Ever wheezed	35	34	33	33	35	37	39	38
Wheezed in last 12 months	21	20	19	18	19	23	28	27
Doctor-diagnosed asthma	11	19	12	11	8	10	9	9
Base	14821	1873	2759	2796	2508	1996	1816	1073
Women								
Ever wheezed	31	32	29	29	31	33	31	30
Wheezed in last 12 months	20	23	19	17	19	23	20	22
Doctor-diagnosed asthma	12	17	14	12	11	11	12	9
Base	17677	2201	3414	3105	2872	2207	2160	1718
All adults								
Ever wheezed	33	33	31	31	32	35	34	33
Wheezed in last 12 months	21	22	19	17	19	23	23	24
Doctor-diagnosed asthma	12	18	13	11	10	10	11	9
Base	32498	4074	6173	5901	5380	4203	3976	2791

Adults aged 16 and above.

Data from 1995 and 1996 Health Survey for England combined.

Source: Joint Health Surveys Unit (1998) Health Survey for England 1996. The Stationery Office: London.

Figure 2.10 Prevalence of doctor-diagnosed asthma by age and sex, 1995/96, England

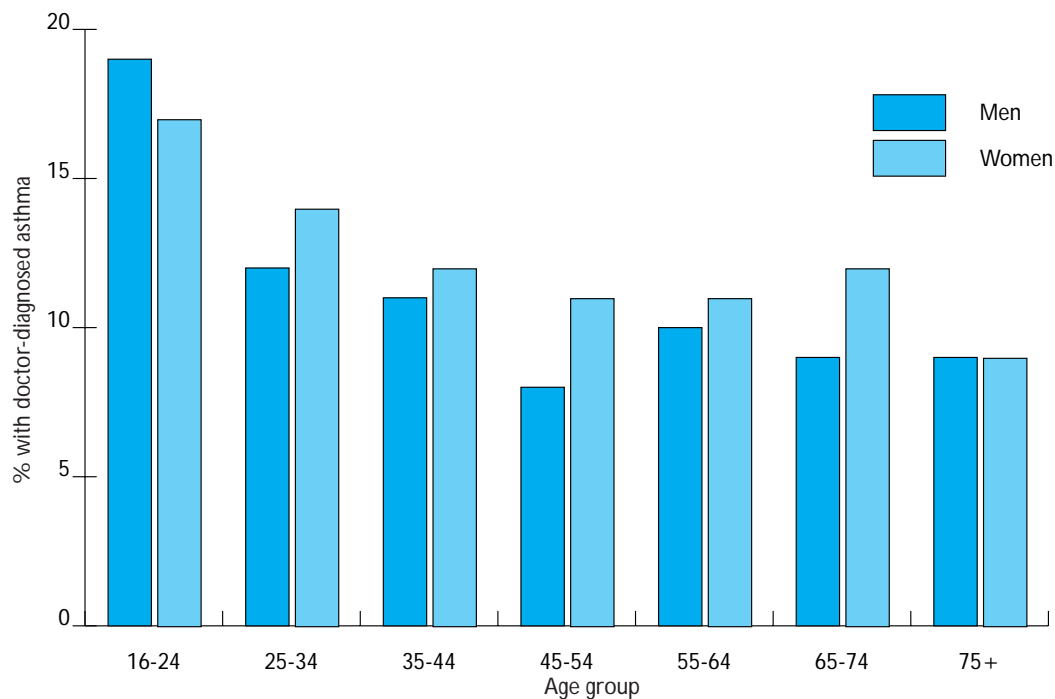


Table 2.11 Incidence and survival rates in the major cancers by sex, 1996, UK

	Rank	ICD9/ICD10 codes	Number of registrations	% of all cancers	Lifetime risk (odds)	One-year relative survival (%)	Five-year relative survival (%)
MEN							
	1	Lung 162/C33-34	25,700	20	1 in 13	20	5
	2	Prostate 185/C61	21,400	17	1 in 14	79	49
	3	Colorectal 153-154/C18-21	17,500	14	1 in 18	64*	42*
	4	Bladder 188/C67	9,710	8	1 in 30	82	66
	5	Stomach 151/C16	6,610	5	1 in 44	28	10
	6	Non-Hodgkin's lymphoma 200,202/C82-85,C91.4,C96	4,500	4	1 in 69	66	46
	7	Oesophagus 150/C15	4,100	3	1 in 75	25	6
	8	Kidney 189/C64-66, C68	3,450	3	1 in 89	58	40
	9	Leukaemia 204-208/C91-95 xC91.4	3,380	3	1 in 95	56	30
	10	Pancreas 157/C25	3,230	3	1 in 96	11	2
	11	Lip, mouth and pharynx 140-149/C00-14	2,940	2	1 in 126	74**	44**
	12	Melanoma of skin 172/C43	2,240	2	1 in 147	91	72
	13	Brain 191/C71	2,170	2	1 in 147	30	13
	14	Larynx 161/C32	1,870	1	1 in 182	83	64
	15	Testis 186/C62	1,770	1	1 in 259	97	94
	16	Multiple myeloma 203/C88,C90	1,750	1	1 in 177	59	20
		Other	13,900	11			
		All cancers	126,200	100	1 in 3		
WOMEN							
	1	Breast 174-175/C50	36,100	28	1 in 9	92	74
	2	Colorectal 153-154/C18-21	16,800	13	1 in 20	61*	40*
	3	Lung 162/C33-34	15,200	12	1 in 23	20	5
	4	Ovary 183/C56-57	6,570	5	1 in 48	58	29
	5	Uterus 182/C54	4,520	4	1 in 73	87	73
	6	Non-Hodgkin's lymphoma 200,202/C82-85,C91.4,C96	3,940	3	1 in 83	67	48
	7	Bladder 188/C67	3,890	3	1 in 79	71	58
	8	Stomach 151/C16	3,740	3	1 in 86	27	11
	9	Pancreas 157/C25	3,630	3	1 in 95	11	2
	10	Cervix 180/C53	3,320	3	1 in 116	83	64
	11	Melanoma of skin 172/C43	3,110	2	1 in 117	96	86
	12	Oesophagus 150/C15	2,960	2	1 in 95	25	7
	13	Leukaemia 204-208/C91-95 xC91.4	2,850	2	1 in 127	51	30
	14	Kidney 189/C64-66, C68	2,160	2	1 in 162	54	37
	15	Brain 191/C71	1,780	1	1 in 207	30	14
	16	Lip, mouth and pharynx 140-149/C00-14	1,620	1	1 in 215	73**	52**
	17	Multiple myeloma 203/C88,C90	1,540	1	1 in 204	56	18
		Other	15,000	12			
		All cancers	128,700	100	1 in 3		

Relative survival rates for patients diagnosed in 1991-93.

* Colon cancer ** Cancer of the oral cavity (patients diagnosed 1986-90)

Source: Office for National Statistics (2001) Quinn M, Babb P, Brock A, Kirby L and Jones J. Cancer trends in England and Wales 1950-1999. The Stationary Office: London.

Figure 2.11 Incidence and survival rates in the major cancers by sex, 1996, UK

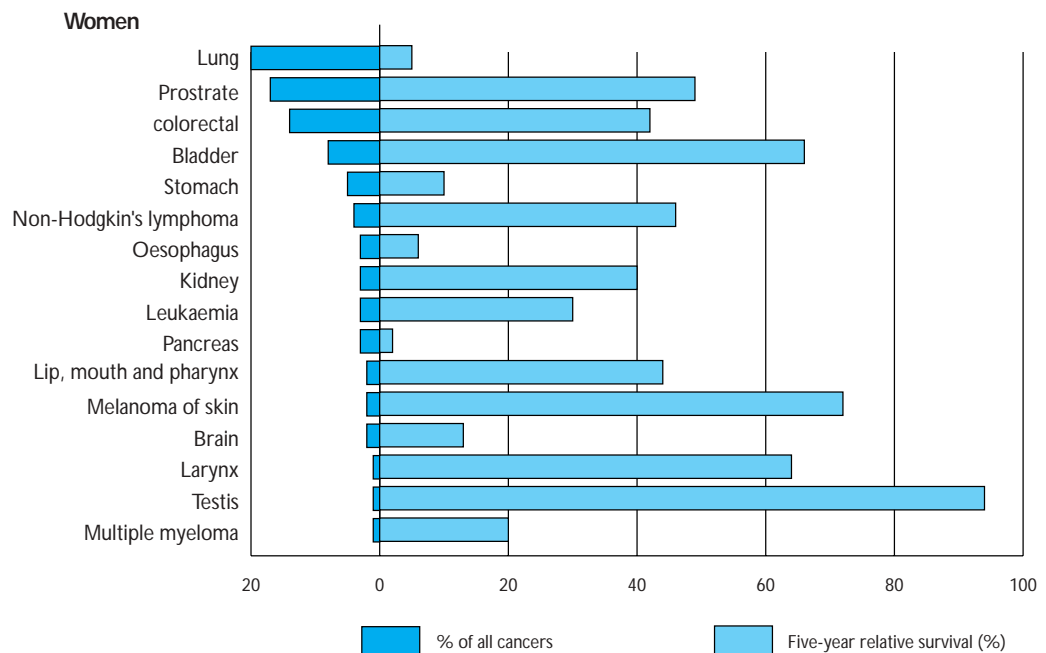
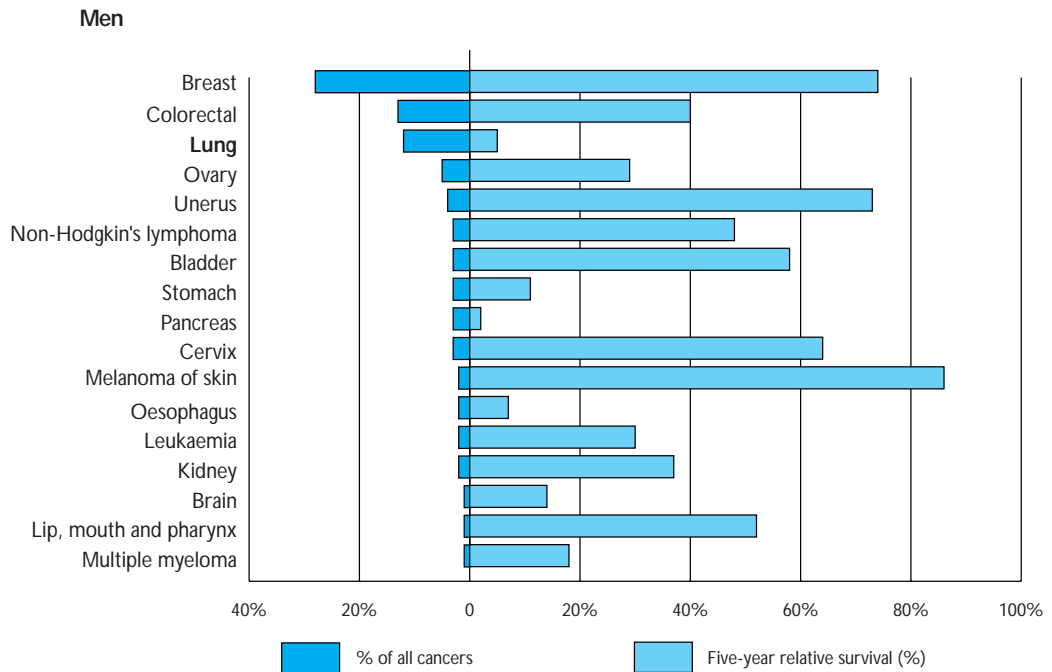


Table 2.12 Lung cancer incidence and survival by sex, region and country, latest available year, UK

	Number of cases	Incidence rate per 100,000	One-year relative survival (%)	Five-year relative survival (%)
MEN				
United Kingdom*	25,700	79.6	-	-
England**	19,600	71.6	21	6
Northern and Yorkshire	3,050	87.1	19	5
Trent	2,160	73.2	18	5
Anglia and Oxford	1,790	60.4	20	5
North Thames	2,440	69.5	28	7
South Thames	2,530	65.5	25	6
South and West	2,340	56.7	20	6
West Midlands	2,190	73.6	20	5
Northwest	3,100	87.5	19	6
Wales**	1,370	78.0	20	8
Scotland*	2,835	107.0	19	6
Northern Ireland**	563	74.7	-	-
WOMEN				
United Kingdom*	15,200	37.4		
England**	11,500	33.6	20	6
Northern and Yorkshire	2,030	46.1	18	5
Trent	1,080	29.6	17	5
Anglia and Oxford	1,010	28.0	19	6
North Thames	1,550	35.0	28	8
South Thames	1,510	29.5	24	6
South and West	1,280	24.4	19	6
West Midlands	1,090	29.4	19	6
Northwest	1,990	45.0	19	6
Wales**	780	35.2	23	9
Scotland*	2,023	56.1	19	6
Northern Ireland**	310	32.5	-	-

ICD9 162/ ICD10 C33-34

* 1996 incidence

** 1997 incidence

Incidence rates standardised using the European Standard Population.

Source: Office for National Statistics (2001) Quinn M, Babb P, Brock A, Kirby L and Jones J. Cancer trends in England and Wales 1950-1999. The Stationary Office: London.

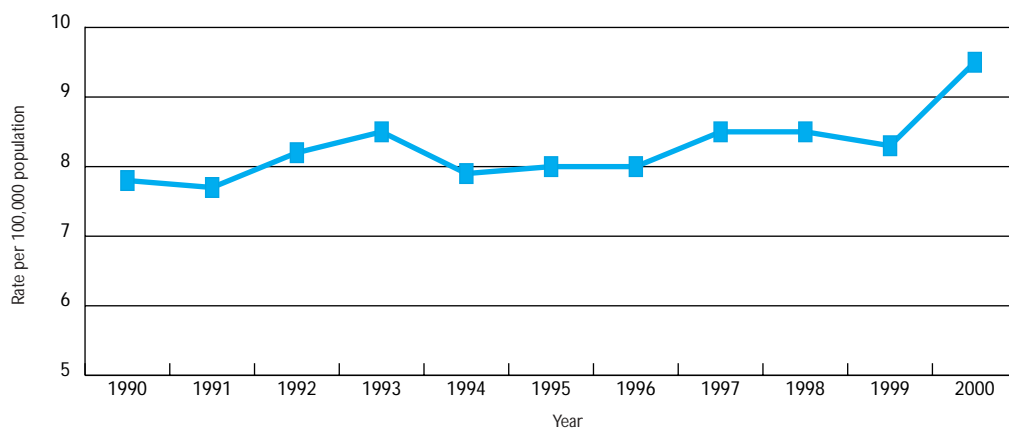
Table 2.13 Incidence of respiratory tuberculosis, 1990-2000, England and Wales

	Number of notifications	Rate per 100,000
1990	3,942	7.8
1991	3,950	7.7
1992	4,204	8.2
1993	4,394	8.5
1994	4,092	7.9
1995	4,123	8.0
1996	4,154	8.0
1997	4,434	8.5
1998	4,453	8.5
1999	4,354	8.3
2000	5,025	9.5

Data excludes chemoprophylaxis and Port Health Authorities.

Source: Public health laboratory service (2001) Statutory notifications to the Communicable Disease Surveillance Centre <http://www.phls.co.uk/facts/TB>

Figure 2.13 Incidence of respiratory tuberculosis per 100,000 population, 1990-2000, England and Wales



Treatment

Consultations in General Practice

In the UK there are over 38 million consultations in General Practice each year due to respiratory disease. Three quarters (76%) are consultations with a GP at their practice, around one fifth (22%) are with a GP at the patient's home, and the remaining 2% are with a nurse (either at home or at a practice) (Table 3.1).

Inpatient hospital treatment

Overall there were over 740,000 inpatient cases treated for respiratory disease in National Health Service hospitals in 1999/2000. These represent 9% of all inpatient cases in men and 5% in women (Table 3.2).

In children aged 0-14 years there were over 210,000 inpatient cases for respiratory disease – 12% of all National Health Service hospital admissions in this age group in 1999/2000 (Table 3.3).

Around two thirds (67%) of respiratory inpatients are emergency admissions and one tenth (9%) day cases (Table 3.2).

Hospital treatment by type of respiratory disease

Around two fifths (39%) of hospital inpatient bed days used in the treatment of respiratory disease are due to pneumonia and other acute lower respiratory tract infections, a quarter (23%) due to chronic obstructive lung disease and one in ten (9%) due to cancer of the bronchus and lung (Table & Fig 3.3).

In children aged 0-14, just under half (48%) of all hospital admissions for respiratory disease are due to acute infection. In the elderly aged 75 years and over, pneumonia accounts for one quarter (24%) of respiratory inpatient cases (Table 3.3).

Drug treatment

In England in 1999, around 49 million prescriptions were dispensed¹ for the prevention and treatment of respiratory disease. Just under half of these prescriptions were for bronchodilators used in the treatment of asthma and COPD (Table 3.4).

Rates of prescribing for respiratory disease are exceeded only by rates of prescribing for diseases of the cardiovascular and central nervous systems. In 1998, 12% of all prescriptions issued by GPs in England and Wales for women and 9% issued for men, were for the treatment of respiratory disease (Table 3.5).

The volume of prescribing for respiratory disease has increased in recent years. Between 1994 and 1998 the age-standardised prescription rate in people registered with a General Practitioner rose by 4% in men and 9% in women (Table 3.5).

Operations for respiratory disease

In 1999/2000, there were over 10,500 operations for respiratory disease. Of these 40% (4,288 operations) were for the treatment of lung cancer (Table 3.6).

¹ This figure does not include prescriptions dispensed in hospitals.

Table 3.1 Rates of consultations in General Practice related to respiratory disease, 1991/92, England and Wales, and estimates of total numbers of consultations, 2000, UK

	Age-group				Total number of consultations	As % of all consultations
	0-15	16-64	65-74	75+		
	Consultations per 100/population/year					
GP consultations at practice	91.85	44.7	52.55	34.79	32,377,962	17%
GP consultations at home	10.81	2.8	14.4	35.19	4,942,652	21%
Nurse consultations at practice	2.09	1.0	1.8	0.98	750,206	3%
Nurse consultations at home	0.07	0.0	0.04	0.13	20,894	5%
All consultations	104.82	48.5	68.79	71.09	38,091,714	16%

Source: Royal College of General Practitioners, the Office of Population Censuses and Surveys, and the Department of Health (1995) Morbidity Statistics from General Practice, Fourth National Study, 1991-1992, HMSO: London.

Table 3.2 Inpatient cases by main diagnosis and sex, National Health Service hospitals, 1999/2000, England

	Total	Men	Women	Emergency admissions	Day cases	Bed Days
All diagnoses	11,149,538	5,262,807	5,886,731	3,836,769	3,579,764	49,419,319
All diseases of the respiratory system (A15-16, A19, A31, A36-37, A40, B90, C33-34, C38, C45, D02, D14, D86, E84, I26-28, J00-J99, P22-25, Q31-34, T17)	742,541	464,281	278,260	495,165	68,979	4,530,163
Coronary heart disease (I20-25)	288,936	234,403	54,533	189,160	41,961	1,649,313
Other cardiovascular disease (I00-I99 excluding I20-28)	540,672	339,482	201,190	302,886	100,818	5,146,975
Cancer (excluding cancers of the respiratory system) (C00-D48 excluding C33, C34, C38, C45, D02, and D14)	1,197,708	594,542	603,166	135,976	733,801	3,813,899
All diseases of the nervous system (G00-G99)	203,437	107,609	95,828	87,517	56,980	1,743,384
All diseases of the digestive system (K00-K93)	1,153,004	646,273	506,731	345,973	602,774	3,194,082
All diseases of the genitourinary system (N00-N99)	757,508	293,851	463,657	174,214	355,927	1,993,492
Complications of pregnancy and childbirth (O00-O99)	1,162,470	0	1,162,470	141,970	100,554	2,035,320
Injury and poisoning (S00-T98 excluding T17)	693,537	402,484	291,053	584,457	31,869	4,229,207
All other diagnoses	4,409,725	2,179,882	2,229,843	1,379,451	1,486,101	21,083,483

ICD (10th revision) in parentheses: ordinary admissions and day cases combined.

Source: Department of Health (2001) Hospital Episode Statistics 1999/2000. <http://www.doh.gov.uk/hes/index.html>

Table 3.3 Inpatient days for cases of respiratory disease, by main diagnosis, sex and age, National Health Service hospitals, 1999/2000, England

	Admissions						Days in hospital	
	Men	Women	0-14	15-59	60-74	75 and over	Total	Total days
Tuberculosis (A15-16, A19, A31, B90)	2,154	558	187	2,184	777	509	2,712	39,664
Cancer of the bronchus and lung (C34)	49206	19093	49	18931	39632	20392	68299	393,077
Other respiratory cancer (C33, C38, C45, D02, D14)	6145	1842	497	3530	3227	1425	7987	32,740
Pulmonary circulatory disease (I26-28)	9697	7425	121	7861	7612	7276	17122	174,378
Acute upper respiratory infection (J00-06)	47438	34720	66379	14344	1696	1895	82158	112,798
Acute lower respiratory infection (J20-22)	61718	42610	33736	21277	22598	49307	104328	842,037
Influenza (J10-11)	1328	1124	411	1096	536	840	2452	15,130
Pneumonia (J12-18)	53897	25227	11082	18165	22165	53868	79124	923,793
Chronic diseases of the upper respiratory tract (J30-39)	70802	63401	44634	75479	11596	3338	134203	153,346
Chronic obstructive lung disease (J40-44, J47)	76297	31055	581	19578	64072	60793	107352	1,051,567
Asthma (J45-46)	35099	31460	30098	33681	8315	4578	66559	220,548
Pneumoconiosis (J60-70)	3143	302	204	1144	1299	2416	3445	51,945
Congenital and perinatal respiratory disease (P22-25, Q31-34)	6907	1601	11321	106	52	22	8508	66,049
Foreign body in respiratory system (T17)	2100	2019	2642	852	404	373	4119	3,789
Other respiratory disease (A36-37, A40, D86, E84, J80-99)	38350	15823	8163	23533	18479	16807	54173	449,303
All respiratory disease	464,281	278,260	210,105	241,761	202,460	223,839	742,541	4,530,164

ICD (10th revision) in parentheses; ordinary admissions and day cases combined.

Source: Department of Health (2001) Hospital Episode Statistics 1999/2000. <http://www.doh.gov.uk/hes/index.html>

Figure 3.3 Inpatient days for cases of respiratory disease, by main diagnosis, National Health Service hospitals, 1999/2000, England

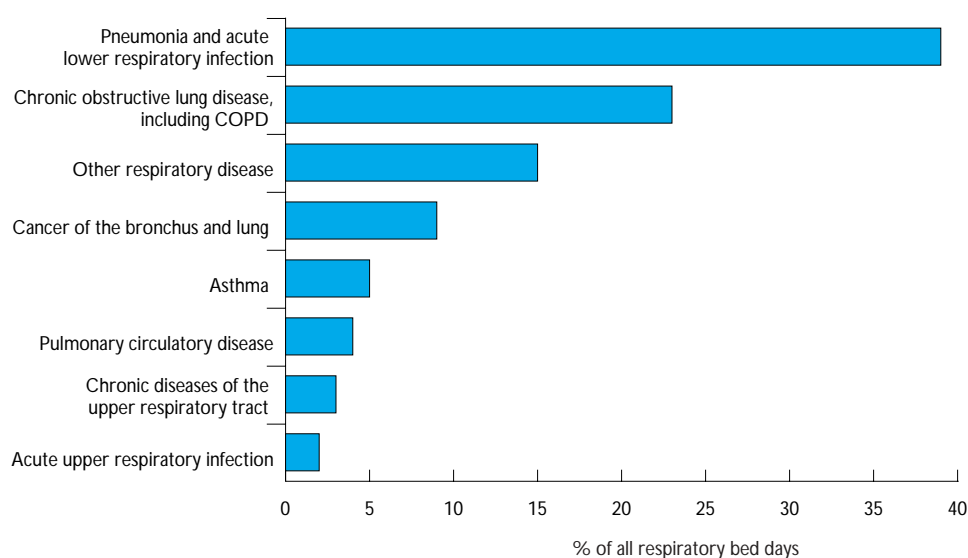


Table 3.4 Prescriptions used in the prevention and treatment of respiratory disease, 1999, England

	Prescriptions (thousands)
General respiratory drugs*	
Inhaled Bronchodilators	24,240.0
Inhaled Corticosteroids	11,908.2
Cromoglycate, related therapy and leukotriene receptor antagonists	490.3
Antihistamines hyposensitisation and allergic emergencies	7,149.9
Oxygen	552.1
Mucolytics	9.4
Aromatic inhalations	35.8
Cough preparations	2,906.4
Systemic nasal decongestants	1,227.1
Drugs for the treatment of tuberculosis	
Rifampicin	35.4
Isoniazid	14.2
Pyrazinamide	7.4
Ethambutol	18.5
Streptomycin	0.1
Drugs for the treatment of cystic fibrosis	
Creon	111.7
Dornase alfa (pulmozyme)	7.7
All prescriptions	48,714.2

* All drugs in British National Formulary (BNF) chapter 3: respiratory system. Data covers all prescriptions dispensed by community pharmacists, applied contractors, dispensing doctors and prescriptions submitted by prescribing doctors for items personally administered.

This table only includes drugs which are clearly only used in the treatment of respiratory disease. For example, steroid tablets and antibiotics may be commonly used in the treatment of the exacerbations of asthma, but the cost to the NHS could not be separated from their general use.

Source: Department of Health website <http://www.doh.gov.uk/stats/pcs99.htm>

Table 3.6 Operations for respiratory disease, 1999/2000, UK

	Number of operations
Lung cancer	
Primary tumour	3701
Secondary tumour	360
Benign tumour	227
Total	4,288
Pleural cancer	
Mesothelioma	273
Other malignancy	196
Benign	101
Total	570
Pneumothorax	561
Pleuropulmonary sepsis	897
Tuberculosis	121
Other inflammatory lung conditions	399
Trauma	45
Other lung conditions	177
Video assisted surgical procedures	3,450
Total operations	10,508

Source: Society of Cardiothoracic Surgeons of Great Britain and Ireland (2001) United Kingdom Thoracic Surgical Register: Annual Report 1999-2000. <http://www.ctsnet.org/doc/853>

Table 3.5 Age-standardised prescription rate per 1,000 population by selected BNF chapter and sex, 1994-1998, England and Wales

	BNF chapter	1994	1995	1996	1997	1998
Men	Gastro-intestinal system (1)	550	557	584	590	604
	Cardiovascular system (2)	1,377	1,446	1,555	1,651	1,780
	Respiratory system (3)	868	882	883	892	900
	Central nervous system (4)	1,123	1,172	1,221	1,264	1,302
	Infections (5)	693	755	711	700	627
	Endocrine system (6)	305	319	338	352	361
	Musculoskeletal and joint diseases (10)	400	394	403	410	415
	Skin (13)	499	509	537	546	537
	All prescriptions	6763	6999	7184	7382	7528
	Women	Gastro-intestinal system (1)	688	703	728	735
Cardiovascular system (2)		1381	1429	1504	1568	1666
Respiratory system (3)		856	888	887	915	929
Central nervous system (4)		1713	1776	1848	1903	1957
Infections (5)		959	1035	979	980	884
Endocrine system (6)		688	721	774	802	822
Obstetrics, gynaecology and urinary-tract (7)		425	448	430	416	414
Musculoskeletal and joint diseases (10)		499	487	490	496	499
Skin (13)		651	675	716	728	704
All prescriptions		9064	9374	9547	9747	9836

BNF chapter codes in parentheses.

Population only includes persons registered with a General Practitioner.

Source: Office of National Statistics (2000) Key Statistics from General Practice 1998. The Stationery Office: London

Costs

Total cost of respiratory disease to the NHS (£2,576 million)

Primary Care (£647.5 million)

Consultation rates for respiratory disease by type of consultation and age-group are shown in Table 4.1. Applying these rates to the UK population gives a total of about 38 million consultations in 2000. Multiplying these consultations by the appropriate unit cost gives a total cost of primary care attributable to respiratory disease of £647.5 million.

Hospital inpatient care (£1,062.2 million)

From routinely collected hospital statistics it is estimated that there were approximately 78,000 inpatient admissions to hospitals in the UK in 2000 (Table 4.2), with an associated total cost of £1,062.2 million.

Hospital day case care (£18.2 million)

From routinely collected hospital statistics it is estimated that there were approximately 78,000 day case admissions to hospitals in the UK in 2000 (Table 4.2), with an associated total cost of £18.2 million.

Hospital outpatient care (£40.7 million)

There is little reliable information on the number of outpatient attendances related to respiratory disease. Newer diseases and treatments may be particularly under-estimated in the current data. For example, management of patients with ventilatory abnormalities during sleep represents an increasing workload and cost to respiratory services. From statistics collected routinely in hospitals it is estimated that there were approximately 500,000 outpatient attendances in 2000 in the UK¹, amounting to a total cost of £40.7 million.

Drugs (£804.7 million)

Data on the number and cost of prescriptions related to respiratory disease in England can be obtained from the Department of Health. The total cost associated with prescribing and dispensing these prescriptions amounted to £798.5 million in the UK in 2000. Chemotherapy delivered to lung cancer patients adds a significant cost to the overall drugs budget. These drugs are not included in the Department of Health data and therefore were estimated using a number of sources (see Table 4.3). It is estimated that the total cost in the UK of treating lung cancer patients with chemotherapy amounted to approximately £6 million in 2000. This brings the total to £804.7 million.

Production losses due to respiratory disease (£3,194 million)

Mortality (£1,643.6 million)

To estimate production losses caused by mortality from respiratory disease, it was assumed that men would have worked until the age of 65 and women to 60, had they not died.

The number of working years lost due to deaths from respiratory disease was estimated by multiplying the number of deaths in each age-sex group by the number of working years left to each person who died. The results in Table 4.4 show that about 165,000 working years were lost from deaths due to respiratory disease in England and Wales in 2000. This total figure was adjusted to take account of the fact that not everyone was in employment. This was then multiplied by the average annual earnings for April 2000. The estimated cost related to mortality from respiratory disease amounted to £1,643.6 million.

Morbidity (£2,239 million)

The Department of Social Security's records show that 28,309,000 working days were lost due to respiratory related illnesses in 1999/2000 (Table 4.5). Multiplying the number of working days lost by the average daily earnings for men and women in April 2000 produces an estimate of £2,239 million of lost production due to respiratory disease.

¹ Source: KH09 Outpatients and ward attenders, England, 1999-2000. Department of Health hospital activity statistics.

Table 4.1 Rates of consultations in General Practice related to respiratory disease, 1991/1992, England and Wales, and estimates of total numbers of consultations and their cost to the NHS, 2000, UK

	England and Wales				UK	
	Consultations per 100 /population /year				Total number of consultations	Cost (£, million, 2000)
	0-15	16-64	65-74	75+		
GP consultations at practice	91.85	44.73	52.55	34.79	32,377,962	439.85
GP consultations at home	10.81	2.79	14.4	35.19	4,942,652	201.44
Nurse consultations at practice	2.09	0.95	1.8	0.98	750,206	5.94
Nurse consultations at home	0.07	0.01	0.04	0.13	20,894	0.22
All consultations	104.82	48.48	68.79	71.09	38,091,714	647.45

Sources: Morbidity Statistics from General Practice, Fourth National Study, 1991-1992. HMSO:London
A. Netten, J. Dennett and J. Knight (1999). Unit costs of health and social care. PSSRU, University of Kent: Canterbury.

Table 4.2 Hospital admissions related to respiratory disease, 1999/2000, England, and estimates of admissions and their cost to the NHS, 2000, UK

	England Number of admissions	UK Number of admissions	Cost of all admissions (£, million, 2000)
Ordinary inpatient admissions	742,541	839,394	1062.25
Day cases	68,979	77,976	18.15
All admissions	811,520	917,370	1080.40

Sources: Department of Health (2001) Hospital Episode Statistics 1999-2000. (<http://www.doh.gov.uk/hes/>)
Department of Health. Annual Trust Financial Returns 1998 and 1999.

Table 4.3 Number and cost of prescriptions used in the treatment of respiratory disease 1999, England, and estimates 2000, UK

BNF chapter/ Drug type*	Number of prescriptions (thousands)	Total net ingredient cost (£ million, 2000)
3.1 Bronchodilators	24,240	241.29
3.2 Corticosteroids	11,908	286.84
3.3 Cromoglycate & related therapy	490	15.05
3.4 Antihistamines & hyposensitisation	7,150	49.15
3.6 Oxygen	62	1.98
3.7 Mucolytics	9	5.28
3.8 Aromatic inhalations	36	0.03
3.9 Cough preparations	2,906	1.88
3.10 Systemic nasal decongestants	1,227	2.13
Tuberculosis drugs	76	1.12
Cystic Fibrosis drugs	119	14.42
Lung cancer chemotherapy*	-	6.20
Total cost UK#		804.7

Sources: Department of Health Statistics Division. Prescription cost analysis. <http://www.doh.gov.uk/prescriptionstatistics/index.htm>

This table only includes drugs which are clearly only used in the treatment of respiratory disease. For example, steroid tablets and antibiotics may be commonly used in the treatment of the exacerbations of asthma, but the cost to the NHS could not be separated from their general use.

Office for National Statistics (2001). 1992 Cancer Statistics, Registrations. Series MB1, No25. HMSO: London.

Standing Medical Advisory Committee (1994). Management of Lung Cancer. Current clinical practices 1994. The report of a working group. London, Department of Health.

Wolstenholme, J. L. and D. K. Whynes (1999). 'The hospital costs of treating lung cancer in the United Kingdom.' British Journal of Cancer 80: 1-2.

Total cost includes the costs of dispensing the drug.

* Estimated using data on cancer registrations and proportions of small cell and non-small cell cancers expected to receive chemotherapy.

Table 4.4 Working years lost due to mortality from respiratory disease and estimates of production losses, 2000, UK

Age	Working years lost			Production loss (£, million, 2000)		
	Men	Women	Total	Men	Women	Total
<35	29,656	19,266	48,922	167.8	80.9	248.7
35-44	14,350	9,840	24,190	167.2	80.2	247.4
45-54	34,935	16,720	51,655	499.0	173.2	672.2
55-64	35,545	4,458	40,003	444.0	31.2	475.2
All ages	114,486	50,284	164,770	1,278.0	365.6	1,643.6

Sources: Office for National Statistics (2000) Mortality statistics by cause. Series DH2 no. 26. HMSO: London

General Register Office (2000) Annual Report 1999. General Register Office: Edinburgh.

General Register Office (2000) Annual Report 1999. Statistics and Research Agency: Northern Ireland.

Table 4.5 Days of certified incapacity due to morbidity from respiratory disease, 1999/2000, and estimates of production losses, 2000, UK

	Days of certified incapacity (thousands)#			Production losses (£, million, 2000)		
	Men	Women	All adults	Men	Women	All adults
Under 20	71	82	153	5.62	6.49	12.10
20-29	665	549	1,214	52.59	43.42	96.02
30-39	589	933	1,522	46.58	73.79	120.37
40-49	2,484	2,012	4,496	196.46	159.13	355.59
50-54	2,125	2,277	4,402	168.07	180.09	348.15
55-59	4,312	2,596	6,908	341.04	205.32	546.35
60-64	7,230	626	7,856	571.82	49.51	621.33
Over 65	1,590	169	1,759	125.75	13.37	139.12
All ages	19,066	9,243	28,309	1,507.93	731.11	2,239.04

(ICD J00-J99)

Sources: Department of Social Security (2001) Social Security Statistics 1999-2000. HMSO: London.
Department of Employment (2001) New Earnings Survey 2000. HMSO: London.

Table 4.6 Health care costs of selected diseases, £, million, 2000#, UK

Disease group	Direct health care cost*	Source
Respiratory Disease	2,567	Present study
Alzheimer's Disease	*2,050	Gray and Fenn 1993
Coronary Heart Disease	*1,852	Maniadakis and Rayner 1998
Back pain	*1,705	Maniadakis and Gray 2000
Stroke	1,104	Dale 1989
Arthritis	831	Wyles 1992
Epilepsy	182	Griffin and Wyle 1991
Insulin dependent diabetes	*126	Gray et al. 1995
Benign Prostatic Hyperplasia	122	Drummond et al. 1993
Multiple sclerosis	*48	O'Brien 1987

All costs have been inflated to 2000 prices using the hospital and community health services pay and price index.

* Includes costs to the NHS and where indicated additional costs to the community and non-NHS care (informal care costs).

One should be aware that the results from the above studies may not be directly comparable due to varying accounting techniques and different costs included in the direct cost calculation.

Figure 4.7 Direct medical cost of respiratory disease

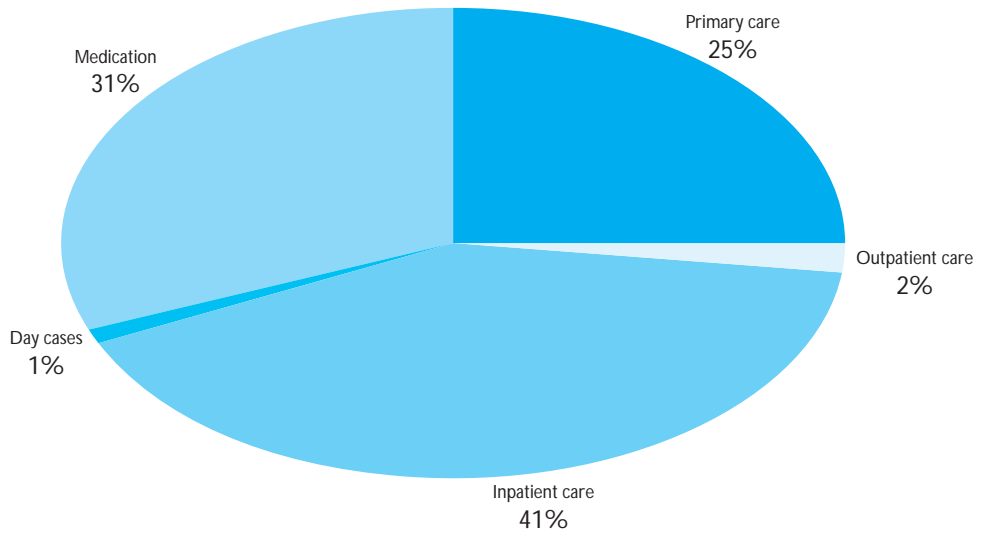
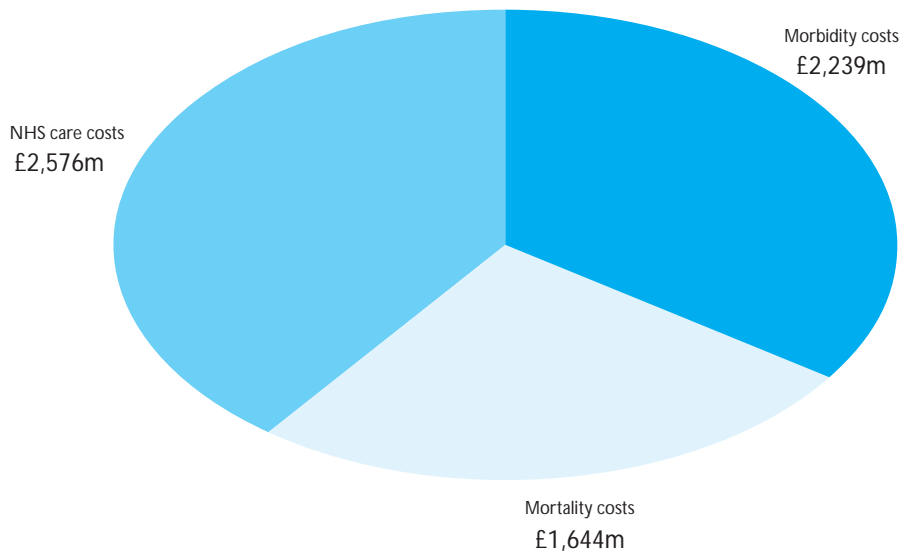


Figure 4.8 Total cost of respiratory disease, £, million, 2000, UK



Total cost of respiratory disease, UK = £6,459 million

The British Thoracic Society

The British Thoracic Society (BTS) is the national representative body for respiratory medicine in the UK. Formed in 1982, from the amalgamation of the British Thoracic Association and the Thoracic Society, the BTS has over 2,000 members. Reflecting the diversity of respiratory medicine, these include doctors, nurses, physiotherapists, clinical scientists and any professional with an interest in lung diseases.

The main aims of the Society are to further the interests of patients with lung diseases by working to increase the profile and understanding of respiratory medicine amongst the Government, the National Health Service, the general public and the media. The commitment to this goal is reflected in the Society's dedication to promote the highest standards of clinical care and to raise the level of resources available to fight lung disease to match the European average.

As the major British representative of lung disease, the BTS undertakes research into the causes, prevention, treatment and management of respiratory diseases, disseminating this information through the production of guidelines for health professionals, its journal *Thorax*, scientific and educational meetings, and communications work.

The BTS is a registered charity and company limited by guarantee.

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