

8.1. INTRODUCTION AND SUMMARY

Table 8.1. Summary of incidence and mortality statistics: colon cancer

	INCIDENT CASES			DEATHS		
	males	females	both sexes	males	females	both sexes
All cancers (invasive, in situ and uncertain) (ICD-O-2 C18)						
1997 cases	600	565	1165	386	342	728
% of all cancers	5.7%	5.2%	5.4%	9.6%	9.7%	9.6%
<i>Incidence and mortality rates (per 100,000 persons per year)</i>						
crude rate	33.2	30.8	32.0	21.3	18.6	20.0
World age-standardised rate	25.4	20.2		15.9	10.9	
European age-standardised rate	38.0	29.4		24.7	16.6	
cumulative risk (0-74)	2.9%	2.3%		1.8%	1.2%	
mortality/incidence ratio	0.643	0.605	0.625			
Time trends (all cancers)						
1994 cases	620	585	1205	361	321	682
1995 cases	589	559	1148	397	332	729
1996 cases	619	511	1130	357	327	684
1997 cases	600	565	1165	384	342	726
1994-1997 average	607	555	1162	375	331	705
annual % change 1994-97	-1.5%	-3.0%	-2.3%	-0.0%	+1.0%	+0.3%
95% confidence limits of trend	(-4.4%; 1.5%)	(-9.5%; 3.9%)	(-4.5%; 0.1%)	(-4.3%; 4.5%)	(-3.0%; 5.1%)	(-3.6%; 4.3%)
Invasive cancers only (ICD-10 C18)						
1997 cases	569	525	1094	384	342	726
% of all invasive cancers	5.8%	6.0%	5.9%	9.7%	9.8%	9.7%
<i>Incidence and mortality rates (per 100,000 persons per year)</i>						
crude rate	31.4	28.6	30.0	21.2	18.6	19.9
World age-standardised rate	23.9	18.4		15.7	10.9	
European age-standardised rate	36.1	27.4		24.5	16.6	
cumulative risk (0-74)	2.7%	2.1%		1.8%	1.2%	
mortality/incidence ratio	0.675	0.651	0.664			

Colon cancer was the commonest of the colorectal sites. Over 5% of cancers in both men and women arose in the colon, with a mortality of 62.5% (Table 8.1). The incidence of colon cancer has decreased for both men and women since 1994, but not significantly.

8.2. AGE AND SEX PROFILE

Table 8.2. Annual average number of cases, age-specific incidence rate and relative age-specific rate for colon cancers, 1994 to 1997

	MALES			FEMALES		
	annual average number of cases	cases per 100,000	relative rate	annual average number of cases	cases per 100,000	relative rate
0-4	0	0	0.0	0	0	0.0
5-9	0	0	0.0	0	0	0.3
10-14	1	1	1.0	3	2	2.6
15-19	1	1	0.6	7	4	3.1
20-24	1	1	0.4	4	3	0.6
25-29	1	1	0.3	2	1	0.1
30-34	2	2	0.4	5	4	0.3
35-39	6	5	0.8	6	4	0.3
40-44	11	9	0.9	12	10	0.5
45-49	23	21	1.2	20	18	0.6
50-54	30	32	0.9	28	31	0.7
55-59	49	64	1.0	46	60	1.1
60-64	77	113	1.1	44	64	0.9
65-69	104	172	1.1	79	119	1.2
70-74	107	213	1.0	89	144	1.2
75-79	99	280	1.0	91	185	1.3
80-84	64	308	1.0	76	221	1.3
>85	30	288	0.8	45	189	1.1
all ages	607	34	1.0	555	31	1.0

Colon cancer was most frequent in men aged 70 to 74 and women aged 75 to 79 (Table 8.2). The highest incidence rates relative to other cancers were in men aged 60 to 64 and women, apart from a few cases in the 10 to 19 year age group (carcinoids; see previous chapter), was highest in those aged 80 to 84.

8.3. SUBSITES

Sigmoid colon was the most frequent subsite for both sexes (Table 8.3). However, right-sided cancers were more frequent in women (43% of total) than in men (35%).

Table 8.3. Subsites of colon cancer

	ICD-O-2 site	MALES		FEMALES	
		cases	% of total	cases	% of total
caecum	C18.0	111	18.5%	129	22.8%
appendix	C18.1	16	2.7%	32	5.7%
ascending colon	C18.2	53	8.8%	57	10.1%
hepatic flexure	C18.3	30	5.0%	23	4.1%
transverse colon	C18.4	56	9.3%	50	8.8%
splenic flexure	C18.5	24	4.0%	24	4.2%
descending colon	C18.6	49	8.2%	43	7.6%
sigmoid colon	C18.7	224	37.3%	165	29.2%
overlapping lesion of colon	C18.8	8	1.3%	7	1.2%
other and unspecified	C18.9	29	4.8%	35	6.2%
all cancers		600		565	

8.4. GEOGRAPHICAL DISTRIBUTION

INTERNATIONAL

As with colorectal cancers, male cancers were more frequent than female in all countries (Table 8.4). The incidence rates for Ireland were a little higher than average, while lower than those in Northern Ireland and Scotland.

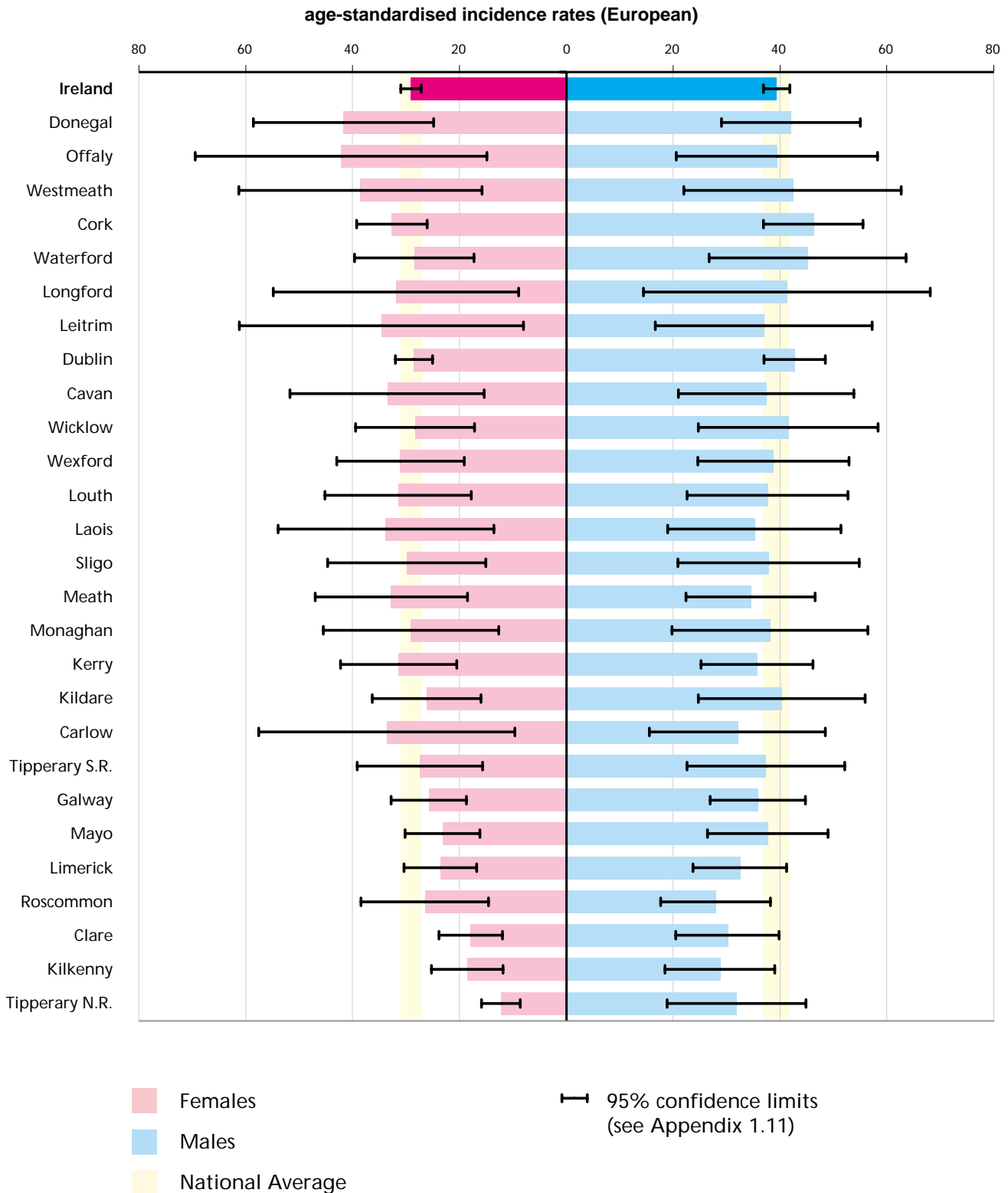
Table 8.4. Age-adjusted annual incidence rate (European standard population) and rank of rates by country, 1995: colon cancer (invasive cases only)

	MALES		FEMALES	
	age-standardised rate	rank	age-standardised rate	rank
N. Ireland	43	2	33	2
Italy	45	1	29	5
Scotland	40	5	31	3
Norway	36	8	33	1
Czech Republic	42	3	27	11
Spain	40	4	24	14
Ireland (1994-1997)	38	7	27	9
Iceland	34	11	29	4
Austria	38	6	25	12
Netherlands	34	10	28	6
Germany	35	9	27	10
Denmark	31	15	28	8
Switzerland	33	13	24	13
France	34	12	23	15
Slovakia	31	14	20	18
Sweden	27	16	23	16
Malta	22	21	28	7
England	26	18	20	17
Estonia	26	17	18	20
Finland	23	20	18	19
Slovenia	24	19	17	21
Bulgaria	16	22	12	23
Poland	16	23	12	22

NATIONAL

Colon cancer incidence in males ranged from 118% of expected in Cork to 71% in Roscommon, and for females from 145% in Offaly to 42% in Tipperary North (Figure 8.1). The incidence rate was not significantly elevated in any county, but was significantly below expected for women in Tipperary North.

Figure 8.1. Age-adjusted (European population) rates and 95% confidence limits by county, 1994 to 1997: colon cancer



8.5. BASIS OF DIAGNOSIS AND HISTOLOGICAL TYPE

Table 8.5. Most valid basis of diagnosis of cancer

BASIS OF DIAGNOSIS	CASES	% OF TOTAL
tissue diagnosis	1065	91.4%
histology of primary	1036	88.9%
histology of other site	25	2.1%
cytology	4	0.3%
clinical diagnosis	100	8.6%
clinical	50	4.3%
radiology	42	3.6%
post-mortem	4	0.3%
other/not known	4	0.3%
all cancers	1165	

Over 90% of colon cancers were verified histologically, with a further 3.6% diagnosed through radiology (Table 8.5).

Almost all histologically characterised cancers were adenocarcinoma (Table 8.6). The most frequent non-adenocarcinoma cancer was carcinoid (41 cases to 3.5%). Few cancers (2%) were in situ at the time of diagnosis.

Table 8.6. Morphology

Description	ICD-O-2 code	1997		1994-1997 AVERAGE	
		cases	% of total	cases	% of total
adenocarcinoma, NOS	8140/3	765	65.7%	753	64.8%
malignant neoplasm	8000/3	102	8.8%	109	9.4%
mucous adenocarcinoma	8480/3	70	6.0%	67	5.8%
mucin-secreting adenocarcinoma	8481/3	42	3.6%	54	4.7%
adenocarcinoma in adenomatous polyp	8210/3	24	2.1%	28	2.4%
carcinoid tumour, NOS, of appendix	8240/1	32	2.7%	27	2.3%
carcinoma, NOS	8010/3	9	0.8%	18	1.5%
adenocarcinoma in tubulovillous adenoma	8263/3	21	1.8%	16	1.3%
villous adenoma, NOS	8261/1	16	1.4%	15	1.3%
acinar cell carcinoma	8550/3	17	1.5%	15	1.2%
signet ring cell carcinoma	8490/3	14	1.2%	10	0.9%
adenocarcinoma in situ in adenomatous polyp	8210/2	10	0.9%	10	0.8%
papillary adenocarcinoma, NOS	8260/3	4	0.3%	7	0.6%
adenocarcinoma in villous adenoma	8261/3	4	0.3%	7	0.6%
carcinoid tumour	8240/3	9	0.8%	5	0.4%
carcinoma in situ, NOS	8010/2	5	0.4%	4	0.3%
all other types		21	1.8%	20	1.7%
Behaviour					
uncertain		48	4.1%	42	3.6%
in situ		22	1.9%	19	1.7%
Invasive		1095	94.0%	1101	94.7%
all cancers		1165		1162	100.0%

8.6. STAGE

Table 8.7. Summary stage

stage	1997		1994-1997 AVERAGE	
	cases	% of total	cases	% of total
0	22	1.9%	19	1.7%
I	91	7.8%	87	7.4%
II	180	15.5%	198	17.0%
III	145	12.4%	136	11.7%
IV	227	19.5%	237	20.4%
not applicable	58	5.0%	48	4.1%
not staged	442	37.9%	438	37.7%
all stages	1165		1162	

Summary staging could be assigned to 62% of cancers (Table 8.7). The largest number of these were stage IV cancers (20%; 34% of those staged). The stage distribution does not seem to have changed appreciably over the 1994-1997 period.

Table 8.9. TNM stage

T stage	N stage	M0		M1		NOT STAGED	
		cases	% of total	cases	% of total	cases	% of total
Tis/Ta	N0	22	1.9%	0	0.0%	0	0.0%
T1	N0	18	1.5%	1	0.1%	7	0.6%
	N1	0	0.0%	0	0.0%	0	0.0%
	N2	0	0.0%	0	0.0%	0	0.0%
	N3	0	0.0%	0	0.0%	0	0.0%
	not staged	4	0.3%	0	0.0%	16	1.4%
T2	N0	73	6.3%	1	0.1%	29	2.5%
	N1	11	0.9%	2	0.2%	6	0.5%
	N2	2	0.2%	1	0.1%	0	0.0%
	N3	0	0.0%	0	0.0%	0	0.0%
	not staged	10	0.9%	0	0.0%	9	0.8%
T3	N0	162	13.9%	23	2.0%	113	9.7%
	N1	79	6.8%	38	3.3%	49	4.2%
	N2	34	2.9%	20	1.7%	21	1.8%
	N3	2	0.2%	4	0.3%	2	0.2%
	not staged	15	1.3%	22	1.9%	19	1.6%
T4	N0	18	1.5%	6	0.5%	14	1.2%
	N1	12	1.0%	18	1.5%	21	1.8%
	N2	4	0.3%	5	0.4%	5	0.4%
	N3	1	0.1%	1	0.1%	1	0.1%
	not staged	10	0.9%	23	2.0%	15	1.3%
not staged	N0	1	0.1%	1	0.1%	0	0.0%
	N1	0	0.0%	1	0.1%	1	0.1%
	N2	0	0.0%	2	0.2%	0	0.0%
	N3	0	0.0%	2	0.2%	0	0.0%
	not staged	10	0.9%	56	4.8%	64	5.5%
all T	all N	488	41.9%	227	19.5%	392	33.6%
not applicable		58	5.0%				
all cancers		1165					

Table 8.8. Extent of disease

EXTENT OF DISEASE	CASES	% OF TOTAL
local	294	25.2%
regional	194	16.7%
distant	227	19.5%
not applicable	58	5.0%
not known	392	33.6%
all cancers	1165	

Extent of disease information (Table 8.8) was available for a slightly larger number of cases than summary or TNM staging. There was a slight predominance of local lesions. The most frequent TNM stage (Table 8.9) was T3 N0 M0 (14% of cases).

8.7. TREATMENT

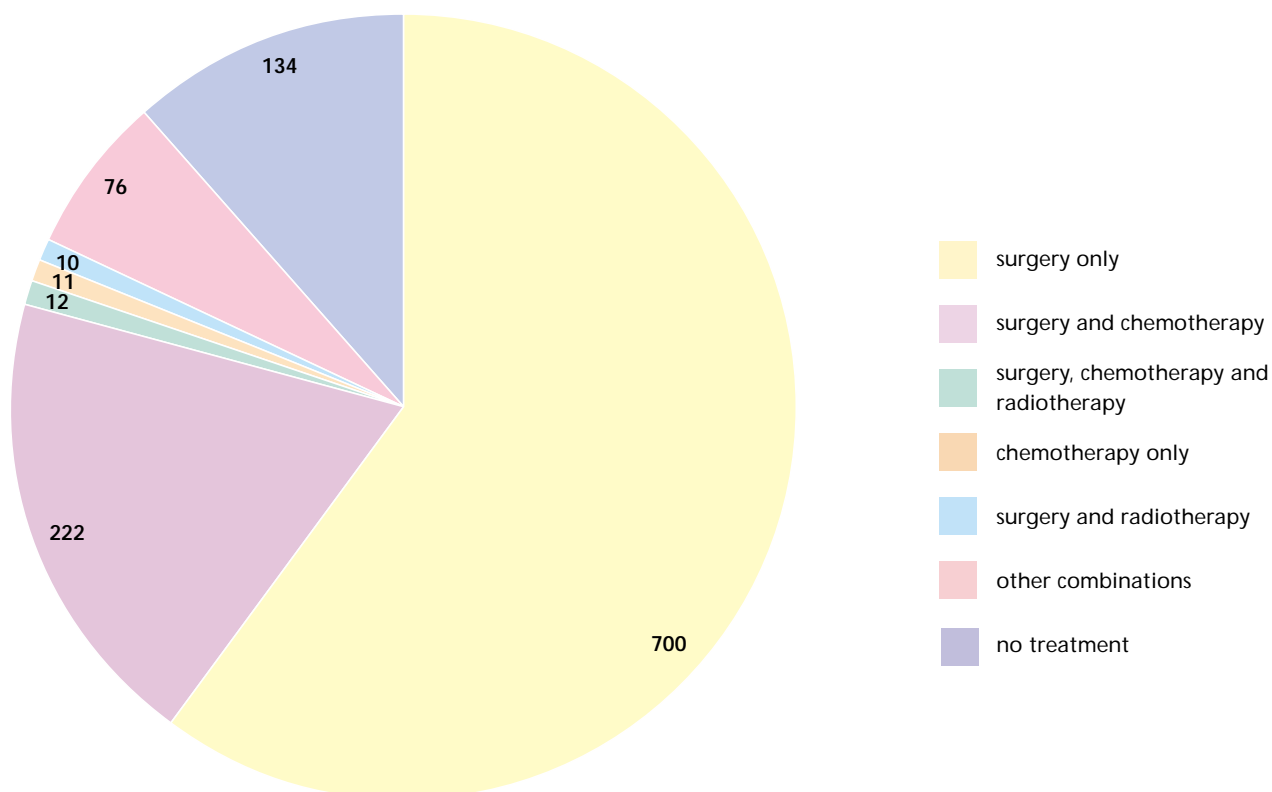
Most colon cancers (83%) were surgically treated (Table 8.10). Many of these (20% of all cancers and 24% of surgical cases) had adjuvant chemotherapy (Figure 8.2). The use of chemotherapy has increased from 17% of cases in 1994 to 22% in 1997, while radiotherapy levels have remained constant at around 2%.

Table 8.10. Treatment summary

TREATMENT	NUMBER OF 1997 CASES TREATED	TRENDS IN % OF CASES TREATED			
		1997	1996	1995	1994
surgery	970	83.3%	79.5%	78.5%	76.2%
chemotherapy	259	22.2%	20.7%	18.8%	17.3%
hormone	4	0.3%	0.1%		
radiotherapy	25	2.1%	2.6%	2.1%	1.7%
other treatment	70	6.0%	8.2%	6.0%	26.8%
all cases treated	1031	88.5%	86.4%	88.5%	88.7%
no treatment	134	11.5%	13.6%	11.5%	11.3%
all cases	1165	1165	1130	1148	1205

Figure 8.2. Frequent treatment combinations

Note: numbers indicated refer to the number of cases treated



8.8. SURVIVAL

Overall survival at five years was 56%±3% for men and 57%±3% for women (Table 8.11). These figures are close to those for colorectal cancer. Five-year survival for stage I cases was 91%±15% for men and 99%±8% for women, while survival for stage IV cases was 9%±4% for men and 15%±5% for women (Figure 8.3).

Table 8.11. One to five year relative survival (± 95% confidence limits) for cancers diagnosed from 1994 to 1997

sex	stage	cases	YEARS FROM DIAGNOSIS					
			1		3		5	
			survival	95% confidence limits (±)	survival	95% confidence limits (±)	survival	95% confidence limits (±)
males	0	40	0.90	0.12	0.86	0.17	1.04	0.18
	I	167	0.94	0.05	0.99	0.06	0.91	0.15
	II	400	0.94	0.03	0.85	0.05	0.85	0.08
	III	249	0.82	0.05	0.59	0.08	0.49	0.12
	IV	492	0.34	0.04	0.14	0.03	0.09	0.04
	X	886	0.73	0.03	0.64	0.04	0.63	0.05
	all	2234	0.71	0.02	0.59	0.02	0.56	0.03
females	0	22	0.93	0.12	0.97	0.12	1.02	0.12
	I	143	0.99	0.04	0.94	0.07	0.99	0.08
	II	338	0.91	0.04	0.80	0.06	0.79	0.08
	III	257	0.84	0.05	0.65	0.07	0.60	0.09
	IV	417	0.33	0.05	0.16	0.04	0.15	0.05
	X	889	0.73	0.03	0.65	0.04	0.60	0.05
	all	2066	0.71	0.02	0.60	0.02	0.57	0.03

Figure 8.3. Relative survival by stage for cases diagnosed from 1994 to 1997

