

13.1. INTRODUCTION AND SUMMARY

Prostate cancer was the second commonest non-cutaneous cancer in men (Table 13.1). Men had a 5% risk of developing prostate cancer before age 75, and a 1.6% chance of dying before the same age.

Prostate cancer incidence has increased since 1994, at an annual rate of 1.6%. Whether this is due to better case-finding, more incidental diagnoses or a true increase in incidence is unknown.

Table 13.1. Summary of incidence and mortality statistics: prostate cancer

	INCIDENT CASES	DEATHS
All cancers (invasive, in situ and uncertain) (ICD-O-2 C61)		
1997 cases	1133	536
% of all cancers (male)	10.7%	13.3%
<i>Incidence and mortality rates (per 100,000 persons per year)</i>		
crude rate	62.6	29.6
World age-standardised rate	44.6	18.8
European age-standardised rate	71.3	32.9
cumulative risk (0-74)	5.1%	1.6%
mortality/incidence ratio	0.473	
Time trends (all cancers)		
1994 cases	1069	475
1995 cases	1112	521
1996 cases	1156	523
1997 cases	1133	535
1994-1997 average	1118	514
annual % change 1994-97	+1.6%	+2.7%
95% confidence limits of trend	(-0.6%; 3.8%)	(-0.1%; 5.6%)
Invasive cancers only (ICD-10 C61)		
1997 cases	1130	535
% of all invasive cancers (male)	11.5%	13.5%
<i>Incidence and mortality rates (per 100,000 persons per year)</i>		
crude rate	62.4	29.6
World age-standardised rate	44.5	18.8
European age-standardised rate	71.1	32.8
cumulative risk (0-74)	5.0%	1.6%
mortality/incidence ratio	0.473	

13.2. AGE AND SEX PROFILE

Table 13.2. Annual average number of cases, age-specific incidence rate and relative age-specific rate for prostate cancers, 1994 to 1997

	CASES	CASES PER 100,000	RELATIVE RATE
0-4	0	0	0.1
5-9	0	0	0.0
10-14	0	0	0.0
15-19	0	0	0.0
20-24	0	0	0.0
25-29	0	0	0.0
30-34	0	0	0.0
35-39	0	0	0.0
40-44	1	1	0.0
45-49	4	3	0.1
50-54	22	23	0.3
55-59	44	56	0.5
60-64	103	150	0.8
65-69	173	287	1.0
70-74	261	522	1.3
75-79	243	687	1.4
80-84	176	841	1.5
>85	93	889	1.4
all ages	1118	62.2	1.0

The largest number of cases was in men aged 70 to 74, but the highest relative age-specific rate was in those aged 80 to 84, reflecting the largely elderly age profile of prostate cancer patients (Table 13.2).

13.3. GEOGRAPHICAL DISTRIBUTION

INTERNATIONAL

The incidence in Ireland was a little above average, and above that for England, Scotland and Northern Ireland (Table 13.3). The Nordic countries (with the exception of Denmark) all had high incidence rates, which may indicate active screening.

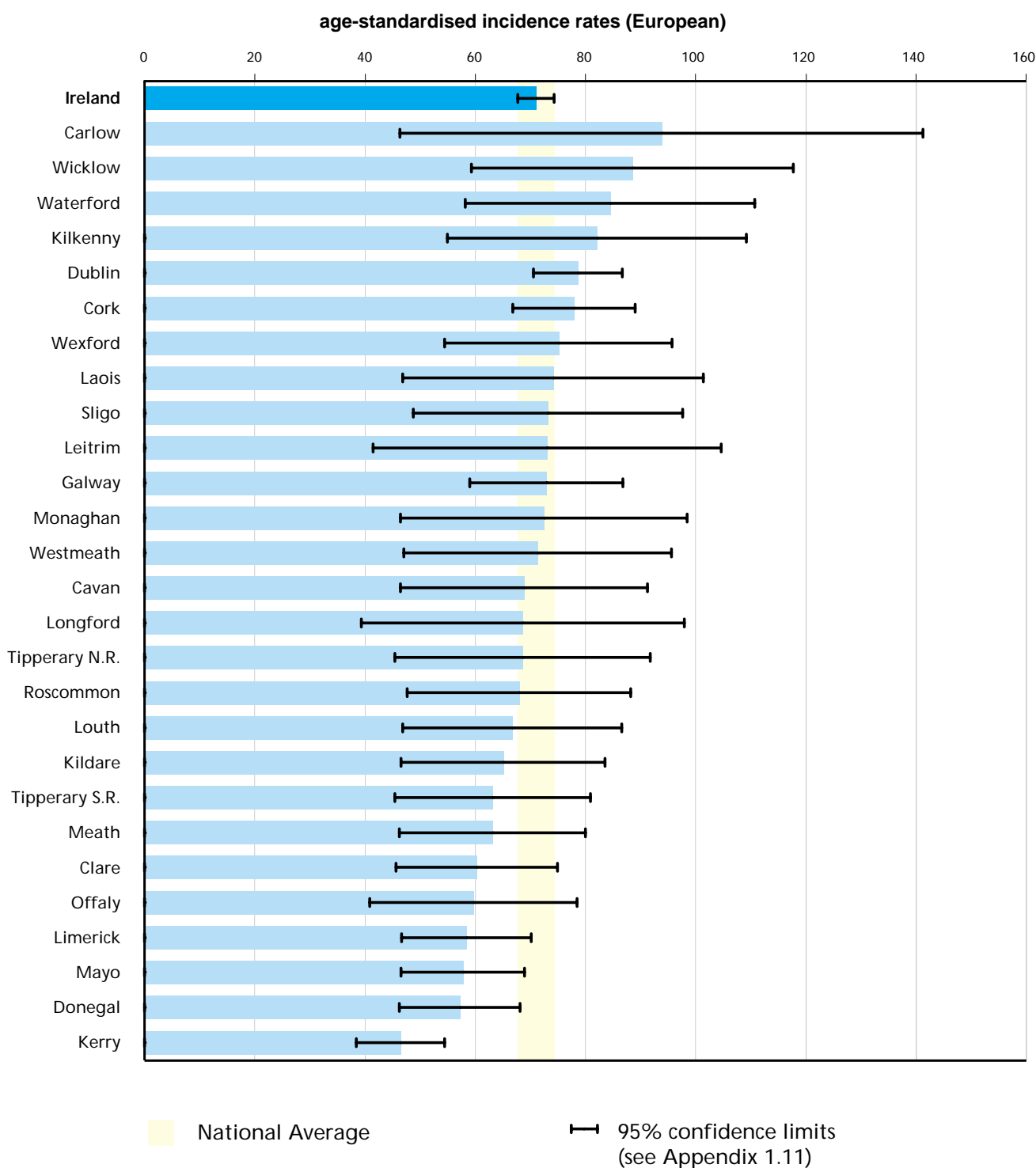
Table 13.3. Age-adjusted annual incidence rate (European standard population) and rank of rates by country, 1995: prostate cancer (invasive cases only)

	AGE-STANDARDISED RATE	RANK
Iceland	131	1
Finland	100	2
Sweden	96	3
Norway	93	4
Switzerland	92	5
Austria	88	6
France	88	7
Netherlands	86	8
Ireland (1994-1997)	71	9
Germany	70	10
Scotland	67	11
N. Ireland	61	12
England	54	13
Spain	53	14
Czech Republic	50	15
Estonia	47	16
Malta	44	17
Italy	43	18
Denmark	43	19
Slovakia	39	20
Slovenia	36	21
Poland	25	22
Bulgaria	19	23

NATIONAL

The incidence of prostate cancer varied from 132% of expected in Carlow to 65% in Kerry (Figure 13.1). Apart from the low rate in Kerry, the incidence rate was not significantly different from expectation in any county.

Figure 13.1. Age-adjusted (European population) rates and 95% confidence limits by county, 1994 to 1997: prostate cancer



13.4. BASIS OF DIAGNOSIS AND HISTOLOGICAL TYPE

Most prostate cancers were diagnosed by biopsy, but a substantial proportion (7%) were registered only on the basis of a clinical diagnosis and a further 4% on the basis of imaging (Table 13.4).

Table 13.4. Most valid basis of diagnosis of cancer

BASIS OF DIAGNOSIS	CASES	% OF TOTAL
tissue diagnosis	990	87.4%
histology of primary	971	85.7%
histology of other site	17	1.5%
cytology	1	0.1%
bone marrow	1	0.1%
clinical diagnosis	143	12.6%
clinical	84	7.4%
blood film	5	0.4%
radiology	44	3.9%
post-mortem	2	0.2%
other/not known	8	0.7%
all cancers	1133	

Most prostate cancers were diagnosed by biopsy, but a substantial proportion (7%) were registered only on the basis of a clinical diagnosis and a further 4% on the basis of imaging (Table 13.4).

Almost all of the histologically diagnosed cancers were described as adenocarcinoma (Table 13.5). Most of the remainder were those not histologically verified, with a tiny number of other histologies.

Table 13.5. Morphology

Description	ICD-O-2 code	1997		1994-1997 AVERAGE	
		cases	% of total	cases	% of total
adenocarcinoma, NOS	8140/3	952	84.0%	920	82.3%
malignant neoplasm	8000/3	145	12.8%	148	13.2%
carcinoma, NOS	8010/3	28	2.5%	34	3.0%
acinar cell carcinoma	8550/3	0	0.0%	3	0.2%
transitional cell carcinoma, NOS	8120/3	2	0.2%	2	0.2%
carcinoma in situ, NOS	8010/2	2	0.2%	1	0.1%
small cell carcinoma, NOS	8041/3	0	0.0%	1	0.1%
clear cell adenocarcinoma, NOS	8310/3	0	0.0%	1	0.1%
mucin-secreting adenocarcinoma	8481/3	1	0.1%	1	0.1%
anaplastic carcinoma, NOS	8021/3	1	0.1%	1	0.1%
papillary transitional cell carcinoma	8130/3	0	0.0%	1	0.1%
adenocarcinoma in situ, NOS	8140/2	0	0.0%	1	0.1%
signet ring cell carcinoma	8490/3	0	0.0%	1	0.0%
intraductal adenocarcinoma, papillary, with invasion	8503/3	1	0.1%	1	0.0%
undifferentiated carcinoma, NOS	8020/3	0	0.0%	1	0.0%
leiomyosarcoma, NOS	8890/3	0	0.0%	0	0.0%
all other types		1	0.1%	2	0.2%
Behaviour					
in situ		2	0.2%	2	0.2%
invasive		1131	99.8%	1116	99.8%
All Cancers		1133		1118	

13.5. STAGE

Table 13.6. Summary stage

stage	1997		1994-1997 AVERAGE	
	cases	% of total	cases	% of total
0	8	0.7%	9	0.8%
I	8	0.7%	19	1.7%
II	43	3.8%	37	3.3%
III	9	0.8%	13	1.2%
IV	241	21.3%	242	21.7%
not staged	824	72.7%	799	71.5%
all cases	1133		1118	

Staging was poorly recorded for prostate cancer; fewer than 30% had a summary stage (Table 13.6). Most of these were stage IV cancers.

Table 13.8. TNM stage

T stage	N stage	M0		M1		NOT STAGED	
		cases	% of total	cases	% of total	cases	% of total
Tis/Ta	N0	2	0.2%	0	0.0%	0	0.0%
T1	N0	16	1.4%	0	0.0%	3	0.3%
	N1	2	0.2%	0	0.0%	0	0.0%
	N2	0	0.0%	0	0.0%	1	0.1%
	N3	0	0.0%	0	0.0%	0	0.0%
	not staged	24	2.1%	12	1.1%	110	9.7%
T2	N0	43	3.8%	5	0.4%	17	1.5%
	N1	1	0.1%	0	0.0%	0	0.0%
	N2	0	0.0%	1	0.1%	0	0.0%
	N3	0	0.0%	1	0.1%	0	0.0%
	not staged	42	3.7%	51	4.5%	92	8.1%
T3	N0	9	0.8%	1	0.1%	6	0.5%
	N1	1	0.1%	0	0.0%	2	0.2%
	N2	0	0.0%	1	0.1%	0	0.0%
	N3	0	0.0%	1	0.1%	0	0.0%
	not staged	13	1.1%	9	0.8%	25	2.2%
T4	N0	1	0.1%	0	0.0%	0	0.0%
	N1	0	0.0%	1	0.1%	0	0.0%
	N2	1	0.1%	1	0.1%	0	0.0%
	N3	0	0.0%	0	0.0%	0	0.0%
	not staged	7	0.6%	18	1.6%	15	1.3%
not staged	N0	5	0.4%	0	0.0%	0	0.0%
	N1	0	0.0%	3	0.3%	0	0.0%
	N2	0	0.0%	3	0.3%	2	0.2%
	N3	0	0.0%	0	0.0%	0	0.0%
	not staged	101	8.9%	127	11.2%	357	31.5%
all T	all N	268	23.7%	235	20.7%	630	55.6%
all cancers		1133					

Table 13.7. Extent of disease

EXTENT OF DISEASE	CASES	% OF TOTAL
local	76	6.7%
regional	192	16.9%
distant	235	20.7%
not known	630	55.6%
all	1133	

Extent of disease was slightly better documented, and could be described for 45% of cases, about half of which had metastases (Table 13.7).

As with the summary stage, TNM information was quite limited (Table 13.8). The commonest TNM stage was T2 N0 M0.

Table 13.9. Histological grade of prostate cancer

grade	1997		1994-1997 AVERAGE	
	cases	% of all cases	cases	% of all cases
1	238	21.0%	240	21.4%
2	362	32.0%	338	30.2%
3	242	21.4%	261	23.4%
4	8	0.7%	15	1.3%
not known	283	25.0%	264	23.6%
all	1133	100.0%	1118	100.0%

Grade information was more available than stage, as many of the cancers were removed by TURP (Table 13.9). 75% of cases were graded, with most at grade 2.

13.6. TREATMENT

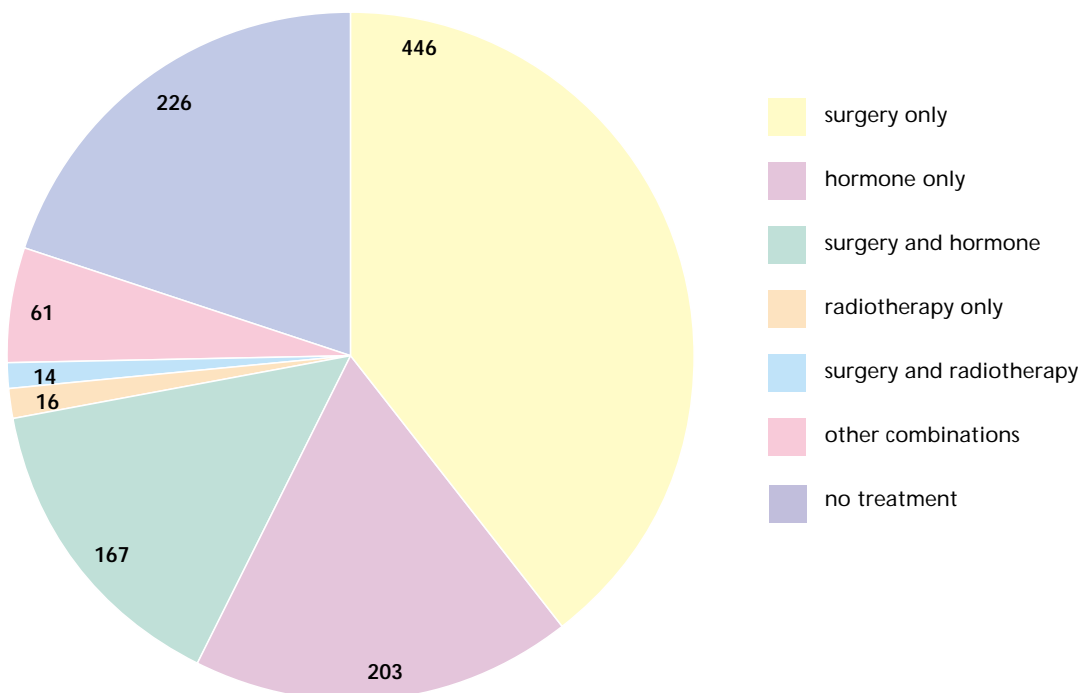
57% of prostate cancers were removed surgically, a figure which has increased from 48% in 1994 (Table 13.10). Hormone therapy was the next most frequent treatment, and was given alone in 18% of cases and with surgery in 15% (Figure 13.2). Four percent of patients had radiotherapy, a figure that has not changed appreciably since 1994.

Table 13.10. Treatment summary

TREATMENT	NUMBER OF 1997 CASES TREATED	TRENDS IN % OF CASES TREATED			
		1997	1996	1995	1994
surgery	651	57.5%	58.1%	50.4%	47.8%
chemotherapy	7	0.6%	1.6%		22.7%
hormone	395	34.9%	31.5%	30.0%	
radiotherapy	43	3.8%	5.4%	3.8%	3.6%
other treatment	45	4.0%	8.7%	4.0%	35.8%
all cases treated	907	80.1%	81.6%	80.1%	86.2%
no treatment	226	19.9%	18.4%	19.9%	13.8%
all cases	1133	1133	1156	1112	1069

Figure 13.2. Frequent treatment combinations

Note: numbers indicated refer to the number of cases treated



13.7. SURVIVAL

Overall survival at five years was 72%±3% (Table 13.11). Five-year survival for stage I cases was 80%±17%, while survival for stage IV cases was 29%±5% (Figure 13.3).

Table 13.11. One to five year relative survival (± 95% confidence limits) for cancers diagnosed from 1994 to 1997: by stage

stage	cases	YEARS SINCE DIAGNOSIS					
		1		3		5	
		survival	95% confidence limits (±)	survival	95% confidence limits (±)	survival	95% confidence limits (±)
0	32	1.01	0.09	0.97	0.19	0.93	0.23
I	70	0.98	0.07	0.94	0.12	0.80	0.17
II	142	1.00	0.04	0.96	0.08	0.87	0.17
III	49	1.00	0.06	0.98	0.12	0.95	0.24
IV	934	0.67	0.03	0.37	0.04	0.29	0.05
X	3004	0.93	0.01	0.85	0.02	0.84	0.04
all	4231	0.88	0.01	0.76	0.02	0.72	0.04

Figure 13.3. Relative survival by stage and grade for cases diagnosed from 1994 to 1997

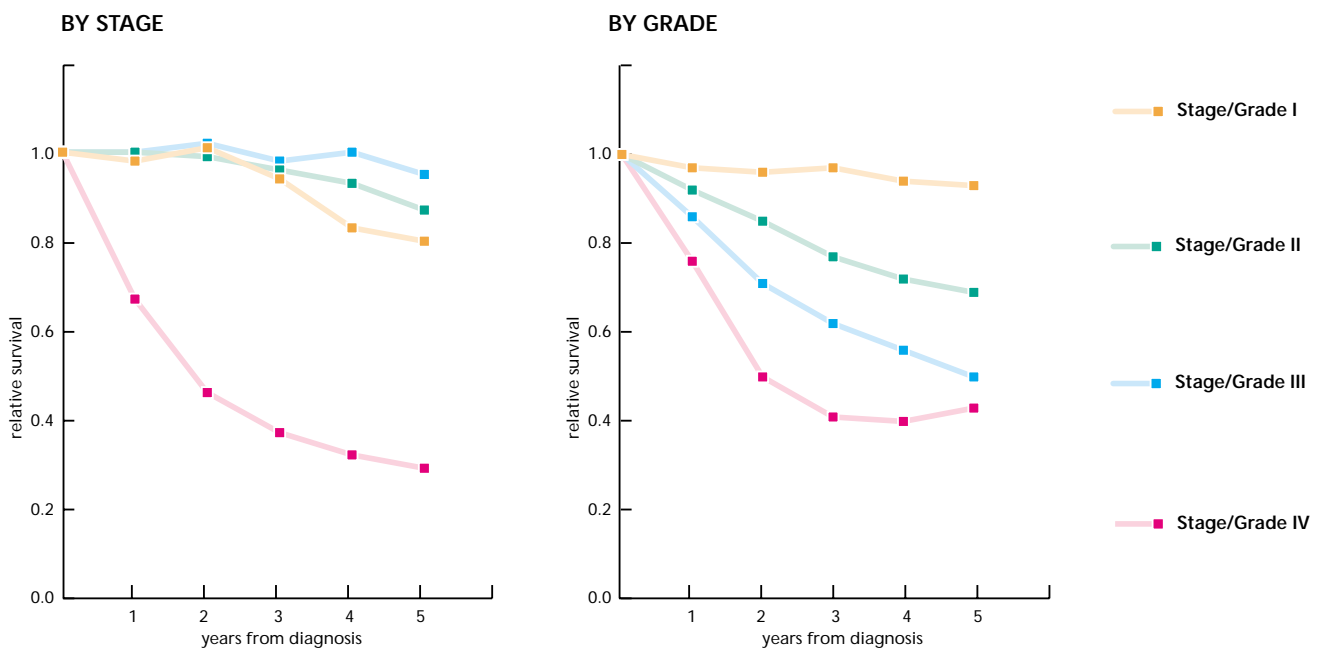


Table 13.12. One to five year relative survival (± 95% confidence limits) for cancers diagnosed from 1994 to 1997: by grade

grade	cases	YEARS SINCE DIAGNOSIS					
		1		3		5	
		survival	95% confidence limits (±)	survival	95% confidence limits (±)	survival	95% confidence limits (±)
1	958	0.97	9.02	0.97	0.04	0.93	0.09
2	1351	0.92	0.02	0.77	0.04	0.69	0.06
3	1044	0.86	0.03	0.62	0.04	0.50	0.07
4	59	0.76	0.14	0.41	0.16	0.43	0.30
not known	819	0.68	0.03	0.50	0.04	0.49	0.07
all	4231	0.88	0.01	0.76	0.02	0.72	0.04

Five-year survival for grade 1 cases was 93%±9%, while survival for grade 4 cases was 43%±30% (Table 13.12). Survival for ungraded cases was much poorer than for graded cases (Figure 13.3).