

Cancer in Scotland

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Information Services Division
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Incidence

Around 27,000 new cases of cancer were diagnosed in Scotland in 2004 (35,000 if non-melanoma skin cancers are included - the following summary report excludes non-melanoma skin cancers because registration of this tumour is incomplete). For males, the most common cancers are prostate, lung and colorectal cancers accounting for 53% of cancers in males (see Figure 1). For females, the most common cancers are breast, lung and colorectal cancers accounting for 55% of cancers in women (see Figure 2).

Figure 1: Ten most common cancers in males (ICD-10), diagnosed in 2004

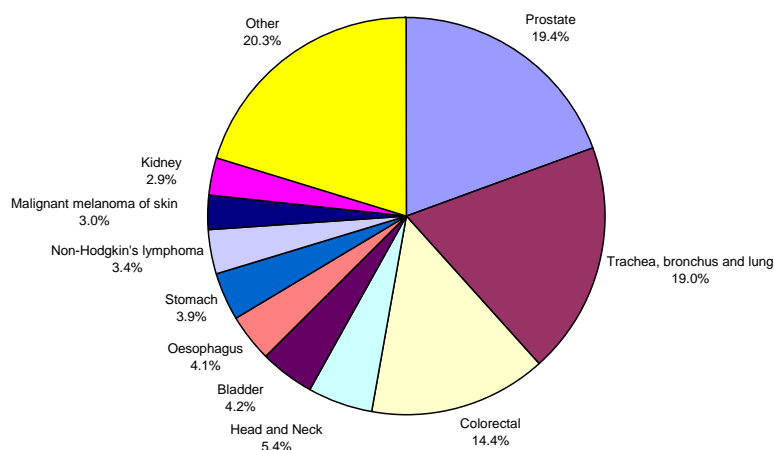
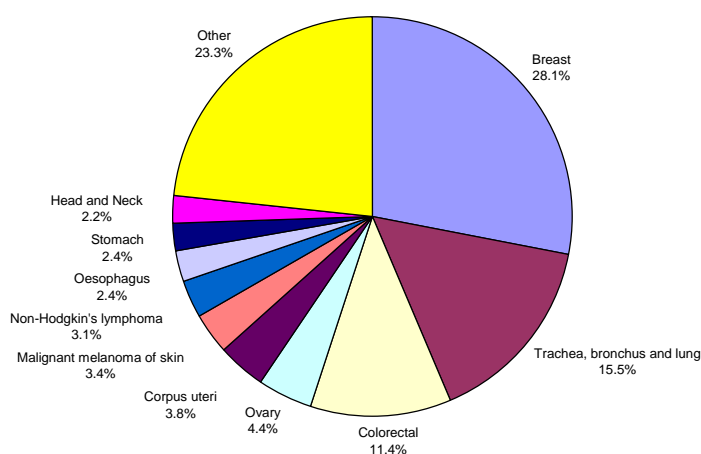


Figure 2: Ten most common cancers in females (ICD-10), diagnosed in 2004



Lung cancer is still the most common cancer overall (17% of all cancers), with around 4,700 cases diagnosed in 2004, compared to around 3,900 cases of breast cancer (15%) and 3,500 cases of colorectal cancer (13%).

Overall, cancer incidence has decreased by 9% in men over the last decade, and remained stable for women (Table 1). The apparent fall in bladder cancer incidence is an artefact due to a change in coding practice across cancer registries in Europe. Around a quarter of bladder tumours are no longer coded as invasive bladder cancers.

The incidence of cancer increases with age in both sexes (see Figure 5). The absolute number of cases increases to age 70-74 in men and 75-79 in women and then declines thereafter as the population diminishes at older ages.

Although cancer registrations are believed to be essentially complete for the year 2004, it is important to note that the cancer registration database is dynamic. In common with other cancer registries, cancer incidence rates in Scotland can take up to five years after the end of a given calendar year to stabilise due to the continuing accrual of late registrations coming to light, for example through death certification. At this stage, it may be misleading to focus too much attention on any apparent changes in incidence between 2003 and 2004. It is more informative to examine trends in incidence observed over a number of years. Striking changes from one year to the next may occur in the case of rare cancers, but these are likely to reflect random fluctuation caused by small numbers of cases - in such cases, it is even more important to examine incidence rates for a number of years aggregated together, rather than focusing on a single year of incidence.

Table 1: Most common cancers in Scotland in 2004
Rank, number, frequency in 2004, and change in incidence rate since 1994

Males

Rank	ICD-10 site grouping	Number	Frequency	10 year % change ¹	p-value
1	Prostate (C61)	2,550	19.4%	+15.9	<0.001
2	Trachea, bronchus and lung (C33-C34)	2,506	19.0%	-25.1	<0.001
3	Colorectal (C18-C20)	1,892	14.4%	-0.5	0.825
4	Head and Neck (C00-C14, C30-C32)	709	5.4%	-1.0	0.792
5	Bladder (C67) ²	559	4.2%	-58.9	<0.001
6	Oesophagus (C15)	536	4.1%	+4.0	0.369
7	Stomach (C16)	515	3.9%	-26.9	<0.001
8	Non-Hodgkin's lymphoma (C82-C85)	451	3.4%	+8.6	0.080
9	Malignant melanoma of skin (C43)	389	3.0%	+45.5	<0.001
10	Kidney (C64-C65)	383	2.9%	+5.7	0.283
	Other malignant neoplasms	2,674	20.3%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	13,164	100.0%	-8.7	<0.001

Females

Rank	ICD-10 site grouping	Number	Frequency	10 year % change ¹	p-value
1	Breast (C50)	3,917	28.1%	+10.6	<0.001
2	Trachea, bronchus and lung (C33-C34)	2,160	15.5%	+5.6	0.011
3	Colorectal (C18-C20)	1,595	11.4%	-9.6	<0.001
4	Ovary (C56)	619	4.4%	-4.5	0.223
5	Corpus uteri (C54)	525	3.8%	+18.5	<0.001
6	Malignant melanoma of skin (C43)	478	3.4%	+20.7	<0.001
7	Non-Hodgkin's lymphoma (C82-C85)	427	3.1%	+1.0	0.834
8	Oesophagus (C15)	336	2.4%	-12.3	0.014
9	Stomach (C16)	330	2.4%	-27.9	<0.001
10	Head and Neck (C00-C14, C30-C32)	310	2.2%	+2.0	0.721
	Other malignant neoplasms	3,252	23.3%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	13,949	100.0%	-1.3	0.120

All persons

Rank	ICD-10 site grouping	Number	Frequency	10 year % change ¹	p-value
1	Trachea, bronchus and lung (C33-C34)	4,666	17.2%	-12.0	<0.001
2	Breast (C50) ³	3,948	14.6%	x	x
3	Colorectal (C18-C20)	3,488	12.9%	-3.9	0.013
4	Prostate (C61) ³	2,550	9.4%	x	x
5	Head and Neck (C00-C14, C30-C32)	1,019	3.8%	+1.4	0.639
6	Non-Hodgkin's lymphoma (C82-C85)	878	3.2%	+5.1	0.133
7	Oesophagus (C15)	872	3.2%	-1.7	0.618
8	Malignant melanoma of skin (C43)	867	3.2%	+30.9	<0.001
9	Stomach (C16)	845	3.1%	-26.1	<0.001
10	Bladder (C67) ²	832	3.1%	-55.7	<0.001
	Other malignant neoplasms	7,149	26.4%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	27,114	100.0%	-4.1	<0.001

'x' = not applicable.

1 Calculated using Poisson regression analyses.

2 A change in coding of some malignant bladder cancers to *in situ* or uncertain behaviour has caused a large fall in incidence.

3 Percentage change in incidence is not shown here for cancers occurring in only one sex.

Source: Scottish Cancer Registry, ISD

Date extracted: April 2007

Figure 3: Trends in incidence of ten most common cancers, males

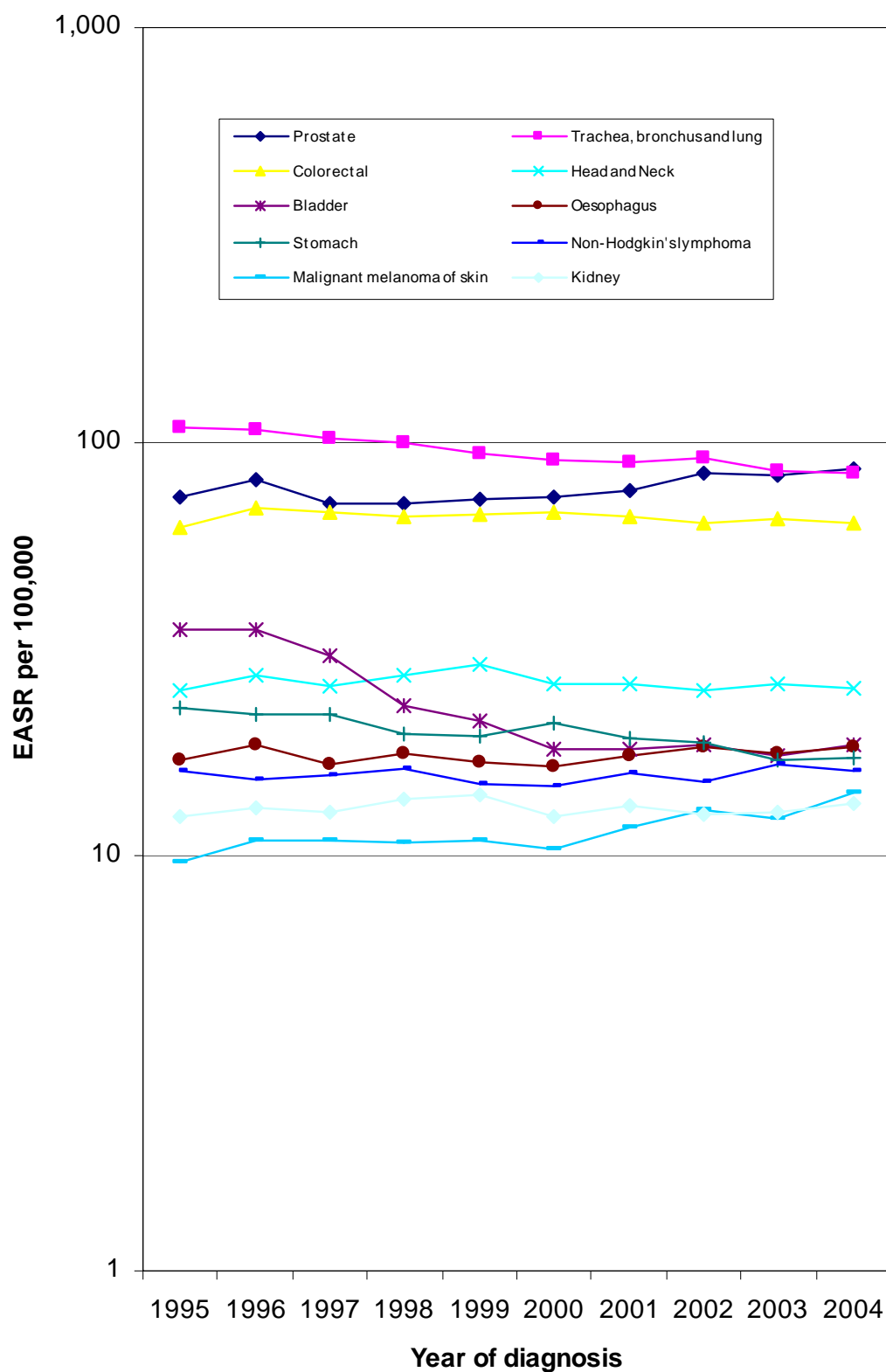


Figure 4: Trends in incidence of ten most common cancers, females

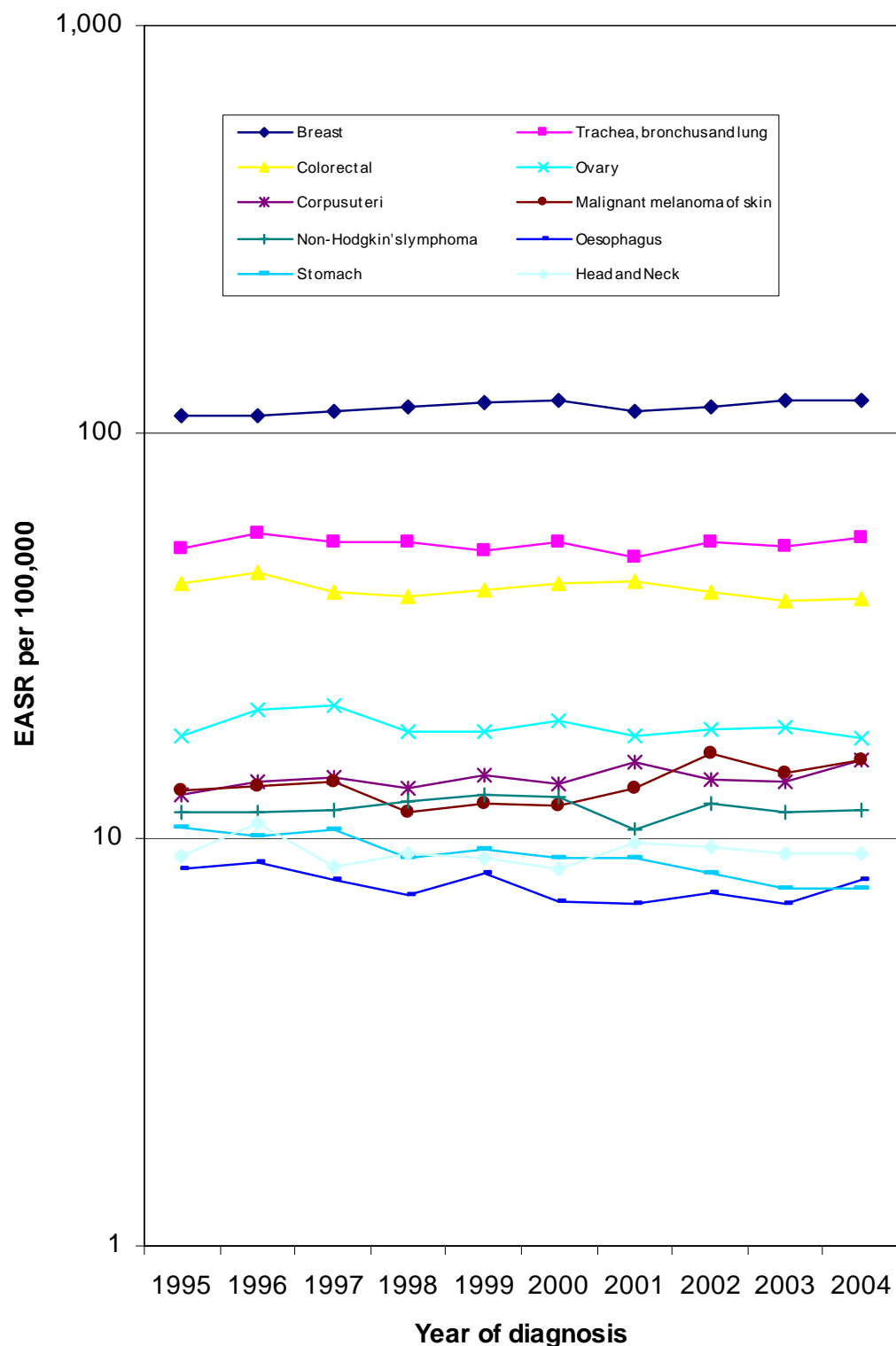
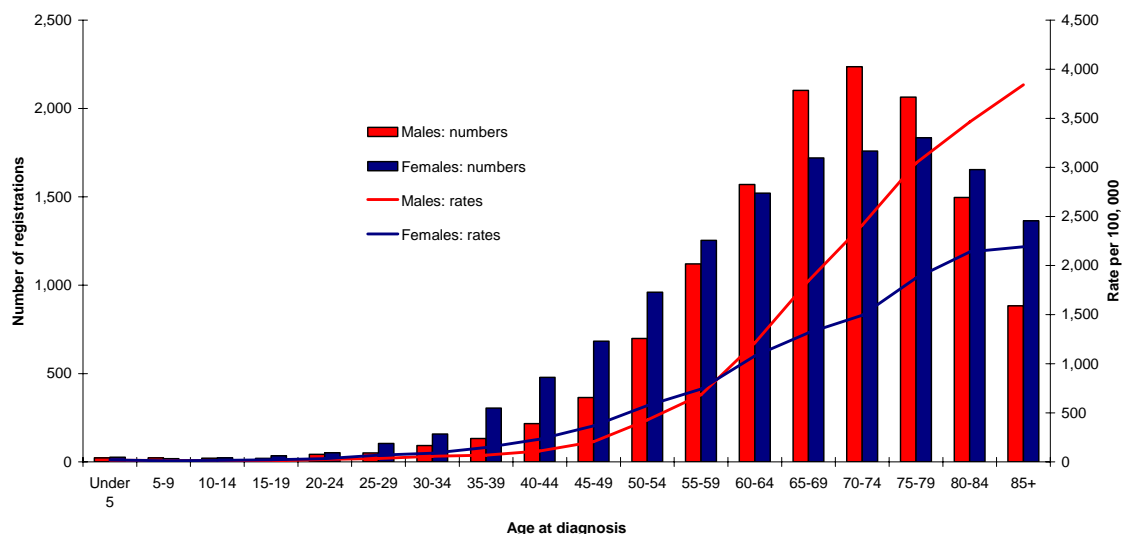


Figure 5: Number of registrations and age-specific rates per 100,000, all malignant neoplasms diagnosed in 2004, by sex



A summary table showing numbers of cases and age-standardised incidence rates for each cancer, sex and year (1995-2004) can be found at http://www.isdscotland.org/isd/files/cancer_incandmort_summary.xls

Detailed numbers and rates by age band, sex and health board for approximately 50 cancer sites and for all cancers combined over the period 1980-2004 can be found within the cancer-specific categories listed at <http://www.isdscotland.org/cancer>.

A summary of the most recent Cancer Incidence Projections (2004) can be found at <http://www.scotland.gov.uk/library5/health/cissc-00.asp>. A more comprehensive report from 2001 is available at <http://www.scotland.gov.uk/library3/health/csatp-00.asp>.

Cancer incidence statistics for England can be found at <http://www.statistics.gov.uk/statbase/Product.asp?vlnk=8843>. Comparative data on incidence and mortality for the UK and Ireland can be found at <http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=14059&Pos=&ColRank=1&Rank=272>.

Lifetime risk of cancer

It is estimated that 1 in 3 people in Scotland will develop some form of cancer during their lifetime, and that around 1 in 9 males and 1 in 7 females will develop some form of cancer before the age of 65 (see Table 2). Having survived to age 65 without cancer, the risk of getting cancer subsequently is 1 in 3 for males and 1 in 4 for females.

Table 2: Risk of being diagnosed with cancer over a lifetime (up to the age of 90) based on incidence and mortality during 1999-2003

Risk of being diagnosed with cancer over a lifetime (up to the age of 90), Scotland, 1999-2003						
Cancer site / type (ICD-10)	Males			Females		
	% of cohort that develop cancer up to age 64	Lifetime risk over lifetime	Lifetime risk 1 in ...	% of cohort that develop cancer up to age 64	Lifetime risk over lifetime	Lifetime risk 1 in ...
All malignant neoplasms excl non-melanoma skin cancer ¹	11.5	35.2	3	13.6	33.9	3
Head and neck (C00-C14, C30-C32)	1.0	2.0	49	0.4	0.8	121
Oral cavity (C01-C06)	0.4	0.7	153	0.1	0.3	301
Oesophagus (C15)	0.5	1.5	68	0.2	0.9	112
Stomach (C16)	0.4	1.7	59	0.2	1.1	95
Colorectal (C18-C20)	1.6	5.5	18	1.1	4.5	22
Colon (C18)	0.9	3.4	29	0.7	3.2	31
Rectum and rectosigmoid junction (C19-C20)	0.7	2.1	48	0.4	1.3	74
Pancreas (C25)	0.3	0.9	114	0.2	1.0	104
Larynx (C32)	0.3	0.7	136	0.1	0.2	568
Trachea, bronchus and lung (C33-C34)	2.0	7.8	13	1.4	5.5	18
Malignant melanoma of the skin (C43)	0.5	0.9	112	0.7	1.1	89
Female breast (C50, females)	x	x	x	5.5	9.6	10
Cervix uteri (C53)	x	x	x	0.6	0.8	124
Corpus uteri (C54)	x	x	x	0.6	1.3	80
Ovary (C56)	x	x	x	0.8	1.7	58
Prostate (C61)	1.3	7.0	14	x	x	x
Testis (C62)	0.5	0.6	177	x	x	x
Kidney (C64-C65)	0.4	1.0	97	0.2	0.7	149
Bladder (C67)	0.3	1.6	61	0.1	0.7	140
Brain and other CNS (C70-C72)	0.4	0.7	148	0.2	0.5	207
Thyroid (C73)	0.1	0.1	954	0.2	0.3	363
Hodgkin's disease (C81)	0.2	0.2	529	0.1	0.2	602
Non-Hodgkin's lymphoma (C82-C85)	0.5	1.2	80	0.4	1.2	85
Multiple myeloma and malignant plasma cell neoplasms (C90)	0.1	0.5	190	0.1	0.5	221
Leukaemias (C91-C95)	0.4	1.1	87	0.3	0.8	122

¹ C00-C96 excl C44 (C97 is not used by the Scottish Cancer Registry).

Source: Scottish Cancer Registry, ISD

'x' = not applicable.

Data extracted: August 2006

For the most common cancers, for males, the lifetime risk of developing lung cancer is estimated as 1 in 13, of prostate cancer 1 in 14, and 1 in 18 men are estimated to develop colorectal cancer in their lifetime. For females, the estimated lifetime risk is 1 in 10 for breast cancer, 1 in 18 for lung cancer, and 1 in 22 for colorectal cancer.

Prevalence of cancer

Overall, 2.1% of men and 2.9% of women in Scotland are living with cancer (2,101 and 2,889 per 100,000 population) (see Table 3). Around a quarter of these people have been diagnosed at least 10 years previously, and around a third have been diagnosed within the previous 5 years.

Table 3: Cancer survivors (prevalence) at 31 December 2003, by time since diagnosis

Cancer survivors (prevalence) at 31 December 2003, Scotland					
Time survived since diagnosis					
Males					
	Prevalence: rate per 100,000 in population				
Cancer site / type (ICD-10)	Up to 1 year	> 1 to 5 years	> 5 to 10 years	> 10 to 20 years	Total up to 20 years
All malignant neoplasms excl non-melanoma skin cancer ¹	355.6	778.6	534.2	432.5	2,100.9
Head and neck (C00-C14, C30-C32)	24.7	63.6	44.7	36.6	169.6
Oral cavity (C01-C06)	8.3	19.0	11.8	8.1	47.2
Oesophagus (C15)	11.9	12.6	5.2	2.3	32.0
Stomach (C16)	11.3	15.5	9.1	8.5	44.4
Colorectal (C18-C20)	60.1	151.0	97.6	71.0	379.7
Colon (C18)	37.6	91.5	60.9	47.3	237.2
Rectum and rectosigmoid junction (C19-C20)	22.9	61.5	37.9	24.9	147.1
Pancreas (C25)	4.3	2.6	1.0	1.4	9.4
Larynx (C32)	8.6	26.6	19.5	17.0	71.7
Trachea, bronchus and lung (C33-C34)	45.2	40.2	20.3	22.3	128.1
Malignant melanoma of the skin (C43)	13.1	39.4	32.7	30.4	115.5
Female breast (C50, females)	x	x	x	x	x
Cervix uteri (C53)	x	x	x	x	x
Corpus uteri (C54)	x	x	x	x	x
Ovary (C56)	x	x	x	x	x
Prostate (C61)	88.6	238.0	129.8	47.7	504.1
Testis (C62)	7.6	32.9	34.8	50.7	126.1
Kidney (C64-C65)	10.4	26.3	17.3	14.2	68.3
Bladder (C67)	16.9	42.4	67.0	73.0	199.3
Brain and other CNS (C70-C72)	5.1	8.2	6.9	8.0	28.1
Thyroid (C73)	1.5	4.1	4.2	5.3	15.1
Hodgkin's disease (C81)	2.8	8.9	10.3	17.1	39.1
Non-Hodgkin's lymphoma (C82-C85)	14.7	35.2	27.4	23.6	100.8
Multiple myeloma and malignant plasma cell neoplasms (C90)	5.4	11.0	3.5	1.5	21.4
Leukaemias (C91-C95)	12.2	29.9	21.8	16.9	80.8
1 C00-C96 excl C44 (C97 is not used by the Scottish Cancer Registry).					x' = not applicable.
Source: Scottish Cancer Registry, ISD					Data extracted: August 2006
Females					
	Prevalence: rate per 100,000 in population				
Cancer site / type (ICD-10)	Up to 1 year	> 1 to 5 years	> 5 to 10 years	> 10 to 20 years	Total up to 20 years
All malignant neoplasms excl non-melanoma skin cancer ¹	367.9	949.5	784.6	786.6	2,888.5
Head and neck (C00-C14, C30-C32)	9.9	26.2	19.6	18.6	74.3
Oral cavity (C01-C06)	4.3	10.7	7.5	5.9	28.3
Oesophagus (C15)	6.5	5.4	3.7	3.2	18.8
Stomach (C16)	7.3	9.7	6.7	7.0	30.7
Colorectal (C18-C20)	42.9	123.1	94.7	85.9	346.5
Colon (C18)	29.0	85.9	66.6	63.1	244.5
Rectum and rectosigmoid junction (C19-C20)	14.0	38.0	28.8	23.7	104.6
Pancreas (C25)	4.6	2.2	1.2	1.2	9.2
Larynx (C32)	2.0	5.9	4.8	4.9	17.5
Trachea, bronchus and lung (C33-C34)	36.7	33.6	16.7	13.6	100.5
Malignant melanoma of the skin (C43)	16.3	54.6	54.5	62.0	187.3
Female breast (C50, females)	134.9	424.3	354.6	335.4	1,249.1
Cervix uteri (C53)	8.9	32.8	38.3	70.6	150.6
Corpus uteri (C54)	15.9	52.8	47.3	49.3	165.3
Ovary (C56)	17.5	41.4	33.1	35.7	127.7
Prostate (C61)	x	x	x	x	x
Testis (C62)	x	x	x	x	x
Kidney (C64-C65)	6.5	16.1	13.2	10.4	46.3
Bladder (C67)	6.5	15.0	26.5	32.7	80.7
Brain and other CNS (C70-C72)	2.7	5.1	5.0	6.8	19.6
Thyroid (C73)	3.5	12.3	12.5	15.1	43.4
Hodgkin's disease (C81)	1.9	7.9	7.7	11.8	29.3
Non-Hodgkin's lymphoma (C82-C85)	12.5	34.5	25.8	21.4	94.2
Multiple myeloma and malignant plasma cell neoplasms (C90)	4.1	8.8	3.6	1.6	18.2
Leukaemias (C91-C95)	8.0	20.4	16.4	14.1	58.8
1 C00-C96 excl C44 (C97 is not used by the Scottish Cancer Registry).					x' = not applicable.
Source: Scottish Cancer Registry, ISD					Data extracted: August 2006

Cancers with high incidence along with favourable survival have the highest prevalence, in particular breast cancer (1.2% of women in Scotland are living with breast cancer). Prevalence is increasing for many cancers due to improvements in prognosis and increasing incidence.

The prevalence of cancer in the Scottish population increases with age (see Table 4), with 9.6% of men and 8.4% of women (9,554 and 8,381 cases per 100,000 population) of people aged 65 and over living with, compared to 2.1% of men and 4.2% of women aged 45-64, and 0.4% of men and 0.5% of women aged under 45. This comprises people diagnosed very recently and those diagnosed up to 20 years previously. The most prevalent cancer (3.2%) of men aged 65 and over is prostate cancer. Overall, 63% of males and 54% of females who are living with a diagnosis of cancer are aged 65 and over.

Table 4: Cancer survivors (prevalence) at 31 December 2003, current ages of those surviving up to 20 years following diagnosis

Cancer survivors (prevalence) at 31 December 2003, Scotland				
Current ages of those surviving up to 20 years following diagnosis				
Males	Prevalence: rate per 100,000 in population			
Cancer site / type (ICD-10)	Under 45	45-64	65+	All Ages
All malignant neoplasms excl non-melanoma skin cancer ¹	374.4	2,143.1	9,554.0	2,100.9
Head and neck (C00-C14, C30-C32)	10.2	271.1	676.4	169.6
Oral cavity (C01-C06)	3.9	92.9	151.4	47.2
Oesophagus (C15)	1.4	44.9	141.4	32.0
Stomach (C16)	1.0	39.2	243.1	44.4
Colorectal (C18-C20)	11.1	337.7	2,066.0	379.7
Colon (C18)	7.3	187.9	1,331.9	237.2
Rectum and rectosigmoid junction (C19-C20)	3.9	152.7	761.9	147.1
Pancreas (C25)	0.7	10.8	44.4	9.4
Larynx (C32)	1.2	103.6	320.3	71.7
Trachea, bronchus and lung (C33-C34)	3.0	130.4	669.3	128.1
Malignant melanoma of the skin (C43)	39.5	168.5	348.7	115.5
Female breast (C50, females)	x	x	x	x
Cervix uteri (C53)	x	x	x	x
Corpus uteri (C54)	x	x	x	x
Ovary (C56)	x	x	x	x
Prostate (C61)	0.5	249.6	3,173.3	504.1
Testis (C62)	118.1	190.1	42.0	126.1
Kidney (C64-C65)	8.0	93.1	285.4	68.3
Bladder (C67)	4.8	147.4	1,144.0	199.3
Brain and other CNS (C70-C72)	27.9	32.2	21.3	28.1
Thyroid (C73)	7.3	24.2	32.5	15.1
Hodgkin's disease (C81)	38.4	45.6	30.2	39.1
Non-Hodgkin's lymphoma (C82-C85)	28.5	145.7	333.0	100.8
Multiple myeloma and malignant plasma cell neoplasms (C90)	1.1	26.0	101.4	21.4
Leukaemias (C91-C95)	37.2	76.5	278.9	80.8
1 C00-C96 excl C44 (C97 is not used by the Scottish Cancer Registry).				x' = not applicable.
Source: Scottish Cancer Registry, ISD				Data extracted: August 2006
Females	Prevalence: rate per 100,000 in population			
Cancer site / type (ICD-10)	Under 45	45-64	65+	All Ages
All malignant neoplasms excl non-melanoma skin cancer ¹	509.1	4,220.1	8,381.1	2,888.5
Head and neck (C00-C14, C30-C32)	8.7	105.6	233.1	74.3
Oral cavity (C01-C06)	3.2	41.3	87.7	28.3
Oesophagus (C15)	0.7	16.8	77.0	18.8
Stomach (C16)	1.7	23.9	128.7	30.7
Colorectal (C18-C20)	11.4	266.7	1,482.1	346.5
Colon (C18)	8.7	174.3	1,062.9	244.5
Rectum and rectosigmoid junction (C19-C20)	2.8	94.3	430.8	104.6
Pancreas (C25)	0.7	10.2	33.8	9.2
Larynx (C32)	0.6	26.0	57.8	17.5
Trachea, bronchus and lung (C33-C34)	3.7	105.6	390.5	100.5
Malignant melanoma of the skin (C43)	79.9	279.2	392.4	187.3
Female breast (C50, females)	123.3	2,222.6	3,382.9	1,249.1
Cervix uteri (C53)	78.2	297.2	174.1	150.6
Corpus uteri (C54)	4.4	223.0	580.8	165.3
Ovary (C56)	32.8	212.3	304.1	127.7
Prostate (C61)	x	x	x	x
Testis (C62)	x	x	x	x
Kidney (C64-C65)	6.1	51.5	162.6	46.3
Bladder (C67)	2.0	52.9	359.6	80.7
Brain and other CNS (C70-C72)	20.4	20.1	16.3	19.6
Thyroid (C73)	27.7	71.4	53.6	43.4
Hodgkin's disease (C81)	31.5	30.6	20.8	29.3
Non-Hodgkin's lymphoma (C82-C85)	15.4	125.7	293.2	94.2
Multiple myeloma and malignant plasma cell neoplasms (C90)	0.4	16.5	75.1	18.2
Leukaemias (C91-C95)	29.3	41.7	172.5	58.8
1 C00-C96 excl C44 (C97 is not used by the Scottish Cancer Registry).				x' = not applicable.
Source: Scottish Cancer Registry, ISD				Data extracted: August 2006

Cancer mortality

Over 15,000 people died of cancer in Scotland in 2006. Lung cancer accounted for 28% of cancer deaths in males, and 26% of cancer deaths in females. Colorectal, breast and prostate cancer were the other major causes of cancer deaths (Table 5).

Overall cancer mortality has decreased by 12% in males and 5% in females in the last 10 years. In men, the largest falls in mortality have been in lung, stomach and bladder cancer (23%, 24% and 23% respectively). For women, the largest falls were observed in colorectal and stomach cancer (21% and 34% respectively).

Table 5: Most common causes of death from cancer in Scotland in 2006: Rank, number, frequency and change in mortality rate since 1996**Mortality Top 10, 2006****Males**

Rank	ICD-10 site grouping	Number	Frequency	10 year % change ¹	p-value
1	Trachea, bronchus and lung (C33-C34)	2,162	28.1%	-23.5	<0.001
2	Colorectal (C18-C20)	835	10.9%	-17.7	<0.001
3	Prostate (C61)	779	10.1%	-8.4	0.011
4	Oesophagus (C15)	490	6.4%	+2.9	0.517
5	Stomach (C16)	338	4.4%	-23.9	<0.001
6	Bladder (C67)	281	3.7%	-22.9	<0.001
7	Pancreas (C25)	269	3.5%	-10.4	0.053
8	Head and Neck (C00-C14, C30-C32)	244	3.2%	-9.5	0.093
9	Brain and other CNS (C70-C72)	219	2.8%	+19.7	0.010
10	Liver and intrahepatic bile ducts (C22)	217	2.8%	+40.3	<0.001
	Other malignant neoplasms	1,858	24.2%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	7,692	100.0%	-12.1	<0.001

Females

Rank	ICD-10 site grouping	Number	Frequency	10 year % change ¹	p-value
1	Trachea, bronchus and lung (C33-C34)	1,900	25.9%	+6.4	0.007
2	Breast (C50)	1,108	15.1%	-11.5	<0.001
3	Colorectal (C18-C20)	715	9.8%	-21.2	<0.001
4	Ovary (C56)	400	5.5%	-8.4	0.063
5	Pancreas (C25)	298	4.1%	+0.1	0.986
6	Oesophagus (C15)	275	3.8%	-10.5	0.047
7	Stomach (C16)	214	2.9%	-34.3	<0.001
8	Non-Hodgkin's lymphoma (C82-C85)	195	2.7%	-14.6	0.016
9	Leukaemias (C91-C95)	154	2.1%	+2.7	0.729
10	Bladder (C67)	144	2.0%	-20.1	0.002
	Other malignant neoplasms	1,930	26.3%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	7,333	100.0%	-5.5	<0.001

All persons

Rank	ICD-10 site grouping	Number	Frequency	10 year % change ¹	p-value
1	Trachea, bronchus and lung (C33-C34)	4,062	27.0%	-10.4	<0.001
2	Colorectal (C18-C20)	1,550	10.3%	-18.2	<0.001
3	Breast (C50) ²	1,112	7.4%	x	x
4	Prostate (C61) ²	779	5.2%	x	x
5	Oesophagus (C15)	765	5.1%	-1.0	0.775
6	Pancreas (C25)	567	3.8%	-4.6	0.234
7	Stomach (C16)	552	3.7%	-27.2	<0.001
8	Bladder (C67)	425	2.8%	-19.4	<0.001
9	Ovary (C56) ²	400	2.7%	x	x
10	Non-Hodgkin's lymphoma (C82-C85)	397	2.6%	-16.2	0.000
	Other malignant neoplasms	4,416	29.4%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	15,025	100.0%	-7.8	<0.001

'x' = not applicable.

1 Calculated using Poisson regression analyses.

2 Percentage change in mortality is not shown here for cancers occurring in only one sex (Note: breast cancer does rarely occur in males).

Source: General Register Office for Scotland (GROS)

Date extracted: August 2007

Figure 6: Trends in mortality from ten most common cancer causes of death, males

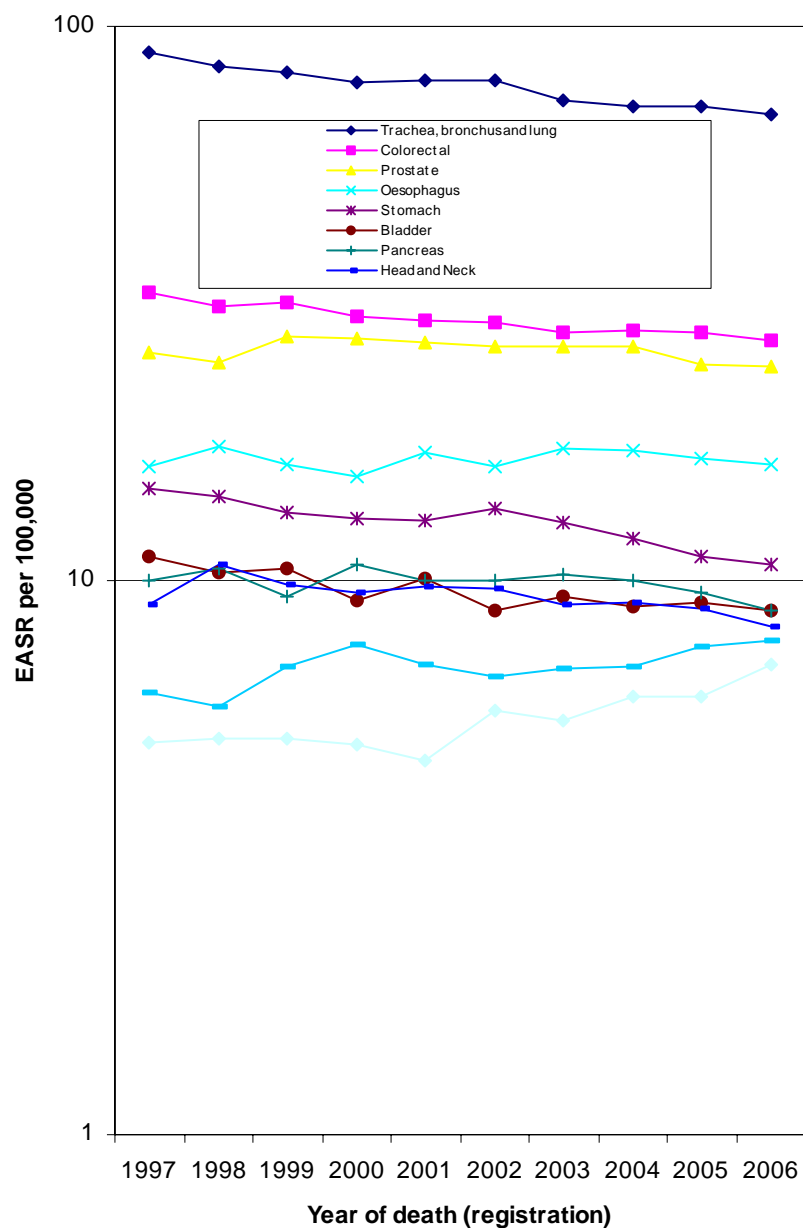
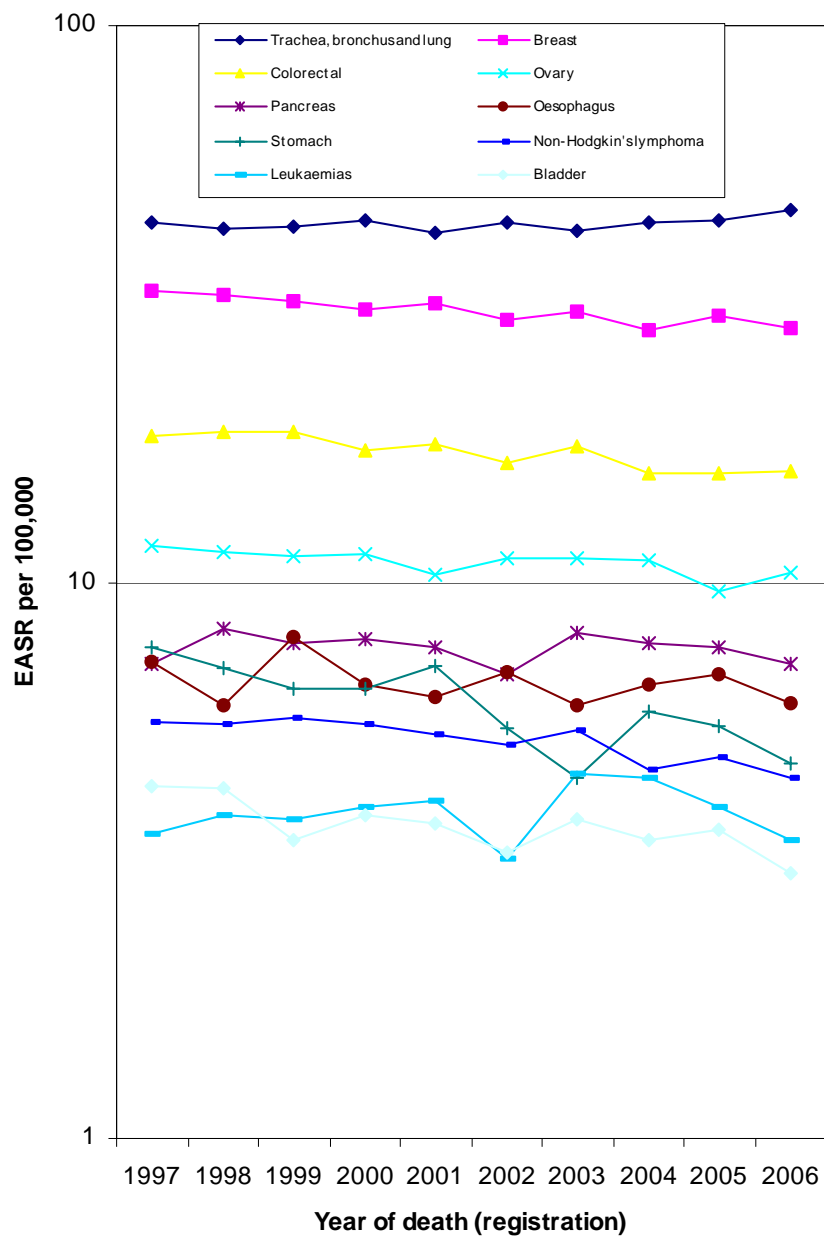


Figure 7: Trends in mortality from ten most common cancer causes of death, females



Cancer survival

For patients diagnosed during 2000-2004, 61% of male and 67% of female patients survived to one year after diagnosis and 42% of male and 51% of female patients survived to five years after diagnosis.

Survival is worst in patients with cancers that often present at an advanced stage and are less amenable to treatment (for example, cancers of the lung and pancreas). Survival tends to be better for cancers for which patients present at an early stage (for example, malignant melanoma of the skin), cancers which can be detected early by screening (for example, breast cancer), and for cancers for which there have been major advances in treatment (for example, testicular cancer and leukaemias).

Five-year survival for cancer patients, relative to the life expectancy of the population in general, increased from 26% for males diagnosed in 1980-1984 to 42% for males diagnosed 2000-2004, and from 38% to 51% for females¹. This represents a substantial and significant improvement in the probability of surviving cancer in the long term.

Survival from **prostate** cancer has improved substantially from (46% to 80%)¹. Much of this is likely to be due to increasingly widespread use of prostate-specific antigen (PSA) testing in Scotland since the 1990s. The PSA test enables some invasive prostate cancers to be identified earlier than in the past, leading to an increase in survival time (between diagnosis and death) even for men whose death is not necessarily postponed. The PSA test also identifies some latent, non-lethal tumours that may never cause symptoms and may never be diagnosed during life. A number of studies are underway in Europe and the USA to determine whether population screening programmes based on the PSA test are an effective way to reduce mortality from prostate cancer.

Survival for **breast** cancer patients has also increased substantially from 64% for those diagnosed in 1980-1984 to 84% in 2000-2004¹. This improvement is likely to be due to a combination of new treatments, particularly hormonal therapy, earlier diagnosis of cancers in women participating in the Scottish Breast Screening Programme, and better organisation and delivery of care for patients.

Large improvements in survival are seen for cancers of the **colon and rectum** with around 55% of patients now surviving at least five years after diagnosis, compared to around 35% of those diagnosed between 1980-1984. Improvements in peri-operative care may have contributed to the increase in survival. Early diagnosis of these cancers is very important in determining options for treatment and increasing the probability of cure for the patient. The

¹ Relative survival is an estimate of the observed survival divided by the expected probability of survival in the general population. This can be thought of as a measure of the survival expectation after contracting cancer, or the probability of survival from cancer in the **absence** of other causes of death.

continuing rollout of the Scottish Bowel Screening Programme will increase early detection.

Substantial improvements in survival are also observed for females with cancer of the **corpus uteri** (increase from 72% to 83%), for patients with **non-Hodgkin's lymphoma** (males: 35% to 59%; females 42% to 60%), **Hodgkin's disease** (males: 69% to 89%; females: 65% to 92%) and **leukaemia** (males: 26% to 53%; females: 25% to 50%).

Increases in the five year survival for **malignant melanoma of the skin** (62% to 87% in males, and 81% to 93% in females). These positive changes are likely to reflect an increase in diagnosis of early stage disease following health education programmes that encourage earlier presentation and referral.

The lack of improvement for patients with **head and neck** cancers is largely an artefact of the large decrease in the proportion of **lip** tumours, which usually have an excellent prognosis. Survival at specific sites within the head and neck has generally improved.

Survival remains poor with little improvement over time for patients with **lung** cancer, and **pancreatic** cancer. These internal tumours frequently present at an advanced stage and are less amenable to treatment. However, survival has increased greatly for patients with **stomach** cancer (males: 9% to 14%; females: 9% to 16%) and **oesophageal** cancer in males: 5% to 11%.

A report on trends in cancer survival in Scotland from 1971-1995 for 25 cancer types can be found at http://www.isdscotland.org/isd/files/trends_1971-95.pdf, which contains detailed data and methods sections. An up-date of this publication for the period 1980-2004 can be found on our web site at <http://www.isdscotland.org/cancer>.

Children, adolescents and young adults

Incidence and survival information for adolescents and young adults can be found at <http://www.isdscotland.org/cancer>. In brief, the incidence of cancer in adolescents and young adults (aged 15-24) account for approximately 0.7% of all cancers per year (approximately 160 cases per year) in Scotland. Incidence rates of all cancers in adolescents and young adults have increased over time, rising from 178.3 to 237.4 per million population between the periods 1976-1980 and 1996-2000. Five-year (observed) survival from all cancers in adolescents and young adults has increased by 19% (from 60% to 79%) between the periods 1976-1980 and 1997-2001.

A report on childhood cancer in Scotland including incidence, mortality and survival for 1975-1999 is also available at http://www.isdscotland.org/isd/files/SHS_Childhood_Cancer_in_Scotland.pdf. It shows that the incidence of childhood cancer in Scotland has increased, mortality has decreased, and survival has improved, over the period 1975-1979 to 1995-1999. In summary, around 120 children are diagnosed with

cancer in Scotland each year, accounting for less than 1% of all malignant neoplasms diagnosed at all ages. The youngest age group (0-4 years) accounts for 46% of all childhood cancers. Overall, the incidence of, and mortality from, childhood cancer are higher in boys than in girls. The two most commonly occurring cancers in childhood are leukaemia, and Central Nervous System (mostly brain) tumours. Between 1975-79 and 1995-99, the average annual age- and sex-standardised incidence rate of all childhood cancer increased significantly, from 108 to 132 per million children per year. Similar incidence trends have been seen in other European countries. During the same period, the average annual age- and sex-standardised mortality rate of all childhood cancer decreased from 53 to 28 per million children per year. Five-year survival for all childhood cancers combined has increased from 50% for those diagnosed during 1975-79 to 76% for those diagnosed during 1995-99, and for some specific types of childhood cancer, survival prospects are now excellent.

Since the early 1990s, the UK Childhood Cancer Study Investigators have been collating and analysing data, with a view to investigating the possible causes of childhood cancer.

UK statistics

Summary information on cancer in the UK can be found at <http://info.cancerresearchuk.org/cancerstats/> and information for England can be found at <http://www.statistics.gov.uk/>.

Information on geographical patterns in cancer incidence and mortality across the UK and Ireland is available in 'Cancer Atlas of the United Kingdom and Ireland 1991-2000' at <http://www.statistics.gov.uk/statbase/Product.asp?vlnk=14059&More=n>.