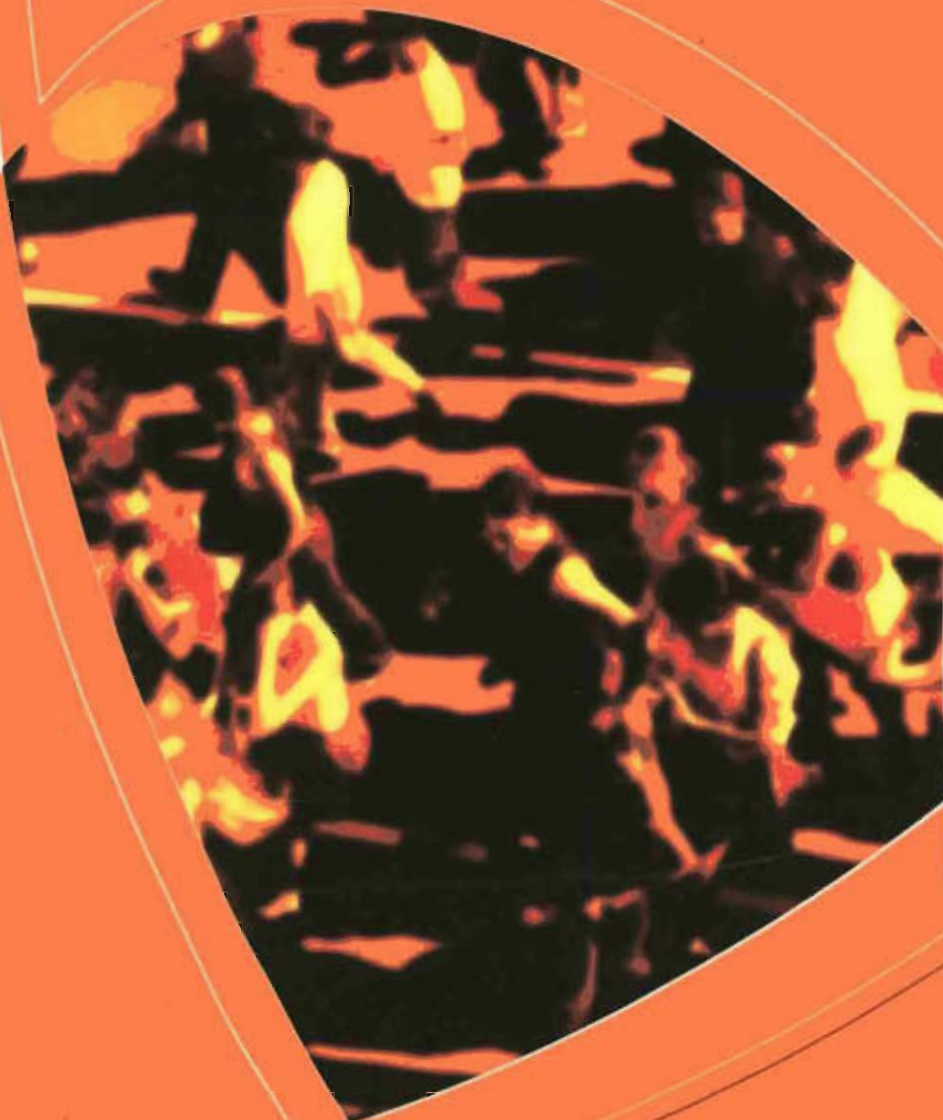


827.
Cancer

1994-2002



cancer in ireland 1994-2002
Incidence, Mortality, Treatment and Survival



National
Cancer
Registry
Ireland

BASIC FACTS

- Over 21,000 Irish people will develop cancer this year and 7,800 will die of the disease
- Cancer numbers are increasing by about 1.5% every year, mainly due to growth in our population
- Breast cancer has overtaken both lung and colorectal cancer to become the second commonest cancer in Ireland (after non-melanoma skin cancer).
- The numbers of prostate cancers now exceed those of lung cancer
- Deaths from cancer are neither increasing or decreasing significantly
- Cancer causes one-quarter of all deaths in Ireland and is the largest single cause of death for the Irish population.
- Cancer is responsible for more than half of deaths of women aged 30 to 60.
- In 1999 cancer was responsible for over 100,000 years of life lost to the Irish population. Lung cancer accounted for 18,000 years and colorectal (bowel) and breast cancer for 12,000 years each. These three cancers were responsible for almost half of all years of life lost due to cancer.
- Patients with cancer accounted for over 300,000 days' stay in hospital (just under 10% of the total) in 1999



October 2003

Re: **Cancer in Ireland 1994 - 2002**
Incidence, Mortality, Treatment and Survival

Dear Colleague

I enclose a copy of our annual report, containing the most recent information on cancer incidence, mortality, treatment and survival in Ireland. I hope that you find it useful and informative.

More detailed data and tables will be available at our website www.ncri.ie
Any comments you have concerning the content or layout of the report would be welcomed, and can be sent to info@ncri.ie or to myself at 021 4318014 (telephone) or 021 4318016 (fax).

If you, or a colleague, would like extra copies these can be supplied by application to the above email address or telephone number.

Yours sincerely

Harry Comber
Director

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CANCER CASES 1994-2002

The total number of cancer cases is estimated to have increased at an annual rate of 1.8% for women and 1.1% for men between 1994 and 2002. This is an increase of about 300 cases each year (Table 1, Figure 2). However, almost all of the increase noted is due to population growth and ageing. The overall true risk of cancer (allowing for the effects of population change and ageing) is not increasing for women and is increasing by only 0.6% per year for men.

For the commoner invasive cancers, the largest rate of increase appears to be in cancer of the uterus (4% per year), breast, lung and kidney (3%) for women, and in kidney (7%) melanoma (6%) prostate cancer (5%) and lymphoma (5%) for men.

The largest apparent decreases are in cancer of the bladder for women (-5%) and in cancers of the head and neck in men (-3%). However, the estimates for bladder cancer and myeloma are influenced by a fall in numbers between 1994 and 1995 which may be an artefact of coding changes. Breast cancer has overtaken both lung and colorectal cancer to become the second commonest cancer (after non-melanoma skin cancer), and the number of prostate cancers now exceeds that of male lung cancer.

Figure 1.

Estimated annual change in invasive cancer numbers 1994-2002

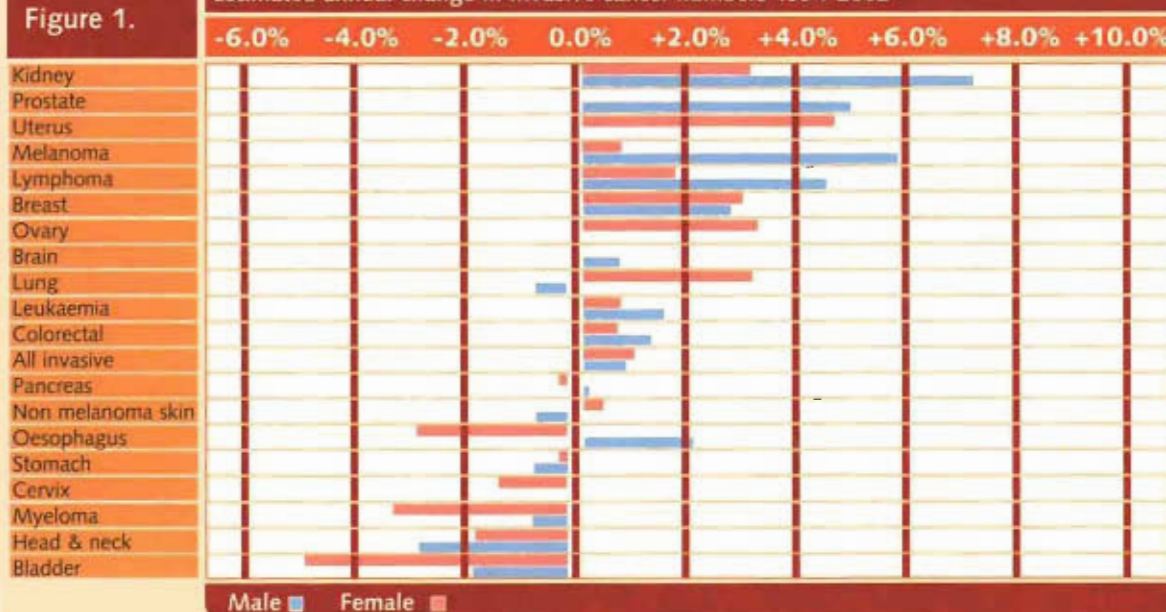


Figure 2.

Trends in total invasive cancer numbers 1994-2002 (including 95% confidence limits for 2000-2002 predictions)



CANCER CASES 1994-2002

Table 1. New cancer cases 1994-2002 ^a										
Female	1994	1995	1996	1997	1998	1999	2000*	2001*	2002*	Annual change ^b
All cancers	9679	9429	10008	10231	10215	10342	10610	10836	11077	1.8%
All invasive cancers	8028	7872	8160	8319	8367	8331	8517	8649	8788	1.2%
Non melanoma skin	2315	2320	2405	2449	2386	2329	2401	2420	2441	0.5%
All invasive cancers excluding NMS ^c	5713	5552	5755	5870	5981	6002	6117	6231	6350	1.5%
Colorectal	767	736	693	774	771	757	764	772	780	0.6%
Breast	1505	1525	1588	1614	1689	1738	1793	1856	1921	3.2%
Lung	492	480	497	523	545	563	577	598	620	3.3%
Lymphoma	220	196	214	238	244	214	236	241	247	1.9%
Stomach	171	179	173	172	176	171	173	173	174	-0.1%
Bladder	171	106	130	121	112	123	106	101	96	-5.0%
Melanoma	240	233	230	236	235	248	243	245	248	0.8%
Leukaemia	157	115	141	152	162	131	145	147	148	0.5%
Pancreas	166	147	172	173	158	157	161	161	162	-0.1%
Ovary	280	328	315	332	307	333	340	349	358	2.2%
Oesophagus	123	133	110	101	114	113	104	102	99	-2.8%
Head and neck ^d	71	79	69	69	79	61	67	66	65	-1.9%
Brain and meninges	99	110	113	104	102	105	106	107	108	0.0%
Kidney	84	89	87	83	90	103	99	103	106	3.2%
Uterus	180	212	215	220	199	247	242	252	263	4.6%
Myeloma	99	67	68	85	71	75	69	67	65	-3.2%
Cervix	174	153	205	166	187	152	167	164	159	-1.1%

Male	1994	1995	1996	1997	1998	1999	2000*	2001*	2002*	Annual change ^b
All cancers	9385	9255	9523	9640	9630	9751	9885	10047	10226	1.1%
All invasive cancers	8932	8783	8976	9023	9015	9103	9173	9285	9412	0.7%
Non melanoma skin	2812	2802	2878	2797	2673	2716	2698	2691	2687	-0.8%
All invasive cancers excluding NMS ^c	6120	5981	6098	6226	6342	6387	6479	6602	6737	1.4%
Colorectal	985	927	977	1007	1016	1011	1035	1056	1078	1.5%
Breast	13	8	17	16	10	14	14	15	15	2.4%
Lung	1038	941	958	919	1002	953	945	944	944	-0.6%
Prostate	1068	1112	1148	1180	1244	1378	1403	1484	1571	5.1%
Lymphoma	239	226	251	266	296	274	303	318	334	4.7%
Stomach	300	288	303	299	284	279	282	280	279	-1.0%
Bladder	341	335	341	334	288	321	304	299	295	-2.0%
Melanoma	134	121	127	167	152	164	175	186	198	5.9%
Leukaemia	185	208	192	204	205	207	213	218	223	1.8%
Pancreas	159	143	160	175	161	160	168	171	175	0.1%
Oesophagus	164	168	185	193	155	193	189	194	199	2.1%
Head and Neck ^d	224	213	220	202	198	190	187	182	178	-2.9%
Brain and meninges	141	154	135	145	152	146	150	153	155	0.9%
Kidney	138	123	147	172	176	174	196	211	227	7.2%
Myeloma	100	96	101	95	101	92	95	95	95	-0.6%

* Estimate

a See Appendix 4 for definitions of "cancer", "new case" and "invasive"

b Estimated annual percentage change (EAPC). See Appendix 4

c NMS: non melanoma skin

d ICD 10 C00 to C14

CANCER DEATHS 1994-2002

There was little real change in the number of cancer deaths between 1994 and 1999, and this trend is expected to continue (Table 2, Figures 3,4). All of the increase noted is due to population growth and ageing. The true risk of dying from cancer (allowing for the effects of population change and ageing) is decreasing by about 1% per year.

Lung cancer remains the leading cause of cancer death overall although the risk seems to be decreasing for men. Breast cancer remains the most important cause of cancer death for women, but is also decreasing in frequency. There have been significant increases in the number of deaths from melanoma, leukaemia and lymphoma for both sexes, and for kidney cancer in men, with a decrease in the number of deaths from cancers of the brain, stomach and bladder (Figure 3). The trends for these cancers are based on quite small numbers, and may also be influenced by recent improvements in diagnostic methods.

Table 2.		Deaths from cancer 1994-2002								
Female	1994	1995	1996	1997	1998	1999	2000*	2001*	2002*	Annual change ^a
All cancers	3455	3443	3427	3538	3482	3537	3547	3579	3615	0.6%
All invasive cancers	3440	3426	3400	3496	3447	3490	3492	3518	3546	0.4%
Lung	519	539	507	497	548	532	532	536	541	0.5%
Colorectal	415	425	403	443	368	409	394	392	389	-1.0%
Breast	648	655	635	634	599	644	619	629	615	-0.6%
Ovary	203	202	211	263	225	221	243	251	260	3.0%
Oesophagus	127	126	114	107	103	118	104	101	99	-2.8%
Pancreas	168	173	174	180	179	187	189	193	198	2.0%
Stomach	179	153	163	141	149	148	137	133	129	-3.3%
Lymphoma	108	95	89	101	132	114	123	128	134	4.3%
Leukaemia	86	79	90	90	98	120	119	128	137	7.2%
Myeloma	76	67	65	63	67	69	64	63	62	-1.6%
Brain and meninges	106	93	114	94	79	75	74	70	66	-6.2%
Kidney	48	47	56	49	54	55	57	58	60	2.9%
Head and neck	39	39	37	33	43	33	35	35	34	-1.6%
Melanoma	25	26	33	33	45	39	48	54	60	11.7%
Bladder	71	46	49	60	47	47	43	41	39	-5.2%
Cervix	60	72	82	82	80	78	121	93	61	2.6%
Uterus	47	44	49	40	41	43	40	40	39	-2.3%

Male	1994	1995	1996	1997	1998	1999	2000*	2001*	2002*	Annual change ^a
All cancers	3983	4114	4009	4017	4056	4114	4113	4159	4211	0.6%
All invasive cancers	3974	4097	3984	3974	4019	4052	4046	4082	4122	0.3%
Lung	1031	1035	960	889	974	915	891	876	863	-2.2%
Colorectal	509	550	493	527	507	561	543	553	563	1.1%
Prostate	475	521	523	535	514	499	523	531	540	0.8%
Oesophagus	196	163	189	204	189	187	194	196	199	1.0%
Pancreas	199	175	161	184	194	184	184	185	187	0.3%
Stomach	241	259	236	233	208	204	199	192	186	-3.9%
Lymphoma	117	126	132	119	160	142	158	167	176	5.2%
Leukaemia	108	101	118	124	145	145	158	171	186	7.8%
Myeloma	73	80	78	73	73	84	80	82	83	1.3%
Brain and meninges	119	139	121	120	112	112	110	108	105	-2.5%
Kidney	73	66	81	100	90	89	102	109	116	6.4%
Head and Neck	95	105	105	107	90	105	102	103	104	0.4%
Melanoma	22	33	27	35	24	46	43	47	52	10.0%
Bladder	115	116	114	113	106	115	110	110	110	-0.6%

* Estimate

CANCER DEATHS 1994-2002

Figure 3.

Estimated annual change in cancer deaths 1994-2002



Figure 4.

Trends in deaths from all cancers 1994-2002 (including 95% confidence limits for 2000-2002 predictions)



COMMON CANCERS 1999

Cancer Cases

Just over 20,000 new cancer cases were registered in 1999, of which 17,434 (87%) were invasive (malignant) cases. The commonest cancer was non-melanoma cancer of the skin (NMS), which made up 25% of all cancers registered. Next commonest were colorectal and breast cancer, each comprising 9% of the total, followed by lung (8%) and prostate (7%) cancers. These five cancers were considerably more frequent than those at any other site, and made up 57% of all cancers and 66% of invasive cancers (Table 3, Figure 5).

The lifetime risk of developing any cancer was 44% for women and 43% for men. Excluding non-melanoma skin cancer, the overall risk of developing an invasive cancer was about 30% for both men and women. For women, the risk of developing breast cancer was 8.7% (1 in 12); for men the risk of prostate cancer was 6.9% (1 in 14) and the risk of lung and of colorectal cancer was 5.7% (1 in 18).

Table 3.	New cancer cases 1999										
	Both sexes			Female				Male			
Cancer site	cases	% of total	cases per 100000 person yrs ^a	cases	% of female cases	cases per 100000 person yrs ^a	Lifetime risk ^b	cases	% of male cases	cases per 100000 person yrs ^a	Lifetime risk ^b
All cancers	20093		536	10342		548	44.4%	9751		524	43.2%
All invasive cancers	17434	86.8%	465	8331	80.6%	442	38.9%	9103	93.4%	490	41.3%
Non-melanoma skin	5045	25.1%	135	2329	22.5%	123	14.0%	2716	26.3%	146	15.8%
Colorectal	1768	8.7%	47	757	7.3%	40	4.3%	1011	9.8%	54	5.7%
Breast	1752	8.7%	47	1738	16.8%	92	8.7%	14	0.1%	1	0.1%
Lung	1516	7.5%	40	563	5.4%	30	3.1%	953	9.2%	51	5.7%
Prostate	1378	6.9%	37					1378	13.3%	74	6.9%
Lymphoma	488	2.4%	13	214	2.1%	11	1.2%	274	2.6%	15	1.3%
Stomach	450	2.2%	12	171	1.7%	9	1.1%	279	2.7%	15	1.8%
Bladder	444	2.2%	12	123	1.2%	7	0.8%	321	3.1%	17	2.0%
Melanoma of skin	412	2.1%	11	248	2.4%	13	1.2%	164	1.6%	9	0.7%
Leukaemia	338	1.7%	9	131	1.3%	7	0.8%	207	2.0%	11	1.1%
Ovary	333	1.7%	9	333	3.2%	18	1.8%				
Pancreas	317	1.6%	8	157	1.5%	8	1.1%	160	1.5%	9	1.0%
Oesophagus	306	1.5%	8	113	1.1%	6	0.7%	193	1.9%	10	1.1%
Kidney	277	1.4%	7	103	1.0%	5	0.5%	174	1.7%	9	0.8%
Head and neck	251	1.2%	7	61	0.6%	3	0.4%	190	1.8%	10	1.3%
Corpus uteri	247	1.2%	7	247	2.4%	13	1.3%				
Brain	244	1.2%	7	102	1.0%	5	0.6%	142	1.4%	8	0.7%
Multiple myeloma	167	0.8%	4	75	0.7%	4	0.4%	92	0.9%	5	0.6%
Cervix	152	0.8%	4	152	1.5%	8	1.0%				

a. Crude incidence rate (see Appendix 4)

b. Lifetable estimate (see Appendix 4)



DEATHS FROM CANCER 1999

Approximately one-quarter of all deaths in Ireland are due to cancer (Table 5), which makes it the single most important cause of death. The impact of cancer is greatest in young and middle-aged women—over half of all deaths in women aged between 40 and 60 were due to cancer (Table 6).

Almost all fatal cancers were invasive. Lung cancer was the commonest cause of cancer death overall (19%) and for men only, while breast cancer was the commonest cause of cancer death for women (18% of the total) (Table 4, Figure 6). The four cancer sites of lung, colorectal, breast and prostate accounted for almost half of all cancer deaths. The risk of dying of cancer before age 75 was 12% for women and 15% for men. The greatest risk of death was associated with lung cancer for men (4% chance of dying before age 75) and breast cancer for women (2.7%).

Table 4.	Deaths from cancer 1999										
	Both sexes			Female				Male			
Cancer site	deaths	% of total	deaths per 100000 person yrs	deaths	% of female deaths	deaths per 100000 person yrs	Risk of death before 75	deaths	% of male deaths	deaths per 100000 person yrs	Risk of death before 75
All cancers	7651		202	3537		187	12.5%	4114		216	15.1%
All invasive cancers	7542	98.6%	199	3490	98.7%	185	11.6%	4052	98.5%	212	14.9%
Lung	1447	18.9%	38	532	15.0%	28	2.0%	915	22.2%	48	4.0%
Colorectal	970	12.6%	26	409	11.6%	22	1.1%	561	13.6%	29	2.1%
Breast	648	8.5%	17	644	18.2%	34	2.7%	4	0.1%	<1	0.0%
Prostate	499	6.5%	13					499	12.1%	26	1.3%
Pancreas	371	4.8%	10	187	5.3%	10	0.6%	184	4.5%	10	0.7%
Stomach	352	4.6%	9	148	4.2%	8	0.5%	204	5.0%	11	0.9%
Oesophagus	305	4.0%	8	118	3.3%	6	0.3%	187	4.5%	10	0.8%
Leukaemia	265	3.5%	7	120	3.4%	6	0.3%	145	3.4%	8	0.6%
Lymphoma	256	3.3%	7	114	3.2%	6	0.4%	142	3.4%	7	0.7%
Ovary	221	2.9%	6	221	6.2%	12	1.0%				
Brain	186	2.4%	5	74	2.1%	4	0.3%	112	2.7%	6	0.6%
Bladder	162	2.1%	4	47	1.3%	3	0.1%	115	2.8%	6	0.3%
Multiple myeloma	153	2.0%	4	69	2.0%	4	0.2%	84	2.0%	4	0.3%
Kidney	144	1.9%	4	55	1.6%	3	0.2%	89	2.2%	5	0.4%
Head and neck	138	1.9%	4	33	0.9%	2	0.0%	105	2.5%	6	0.3%
Liver	131	1.7%	4	51	1.4%	3	0.2%	80	1.9%	4	0.4%
Melanoma of skin	85	1.1%	2	39	1.1%	2	0.1%	46	1.1%	2	0.2%
Cervix	78	1.0%	2	78	2.2%	4	0.3%				

DEATHS FROM CANCER 1999

Figure 6.

Deaths from cancer 1999



Table 5.

Deaths registered in 1999

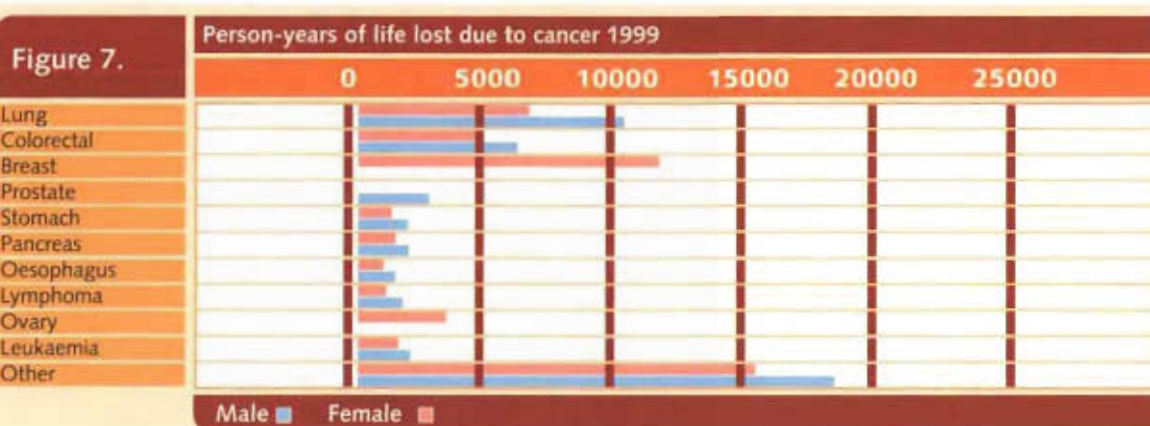
	Deaths	% of total
All causes	31683	
Malignant neoplasms	7454	24%
Ischaemic heart disease	6876	22%
Acute myocardial infarction	4350	14%
Other diseases of circulatory system	2855	9%
Cerebrovascular disease	2693	8%
Pneumonia	2597	8%
Injury and poisoning	1492	5%
Other	3366	11%

Table 6.

Deaths from cancer 1999 (by age & sex)

	Females	Males
0-9	2%	4%
10-19	15%	7%
20-29	21%	7%
30-39	44%	15%
40-49	54%	28%
50-59	52%	36%
60-69	43%	33%
70-80	25%	26%
>80	12%	17%
All	23%	24%

PERSON-YEARS OF LIFE LOST DUE TO CANCER



One of the most important impacts of cancer is the number of years of life lost due to premature death (person-years of life lost, or PYLL; see Appendix 4 for more details). The average age at death from cancer is 70, and, at that age the average woman would expect 14 more years of life and the average man 11 years. Each death from cancer therefore represents a loss of many potential years of life.

In 1999, the 7,651 cancer deaths were responsible for over 103,000 years of life lost, 14 years per cancer (Table 7). Lung cancer had the largest influence on these figures, accounting for approximately 18,000 years of life lost, one-sixth of the total. In men, lung cancer accounted for 21% of all years of life lost, while for women, breast cancer had the greatest impact, representing 23% of all years of life lost. Colorectal cancer accounted for 11% of years of life lost overall.

Table 7.	Years of life lost due to cancer 1999					
	Female			Male		
Cancer site	PYLL	average YLL	% of all years of life lost	PYLL	average YLL	% of all years of life lost
All sites	52983	15.0	100%	50173	12.2	100%
Lung	7078	13.3	13%	10519	11.5	21%
Colorectal	5000	12.2	9%	6729	12.0	13%
Breast	12270	19.1	23%	41	10.2	0%
Prostate				3817	7.6	8%
Stomach	1820	12.3	3%	2355	11.5	5%
Pancreas	2078	11.1	4%	2182	11.9	4%
Oesophagus	1353	11.5	3%	2425	13.0	5%
Lymphoma	2080	18.2	4%	2472	17.4	5%
Ovary	3989	18.0	8%			0%
Leukaemia	2034	17.0	4%	2439	16.8	5%
Other	15282	14.6	29%	17195	13.5	34%

HOSPITAL ACTIVITY

Data on hospital discharges from all public acute hospitals and a number of other locations is collected as part of the Hospital InPatient Enquiry (HIPE). All the analysis in this section is based on this HIPE data, and not on the data collected by the Registry on cancer treatments. The HIPE system aims to collect information on diagnoses and procedures for all inpatients and some outpatients. It is estimated that 94.6% of all discharges in the hospitals covered in the period 1994 to 1999 are included in the data. From National Cancer Registry data, we know that hospitals sending data to the HIPE system treated 85% of all new cancers during the same period, so the data below describe approximately 81% of all cancer cases.

There are some difficulties in interpreting these data, particularly with regard to chemotherapy and radiotherapy episodes (see Appendix 4). Cancer, or a history of cancer, was given as a diagnosis (ICD9-CM code 140 to 239 or V10) in just under 100,000 discharges annually. In approximately 40,000 of these, cancer (invasive, in situ or of uncertain behaviour) was the principal diagnosis, and, in another 25,000, chemo- or radiotherapy was coded as the "principal diagnosis" (Table 8). A significant percentage of the remainder were episodes of care for benign tumours (this category consists of lesions such as warts, polyps, papillomas and other lesions not commonly regarded as "cancer"). In 19,233 episodes, cancer was given as one of the secondary diagnoses, but was not the principal diagnosis.

Table 8. Principal diagnoses for all cancer-related episodes	
Principal diagnosis	Average number of discharges per year
All episodes involving neoplasms	98419
Cancer (invasive, in situ or uncertain)	40304
Chemotherapy/ radiotherapy	25188
Benign tumours	13695
Non-cancer	15455
Other	3778

The total number of inpatient episodes for cancer has remained constant, but the number of outpatient episodes has risen by 18% per year since 1994 (Table 9). At least some of this increase may be attributable to improved recording of outpatient episodes. Consequently, although the average length of stay for inpatients has not changed, the average length of stay for all patients combined has fallen from 9.2 to 6.8 days.

Table 9.	Invasive cancer as principal diagnosis: number of episodes and length of stay					
	Number of episodes			Length of stay		
Year	Inpatient	Outpatient	Total	Days per inpatient episode	Days per episode (inpatient and outpatient)	Total number of days
1994	26360	8620	34980	12.2	9.2	322656
1995	25732	10891	36623	12.7	8.9	325547
1996	26287	12359	38646	12.4	8.5	326646
1997	26871	13837	40708	12.2	8.1	328997
1998	26340	17494	43834	12.3	7.4	323777
1999	26524	20507	47031	12.0	6.8	318133

The total length of stay for patients with cancer as a principal diagnosis was 318,000 days in 1999, an average of 12 days per episode, compared with 6.3 days for all conditions (HIPE, 2002).

Daycare?

LENGTH OF STAY

Table 10.	Number of episodes and length of stay by principal diagnosis (invasive cancers only), 1999						
	Inpatient			Outpatient	In and Out patient		
	number of episodes	total length of stay	average length of stay	number of episodes	number of episodes	total length of stay	average length of stay
All cancers	26524	318133	12	20507	47031	318133	7
Lung	2474	32366	13	588	3062	32366	11
Female breast	2623	29490	11	2255	4878	29490	6
Colon	1563	25985	17	1056	2619	25985	10
Rectum and anus	1234	19500	16	696	1930	19500	10
Lymphoma	1511	16697	11	2012	3523	16697	5
Prostate	1223	14457	12	304	1527	14457	9
Leukaemia	1488	18199	12	3231	4719	18199	4
Oesophagus	932	12346	13	260	1192	12346	10
Stomach	695	10221	15	296	991	10221	10
Bladder	1158	9294	8	431	1589	9294	6
Non melanoma skin	1289	8794	7	3170	4459	8794	2
Ovary	839	9269	11	567	1406	9269	7
Brain	616	8913	14	62	678	8913	13
Pancreas	496	7106	14	53	549	7106	13
Myeloma	578	7068	12	1039	1617	7068	4
Kidney	459	5363	12	119	578	5363	9
Larynx	293	5019	17	34	327	5019	15
Cervix	409	4351	11	39	448	4351	10
Corpus uteri	353	4030	11	36	389	4030	10
Secondary cancer	1847	22674	12	309	2156	22674	11
Unknown primary site	204	3079	15	85	289	3079	11
Other	4240	43912	10	3865	8105	43912	5

The average length of stay was longest for colorectal cancer (16-17 days), stomach cancer (15 days) and cancer of unknown site (15 days) (Table 10). The shortest stays were recorded for non-melanoma cancer of the skin (7 days) and bladder cancer (8 days). The ratio of inpatient to outpatient episodes was 1.3. The ratio was highest for cancers of the cervix, brain and uterus, where inpatient episodes outnumbered outpatient episodes by 10 to 1, and lowest for cancers of the skin, for lymphoma, myeloma and leukaemia, where outpatient episodes predominated. It should be noted, however, that capture of radiotherapy and chemotherapy outpatient sessions by HIPE seems to be incomplete. In particular, no outpatient radiotherapy episodes were recorded at one of two main national radiotherapy centres.

MOST FREQUENT INPATIENT PROCEDURES

Most frequent inpatient procedures for breast, lung, colon and prostate cancers; HIPE 1994-1999

The tables below list the principal procedure, as recorded by HIPE, for each episode of care. Where multiple procedures were carried out during the same admission or outpatient contact, only one, usually the most radical, has been counted. For this reason, biopsies, for instance, will be undercounted, as many would have been performed during the same episode as definitive surgery. It is important to note that the data presented in this section are not cancer registry data. As such they apply to both newly incident and prevalent cancers and may include multiple episodes per patient.

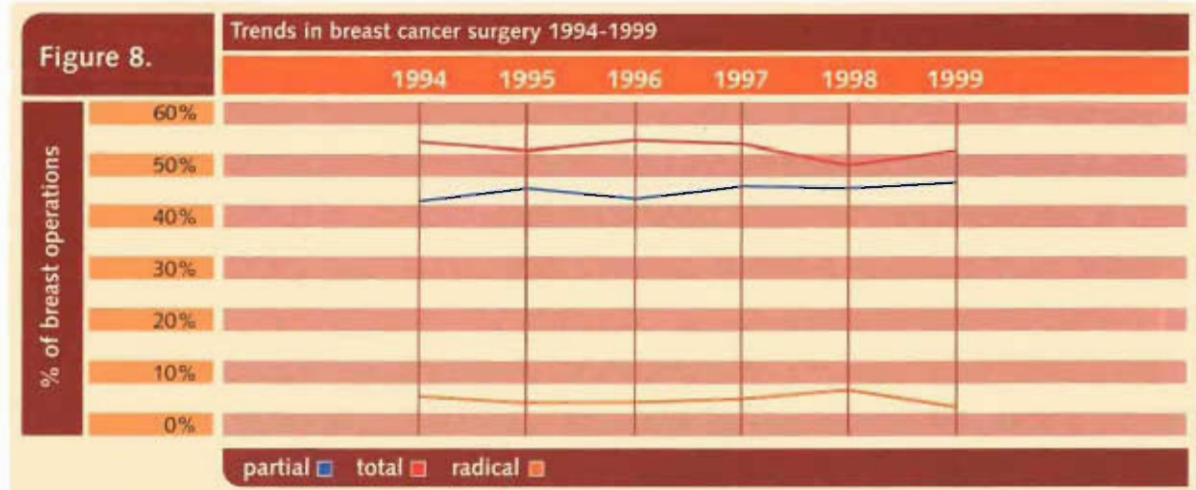
For breast, colon and prostate cancers, the most frequent principal inpatient procedure was specific surgery, while, for lung cancer, surgery was a much less frequent option. For 31% of lung cancer inpatient episodes, no procedure was recorded, compared to 12% for breast cancer, 15% for colorectal cancer and 23% for prostate cancer.

Most breast cancer patients had operative treatment (excluding biopsy) (Table 11).

Just over half of the surgery for breast cancer was total mastectomy and just under half consisted of partial mastectomy. Radical mastectomy was uncommon and decreased from 7% of all breast cancer operations in 1994 to just over 3% in 1999 (Figure 8).

Table 11. Main inpatient procedures for breast cancer; 1994-1999 averages		Episodes	% of total
Operative procedures		1188	49%
Unilateral extended simple mastectomy		504	45%
Local excision of lesion of breast		238	19%
Unilateral simple mastectomy		180	9%
Subtotal mastectomy		134	7%
Unilateral radical mastectomy		59	5%
Resection of quadrant of breast		58	2%
Unilateral extended radical mastectomy		8	2%
Bilateral simple mastectomy		2	<1%
Bilateral extended simple mastectomy		2	<1%
Other surgery		4	1%
Non-operative procedures		936	39%
Teloradiotherapy		242	10%
Injection or infusion of cancer chemotherapeutic substance		236	10%
Needle biopsy of breast		74	3%
Open biopsy of breast		57	2%
Bone scan		20	1%
Transfusion of packed cells		17	1%
Diagnostic ultrasound of abdomen and retroperitoneum		16	1%
Injection or infusion of other therapeutic or prophylactic substance		16	1%
Computerised axial tomography of head		15	1%
Thoracentesis		14	1%
Excision of axillary lymph node		14	1%
Injection of antibiotic		12	<1%
Transfusion of whole blood		10	<1%
Other non-operative procedure		194	8%
No procedure recorded		295	12%
Total		2419	

MOST FREQUENT INPATIENT PROCEDURES



By contrast with breast cancer, only 184 operations were recorded for lung cancer each year (Table 12). The main procedures recorded were diagnostic—endoscopic biopsy and imaging—as well as radio- and chemotherapy.

Table 12. Main inpatient procedures for lung cancer; 1994-1999 averages		Episodes	% of total
Operative procedures		184	7%
Lobectomy of lung		115	4%
Complete pneumonectomy		42	2%
Segmental resection of lung		23	1%
Local excision or destruction of lesion or tissue of lung, NOS*		2	<1%
Local excision or destruction of lesion or tissue of bronchus, NOS*		<1	<1%
Excision of bronchus, NOS*		<1	<1%
Radical dissection of thoracic structures		<1	<1%
Non-operative procedures		1644	62%
Endoscopic biopsy of bronchus		310	12%
Injection or infusion of cancer chemotherapeutic substance		264	10%
Teleradiotherapy using photons		132	5%
Closed endoscopic biopsy of lung		112	4%
Bronchoscopy, NOS*		76	3%
Computerised axial tomography of thorax		61	2%
Computerised axial tomography of head		48	2%
Percutaneous biopsy of lung		40	2%
Fiber-optic bronchoscopy		40	2%
Routine chest x-ray		39	1%
Thoracentesis		37	1%
Injection of antibiotic		30	1%
Injection or infusion of other therapeutic or prophylactic substance		29	1%
Diagnostic ultrasound of abdomen and retroperitoneum		26	1%
Mediastinoscopy		25	1%
Electrocardiogram		25	1%
Transfusion of whole blood		24	1%
Other non-operative procedure		327	12%
No procedure recorded		806	31%
Total		2633	

*NOS: not otherwise specified

MOST FREQUENT INPATIENT PROCEDURES

Most patients with colorectal cancer had surgery-1137 procedures (Table13). There was a wide range of procedures depending on the anatomical site of the cancer. No procedure was recorded in 393 episodes (15%).

Table 13. Main inpatient procedures for colorectal cancer; 1994-1999 averages		Episodes	% of total
Operative procedures		1137	42%
Right hemicolectomy		301	11%
Left hemicolectomy		181	7%
Anterior resection of rectum, NOS*		173	6%
Sigmoidectomy		168	6%
Abdominoperineal resection of rectum		101	4%
Partial excision of large intestine, NOS*		68	3%
Anterior resection of rectum with synchronous colostomy		55	2%
Resection of transverse colon		22	1%
Total intra-abdominal colectomy		22	1%
Local excision of rectal lesion or tissue		14	1%
Partial resection of small intestine, NOS*		8	<1%
Caecectomy		6	<1%
Endoscopic polypectomy of large intestine		4	<1%
Local excision or destruction of lesion or tissue of anus, NOS*		3	<1%
Excision of lesion or tissue of large intestine		3	<1%
Multiple segmental resection of large intestine		2	<1%
Other operative procedure		8	<1%
Non-operative procedures		1163	43%
Injection or infusion of cancer chemotherapeutic substance		237	9%
Endoscopic biopsy of large intestine		108	4%
Teleradiotherapy		96	4%
Colonoscopy		63	2%
Diagnostic ultrasound of abdomen and retroperitoneum		38	1%
Exteriorization of large intestine		33	1%
Colostomy		26	1%
Rigid proctosigmoidoscopy		26	1%
Other transfusion of whole blood		25	1%
Transfusion of packed cells		24	1%
Endoscopic biopsy of rectum		23	1%
Flexible sigmoidoscopy		21	1%
Lower GI series		20	1%
Exploratory laparotomy		18	1%
Computerised axial tomography of abdomen		17	1%
Injection or infusion of other therapeutic or prophylactic substance		17	1%
Esophagogastroduodenoscopy with closed biopsy		14	1%
Other laparotomy		14	1%
Other gastroscopy		13	0%
Permanent colostomy		12	0%
Other non-operative procedure		318	11%
No procedure recorded		393	15%
Total		2693	

*NOS: not otherwise specified

MOST FREQUENT INPATIENT PROCEDURES

The most frequent procedure for prostate cancer was transurethral prostatectomy (Table 14). Radical and total prostatectomy was much less frequent, making up just over 3% of all procedures. However, radical prostatectomy is increasing in frequency, from 17 in 1994 to 58 in 1999 while transurethral prostatectomy is decreasing.

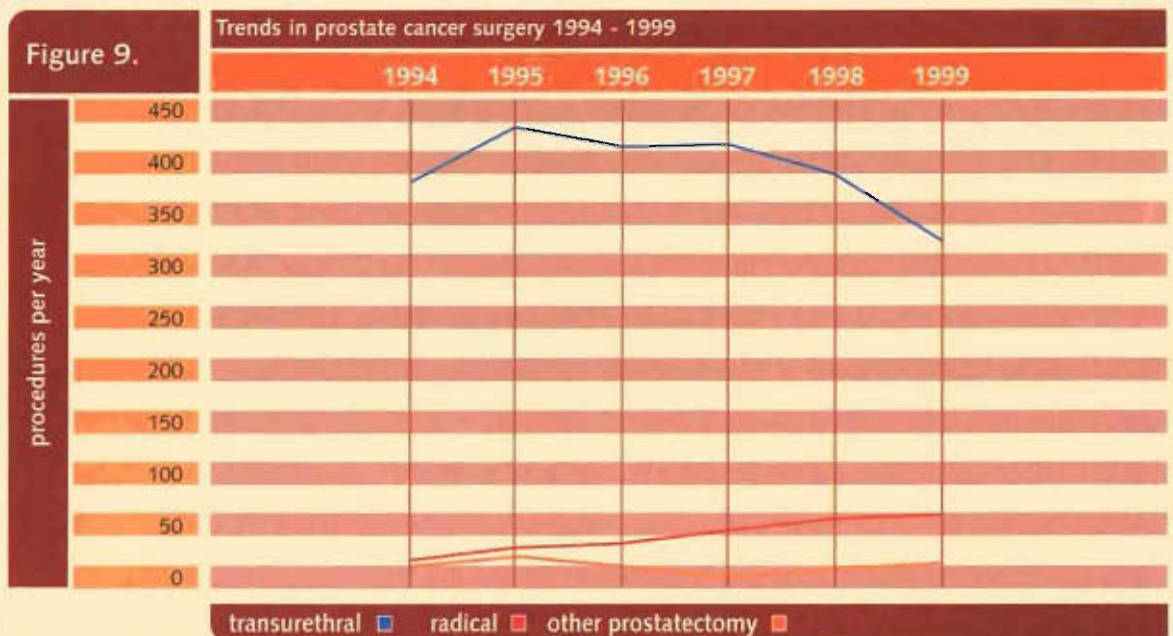


Table 14. Main inpatient procedures for prostate cancer; 1994 - 1999 averages		
	Episodes	% of total
Operative procedures	450	33%
Transurethral prostatectomy	397	29%
Radical prostatectomy	38	3%
Retropubic prostatectomy	7	1%
Operations on prostate and seminal vesicles, NOS*	4	<1%
Suprapubic prostatectomy	2	<1%
Prostatectomy, NOS*	1	<1%
Local excision of lesion of prostate	<1	<1%
Perineal prostatectomy	<1	<1%
Non-operative	590	44%
Needle biopsy of prostate	93	7%
Cystoscopy, NOS*	82	6%
Teleradiotherapy using photons	55	4%
Removal of both testes at same operative episode	47	3%
Transfusion of whole blood	29	2%
Transfusion of packed cells	27	2%
Insertion of indwelling urinary catheter	24	2%
Bone scan	17	1%
Diagnostic ultrasound of abdomen and retroperitoneum	13	1%
Transurethral biopsy of bladder	11	1%
Suprapubic cystostomy	8	1%
Injection or infusion of other therapeutic or prophylactic substance	8	1%
Removal of other urinary drainage device	7	1%
Transurethral excision or destruction of lesion or tissue of bladder, NOS	6	<1%
Computerised axial tomography, NOS*	6	<1%
Open biopsy of prostate	3	<1%
Other non-operative procedure	156	12%
No procedure recorded	307	23%
Total	1347	

*NOS: not otherwise specified

APPENDIX 1. NUMBER OF NEW CANCER CASES, 1999

Appendix 1.		Number of new cancer cases, 1999														
Cancer site	ICD-10 code	Both sexes			Female						Male					
		cases	% of total	cases per 100000 person years	cases	% of total	cases per 100000 person years	EASR ^a	WASR ^b	0-74 cumulative risk ^c	cases	% of total	cases per 100000 person years	EASR	WASR	0-74 cumulative risk
Invasive Cancers																
lip	C00	41	0.2%	1.09	3	0.0%	0.16	0.16	0.11	0.0%	38	0.4%	2.04	2.26	1.48	0.2%
base of tongue	C01	13	0.1%	0.35	6	0.0%	0.32	0.34	0.26	0.0%	7	0.1%	0.38	0.50	0.35	0.0%
other tongue	C02	24	0.1%	0.64	4	0.0%	0.21	0.17	0.11	0.0%	20	0.2%	1.08	1.14	0.82	0.1%
gum	C03	9	0.0%	0.24	2	0.0%	0.11	0.07	0.05	0.0%	7	0.1%	0.38	0.39	0.25	0.0%
floor of mouth	C04	16	0.1%	0.43	5	0.0%	0.26	0.24	0.16	0.0%	11	0.1%	0.59	0.62	0.44	0.1%
palate	C05	17	0.1%	0.45	8	0.0%	0.42	0.40	0.29	0.0%	9	0.1%	0.48	0.57	0.36	0.0%
other mouth	C06	18	0.1%	0.48	6	0.0%	0.32	0.29	0.20	0.0%	12	0.1%	0.65	0.75	0.53	0.1%
parotid	C07	25	0.1%	0.67	7	0.0%	0.37	0.34	0.23	0.0%	18	0.2%	0.97	1.01	0.63	0.0%
other salivary	C08	4	0.0%	0.11	2	0.0%	0.11	0.13	0.09	0.0%	2	0.0%	0.11	0.09	0.05	0.0%
tonsil	C09	15	0.1%	0.40	4	0.0%	0.21	0.22	0.16	0.0%	11	0.1%	0.59	0.68	0.50	0.1%
oropharynx	C10	9	0.0%	0.24	0	0.0%	0.00	0.00	0.00	0.0%	9	0.1%	0.48	0.60	0.45	0.1%
nasopharynx	C11	18	0.1%	0.48	3	0.0%	0.16	0.10	0.05	0.0%	15	0.2%	0.81	0.88	0.75	0.1%
pyriform	C12	18	0.1%	0.48	4	0.0%	0.21	0.15	0.09	0.0%	14	0.1%	0.75	0.96	0.71	0.1%
hypopharynx	C13	9	0.0%	0.24	3	0.0%	0.16	0.16	0.11	0.0%	6	0.1%	0.32	0.39	0.25	0.0%
other mouth/pharynx	C14	15	0.1%	0.40	4	0.0%	0.21	0.20	0.14	0.0%	11	0.1%	0.59	0.69	0.52	0.1%
oesophagus	C15	306	1.5%	8.17	113	0.6%	5.99	5.26	3.39	0.3%	193	2.0%	10.38	11.86	7.95	0.9%
stomach	C16	450	2.2%	12.01	171	0.9%	9.06	8.17	5.40	0.6%	279	2.9%	15.01	17.03	11.27	1.4%
small intestine	C17	23	0.1%	0.61	6	0.0%	0.32	0.23	0.12	0.0%	17	0.2%	0.91	1.03	0.74	0.1%
colon	C18	1112	5.5%	29.68	511	2.5%	27.08	25.09	16.85	2.0%	601	6.2%	32.33	36.55	24.32	3.0%
rectosigmoid	C19	124	0.6%	3.31	52	0.3%	2.76	2.52	1.69	0.2%	72	0.7%	3.87	4.37	3.01	0.4%
rectum	C20	511	2.5%	13.64	183	0.9%	9.70	9.24	6.26	0.7%	328	3.4%	17.64	20.32	13.68	1.6%
anus	C21	21	0.1%	0.56	11	0.1%	0.58	0.56	0.38	0.0%	10	0.1%	0.54	0.65	0.46	0.0%
liver	C22	65	0.3%	1.74	14	0.1%	0.74	0.71	0.49	0.1%	51	0.5%	2.74	3.01	2.00	0.2%
gallbladder	C23	52	0.3%	1.39	34	0.2%	1.80	1.65	1.10	0.1%	18	0.2%	0.97	1.10	0.73	0.1%
other biliary	C24	73	0.4%	1.95	32	0.2%	1.70	1.38	0.85	0.1%	41	0.4%	2.21	2.58	1.78	0.2%
pancreas	C25	317	1.6%	8.46	157	0.8%	8.32	7.37	4.76	0.6%	160	1.6%	8.61	9.72	6.34	0.7%
other digestive	C26	24	0.1%	0.64	13	0.1%	0.69	0.54	0.35	0.0%	11	0.1%	0.59	0.72	0.44	0.0%
nasal cavity/middle ear	C30	13	0.1%	0.35	8	0.0%	0.42	0.44	0.32	0.0%	5	0.1%	0.27	0.31	0.20	0.0%
sinuses	C31	8	0.0%	0.21	2	0.0%	0.11	0.12	0.09	0.0%	6	0.1%	0.32	0.34	0.27	0.0%
larynx	C32	108	0.5%	2.88	21	0.1%	1.11	1.17	0.84	0.1%	87	0.9%	4.68	5.23	3.64	0.4%
trachea	C33	6	0.0%	0.16	3	0.0%	0.16	0.17	0.12	0.0%	3	0.0%	0.16	0.19	0.14	0.0%
lung	C34	1516	7.5%	40.47	563	2.8%	29.84	28.39	19.24	2.5%	953	9.8%	51.26	58.81	39.22	4.9%
thymus	C37	7	0.0%	0.19	2	0.0%	0.11	0.13	0.10	0.0%	5	0.1%	0.27	0.29	0.21	0.0%
mediastinum	C38	12	0.1%	0.32	4	0.0%	0.21	0.25	0.18	0.0%	8	0.1%	0.43	0.52	0.32	0.0%
other chest	C39	0	0.0%	0.00	0	0.0%	0.00	0.00	0.00	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
bones, joints of limbs	C40	13	0.1%	0.35	5	0.0%	0.26	0.26	0.25	0.0%	8	0.1%	0.43	0.44	0.40	0.0%
bones, joints head and trunk	C41	6	0.0%	0.16	0	0.0%	0.00	0.00	0.00	0.0%	6	0.1%	0.32	0.31	0.29	0.0%
melanoma skin	C43	412	2.1%	11.00	248	1.2%	13.14	13.35	10.16	1.1%	164	1.7%	8.82	9.99	7.18	0.8%
non-melanoma skin	C44	5045	25.1%	134.67	2329	11.6%	123.42	115.64	78.67	8.6%	2716	27.9%	146.09	167.69	110.66	11.8%

^a EASR: The European age-standardised incidence rate per 100,000 persons per year (see Appendix 4)

^b WASR: The world age-standardised incidence rate per 100,000 persons per year (see Appendix 4)

^c The risk of developing cancer before age 75 (see Appendix 4)

APPENDIX 1.

Appendix 1. contd.		Number of new cancer cases, 1999														
Cancer site	ICD 10 code	Both sexes			Female						Male					
		cases	% of total	cases per 100000 person years	cases	% of total	cases per 100000 person years	EASR ^a	WASR ^b	0-74 cumulative risk ^c	cases	% of total	cases per 100000 person years	EASR	WASR	0-74 cumulative risk
mesothelioma	C45	18	0.1%	0.48	7	0.0%	0.37	0.45	0.36	0.0%	11	0.1%	0.59	0.75	0.48	0.0%
Kaposi's sarcoma	C46	5	0.0%	0.13	1	0.0%	0.05	0.04	0.02	0.0%	4	0.0%	0.22	0.24	0.19	0.0%
peripheral nerves	C47	5	0.0%	0.13	2	0.0%	0.11	0.09	0.12	0.0%	3	0.0%	0.16	0.18	0.13	0.0%
peritoneum	C48	10	0.0%	0.27	5	0.0%	0.26	0.32	0.25	0.0%	5	0.1%	0.27	0.29	0.22	0.0%
connective tissues	C49	74	0.4%	1.98	33	0.2%	1.75	1.78	1.48	0.1%	41	0.4%	2.21	2.35	1.70	0.1%
breast	C50	1752	8.7%	46.77	1738	8.6%	92.10	100.05	74.15	7.9%	14	0.1%	0.75	0.87	0.57	0.1%
vulva	C51	42	0.2%	1.12	42	0.2%	2.23	1.87	1.21	0.1%	0	0.0%	0.00	0.00	0.00	0.0%
vagina	C52	7	0.0%	0.19	7	0.0%	0.37	0.32	0.19	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
cervix	C53	152	0.8%	4.06	152	0.8%	8.06	8.87	7.17	0.7%	0	0.0%	0.00	0.00	0.00	0.0%
corpus uteri	C54	247	1.2%	6.59	247	1.2%	13.09	13.87	9.94	1.2%	0	0.0%	0.00	0.00	0.00	0.0%
uterus nos	C55	12	0.1%	0.32	12	0.1%	0.64	0.69	0.49	0.1%	0	0.0%	0.00	0.00	0.00	0.0%
ovary	C56	333	1.7%	8.89	333	1.7%	17.65	18.26	13.48	1.5%	0	0.0%	0.00	0.00	0.00	0.0%
other female genital	C57	4	0.0%	0.11	4	0.0%	0.21	0.23	0.16	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
placenta	C58	0	0.0%	0.00	0	0.0%	0.00	0.00	0.00	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
penis	C60	26	0.1%	0.69	0	0.0%	0.00	0.00	0.00	0.0%	26	0.3%	1.40	1.56	1.03	0.1%
prostate	C61	1378	6.9%	36.78	0	0.0%	0.00	0.00	0.00	0.0%	1378	14.1%	74.12	83.56	53.32	6.2%
testis	C62	105	0.5%	2.80	0	0.0%	0.00	0.00	0.00	0.0%	105	1.1%	5.65	5.69	5.58	0.4%
other male genital	C63	3	0.0%	0.08	0	0.0%	0.00	0.00	0.00	0.0%	3	0.0%	0.16	0.16	0.11	0.0%
kidney	C64	277	1.4%	7.39	103	0.5%	5.46	5.34	3.98	0.5%	174	1.8%	9.36	10.70	7.49	0.9%
renal pelvis	C65	8	0.0%	0.21	4	0.0%	0.21	0.15	0.09	0.0%	4	0.0%	0.22	0.25	0.19	0.0%
ureter	C66	8	0.0%	0.21	3	0.0%	0.16	0.17	0.13	0.0%	5	0.1%	0.27	0.27	0.18	0.0%
bladder	C67	444	2.2%	11.85	123	0.6%	6.52	6.14	4.08	0.5%	321	3.3%	17.27	20.02	13.18	1.5%
other urinary	C68	6	0.0%	0.16	2	0.0%	0.11	0.08	0.05	0.0%	4	0.0%	0.22	0.25	0.16	0.0%
eye	C69	42	0.2%	1.12	28	0.1%	1.48	1.56	1.18	0.1%	14	0.1%	0.75	0.86	0.70	0.1%
meninges	C70	7	0.0%	0.19	3	0.0%	0.16	0.14	0.08	0.0%	4	0.0%	0.22	0.24	0.17	0.0%
brain	C71	244	1.2%	6.51	102	0.5%	5.41	5.40	4.19	0.5%	142	1.5%	7.64	8.59	7.16	0.7%
spinal cord	C72	6	0.0%	0.16	5	0.0%	0.26	0.29	0.32	0.0%	1	0.0%	0.05	0.04	0.05	0.0%
thyroid	C73	63	0.3%	1.68	51	0.3%	2.70	2.85	2.29	0.2%	12	0.1%	0.65	0.73	0.52	0.1%
adrenal	C74	13	0.1%	0.35	9	0.0%	0.48	0.51	0.38	0.0%	4	0.0%	0.22	0.28	0.24	0.0%
other endocrine	C75	10	0.0%	0.27	3	0.0%	0.16	0.16	0.13	0.0%	7	0.1%	0.38	0.40	0.30	0.0%
ill-defined site	C76	32	0.2%	0.85	23	0.1%	1.22	1.08	0.73	0.1%	9	0.1%	0.48	0.57	0.48	0.0%
lymph nodes	C77	1	0.0%	0.03	0	0.0%	0.00	0.00	0.00	0.0%	1	0.0%	0.05	0.05	0.05	0.0%
unknown primary site	C80	624	3.1%	16.66	323	1.6%	17.12	14.74	9.43	1.1%	301	3.1%	16.19	18.63	11.87	1.4%
Hodgkin's disease	C81	76	0.4%	2.03	32	0.2%	1.70	1.60	1.64	0.1%	44	0.5%	2.37	2.50	2.21	0.2%
follicular non-Hodgkin's lymphoma	C82	45	0.2%	1.20	21	0.1%	1.11	1.22	0.91	0.1%	24	0.2%	1.29	1.51	1.14	0.1%
diffuse non-Hodgkin's lymphoma	C83	146	0.7%	3.90	67	0.3%	3.55	3.46	2.59	0.3%	79	0.8%	4.25	4.77	3.61	0.4%
peripheral and cutaneous T cell lymphoma	C84	17	0.1%	0.45	4	0.0%	0.21	0.19	0.15	0.0%	13	0.1%	0.70	0.74	0.56	0.1%
other and unspecified NHL	C85	204	1.0%	5.45	90	0.4%	4.77	4.63	3.31	0.4%	114	1.2%	6.13	6.89	5.07	0.5%
malignant immunoproliferative disease	C88	8	0.0%	0.21	3	0.0%	0.16	0.11	0.06	0.0%	5	0.1%	0.27	0.27	0.16	0.0%

Appendix 1. contd.

Number of new cancer cases, 1999

		Both sexes			Female						Male					
Cancer site	ICD-10 code	cases	% of total	cases per 100000 person years	cases	% of total	cases per 100000 person years	EASR ^a	WASR ^b	0-74 cumulative risk ^c	cases	% of total	cases per 100000 person years	EASR	WASR	0-74 cumulative risk
multiple myeloma	C90	167	0.8%	4.46	75	0.4%	3.97	3.54	2.34	0.3%	92	0.9%	4.95	5.68	3.75	0.4%
lymphoid leukaemia	C91	178	0.9%	4.75	65	0.3%	3.44	3.33	3.01	0.3%	113	1.2%	6.08	6.93	5.39	0.5%
myeloid leukaemia	C92	118	0.6%	3.15	49	0.2%	2.60	2.51	2.00	0.2%	69	0.7%	3.71	4.02	3.06	0.3%
monocytic leukaemia	C93	5	0.0%	0.13	0	0.0%	0.00	0.00	0.00	0.0%	5	0.1%	0.27	0.31	0.18	0.0%
other specified leukaemia	C94	11	0.1%	0.29	2	0.0%	0.11	0.09	0.05	0.0%	9	0.1%	0.48	0.53	0.40	0.1%
unspecified leukaemia	C95	26	0.1%	0.69	15	0.1%	0.79	0.67	0.43	0.0%	11	0.1%	0.59	0.69	0.47	0.1%
other lymphoid and haematopoietic	C96	0	0.0%	0.00	0	0.0%	0.00	0.00	0.00	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
all invasive cancers		17434	86.8%	465.38	8331	41.5%	441.50	432.42	306.22	29.2%	9103	93.4%	489.62	556.96	375.42	47.4%
In situ cancers																
oral cavity, oesophagus and stomach	D00	14	0.1%	0.37	5	0.0%	0.26	0.22	0.14	0.0%	9	0.1%	0.48	0.53	0.36	0.0%
other digestive	D01	39	0.2%	1.04	16	0.1%	0.85	0.86	0.59	0.1%	23	0.2%	1.24	1.42	0.93	0.1%
middle ear and respiratory	D02	15	0.1%	0.40	4	0.0%	0.21	0.19	0.13	0.0%	11	0.1%	0.59	0.66	0.44	0.1%
melanoma	D03	155	0.8%	4.14	97	0.5%	5.14	5.51	4.04	0.5%	58	0.6%	3.12	3.50	2.48	0.3%
carcinoma of skin	D04	887	4.4%	23.68	614	3.1%	32.54	30.15	20.07	2.6%	273	2.8%	14.68	16.54	10.96	1.3%
breast	D05	103	0.5%	2.75	103	0.5%	5.46	6.66	5.20	0.5%	0	0.0%	0.00	0.00	0.00	0.0%
cervix	D06	908	4.5%	24.24	908	4.5%	48.12	48.85	47.40	3.5%	0	0.0%	0.00	0.00	0.00	0.0%
other genital	D07	20	0.1%	0.53	14	0.1%	0.74	0.80	0.62	0.1%	6	0.1%	0.32	0.37	0.26	0.0%
other sites	D09	37	0.2%	0.99	9	0.0%	0.48	0.51	0.35	0.1%	28	0.3%	1.51	1.65	1.06	0.1%
all in situ		2178	10.8%	58.14	1770	8.8%	93.80	93.75	78.53	7.1%	408	4.2%	21.95	24.67	16.49	1.8%
Benign																
meninges	D32	58	0.3%	1.55	38	0.2%	2.01	2.12	1.55	0.1%	20	0.2%	1.08	1.18	0.85	0.1%
brain	D33	38	0.2%	1.01	26	0.1%	1.38	1.60	1.30	0.1%	12	0.1%	0.65	0.70	0.61	0.1%
endocrine	D35	47	0.2%	1.25	19	0.1%	1.01	1.15	0.89	0.1%	28	0.3%	1.51	1.80	1.43	0.2%
all benign		143	0.7%	3.82	83	0.8%	4.40	4.87	3.74	0.3%	60	0.6%	3.23	3.68	2.89	0.4%
Uncertain behaviour																
oral and digestive	D37	75	0.4%	2.00	35	0.2%	1.85	1.83	1.50	0.1%	40	0.4%	2.15	2.31	1.77	0.2%
respiratory	D38	1	0.0%	0.03	0	0.0%	0.00	0.00	0.00	0.0%	1	0.0%	0.05	0.07	0.06	0.0%
female genital	D39	12	0.1%	0.32	12	0.1%	0.64	0.69	0.59	0.1%	0	0.0%	0.00	0.00	0.00	0.0%
male genital	D40	2	0.0%	0.05	0	0.0%	0.00	0.00	0.00	0.0%	2	0.0%	0.11	0.11	0.15	0.0%
urinary	D41	28	0.1%	0.75	5	0.0%	0.26	0.27	0.19	0.0%	23	0.2%	1.24	1.41	1.04	0.1%
meninges	D42	0	0.0%	0.00	0	0.0%	0.00	0.00	0.00	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
brain and CNS	D43	5	0.0%	0.13	4	0.0%	0.21	0.19	0.18	0.0%	1	0.0%	0.05	0.06	0.05	0.0%
endocrine	D44	16	0.1%	0.43	7	0.0%	0.37	0.35	0.36	0.0%	9	0.1%	0.48	0.54	0.47	0.0%
polycythaemia vera	D45	31	0.2%	0.83	12	0.1%	0.64	0.61	0.40	0.0%	19	0.2%	1.02	1.12	0.84	0.1%
myelodysplastic syndromes	D46	66	0.3%	1.76	30	0.1%	1.59	1.49	0.99	0.1%	36	0.4%	1.94	2.18	1.33	0.2%
other lymphoid, haematopoietic	D47	63	0.3%	1.68	27	0.1%	1.43	1.25	0.85	0.1%	36	0.4%	1.94	2.26	1.46	0.2%
other sites	D48	39	0.2%	1.04	26	0.1%	1.38	1.42	1.14	0.1%	13	0.1%	0.70	0.77	0.67	0.1%
all uncertain		338	1.7%	9.02	158	0.8%	8.37	8.11	6.19	0.6%	180	1.8%	9.68	10.84	7.83	0.8%
All cancers		20093	100.0%	536.36	10342	51.5%	548.07	539.16	394.69	34.9%	9751	100.0%	524.48	596.16	402.63	37.3%

APPENDIX 1.

APPENDIX 2. NUMBER OF CANCER DEATHS, 1999

Appendix 2.		Number of cancer deaths, 1999														
		Both sexes			Female					Male						
Cancer site	ICD-10 code	deaths	% of total	deaths per 100000 person years	deaths	% of total	deaths per 100000 person years	EASR ^a	WASR ^b	0-74 cumulative risk ^c	deaths	% of total	deaths per 100000 person years	EASR	WASR	0-74 cumulative risk
Invasive Cancers																
lip	C00	6	0.1%	0.16	1	0.0%	0.05	0.04	0.02	0.0%	5	0.1%	0.26	0.24	0.14	0.0%
base of tongue	C01	2	0.0%	0.05	0	0.0%	0.00	0.00	0.00	0.0%	2	0.0%	0.10	0.09	0.07	0.0%
other tongue	C02	24	0.3%	0.63	8	0.2%	0.42	0.38	0.25	0.0%	16	0.4%	0.84	0.96	0.72	0.1%
gum	C03	3	0.0%	0.08	3	0.1%	0.16	0.14	0.09	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
floor of mouth	C04	20	0.3%	0.53	4	0.1%	0.21	0.17	0.11	0.0%	16	0.4%	0.84	1.00	0.73	0.1%
palate	C05	5	0.1%	0.13	1	0.0%	0.05	0.04	0.02	0.0%	4	0.1%	0.21	0.20	0.14	0.0%
other mouth	C06	7	0.1%	0.18	4	0.1%	0.21	0.20	0.14	0.0%	3	0.1%	0.16	0.17	0.11	0.0%
parotid	C07	13	0.2%	0.34	1	0.0%	0.05	0.07	0.05	0.0%	12	0.3%	0.63	0.57	0.38	0.0%
other salivary	C08	4	0.1%	0.11	0	0.0%	0.00	0.00	0.00	0.0%	4	0.1%	0.21	0.22	0.17	0.0%
tonsil	C09	5	0.1%	0.13	0	0.0%	0.00	0.00	0.00	0.0%	5	0.1%	0.26	0.26	0.18	0.0%
oropharynx	C10	3	0.0%	0.08	1	0.0%	0.05	0.07	0.05	0.0%	2	0.0%	0.10	0.09	0.06	0.0%
nasopharynx	C11	6	0.1%	0.16	0	0.0%	0.00	0.00	0.00	0.0%	6	0.1%	0.31	0.35	0.25	0.0%
pyriform	C12	9	0.1%	0.24	2	0.1%	0.11	0.11	0.07	0.0%	7	0.2%	0.37	0.36	0.25	0.0%
hypopharynx	C13	9	0.1%	0.24	2	0.1%	0.11	0.12	0.09	0.0%	7	0.2%	0.37	0.36	0.24	0.0%
other mouth/pharynx	C14	22	0.3%	0.58	6	0.2%	0.32	0.33	0.23	0.0%	16	0.4%	0.84	0.88	0.63	0.1%
oesophagus	C15	305	4.0%	8.03	118	3.3%	6.25	5.34	3.38	0.3%	187	4.5%	9.79	9.58	6.52	0.8%
stomach	C16	352	4.6%	9.27	148	4.2%	7.84	6.75	4.30	0.5%	204	5.0%	10.69	10.24	6.89	0.9%
small intestine	C17	9	0.1%	0.24	3	0.1%	0.16	0.14	0.08	0.0%	6	0.1%	0.31	0.36	0.28	0.0%
colon	C18	706	9.2%	18.60	315	8.9%	16.69	14.24	8.89	0.8%	391	9.5%	20.48	19.27	12.85	1.5%
rectosigmoid	C19	55	0.7%	1.45	20	0.6%	1.06	1.10	0.76	0.1%	35	0.9%	1.83	1.76	1.15	0.1%
rectum	C20	200	2.6%	5.27	71	2.0%	3.76	3.35	2.15	0.2%	129	3.1%	6.76	6.54	4.43	0.5%
anus	C21	9	0.1%	0.24	3	0.1%	0.16	0.21	0.14	0.0%	6	0.1%	0.31	0.30	0.21	0.0%
liver	C22	131	1.7%	3.46	51	1.4%	2.70	2.41	1.53	0.2%	80	1.9%	4.19	4.06	2.76	0.4%
gallbladder	C23	43	0.6%	1.13	30	0.8%	1.59	1.46	0.94	0.1%	13	0.3%	0.68	0.68	0.47	0.1%
other biliary	C24	17	0.2%	0.45	4	0.1%	0.21	0.19	0.12	0.0%	13	0.3%	0.68	0.67	0.45	0.1%
pancreas	C25	371	4.8%	9.77	187	5.3%	9.91	8.35	5.19	0.6%	184	4.5%	9.64	9.11	6.00	0.7%
other digestive	C26	162	2.1%	4.27	75	2.1%	3.97	3.24	1.96	0.2%	87	2.1%	4.56	3.98	2.58	0.3%
nasal cavity/middle ear	C30	2	0.0%	0.05	1	0.0%	0.05	0.04	0.02	0.0%	1	0.0%	0.05	0.03	0.01	0.0%
sinuses	C31	4	0.1%	0.11	2	0.1%	0.11	0.09	0.05	0.0%	2	0.0%	0.10	0.13	0.10	0.0%
larynx	C32	62	0.8%	1.63	13	0.4%	0.69	0.63	0.41	0.0%	49	1.2%	2.57	2.51	1.70	0.2%
trachea	C33	1	0.0%	0.03	0	0.0%	0.00	0.00	0.00	0.0%	1	0.0%	0.05	0.04	0.02	0.0%
lung	C34	1447	18.9%	38.12	532	15.0%	28.19	25.85	16.88	2.0%	915	22.2%	47.93	45.77	30.85	4.0%
mediastinum	C38	17	0.2%	0.45	3	0.1%	0.16	0.18	0.13	0.0%	14	0.3%	0.73	0.79	0.54	0.1%
bones, joints of limbs	C40	4	0.1%	0.11	3	0.1%	0.16	0.13	0.13	0.0%	1	0.0%	0.05	0.04	0.05	0.0%
bones, joints head and trunk	C41	22	0.3%	0.58	5	0.1%	0.26	0.22	0.14	0.0%	17	0.4%	0.89	0.88	0.77	0.1%
melanoma skin	C43	85	1.1%	2.24	39	1.1%	2.07	1.95	1.35	0.1%	46	1.1%	2.41	2.44	1.79	0.2%
non-melanoma skin	C44	45	0.6%	1.19	17	0.5%	0.90	0.68	0.39	0.0%	28	0.7%	1.47	1.20	0.75	0.1%
peritoneum	C48	15	0.2%	0.40	6	0.2%	0.32	0.27	0.18	0.0%	9	0.2%	0.47	0.51	0.35	0.0%
connective tissues	C49	38	0.5%	1.00	21	0.6%	1.11	1.05	0.85	0.1%	17	0.4%	0.89	0.88	0.68	0.1%

a EASR: The European age-standardised rate per 100,000 persons per year (see Appendix 4)

b WASR: The world age-standardised rate per 100,000 persons per year (see Appendix 4)

c The risk of cancer before age 75 (see Appendix 4)

Appendix 2. contd.		Number of cancer deaths, 1999														
Cancer site	ICD-10 code	Both sexes			Female						Male					
		deaths	% of total	deaths per 100000 person-years	deaths	% of total	deaths per 100000 person-years	EASR ^a	WASR ^b	0-74 cumulative risk ^c	deaths	% of total	deaths per 100000 person-years	EASR	WASR	0-74 cumulative risk
breast	C50	648	8.5%	17.07	644	18.2%	34.13	34.80	24.53	2.7%	4	0.1%	0.21	0.20	0.14	0.0%
vulva	C51	14	0.2%	0.37	14	0.4%	0.74	0.62	0.41	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
vagina	C52	5	0.1%	0.13	5	0.1%	0.26	0.25	0.15	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
cervix	C53	78	1.0%	2.06	78	2.2%	4.13	4.37	3.24	0.3%	0	0.0%	0.00	0.00	0.00	0.0%
corpus uteri	C54	43	0.6%	1.13	43	1.2%	2.28	2.10	1.37	0.2%	0	0.0%	0.00	0.00	0.00	0.0%
uterus nos	C55	10	0.1%	0.26	10	0.3%	0.53	0.44	0.27	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
ovary	C56	221	2.9%	5.82	221	6.2%	11.71	11.89	8.34	1.0%	0	0.0%	0.00	0.00	0.00	0.0%
other female genital	C57	2	0.0%	0.05	2	0.1%	0.11	0.12	0.09	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
penis	C60	5	0.1%	0.13	0	0.0%	0.00	0.00	0.00	0.0%	5	0.1%	0.26	0.22	0.13	0.0%
prostate	C61	499	6.5%	13.15	0	0.0%	0.00	0.00	0.00	0.0%	499	12.1%	26.14	20.86	12.44	1.3%
testis	C62	9	0.1%	0.24	0	0.0%	0.00	0.00	0.00	0.0%	9	0.2%	0.47	0.45	0.37	0.0%
kidney	C64	144	1.9%	3.79	55	1.6%	2.91	2.72	1.82	0.2%	89	2.2%	4.66	4.76	3.31	0.4%
bladder	C67	162	2.1%	4.27	47	1.3%	2.49	1.95	1.16	0.1%	115	2.8%	6.02	4.90	2.94	0.3%
eye	C69	1	0.0%	0.03	1	0.0%	0.05	0.03	0.01	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
meninges	C70	1	0.0%	0.03	1	0.0%	0.05	0.07	0.05	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
brain	C71	186	2.4%	4.90	74	2.1%	3.92	3.80	2.69	0.3%	112	2.7%	5.87	6.40	4.89	0.6%
spinal cord	C72	1	0.0%	0.03	1	0.0%	0.05	0.07	0.05	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
thyroid	C73	23	0.3%	0.61	16	0.5%	0.85	0.72	0.46	0.1%	7	0.2%	0.37	0.35	0.24	0.0%
adrenal	C74	9	0.1%	0.24	3	0.1%	0.16	0.17	0.13	0.0%	6	0.1%	0.31	0.33	0.36	0.0%
other endocrine	C75	5	0.1%	0.13	0	0.0%	0.00	0.00	0.00	0.0%	5	0.1%	0.26	0.21	0.15	0.0%
ill-defined site	C76	77	1.0%	2.03	32	0.9%	1.70	1.34	0.81	0.1%	45	1.1%	2.36	2.04	1.32	0.1%
unknown primary site	C80	485	6.3%	12.77	240	6.8%	12.72	11.03	7.00	0.7%	245	6.0%	12.83	11.86	7.89	1.0%
Hodgkin's disease	C81	23	0.3%	0.61	8	0.2%	0.42	0.39	0.31	0.0%	15	0.4%	0.79	0.81	0.67	0.1%
follicular non-Hodgkin's lymphoma	C82	1	0.0%	0.03	0	0.0%	0.00	0.00	0.00	0.0%	1	0.0%	0.05	0.05	0.03	0.0%
diffuse non-Hodgkin's lymphoma	C83	2	0.0%	0.05	1	0.0%	0.05	0.05	0.04	0.0%	1	0.0%	0.05	0.05	0.05	0.0%
other and unspecified NHL	C85	230	3.0%	6.06	105	3.0%	5.56	5.33	3.71	0.4%	125	3.0%	6.55	6.57	4.65	0.6%
multiple myeloma	C90	153	2.0%	4.03	69	2.0%	3.66	3.33	2.22	0.2%	84	2.0%	4.40	3.88	2.50	0.3%
lymphoid leukaemia	C91	90	1.2%	2.37	43	1.2%	2.28	1.90	1.34	0.1%	47	1.1%	2.46	2.27	1.60	0.2%
myeloid leukaemia	C92	111	1.5%	2.92	52	1.5%	2.76	2.47	1.78	0.2%	59	1.4%	3.09	3.11	2.35	0.3%
monocytic leukaemia	C93	1	0.0%	0.03	1	0.0%	0.05	0.04	0.02	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
other specified leukaemia	C94	2	0.0%	0.05	1	0.0%	0.05	0.04	0.02	0.0%	1	0.0%	0.05	0.06	0.09	0.0%
unspecified leukaemia	C95	61	0.8%	1.61	23	0.7%	1.22	0.99	0.60	0.0%	38	0.9%	1.99	1.82	1.20	0.1%
all invasive		7542	98.6%	198.67	3490	98.7%	184.95	170.51	113.72	0.0%	4052	98.5%	212.24	198.77	133.59	16.0%

APPENDIX 2.

Appendix 2. contd.		Number of cancer deaths, 1999														
Cancer site	ICD-10 code	Both sexes			Female						Male					
		deaths	% of total	deaths per 100000 person years	deaths	% of total	deaths per 100000 person years	EASR ^d	WASR ^b	0-74 cumulative risk ^c	deaths	% of total	deaths per 100000 person years	EASR	WASR	0-74 cumulative risk
benign																
salivary glands	D11	1	0.0%	0.026	0	0.0%	0.00	0.00	0.00	0.0%	1	0.0%	0.05	0.03	0.01	0.0%
colorectal	D12	3	0.0%	0.079	2	0.1%	0.11	0.08	0.04	0.0%	1	0.0%	0.05	0.04	0.02	0.0%
other GI	D13	1	0.0%	0.03	0	0.0%	0.00	0.00	0.00	0.0%	1	0.0%	0.05	0.03	0.01	0.0%
respiratory	D14	1	0.0%	0.03	0	0.0%	0.00	0.00	0.00	0.0%	1	0.0%	0.05	0.07	0.05	0.0%
soft tissue	D21	2	0.0%	0.05	0	0.0%	0.00	0.00	0.00	0.0%	2	0.0%	0.10	0.13	0.14	0.0%
other skin	D23	2	0.0%	0.05	1	0.0%	0.05	0.04	0.02	0.0%	1	0.0%	0.05	0.04	0.02	0.0%
urinary	D30	1	0.0%	0.03	0	0.0%	0.00	0.00	0.00	0.0%	1	0.0%	0.05	0.07	0.05	0.0%
meninges	D32	11	0.1%	0.29	6	0.2%	0.32	0.30	0.20	0.0%	5	0.1%	0.26	0.26	0.18	0.0%
brain	D33	4	0.1%	0.11	1	0.0%	0.05	0.07	0.05	0.0%	3	0.1%	0.16	0.19	0.14	0.0%
endocrine	D35	2	0.0%	0.05	1	0.0%	0.05	0.03	0.01	0.0%	1	0.0%	0.05	0.04	0.02	0.0%
other/unspecified	D36	3	0.0%	0.08	2	0.1%	0.11	0.10	0.11	0.0%	1	0.0%	0.05	0.04	0.02	0.0%
all benign		31	0.9%	1.64	13	0.4%	0.69	0.61	0.00	3.2%	18	0.5%	0.95	0.92	0.00	4.9%
uncertain behaviour																
oral and digestive	D37	17	0.2%	0.45	9	0.3%	0.48	0.34	0.18	0.0%	8	0.2%	0.42	0.31	0.17	0.0%
uncertain respiratory	D38	7	0.1%	0.18	1	0.0%	0.05	0.04	0.02	0.0%	6	0.1%	0.31	0.28	0.18	0.0%
urinary	D41	1	0.0%	0.03	1	0.0%	0.05	0.04	0.02	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
meninges	D42	1	0.0%	0.03	1	0.0%	0.05	0.05	0.04	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
brain and CNS	D43	18	0.2%	0.47	11	0.3%	0.58	0.50	0.33	0.0%	7	0.2%	0.37	0.33	0.24	0.0%
endocrine	D44	1	0.0%	0.03	1	0.0%	0.05	0.04	0.02	0.0%	0	0.0%	0.00	0.00	0.00	0.0%
polycythaemia vera	D45	9	0.1%	0.24	5	0.1%	0.26	0.19	0.10	0.0%	4	0.1%	0.21	0.17	0.10	0.0%
other uncertain lymphoid, haematopoietic	D47	9	0.1%	0.24	1	0.0%	0.05	0.04	0.02	0.0%	8	0.2%	0.42	0.37	0.27	0.0%
other sites	D48	15	0.2%	0.40	4	0.1%	0.21	0.17	0.10	0.0%	11	0.3%	0.58	0.48	0.32	0.0%
all uncertain		78	1.0%	2.06	34	1.0%	1.80	1.40	0.85	0.1%	44	1.1%	2.30	1.93	1.29	0.1%
all cancers		7651	100.0%	201.55	3537	100.0%	187.44	172.52	115.00	12.5%	4114	100.0%	215.48	201.62	135.54	15.1%

APPENDIX 3. NUMBER OF CANCER CASES & DEATHS BY COUNTY

Appendix 3.

Number of cancer cases and deaths by county for the commoner cancers: 1994-1999 averages

Female cases

	All cancers	All invasive cancers	Non-melanoma skin	Breast	Lung	Colon	Rectum	Lymphoma	Stomach	Bladder	Melanoma skin	Leukaemia	Other invasive	Non-invasive
Clare	198	164	47	35	7	8	3	5	4	2	4	4	48	34
Cork	1220	1001	282	199	57	69	27	25	17	15	34	19	257	220
Cavan	144	122	36	21	7	10	3	4	4	2	4	2	32	22
Carlow	102	86	20	20	5	5	2	3	2	2	3	2	23	16
Donegal	342	285	74	53	18	26	4	8	6	5	8	5	78	58
Dublin	3315	2650	844	505	205	144	54	71	60	43	73	40	614	665
Galway	478	383	112	81	17	23	10	10	9	5	11	7	99	94
Kildare	287	232	56	51	15	12	5	8	3	4	8	5	67	55
Kilkenny	164	135	34	30	7	7	4	5	4	3	4	4	36	29
Kerry	381	321	112	58	14	22	8	7	4	5	7	6	80	60
Longford	86	72	19	14	5	5	1	2	2	1	2	2	21	14
Louth	275	225	71	38	15	13	4	4	6	3	9	5	60	50
Limerick	380	328	75	71	21	19	6	12	7	7	11	7	94	53
Leitrim	79	68	16	13	2	6	1	2	1	2	2	1	24	11
Laois	129	106	26	22	5	8	3	4	2	2	3	2	29	23
Meath	250	203	58	40	12	13	6	4	5	3	6	4	54	47
Monaghan	115	96	26	18	4	6	2	3	4	1	3	2	28	19
Mayo	286	252	79	48	15	15	5	8	5	2	7	4	66	35
Offaly	145	116	28	25	6	9	2	4	3	2	3	3	32	29
Roscommon	140	119	33	24	6	10	3	2	3	1	3	2	34	21
Sligo	161	135	35	29	9	10	2	3	3	2	2	2	39	26
Tipperary	335	284	70	55	17	17	6	10	6	6	10	5	83	51
Waterford	266	218	64	43	11	13	5	6	4	3	8	4	59	48
Westmeath	184	147	41	29	8	11	3	3	2	3	5	3	41	37
Wicklow	267	221	63	48	14	15	4	5	5	3	6	3	57	46
Wexford	256	212	49	41	17	17	4	5	4	3	7	5	61	44

Male cases

	All cancers	All invasive cancers	Non-melanoma skin	Breast	Lung	Prostate	Colon	Rectum	Lymphoma	Stomach	Bladder	Melanoma skin	Leukaemia	Other invasive	Non-invasive
Clare	224	212	70	0	20	28	14	8	6	6	6	3	6	46	13
Cork	1162	1091	347	1	103	152	76	42	33	28	37	19	29	225	71
Cavan	176	166	50	0	15	22	12	7	4	5	7	3	4	37	10
Carlow	109	102	31	1	12	19	6	3	4	5	4	0	2	19	7
Donegal	376	359	108	1	37	50	26	10	10	13	16	5	9	74	18
Dublin	2675	2514	786	5	327	303	149	91	71	88	95	44	45	512	161
Galway	533	499	160	1	45	71	32	19	13	16	16	7	11	109	34
Kildare	258	241	67	1	30	27	16	11	9	9	7	6	7	52	17
Kilkenny	173	161	44	0	15	31	10	6	4	6	6	3	3	35	12
Kerry	407	385	138	0	34	42	23	11	12	12	15	7	10	81	22
Longford	95	88	24	0	11	14	5	4	2	3	2	2	3	21	7
Louth	239	226	73	0	28	26	14	7	7	9	7	3	6	48	13
Limerick	365	345	96	0	39	41	23	13	10	9	14	7	9	86	19
Leitrim	90	85	23	0	9	12	7	3	2	3	4	1	3	19	5
Laois	134	124	38	0	12	20	8	4	4	3	4	2	3	28	10
Meath	252	236	81	0	18	28	16	7	8	9	9	4	4	51	16
Monaghan	130	124	35	0	12	19	10	4	3	5	4	1	3	28	6
Mayo	338	320	106	1	27	40	23	12	8	10	12	3	7	73	18
Offaly	140	132	40	0	12	17	9	3	3	5	4	2	3	34	9
Roscommon	170	160	52	1	15	23	8	6	5	4	6	3	3	36	10
Sligo	173	167	50	1	20	24	10	6	3	5	6	2	4	39	6
Tipperary	354	336	103	0	35	47	22	13	9	9	14	5	7	71	18
Waterford	258	241	73	1	24	36	17	8	6	9	9	4	7	49	17
Westmeath	184	172	54	0	17	24	11	6	6	8	5	3	4	37	13
Wicklow	258	243	72	1	23	36	15	6	8	8	12	5	4	56	15
Wexford	259	247	61	1	29	39	17	9	9	6	10	3	8	56	13

APPENDIX 3.

Appendix 3.

Number of cancer cases and deaths by county for the commoner cancers: 1994-1999 averages

Female deaths

	All cancers	Lung	Colon	Female breast	Stomach	Pancreas	Oesophagus	Rectum and anus	Lymphoma	Brain	Ovary	Leukaemia	Other digestive	Bladder	Other invasive	Non-invasive
Carlow	45	6	4	9	2	3	3	1	2	1	2	1	1	1	10	0
Cavan	53	6	6	9	4	4	2	2	2	2	4	2	1	1	12	1
Clare	74	7	7	15	4	3	2	2	3	1	6	1	3	1	21	1
Cork	417	52	40	78	15	21	15	13	13	12	29	12	11	7	100	2
Donegal	121	17	15	18	6	7	2	3	4	3	7	3	5	2	30	1
Dublin	1021	199	89	177	50	47	36	30	31	26	63	23	10	15	220	6
Galway	157	17	15	31	8	10	4	3	7	5	8	5	6	3	33	2
Kerry	127	15	11	25	4	7	4	3	4	3	8	6	4	3	31	1
Kildare	96	15	8	18	3	4	4	2	3	3	8	3	3	2	21	2
Kilkenny	64	6	5	12	3	3	2	1	2	2	5	3	3	1	15	1
Laois	49	5	5	7	1	3	3	1	2	1	5	2	1	1	13	1
Leitrim	29	2	4	4	2	1	0	1	1	1	3	0	1	1	10	1
Limerick	157	22	16	28	8	10	5	2	5	5	11	4	2	3	35	3
Longford	32	5	2	6	2	1	2	1	1	1	1	1	1	1	7	0
Louth	86	13	7	18	5	4	3	2	2	2	4	2	3	2	22	0
Mayo	128	16	11	26	6	9	3	4	4	4	7	4	4	1	30	2
Meath	80	12	10	16	3	4	3	2	2	3	4	2	3	1	19	1
Monaghan	40	6	2	9	3	1	2	1	1	1	3	2	2	1	9	0
Offaly	50	6	5	9	3	3	2	1	1	1	2	2	2	1	12	1
Roscommon	55	6	8	10	2	3	1	1	2	1	4	1	2	1	12	1
Sligo	62	10	5	13	3	4	2	2	1	2	4	1	2	2	13	0
Tipperary	142	20	11	26	6	7	7	3	5	5	9	4	4	2	34	0
Waterford	88	12	8	15	3	4	3	3	3	2	6	3	3	1	23	1
Westmeath	57	7	4	12	3	3	1	2	1	2	3	1	2	1	15	1
Wexford	102	16	11	16	3	6	2	2	2	2	7	3	3	1	27	2
Wicklow	88	15	8	18	3	3	4	3	2	2	6	2	3	1	19	1

Male deaths

	All cancers	Lung	Colon	Prostate	Stomach	Pancreas	Oesophagus	Rectum and anus	Lymphoma	Brain	Leukaemia	Other digestive	Bladder	Other invasive	Non-invasive
Carlow	43	10	5	7	2	1	3	1	2	1	1	1	1	8	1
Cavan	79	17	7	11	5	5	3	3	2	2	3	2	2	17	0
Clare	100	19	7	14	5	4	5	5	4	3	4	3	2	26	1
Cork	469	103	45	60	24	20	21	21	16	16	16	10	13	100	5
Donegal	163	36	14	25	11	8	6	5	5	4	6	6	6	34	1
Dublin	1068	312	94	107	66	40	49	39	34	33	27	14	28	218	8
Galway	209	41	18	32	12	12	9	8	9	6	6	6	6	45	2
Kerry	156	34	15	17	8	8	7	4	7	6	5	4	5	34	2
Kildare	108	27	10	12	7	5	5	5	4	4	3	3	2	21	1
Kilkenny	76	17	6	13	6	3	5	3	3	1	2	1	2	13	1
Laois	64	13	4	11	3	3	3	3	2	2	2	2	1	15	1
Leitrim	46	9	6	8	2	2	3	2	2	1	2	1	1	8	1
Limerick	175	43	19	17	7	10	9	5	5	6	6	2	6	40	2
Longford	39	10	3	6	2	2	1	1	1	1	2	1	1	10	0
Louth	92	26	9	9	7	3	5	4	3	3	4	1	1	15	1
Mayo	168	30	16	32	9	8	6	10	4	5	5	5	6	32	2
Meath	93	19	8	14	5	6	4	2	3	3	2	2	3	22	1
Monaghan	55	12	7	7	4	3	3	1	0	2	2	2	2	12	0
Offaly	64	14	6	6	4	4	5	2	2	2	2	2	2	15	0
Roscommon	67	13	8	11	3	2	3	2	2	3	1	3	2	16	0
Sligo	79	19	8	11	5	4	3	3	3	2	2	3	2	16	1
Tipperary	159	38	17	26	8	8	7	7	5	3	5	5	6	27	1
Waterford	110	25	10	12	6	6	6	4	4	3	4	3	3	25	1
Westmeath	74	15	8	10	6	3	4	2	3	1	2	1	2	16	1
Wexford	117	28	11	14	5	6	5	6	4	2	5	2	4	24	1
Wicklow	100	24	9	12	7	5	6	2	3	3	3	2	3	21	0

APPENDIX 4. METHODS & DEFINITIONS

Cases and deaths

All neoplasms (including in situ, uncertain and some benign neoplasms) registered as incident between January 1st, 1994 and December 31st, 1999, and which had been registered before July 1st, 2002, are included in this report. Neoplasms described as "invasive" are those in ICD 10 classifications C00 to C96 inclusive. Other conditions registered, and described as "non-invasive", are in situ cancers, cancers of uncertain behaviour, and benign intracranial and intraspinal tumours.

The rules suggested by IARC for dealing with multiple primary tumours have been used in compiling these statistics, so figures may differ from those presented in earlier reports for the years 1994 to 1997, which did not apply these rules.

As with all cancer registration, the data on which this report is based is dynamic, so case or death numbers may not exactly tally with those released previously or in the future.

Data on cancer deaths were kindly provided by the Central Statistics Office, Skehard Road, Cork.

Hospital episodes

Anonymised HIPE data were provided by the Economic and Social Research Institute (ESRI) for all discharges or deaths in participating hospitals during 1994-1999 for which at least one diagnosis code was in the range 140 to 239 or was V10 (history of cancer). Although these data are complete for inpatient episodes, we noticed that one of the two major radiotherapy centres in the country does not register out-patient radiotherapy treatments in HIPE, and so the figures hugely under-estimate the number of radiotherapy treatments. The same is probably true for chemotherapy. The practice of recording radio- and chemotherapy as both diagnoses and procedures also gives rise to some difficulty in interpreting the data. These data are estimated by the ESRI to cover approximately 95% of discharges in the participating hospitals at present. HIPE recording does not take place in private hospitals, or in some hospices or specialised hospitals (e.g. dental).

Calculations

Crude, age-standardised and cumulative incidence rates

These were calculated by standard methods. The denominator population for 1994 to 1998 was drawn from the estimates made by the Central Statistics Office and for 1999 to 2002 from the published population projections, using the M1F1 model.

Crude incidence rate

The number of incident (new) cases or deaths divided by person-years at risk.

European age-standardised incidence or mortality rate (EASR)

An incidence or mortality rate adjusted (standardised) to a hypothetical European standard population. Use of this standard eliminates differences in incidence or mortality rate due to difference in age-composition of the populations compared.

World age-standardised incidence or mortality rate (WASR)

As EASR, but using a hypothetical world standard population

Cumulative incidence rate

This gives the risk of developing (or dying of) cancer before age 75, assuming every individual survives to that age. As life expectancy in Ireland is approximately 75, this also gives a rough estimate of lifetime risk. However, as an estimate of lifetime risk it is inaccurate for cancers with a high incidence or mortality after the age of 74.

Lifetime risk (lifetable method)

This method of calculating lifetime risk is more accurate than the 0-74 cumulative risk. It uses age-specific incidence rates and the numbers predicted as surviving to a particular age from standard life tables.

Predictions

Estimates of incidence and mortality in 2000-2002 were made by fitting a log-linear model with Poisson assumptions to the data. Year of diagnosis was modelled as a continuous variable, and age as a categorical variable, using five year age groups, with the exception of patients under 55, who were combined into a single group. This model was found to give the best fit to data.

Estimated annual percentage change (EAPC)

EAPC was estimated for the period 1994 to 2002 from the slope of the regression of the log of the number of cases/deaths on the year of incidence/death, using the LOGEST function in Microsoft Excel™. Case numbers for each year are related to those in the previous year by the formula:

$$n_{i+1} = n_1 + n_1 \cdot \text{EAPC}; \text{ or } n_{i+x} = n_1 + n_1 \cdot \text{EAPC}_x$$

Person-years of life lost (PYLL)

The number of years of life lost to cancer was calculated by multiplying the number of deaths at each single year of age by life expectancy at that age.

1994-2002



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