

# 1. Summary

## What is this report?

This is the fifth report on cancer in Ireland from the National Cancer Registry. It describes new cancer cases and cancer deaths in Ireland from 1994 to 1998. We also report on

- time trends in cancer
- variation in cancer risk within Ireland
- variation in cancer risk between Ireland and its close neighbours
- cancer treatment
- cancer survival

## Basic facts

- During the five years covered by this report, almost 20,000 new cases of cancer and 7,500 cancer deaths occurred every year. The commonest cancers were those of skin, large bowel, lung, breast (in women) and prostate (in men).
- Overall, men and women had similar risks of developing cancer, although men were more likely to die from it. Older people were much more likely to develop cancer, with the risk doubling in every successive decade of life. Most patients (60%) were aged over 65 at the time of diagnosis and the majority (72%) of cancer deaths also occurred in those over 65.
- One death in every four was due to cancer. However, in women under 65, almost half of all deaths (44%) were due to cancer.
- Between 1994 and 1998 there was no significant change in the risk of developing or dying from cancer. Although some cancers showed trends of increase or decrease with time, the overall pattern was of an unchanged risk.
- Cancer incidence in Ireland was quite similar to that in neighbouring countries. Overall, and for most common cancers, cancer rates here were lower than in Scotland, Wales and Northern Ireland, higher than in England and close to EU averages. Exceptions were breast cancer, where our risk was lower than that of the neighbouring countries, and lung cancer in women, for which our risk was well above EU average.
- The majority of patients had their cancer removed surgically; the percentage having surgery varied from 93% of patients with melanoma to 15% with cancer of the lung. There were no major differences between men and women in treatment, but older patients were much less likely to have cancer-specific treatment. Treatment also seemed to depend on the health board areas in which patients lived.
- Overall survival from cancer was 43% and was generally better for women. The best survival from the common cancers was for women with melanoma, 87% of who were alive after five years. The worst survival was for men with lung cancer, only 8% of whom were alive after five years.

**Common cancers**

The National Cancer Registry records all malignant cancers and some other early tumours which are potentially malignant. Table 1.1 and Figure 1.1 give totals for all cancers registered and also for malignant conditions only. The commonest cancer by far was non-melanoma cancer of the skin. However, this cancer accounted for fewer than half a percent of all cancer deaths. Apart from skin cancer the commonest cancer was cancer of the breast (1597 cases per year, 8% of the total). Cancers of skin, breast, colon (large bowel), lung and prostate between them accounted for two-thirds of all malignant cancers.

The largest number of deaths overall was due to lung cancer (1490 deaths per year, 20% of all cancer deaths) (Figure 1.2). Breast cancer, however, was the commonest cause of death in women (631 cases per year, 18% of the total).

Table 1.1 Number of cases and deaths for the twenty commonest cancers; 1994 – 1998 annual average

	NEW CANCER CASES				CANCER DEATHS			
	female		male		female		male	
	no. per year	% of total	no. per year	% of total	no. per year	% of total	no. per year	% of total
all registered cancers	9912	100%	9487	100%	3448	100%	4010	100%
all malignant cancers	8149	82%	8946	94%	3428	99%	3989	99%
non-melanoma skin	2375	24%	2792	29%	9	<1%	22	1%
breast	1584	16%	13	<1%	631	18%	5	<1%
lung	507	5%	972	10%	519	15%	971	24%
prostate			1150	12%			513	13%
colon	511	5%	572	6%	323	9%	370	9%
rectum and anus	237	2%	410	4%	87	3%	145	4%
lymphoma	222	2%	256	3%	104	3%	129	3%
stomach	174	2%	295	3%	156	5%	234	6%
bladder	128	1%	328	3%	54	2%	112	3%
melanoma skin	235	2%	140	1%	32	1%	28	1%
leukaemia	145	1%	199	2%	89	3%	121	3%
pancreas	163	2%	160	2%	174	5%	182	5%
ovary	312	3%			218	6%		
oesophagus	116	1%	173	2%	115	3%	187	5%
brain	103	1%	144	2%	94	3%	119	3%
kidney	87	1%	151	2%	48	1%	80	2%
corpus uteri	205	2%			44	1%		
cervix	177	2%			75	2%		
multiple myeloma	78	1%	99	1%	68	2%	76	2%
larynx	18	<1%	90	1%	11	0%	44	1%

Figure 1.1 Number of new cases for the twenty commonest cancers; 1994 – 1998 annual average

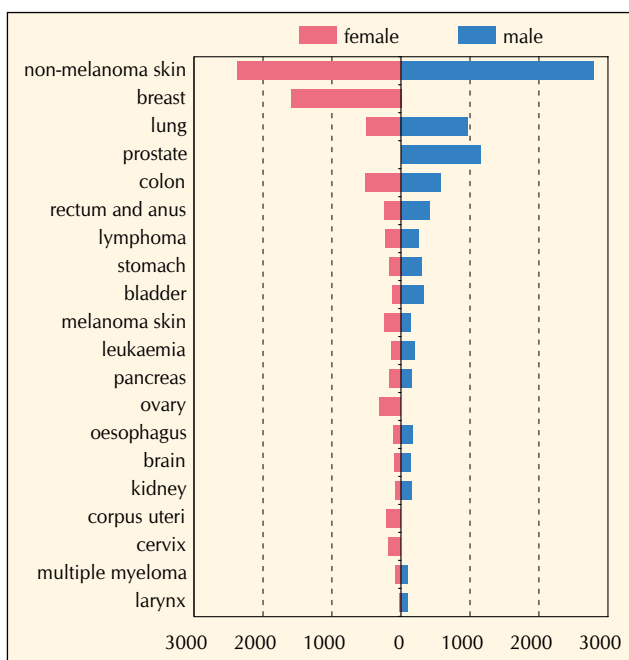
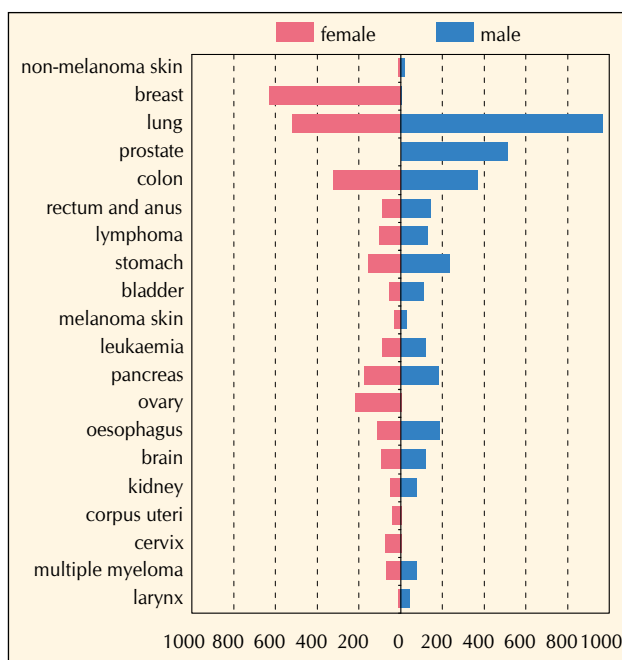


Figure 1.2 Number of deaths for the twenty commonest cancers; 1994 – 1998 annual average



**Time trends**

There was a slight upward trend in both the number of cancer cases and the number of deaths between 1994 and 1998 (Table 1.2, Figure 1.3). This seemed to have been due to population increase, as adjusting for the increase in population over the same period removed the trend (Figure 1.4). Overall, there was no significant change in cancer incidence or mortality between 1994 and 1998 for either sex.

Table 1.2 Number of cases and deaths per year, 1994 – 1998; all malignant cancers except skin

YEAR	CASES	DEATHS
1994	16964	7387
1995	16654	7498
1996	17132	7349
1997	17342	7433
1998	17383	7422

Figure 1.3 Trends in number of cancer cases and deaths, 1994 to 1998

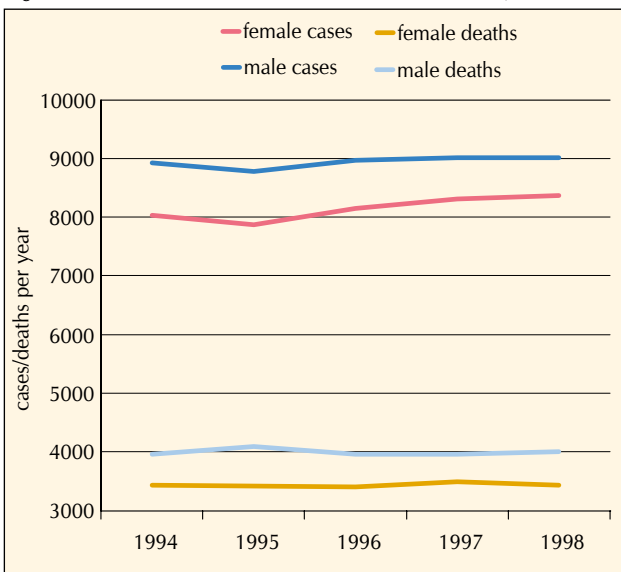
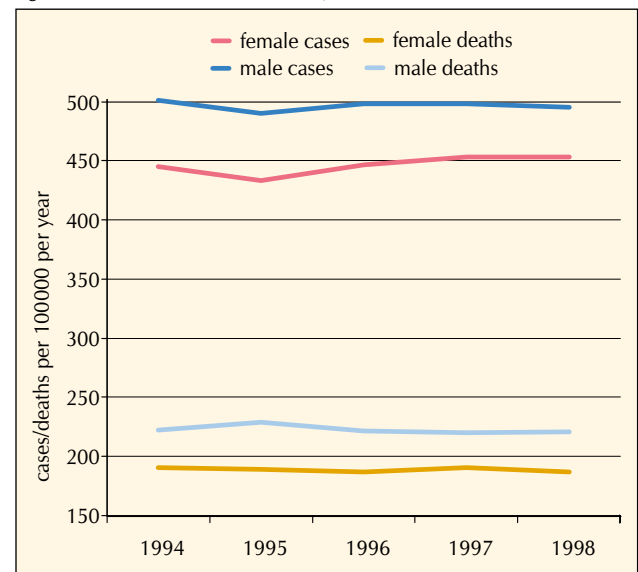


Figure 1.4 Trends in cancer rates, 1994 to 1998



For individual cancer sites, the largest change in incidence was in bladder cancer, which fell by 4% in men and 7% in women (Figure 1.5). The incidence of prostate cancer and lymphoma increased significantly in men, while lung cancer incidence decreased.

Cancer mortality showed similar trends, although with a fall in mortality from lung cancer in both sexes (Figure 1.6).

Figure 1.5 Annual percentage change in cancer incidence, 1994 to 1998

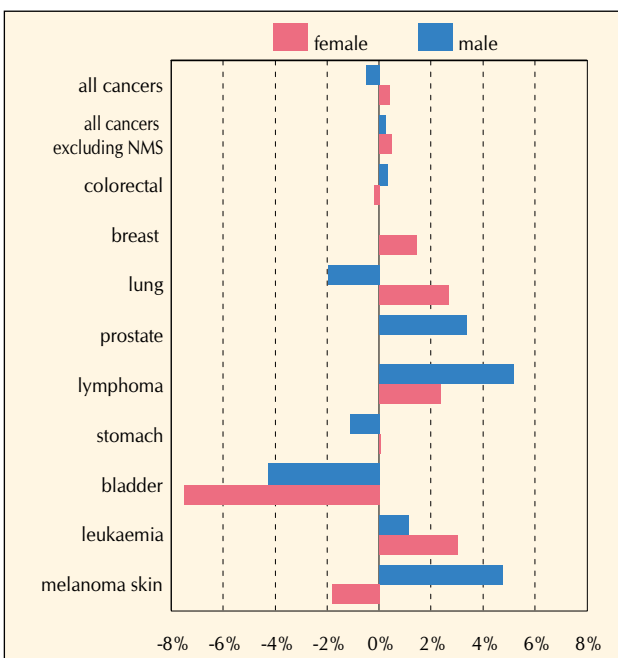
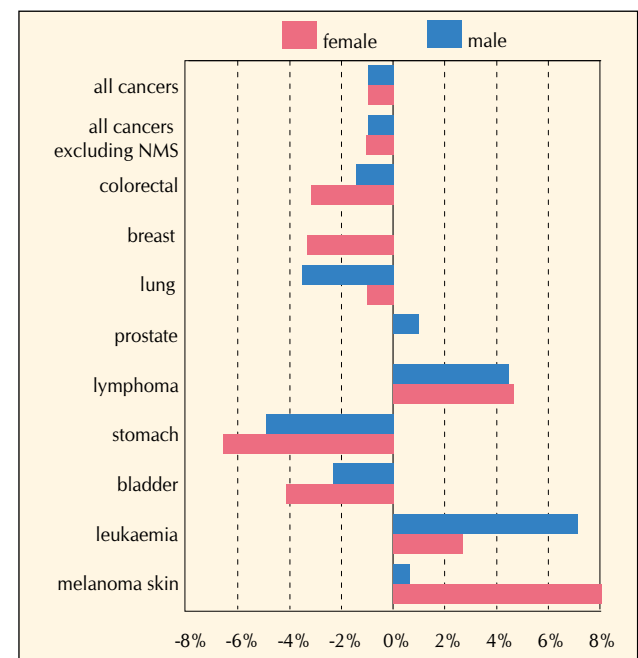


Figure 1.6 Annual percentage change in cancer mortality, 1994 to 1998



### Geographical trends

#### International

Overall cancer incidence in Ireland was above the EU average for women and below this average for men (Table 1.3). Cancer incidence in Ireland was similar to that in England, but below that in Scotland, Wales or Northern Ireland (Figure 1.7). Most cancers had an incidence close to the European average (Figure 1.8). The exceptions were lung cancer in women (66% above EU average) and melanoma of the skin (53% above average for women and 19% above average for men). Lung cancer, stomach cancer and bladder cancer in men were all well below the average for the EU, consistent with the reduction in smoking by men here since the 1980s.

Table 1.3 Cancer incidence rates (per 100000 persons per year) in Ireland, Britain and EU; all malignant cancers except skin

	YEAR	INCIDENCE RATE PER 10000 PER YEAR	
		female	male
Ireland	1994 – 98	320	391
Northern Ireland	1997	339	415
England	1997	328	385
Wales	1997	355	430
Scotland	1997	370	456
EU average	1996	292	416

Figure 1.7 Cancer incidence in Ireland and Britain, 1996: all malignant cancers except skin

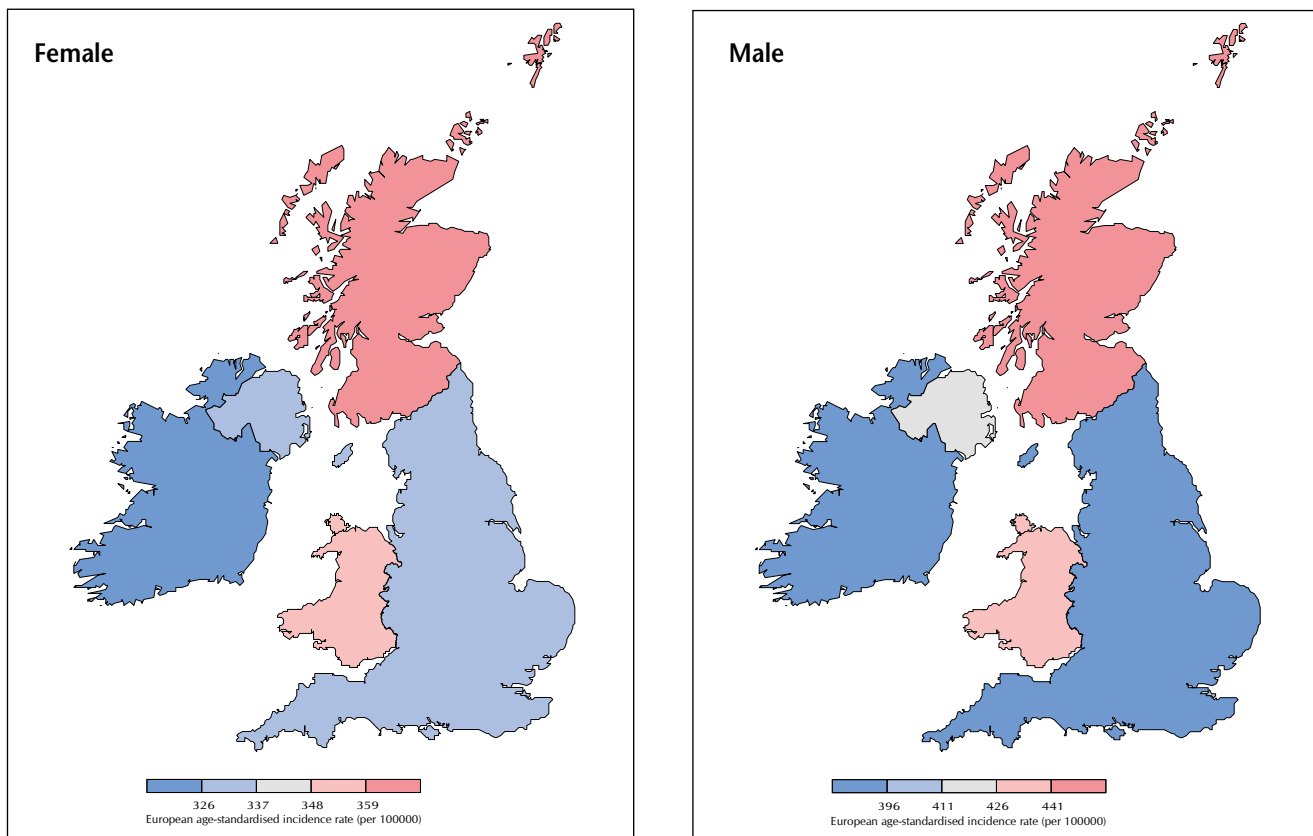


Figure 1.8 Cancer incidence in Ireland as percentage of EU 1996 average

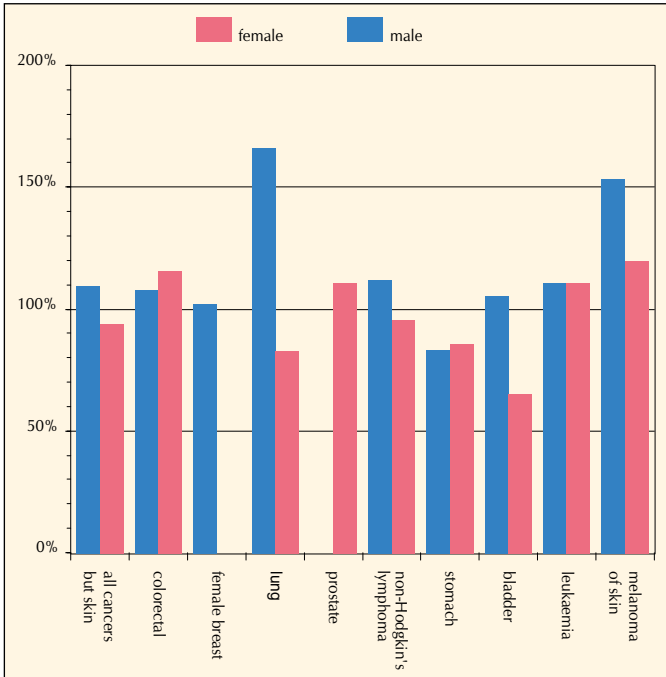
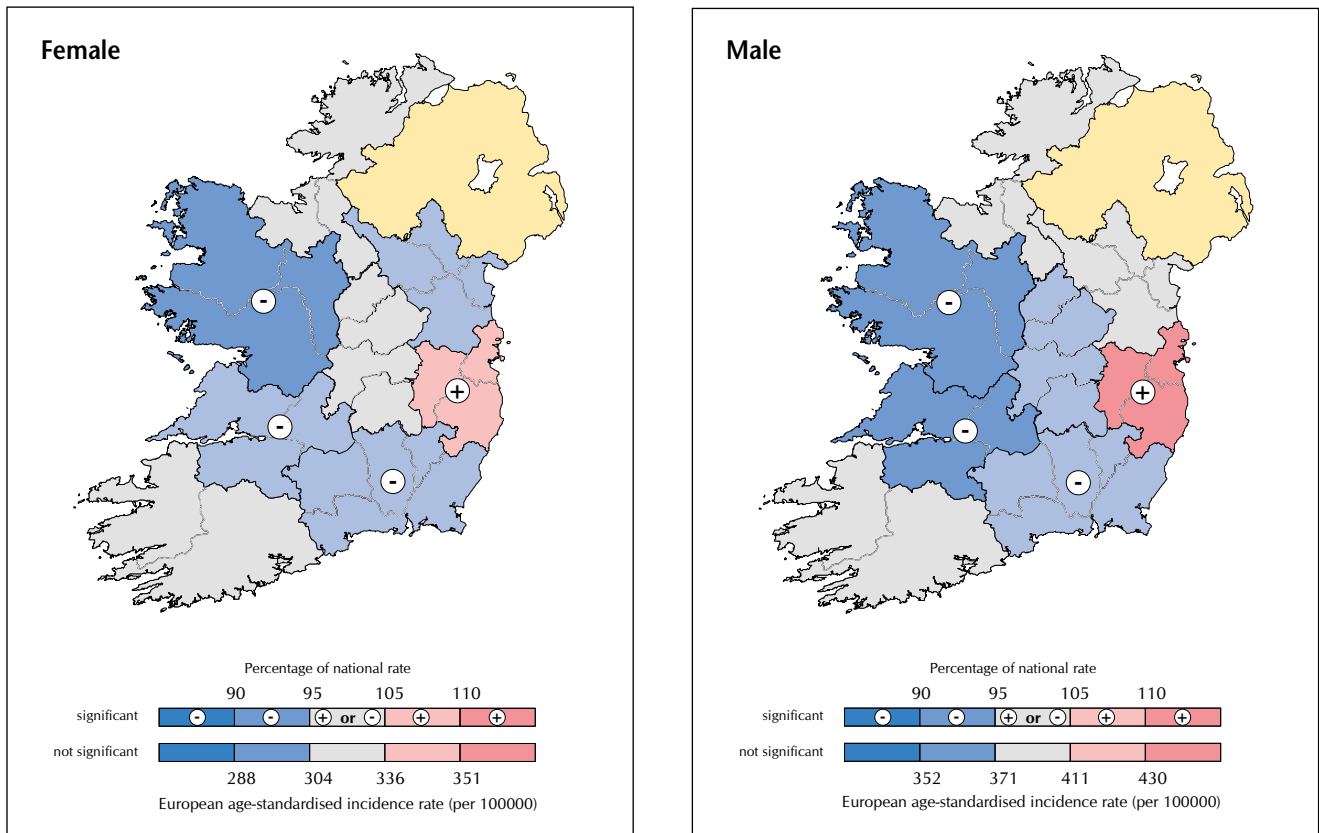


Table 1.4 Cancer incidence rates by health board; all malignant cancers except skin

% OF NATIONAL INCIDENCE RATE		
area	female	male
EHB	107	114
MHB	104	95
MWHB	93	89
NEHB	94	96
NWHB	98	97
SEHB	94	95
SHB	101	99
WHB	90	89

Figure 1.9 Variation in cancer incidence between health board areas: all malignant cancers except skin



**National**

Within Ireland, the highest overall incidence of cancer was found in the eastern area for both males and females, with the lowest rates in the West (Figure 1.9). For both women and men, the overall risk of cancer was significantly lower than average in the South Eastern, Mid Western and Western Health Board areas and above average in the Eastern area. The high population and high cancer rates in the Eastern area have a strong influence on national rates.

### Treatment

Most patients had cancer-specific treatment. The percentage of patients having specific treatment ranged from 95% of breast cancer patients to 43% of leukaemia patients (Figure 1.10). Treatment rates were also low for stomach and lung cancers.

Surgery was the commonest form of treatment for most cancers (Table 1.5). For lymphoma and leukaemia chemotherapy was the most frequent treatment, and, for lung cancer, radiotherapy.

There seems to have been a small but steady increase in the utilization of non-surgical treatments for most of the major cancers discussed in this report. The most notable increases were in the use of hormones to treat prostate cancer and of radiotherapy to treat lung and colorectal cancer.

With the exception of skin melanoma, there were no statistically significant differences in patterns of treatment between men and women. In the case of skin melanoma, women were more likely to be treated surgically than men, even after adjusting for age and stage differences.

For all the cancer sites examined in this analysis, older patients were less likely to receive cancer-specific treatment and, when treated, they were less likely to receive surgery or combination therapy. Age differences persisted even after adjusting for stage, sex and health board of residence.

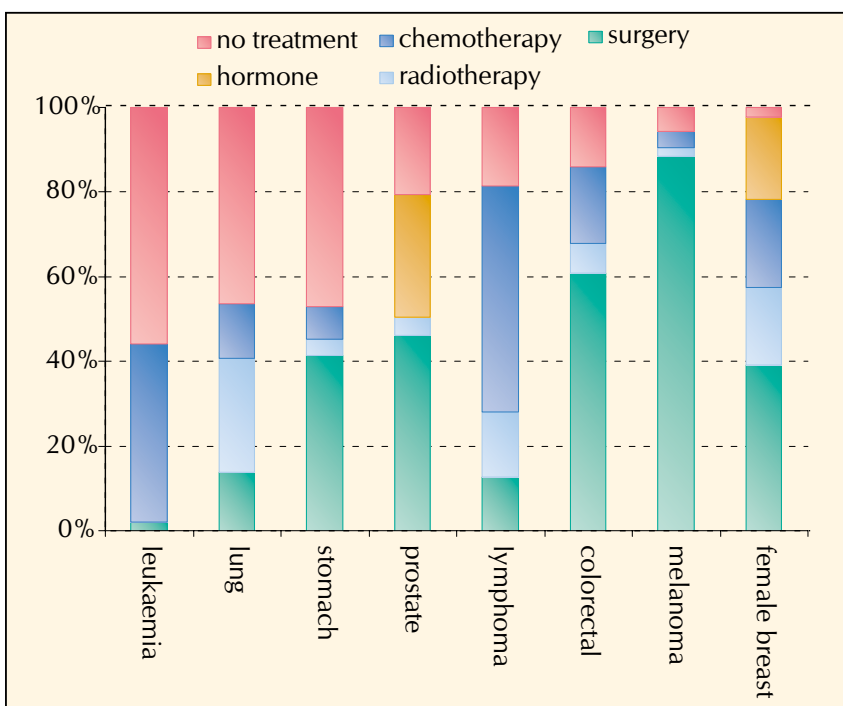
Patients with metastases (stage IV patients) were generally less likely to receive cancer-specific treatment. This was particularly true for stomach and lung cancers.

With one or two exceptions, differences in treatment patterns between the various health boards were not statistically significant (that is, they could have happened by chance). The most notable exception was the lower percentage of lung, breast and lymphoma patients receiving radiotherapy in the Western and Mid Western Health Boards.

Table 1.5 Percentage of cancer patients having treatment (numbers do not add to 100% as many patients had more than one treatment type)

	NO TREATMENT	SURGERY	RADIO THERAPY	CHEMOTHERAPY	HORMONE
colorectal	18%	78%	9%	23%	
female breast	5%	83%	39%	44%	41%
lung	50%	15%	29%	14%	
prostate	24%	54%	5%		34%
lymphoma	22%	15%	18%	63%	
stomach	50%	44%	4%	8%	
leukaemia	57%	2%		43%	
melanoma	6%	93%	2%	4%	

Figure 1.10 Percentage of cancer patients having treatment



## Survival

Overall cancer survival at five years after diagnosis was 43%. Melanoma had the best survival of the common cancers, with 85% of women and 68% of men surviving at least 5 years after diagnosis. The poorest prognosis was for lung cancer with only 10% of women and 8.5% of men surviving more than 5 years after diagnosis. The results for stomach cancer were somewhat better with a 5-year survival of 20% for men and 15% for women. Breast, prostate and bladder cancer, and lymphoma each had a reasonable prognosis, with a 5-year survival of at least 50%.

Women had significantly better survival for colorectal cancer, melanoma and lymphoma, and somewhat better survival (although not statistically significant) for stomach and lung cancer (Table 1.6). The exception was bladder cancer, where women had significantly worse survival than men. Age differences did not account for the observed survival differences in any of the cancers studied.

For all cancers, a younger age at diagnosis conferred a survival advantage for both men and women, although the magnitude of this advantage varied with the cancer type. The maximum age effects were observed for bladder cancer and lymphoma, with very small age effects being observed for melanoma, particularly in women.

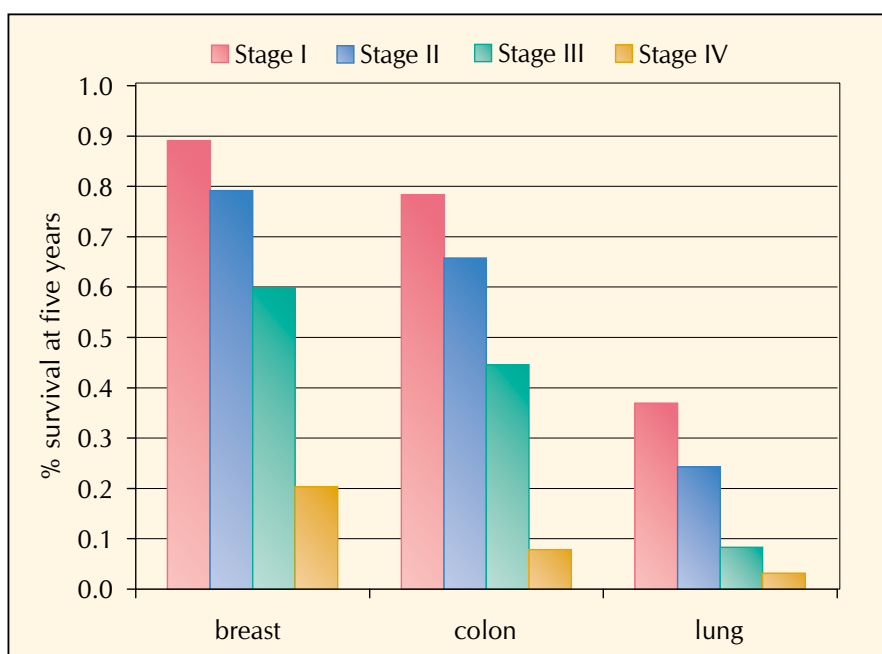
One of the most important factors influencing survival was the stage of the cancer — that is, how advanced the cancer was when detected.

For all cancers, stage IV carried a very poor prognosis. For the three commonest cancers, breast, bowel and lung, the probability of survival decreased considerably with stage. Survival from stage IV breast cancer was only one-quarter that for the earliest (stage I) cancers, while survival from advanced colorectal and lung cancer (stage IV) was only 10% that from stage I (Figure 1.11).

Table 1.6 Survival from some common cancers at five years after diagnosis

	FEMALE	MALE
all cancers except skin	49%	38%
colorectal	48%	43%
breast	71%	-
lung	10%	8.5%
prostate	-	56%
lymphoma	59%	54%
stomach	20%	15%
bladder	61%	64%
leukaemia	46%	44%
melanoma	85%	68%

Figure 1.11 Differences in cancer survival, by stage



## Acknowledgments

The production of this report has been, as usual, a team effort by the Registry staff, all of whom contributed significantly. Overall administration of the Registry is the responsibility of Irene O'Driscoll. Data collection was carried out by our team of tumour registration officers (see Appendix 3), and by Eilish Manley and Vera McCarthy at the Central Statistics Office. The data was processed and checked by Mary Chambers, Fiona Dwane and Geraldine Finn. Data analysis was carried out by Harry Comber, Salah Mahmud, Piaras O Lorcain, Marie Reilly, Patricia Riordan and Paul Walsh, who also wrote the report. The Registry computer system, on which all data is collected and processed, was developed by Eleanor Crowley and Maureen Finucane, who, with Maria Kelly and Anne Griffin, provide our IT services.

Outside the Registry, we are indebted particularly to the pathology staff of the participating hospitals, without whom compiling this report would have been almost impossible. We have been helped by many others within hospitals – medical records staff, HIPE staff, management at all levels, consultants and nurses. We are grateful to the many GPs who took the trouble to notify us of cases and to answer our follow-up queries on death certificates.

Our close relationship with University College Cork has been of great help to the Registry, not only for the work of the University in processing our finances, but also for the many useful contacts, both administrative and academic, in particular with the Department of Epidemiology and Public Health, which this relationship has allowed. In the past few years, our research effort has been greatly helped by grants from the Health Research Board and more recently by the endowment of a cancer epidemiology fellowship by the HRB and the Northern Ireland R&D Office, with the support of the US National Cancer Institute.

Our colleagues in the Northern Ireland Cancer Registry have been a constant source of support and ideas to us, recently culminating in the production of the first all-Ireland cancer incidence and mortality report,<sup>1</sup> which we hope will be the first of many joint publications.

Finally, the functioning of the Registry is entirely dependent on funding provided by the Minister for Health and Children and his Department, who have been steady in their support of the Registry since its foundation.

To all of the above, and to all who have helped in establishing, maintaining and supporting the Registry, we hope that this report is in some part a justification for your efforts.

*Harry Comber, Director*