

Cancer in Scotland

October 2011

First published in June 2004,
revised with each National Statistics publication

Next due for revision June 2012

Information Services Division
NHS National Services Scotland

Contents

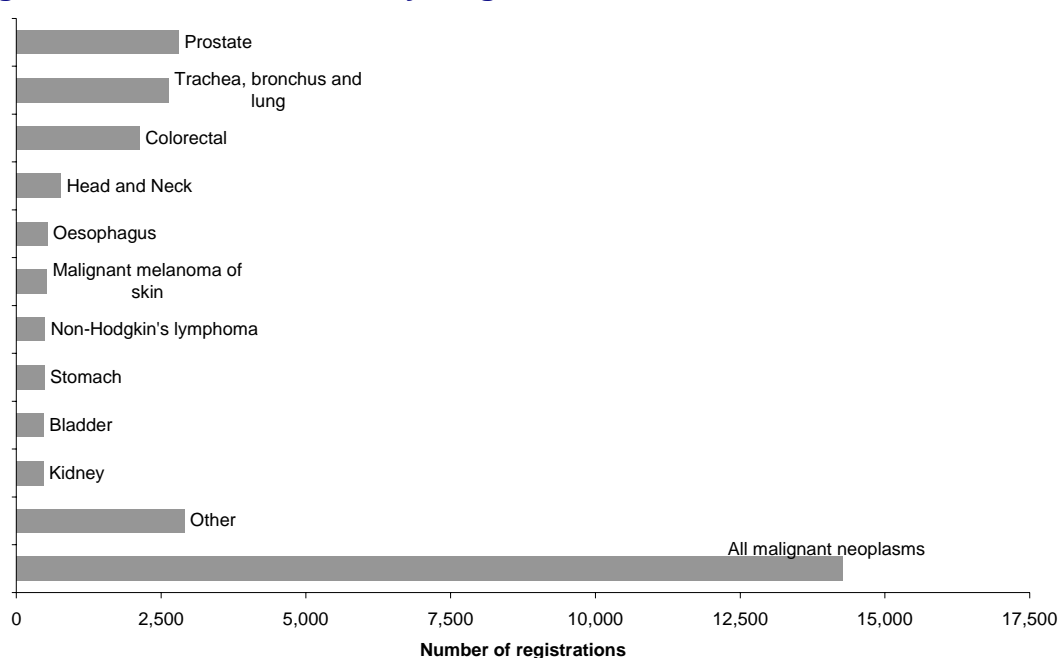
Cancer Incidence	2
Lifetime Risk of Cancer	10
Prevalence of Cancer	10
Cancer Mortality	13
Cancer Survival.....	17
Children, Adolescents and Young Adults	18
UK Statistics.....	19

Cancer incidence

This section is updated annually, alongside the Cancer Incidence National Statistics publication.

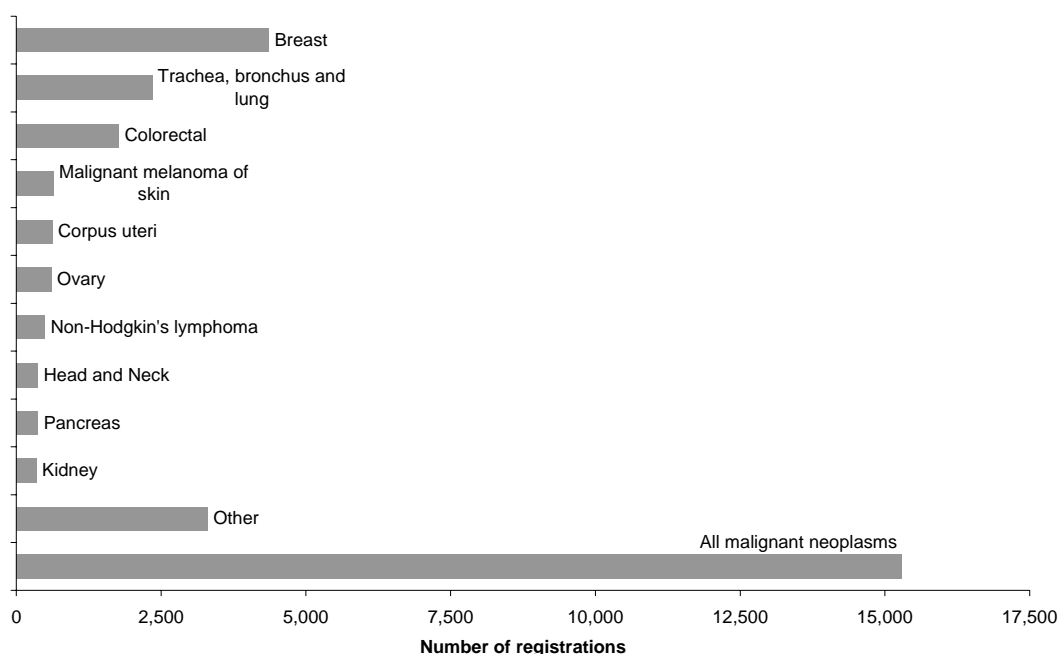
Just over 29,500 new cases of cancer were diagnosed in Scotland in 2009. The following summary report excludes non-melanoma skin cancers (of which there are approximately 10,500 registrations in 2009) because registration of this tumour is believed to be incomplete. For males, the most common cancers are prostate, lung and colorectal cancers, cumulatively accounting for 53% of cancers in men (Figure 1). For females, the most common cancers are breast, lung and colorectal cancers, accounting for 56% of cancers in women (Figure 2).

Figure 1: Ten most commonly diagnosed cancers in males, 2009



All cancers excluding non-melanoma skin cancers (ICD-10 C00-C97 excl C44)
 Source: Scottish Cancer Registry

Figure 2: Ten most commonly diagnosed cancers in females, 2009



All cancers excluding non-melanoma skin cancers (ICD-10 C00-C97 excl C44)
 Source: Scottish Cancer Registry

Lung cancer is still the most common cancer overall (17% of all cancers), with just under 5,000 cases diagnosed in 2009, compared to around 4,400 cases of breast cancer (15%) and almost 4,000 cases of colorectal cancer (13%). The numbers have increased slightly but the ranks and percentages are largely unchanged from 2008.

Over the last 10 years, age-standardised incidence rates of all cancers combined have decreased by approximately 2% in men, and have increased significantly in females by approximately 6% (Table 1, Figures 3 and 4).

While many cancers are decreasing in incidence, the incidence rate of malignant melanoma of the skin has increased considerably over the last decade, by approximately 73% in males and 70% in females. The incidence rate of lung cancer in females continues to rise, with an approximately 18% increase over the last 10 years; in males, the lung cancer incidence rate has decreased by around 15% over the same time period. The apparent fall in bladder cancer incidence in males is an artefact due to a change in classification and coding practice across cancer registries in Europe; around a quarter of bladder tumours are no longer coded as invasive bladder cancers.

Cancers of the kidney show significant increases in incidence rates over the last 10 years of 23% and 37% for males and females, respectively. The increase has occurred primarily in cancers of the renal parenchyma (ICD-10 C64) rather than of the renal pelvis (C65). The reason for this increase is not clear. Established risk factors include obesity and smoking, but advances in imaging may also have led to an increase in incidental diagnosis of some tumours.

The incidence of cancer of the body of the uterus (corpus uteri) has increased significantly (by 28%) over the decade 1999-2009. The majority of cancers at this site affect the endometrium or lining of the womb. The increase in incidence may be due, at least in part, to longstanding changes in fertility (since childbearing appears to protect against endometrial cancer), and increases in levels of obesity (which increase risk). A further contributing factor may be a decrease in rates of hysterectomy, which leaves a larger population at risk of developing uterine cancer, and use of certain medications.

Table 1: Most common cancers in Scotland in 2009

Males					
Rank	ICD-10 site grouping	Number	Frequency	10 year % change ¹	p-value
1	Prostate (C61)	2,805	19.7%	+14.9	0.0077
2	Trachea, bronchus and lung (C33-C34)	2,637	18.5%	-14.7	<0.0001
3	Colorectal (C18-C20)	2,135	15.0%	-1.4	0.5250
4	Head and Neck (C00-C14, C30-C32)	774	5.4%	-5.6	0.1574
5	Oesophagus (C15)	542	3.8%	+1.6	0.6600
6	Malignant melanoma of skin (C43)	534	3.7%	+72.6	<0.0001
7	Non-Hodgkin's lymphoma (C82-C85)	498	3.5%	+9.1	0.0200
8	Stomach (C16)	485	3.4%	-28.2	<0.0001
9	Bladder (C67)	481	3.4%	-26.9	<0.0001
10	Kidney (C64-C65)	471	3.3%	+23.4	<0.0001
	Other malignant neoplasms	2,909	20.4%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	14,271	100.0%	-1.9	0.1012
Females					
Rank	ICD-10 site grouping	Number	Frequency	10 year % change ¹	p-value
1	Breast (C50)	4,368	28.6%	+10.3	0.0006
2	Trachea, bronchus and lung (C33-C34)	2,352	15.4%	+18.4	<0.0001
3	Colorectal (C18-C20)	1,781	11.6%	-1.0	0.6568
4	Malignant melanoma of skin (C43)	647	4.2%	+69.2	<0.0001
5	Corpus uteri (C54)	628	4.1%	+27.6	<0.0001
6	Ovary (C56)	610	4.0%	-8.7	0.0138
7	Non-Hodgkin's lymphoma (C82-C85)	498	3.3%	+7.2	0.1842
8	Head and Neck (C00-C14, C30-C32)	378	2.5%	+3.0	0.6576
9	Pancreas (C25)	376	2.5%	+2.8	0.5876
10	Kidney (C64-C65)	351	2.3%	+37.3	<0.0001
	Other malignant neoplasms	3,306	21.6%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	15,295	100.0%	+6.2	<0.0001
All persons					
Rank	ICD-10 site grouping	Number	Frequency	10 year % change ¹	p-value
1	Trachea, bronchus and lung (C33-C34)	4,989	16.9%	-3.1	0.8464
2	Breast (C50) ²	4,392	14.9%	x	x
3	Colorectal (C18-C20)	3,916	13.2%	-1.3	0.9833
4	Prostate (C61) ²	2,805	9.5%	x	x
5	Malignant melanoma of skin (C43)	1,181	4.0%	+70.8	<0.0001
6	Head and Neck (C00-C14, C30-C32)	1,152	3.9%	-3.4	0.6216
7	Non-Hodgkin's lymphoma (C82-C85)	996	3.4%	+8.3	0.0047
8	Oesophagus (C15)	840	2.8%	-3.0	0.3778
9	Kidney (C64-C65)	822	2.8%	+28.1	<0.0001
10	Stomach (C16)	750	2.5%	-30.8	<0.0001
	Other malignant neoplasms	7,723	26.1%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	29,566	100.0%	+1.8	0.0002

'x' = not applicable.

¹ Calculated using Poisson regression analyses.

² Percentage change in incidence is not shown here for cancers occurring in only one sex.

Source: Scottish Cancer Registry, ISD; Date extracted: July 2011

Figure 3: Trends in incidence of ten most common cancers, males
EASR: Age-standardised rate, standardised to the European Standard Population

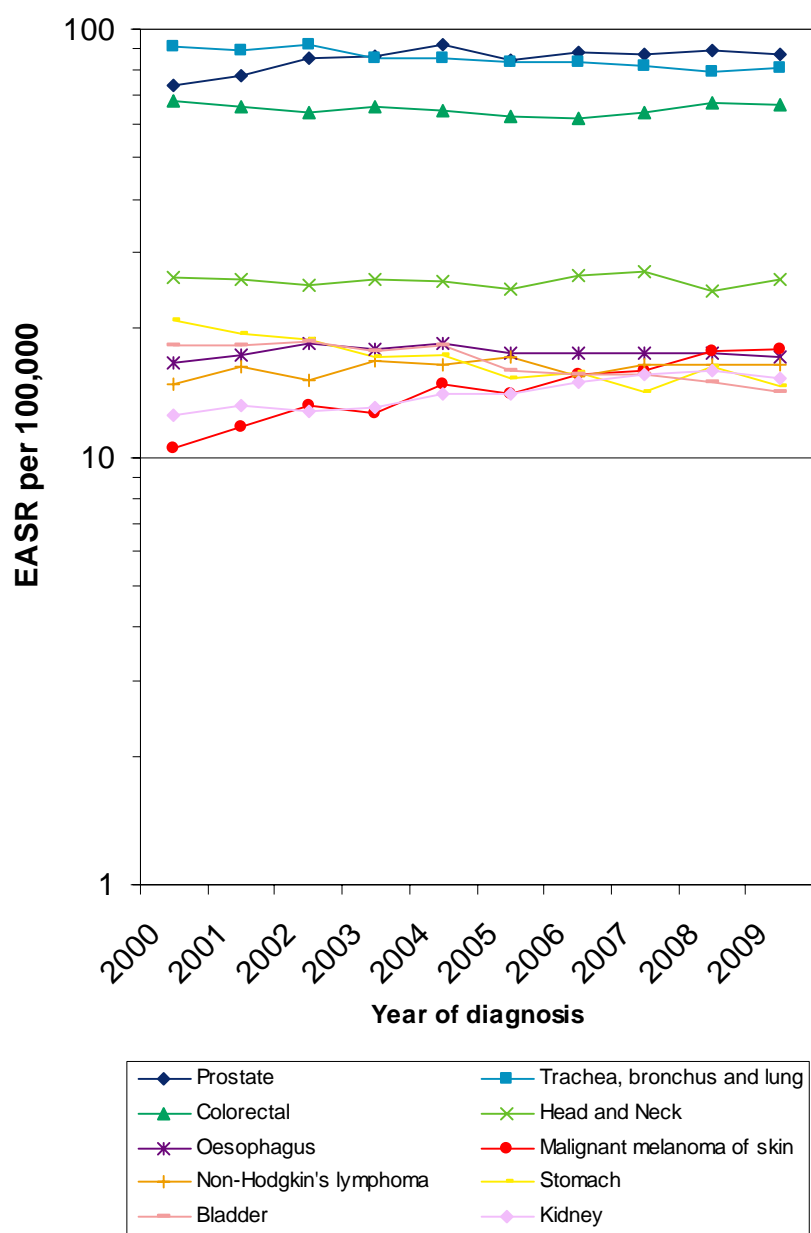


Figure 4: Trends in incidence of ten most common cancers, females
EASR: Age-standardised rate, standardised to the European Standard Population

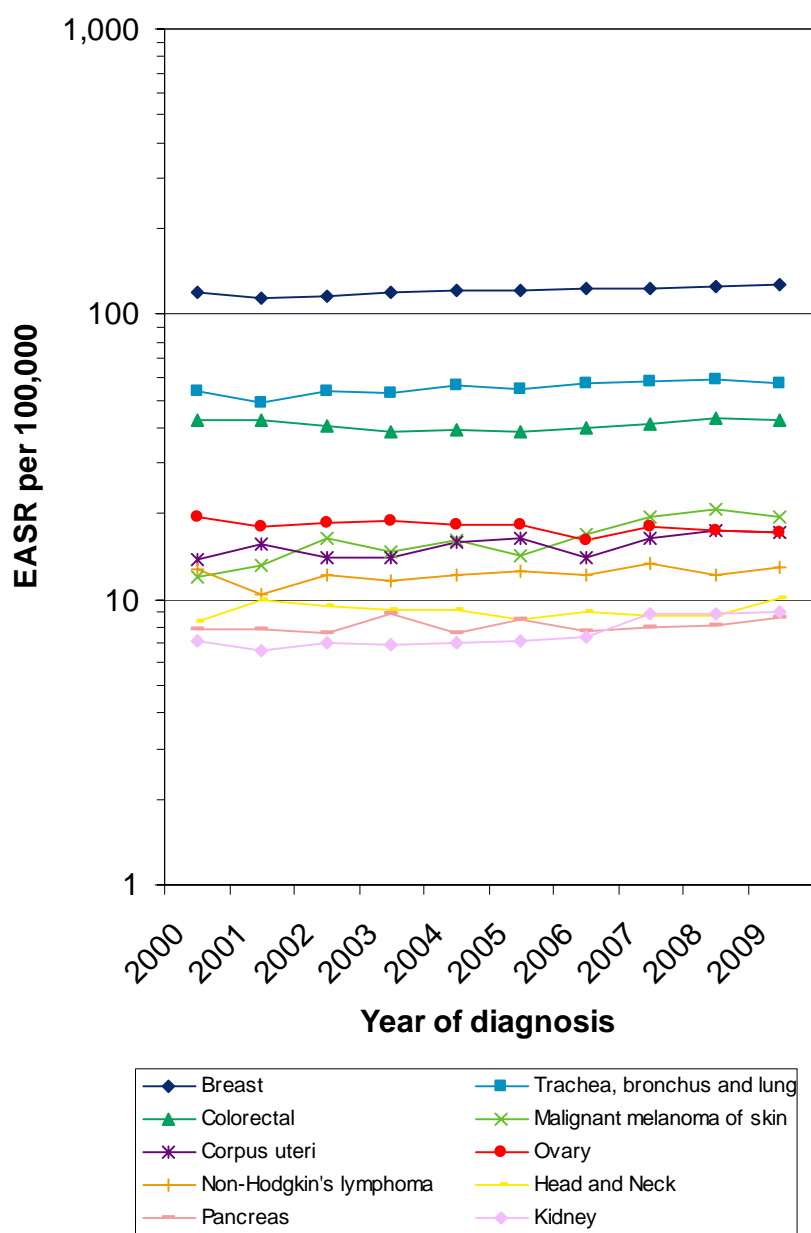
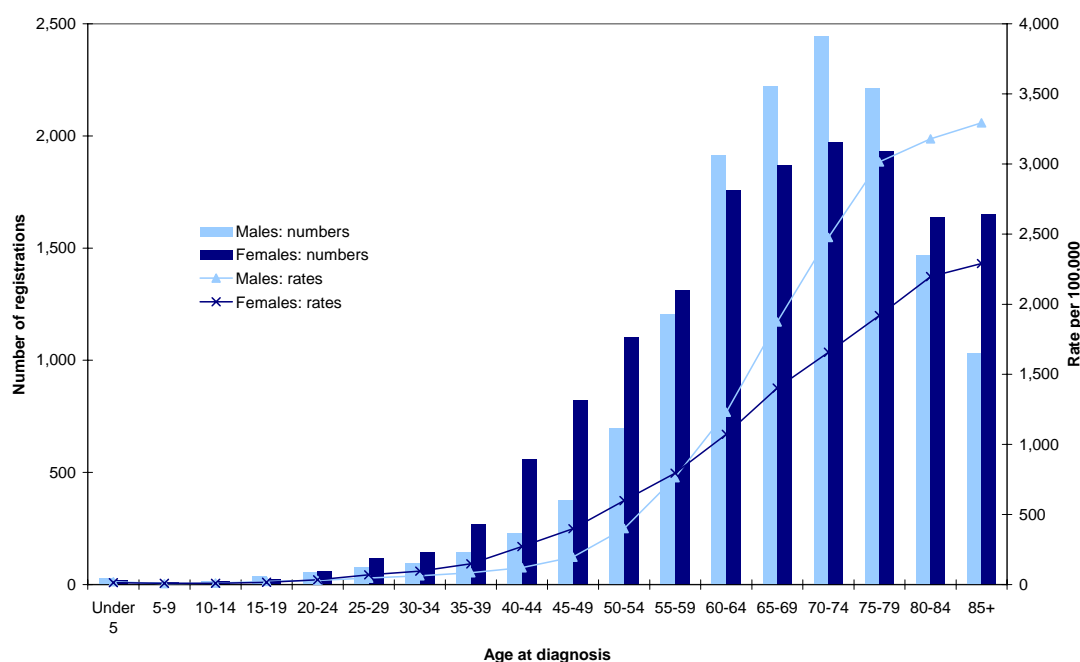


Figure 5: Number of registrations and age-specific rates per 100,000, all malignant neoplasms diagnosed in 2009, by sex



All cancers excluding non-melanoma skin cancers (ICD-10 C00-C97 excl C44)
 Source: Scottish Cancer Registry

The incidence of cancer increases with age in both sexes (Figure 5), to age 70-74, and then declines thereafter as the population diminishes at older ages. The greater increase in the rate of cancer diagnoses in males relative to females in older age groups is partly reflective of the greater number of females in the population at those age groups.

Although cancer registrations are believed to be essentially complete for the year 2009, 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 2008 and 2009; 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.

Further information

A summary table showing numbers of cases and age-standardised incidence rates for each cancer, sex and year (1999-2008) can be found at http://www.isdscotland.scot.nhs.uk/Health-Topics/Cancer/Cancer-Statistics/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 1985-2008 can be found within the cancer-specific categories listed on <http://www.isdscotland.scot.nhs.uk/Health-Topics/Cancer/>.

IA summary of the most recent Cancer Incidence Projections (2008) can be found at <http://www.scotland.gov.uk/Topics/Health/health/cancer/CancerScenariosS>. A more comprehensive report from 2001 is available at <http://www.scotland.gov.uk/Publications/2001/05/9056/File-1>

Cancer incidence statistics for England can be found on the National Statistics hub 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 in the Cancer Atlas produced by Office of National Statistics: <http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=14059&Pos=&ColRank=1&Rank=272>.

Lifetime risk of cancer

This section will next be updated in 2013.

It is estimated that more than 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 (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), 2005-2009

Cancer site / type (ICD-10)	Males			Females		
	% of cohort that develop cancer up to age 64	% of cohort that develop cancer over lifetime	Lifetime risk 1 in ...	% of cohort that develop cancer up to age 64	% of cohort that develop cancer over lifetime	Lifetime risk 1 in ...
All malignant neoplasms excl non-melanoma skin cancer ¹	11.8	37.4	3	14.0	35.9	3
Head and Neck (C00-C14, C30-C32)	1.0	2.1	48	0.4	0.9	118
Oral cavity (C01-C06)	0.4	0.7	142	0.2	0.4	248
Oesophagus (C15)	0.5	1.6	62	0.1	0.9	117
Stomach (C16)	0.3	1.5	66	0.2	0.8	119
Colorectal (C18-C20)	1.6	6.0	17	1.1	4.7	21
Colon (C18)	0.9	3.8	26	0.7	3.3	30
Rectum and rectosigmoid junction (C19-C20)	0.7	2.2	45	0.4	1.4	73
Liver and intrahepatic bile ducts (C22)	0.2	0.8	131	0.1	0.3	289
Pancreas (C25)	0.3	1.0	101	0.2	1.0	100
Larynx (C32)	0.3	0.7	150	0.1	0.2	595
Trachea, bronchus and lung (C33-C34)	1.7	7.8	13	1.4	6.4	16
Bone and connective tissue (C40-C41, C47, C49)	0.2	0.3	352	0.1	0.2	490
Malignant melanoma of the skin (C43)	0.6	1.3	78	0.9	1.5	65
Female breast (C50, females)	x	x	x	5.5	10.6	9
Cervix uteri (C53)	x	x	x	0.6	0.8	119
Corpus uteri (C54)	x	x	x	0.7	1.5	66
Ovary (C56)	x	x	x	0.7	1.7	60
Prostate (C61)	1.9	8.4	12	x	x	x
Testis (C62)	0.5	0.6	178	x	x	x
Kidney (C64-C65)	0.5	1.3	80	0.3	0.9	118
Bladder (C67)	0.2	1.5	65	0.1	0.7	140
Brain and other CNS (C70-C72, C75.1, C75.3)	0.4	0.7	148	0.3	0.5	202
Thyroid (C73)	0.1	0.1	726	0.2	0.3	313
Hodgkin's disease (C81)	0.2	0.2	411	0.1	0.2	541
Non-Hodgkin's lymphoma (C82-C85)	0.6	1.4	70	0.5	1.3	77
Multiple myeloma and malignant plasma cell neoplasms (C90)	0.2	0.6	154	0.1	0.5	191
Leukaemias (C91-C95)	0.4	1.1	88	0.3	0.8	133

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

x = not applicable.
Data extracted: July 2011

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 12, and 1 in 17 men are estimated to develop colorectal cancer in their lifetime. For females, the estimated lifetime risk is 1 in 9 for breast cancer, 1 in 16 for lung cancer, and 1 in 21 for colorectal cancer.

Prevalence of cancer

This section will next be updated in 2013.

Overall, 2.5% of men and 3.4% of women in Scotland are living with cancer (2,540 and 3,361 per 100,000 population, Table 3 and [All Cancer Types prevalence](#)).

Table 3: Cancer survivors (prevalence) at 31 December 2009, by time since diagnosis

Males					
Cancer site / type (ICD-10)	Prevalence: rate per 100,000 in population				
	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	409.2	927.8	646.2	556.7	2,539.9
Prostate (C61)	105.3	318.5	227.4	100.8	751.9
Colorectal (C18-C20)	68.5	166.7	120.4	101.0	456.6
Colon (C18)	43.5	103.6	74.0	63.8	284.9
Head and Neck (C00-C14, C30-C32)	26.5	65.8	49.6	44.2	186.2
Rectum and rectosigmoid junction (C19-C20)	25.4	64.9	48.2	38.5	177.1
Malignant melanoma of the skin (C43)	20.0	58.1	41.4	44.5	164.0
Bladder (C67)	15.3	36.1	31.8	65.6	148.6
Testis (C62)	8.0	31.0	37.7	60.6	137.3
Trachea, bronchus and lung (C33-C34)	50.1	48.2	18.5	18.9	135.7
Non-Hodgkin's lymphoma (C82-C85)	16.1	45.5	33.7	33.6	128.9
Leukaemias (C91-C95)	10.7	31.3	27.3	26.8	96.0
Kidney (C64-C65)	14.3	36.2	23.0	19.7	93.1
Larynx (C32)	7.6	23.7	19.9	19.6	70.8
Oral cavity (C01-C06)	8.8	21.9	14.5	11.4	56.6
Stomach (C16)	11.9	14.5	9.0	8.3	43.7
Hodgkin's disease (C81)	3.3	11.2	10.9	18.4	43.7
Oesophagus (C15)	14.0	13.5	6.7	4.8	39.0
Bone and connective tissue (C40-C41, C47, C49)	3.7	9.6	8.6	11.1	32.9
Multiple myeloma and malignant plasma cell neoplasms (C90)	7.6	15.1	6.1	2.3	31.0
Brain and other CNS (C70-C72, C75.1, C75.3)	5.4	7.9	6.4	10.0	29.7
Thyroid (C73)	2.2	5.8	4.6	6.5	19.1
Liver and intrahepatic bile ducts (C22)	5.1	5.2	1.5	1.1	12.8
Pancreas (C25)	5.9	2.9	1.0	1.0	10.9

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

Data extracted: July 2011

Females					
Cancer site / type (ICD-10)	Prevalence: rate per 100,000 in population				
	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	426.5	1,090.4	874.2	970.2	3,361.3
Female breast (C50, females)	150.8	493.0	423.6	461.3	1,528.7
Colorectal (C18-C20)	52.9	129.9	102.3	104.4	389.5
Colon (C18)	37.5	90.9	70.8	74.4	273.6
Malignant melanoma of the skin (C43)	23.2	74.6	62.2	79.7	239.7
Corpus uteri (C54)	21.7	64.2	55.5	61.3	202.7
Ovary (C56)	17.3	43.4	34.4	45.5	140.6
Cervix uteri (C53)	11.3	31.4	32.4	65.3	140.4
Trachea, bronchus and lung (C33-C34)	44.5	47.7	19.0	14.8	125.9
Non-Hodgkin's lymphoma (C82-C85)	15.3	43.6	31.9	30.4	121.2
Rectum and rectosigmoid junction (C19-C20)	15.7	39.7	32.3	31.3	118.9
Head and Neck (C00-C14, C30-C32)	11.4	26.7	22.2	20.0	80.3
Leukaemias (C91-C95)	7.1	19.1	20.3	19.2	65.7
Kidney (C64-C65)	9.6	22.4	14.2	15.4	61.6
Bladder (C67)	7.4	12.6	11.5	29.0	60.4
Thyroid (C73)	4.5	16.1	15.5	19.4	55.4
Oral cavity (C01-C06)	5.6	12.3	9.7	7.3	34.9
Hodgkin's disease (C81)	2.7	7.1	9.3	12.2	31.4
Stomach (C16)	5.2	7.8	6.9	6.8	26.7
Multiple myeloma and malignant plasma cell neoplasms (C90)	4.8	12.1	4.5	2.2	23.6
Bone and connective tissue (C40-C41, C47, C49)	2.0	7.2	5.8	8.2	23.2
Brain and other CNS (C70-C72, C75.1, C75.3)	4.4	6.4	4.0	7.7	22.4
Oesophagus (C15)	6.7	6.5	3.1	3.7	20.1
Larynx (C32)	2.2	5.8	4.5	5.1	17.6
Pancreas (C25)	4.5	2.3	1.0	1.0	8.9
Liver and intrahepatic bile ducts (C22)	1.8	2.0	0.8	0.7	5.3

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

Data extracted: July 2011

Cancers with high incidence along with favourable survival have the highest prevalence, in particular breast cancer; for example, 1.5% of women in Scotland are living with breast cancer. Prevalence is increasing for many cancers due to a combination of improvements in prognosis and screening techniques, as well as increasing incidence.

The prevalence of cancer in the Scottish population increases with age (Table 4), with 11.1% of men and 9.8% of women (11,083 and 9,846 cases per 100,000 population, respectively) of people aged 65 and over living with cancer, compared to 2.5% of men and 4.5% of women aged 45-64, and 0.4% of men and 0.6% of women aged under 45. The prevalence figures by age group include all cancer diagnoses from 20 years previously, up to those diagnosed very recently.

The most prevalent cancer (4.3%) in men aged 65 and over is prostate cancer; in females 65 and over the most prevalent cancer is breast cancer (4.4%). Overall, 64% of males and 55% of females who are living with a diagnosis of cancer are aged 65 and over.

Table 4: Cancer survivors (prevalence) at 31 December 2009, current ages of those surviving up to 20 years following diagnosis

Males				
Cancer site / type (ICD-10)	Prevalence: rate per 100,000 in population			
	Under 45	45-64	65+	All Ages
All malignant neoplasms excl non-melanoma skin cancer ¹	380.8	2,528.1	11,083.3	2,539.9
Prostate (C61)	0.6	430.5	4,308.5	751.9
Colorectal (C18-C20)	9.4	380.7	2,360.8	456.6
Colon (C18)	5.4	214.1	1,518.4	284.9
Head and Neck (C00-C14, C30-C32)	12.3	273.1	712.8	186.2
Rectum and rectosigmoid junction (C19-C20)	4.1	169.2	874.2	177.1
Malignant melanoma of the skin (C43)	42.7	227.2	526.4	164.0
Bladder (C67)	2.5	89.4	834.4	148.6
Testis (C62)	116.5	230.1	49.0	137.3
Trachea, bronchus and lung (C33-C34)	3.2	120.2	687.0	135.7
Non-Hodgkin's lymphoma (C82-C85)	29.9	175.5	433.6	128.9
Leukaemias (C91-C95)	39.0	92.4	327.6	96.0
Kidney (C64-C65)	9.4	121.7	370.7	93.1
Larynx (C32)	1.4	82.9	322.5	70.8
Oral cavity (C01-C06)	4.7	97.0	187.5	56.6
Stomach (C16)	1.2	33.8	229.7	43.7
Hodgkin's disease (C81)	40.2	54.4	37.7	43.7
Oesophagus (C15)	0.8	52.5	164.9	39.0
Bone and connective tissue (C40-C41, C47, C49)	19.1	38.6	76.9	32.9
Multiple myeloma and malignant plasma cell neoplasms (C90)	1.4	39.5	132.3	31.0
Brain and other CNS (C70-C72, C75.1, C75.3)	26.8	38.6	24.7	29.7
Thyroid (C73)	8.9	30.3	39.0	19.1
Liver and intrahepatic bile ducts (C22)	1.7	15.2	52.5	12.8
Pancreas (C25)	0.7	14.8	43.6	10.9

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

Data extracted: July 2011

Females				
Cancer site / type (ICD-10)	Prevalence: rate per 100,000 in population			
	Under 45	45-64	65+	All Ages
All malignant neoplasms excl non-melanoma skin cancer ¹	558.7	4,501.2	9,845.8	3,361.3
Female breast (C50, females)	127.2	2,378.4	4,367.2	1,528.7
Colorectal (C18-C20)	12.6	285.3	1,633.7	389.5
Colon (C18)	8.4	179.7	1,179.2	273.6
Malignant melanoma of the skin (C43)	97.2	346.4	499.2	239.7
Corpus uteri (C54)	4.3	233.2	734.1	202.7
Ovary (C56)	33.6	223.2	331.7	140.6
Cervix uteri (C53)	85.7	253.6	135.4	140.4
Trachea, bronchus and lung (C33-C34)	4.0	120.4	487.4	125.9
Non-Hodgkin's lymphoma (C82-C85)	17.9	140.0	393.8	121.2
Rectum and rectosigmoid junction (C19-C20)	4.3	107.5	467.9	118.9
Head and Neck (C00-C14, C30-C32)	9.2	99.3	258.8	80.3
Leukaemias (C91-C95)	33.0	52.9	179.0	65.7
Kidney (C64-C65)	7.5	64.3	214.4	61.6
Bladder (C67)	1.7	30.2	274.6	60.4
Thyroid (C73)	33.6	87.5	72.3	55.4
Oral cavity (C01-C06)	3.1	45.7	111.5	34.9
Hodgkin's disease (C81)	32.9	32.1	25.9	31.4
Stomach (C16)	1.3	19.0	111.5	26.7
Multiple myeloma and malignant plasma cell neoplasms (C90)	0.4	24.0	90.4	23.6
Bone and connective tissue (C40-C41, C47, C49)	15.7	22.5	46.2	23.2
Brain and other CNS (C70-C72, C75.1, C75.3)	21.8	25.5	19.9	22.4
Oesophagus (C15)	0.3	16.9	81.8	20.1
Larynx (C32)	0.8	20.0	62.9	17.6
Pancreas (C25)	0.9	9.0	32.1	8.9
Liver and intrahepatic bile ducts (C22)	0.9	5.6	17.5	5.3

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

Data extracted: July 2011

Cancer mortality

This section is updated annually, alongside the Cancer Mortality National Statistics publication.

Over 15,200 people died of cancer in Scotland in 2010. Lung cancer accounted for the largest number of deaths in both sexes, at approximately 27% of cancer deaths in males, and 26% of cancer deaths in females. The absolute numbers of lung cancer deaths in males and females have almost converged to around 2000 deaths per year in each sex, after long term trends of increasing female and decreasing male deaths from lung cancer. Colorectal, breast and prostate cancer were the other major causes of cancer deaths (Table 5).

Overall cancer mortality rates have decreased by 15% in males and 7% in females in the last 10 years. In men, the largest falls in mortality among the top 10 causes of death from cancer have been in stomach, lung and colorectal cancer (31%, 21% and 21% respectively). Death rates from prostate cancer, the most frequently diagnosed cancer in males in 2008 (Table 1), have decreased by 16% over the 10 years to 2010. The death rate from cancer of the liver has increased by 48% in men over the last 10 years, a statistically significant trend.

For women, the largest falls in mortality rates among the top 10 causes of death from cancer were observed in stomach cancer and Non-Hodgkins lymphoma (40% and 26% respectively) (Table 5). Death rates from breast cancer, the most frequently diagnosed cancer in females, have decreased by over 18% over the last 10 years, in spite of the increase in incidence of female breast cancer (Table 1). Cervical cancer deaths have decreased by 18% over the same time period, in keeping with a longer term trend (data not shown in Table 5 as cervical cancer lies outside the top 10 causes of death from cancer).

Table 5: Most common causes of death from cancer in Scotland in 2010: Rank, number, frequency and change in mortality rate since 2000

Males					
Rank	ICD-10 site grouping	Number	Frequency	10 year % change ¹	p-value
1	Trachea, bronchus and lung (C33-C34)	2,107	27.1%	-20.7	<0.001
2	Prostate (C61)	849	10.9%	-16.0	<0.001
3	Colorectal (C18-C20)	782	10.1%	-20.7	<0.001
4	Oesophagus (C15)	533	6.9%	-2.5	0.427
5	Pancreas (C25)	346	4.5%	-0.9	0.853
6	Stomach (C16)	334	4.3%	-31.2	<0.001
7	Bladder (C67)	269	3.5%	-18.3	0.001
8	Head and Neck (C00-C14, C30-C32)	266	3.4%	-10.9	0.035
9	Leukaemias (C91-C95)	231	3.0%	+11.2	0.090
10	Liver and intrahepatic bile ducts (C22)	230	3.0%	+47.5	<0.001
	Other malignant neoplasms	1,828	23.5%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	7,775	100.0%	-15.0	<0.001
Females					
Rank	ICD-10 site grouping	Number	Frequency	10 year % change ¹	p-value
1	Trachea, bronchus and lung (C33-C34)	1,948	26.0%	+10.7	0.000
2	Breast (C50)	1,022	13.6%	-18.3	<0.001
3	Colorectal (C18-C20)	719	9.6%	-12.3	<0.001
4	Ovary (C56)	387	5.2%	-10.8	0.014
5	Pancreas (C25)	323	4.3%	+1.8	0.796
6	Oesophagus (C15)	278	3.7%	-11.2	0.046
7	Non-Hodgkin's lymphoma (C82-C85)	194	2.6%	-26.0	<0.001
8	Stomach (C16)	171	2.3%	-39.8	<0.001
9	Bladder (C67)	171	2.3%	-5.8	0.482
10	Leukaemias (C91-C95)	170	2.3%	-7.9	0.240
	Other malignant neoplasms	2,112	28.2%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	7,495	100.0%	-6.7	<0.001
All persons					
Rank	ICD-10 site grouping	Number	Frequency	10 year % change ¹	p-value
1	Trachea, bronchus and lung (C33-C34)	4,055	26.6%	-9.9	0.003
2	Colorectal (C18-C20)	1,501	9.8%	-17.6	<0.001
3	Breast (C50) ²	1,032	6.8%	x	x
4	Prostate (C61) ²	849	5.6%	x	x
5	Oesophagus (C15)	811	5.3%	-5.0	0.154
6	Pancreas (C25)	669	4.4%	+0.3	0.803
7	Stomach (C16)	505	3.3%	-34.0	<0.001
8	Bladder (C67)	440	2.9%	-14.9	0.049
9	Leukaemias (C91-C95)	401	2.6%	+3.9	0.360
10	Non-Hodgkin's lymphoma (C82-C85)	397	2.6%	-19.6	<0.001
	Other malignant neoplasms	4,610	30.2%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	15,270	100.0%	-11.7	<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.

Source: National Records of Scotland (NRS)

Date extracted: September 2011

Figure 6: Trends in mortality from ten most common cancer causes of death, males
EASR: Age-standardised rate, standardised to the European Standard Population

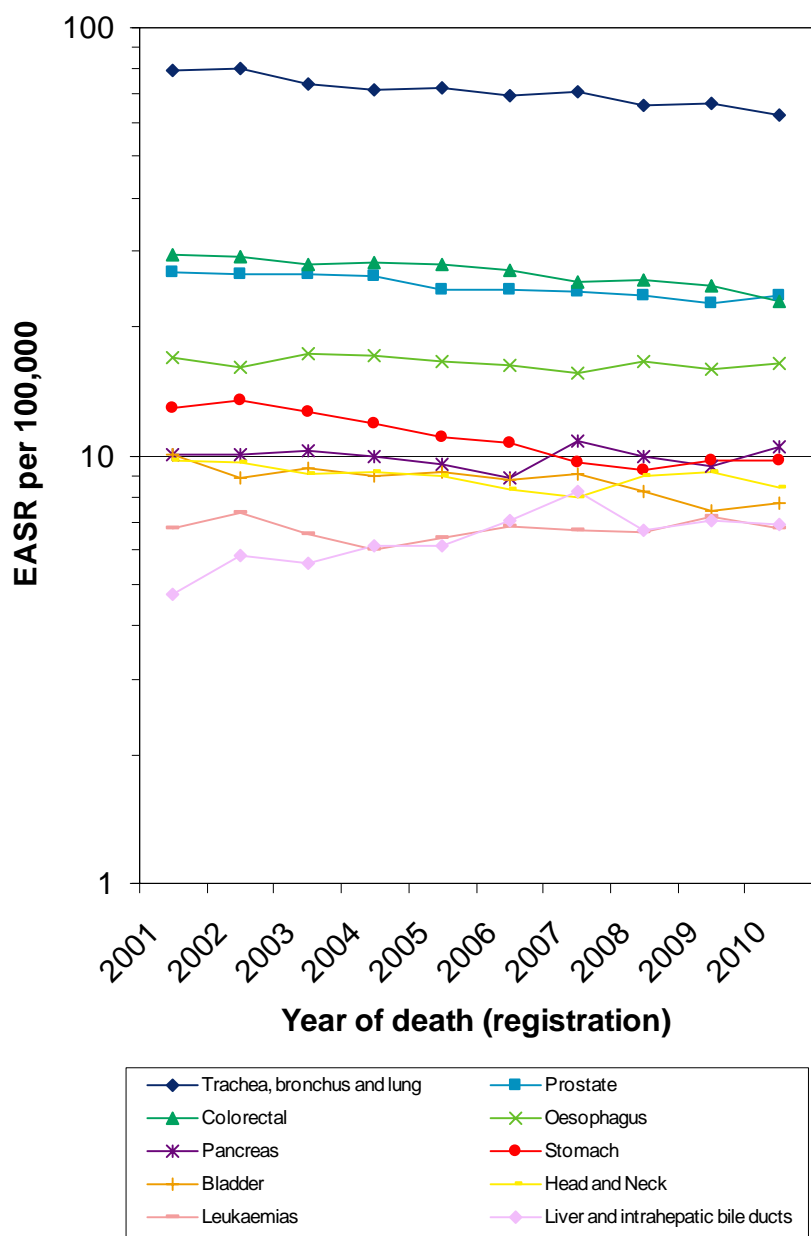
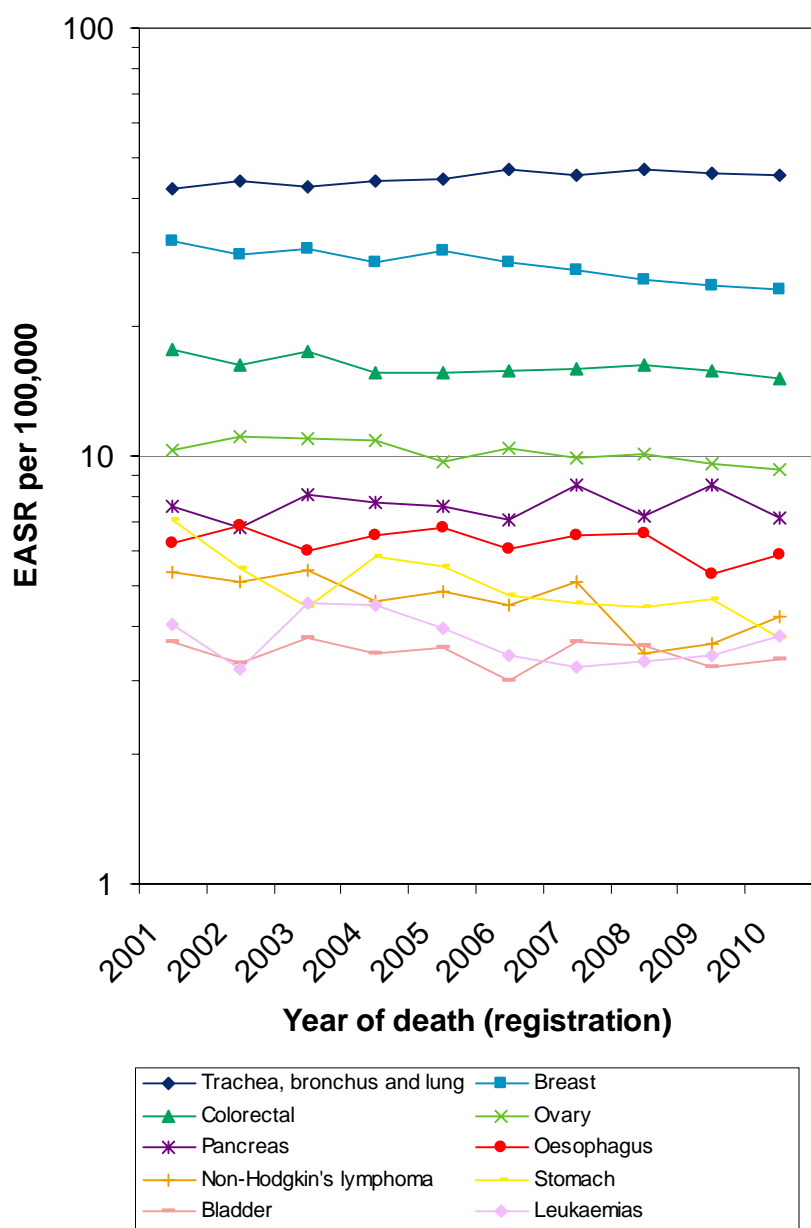


Figure 7: Trends in mortality from ten most common cancer causes of death, females
EASR: Age-standardised rate, standardised to the European Standard Population



Cancer survival

This section is updated with the biennial National Statistics publication of Cancer in Scotland; please also see the summary document *Trends in Cancer Survival in Scotland*, available on www.isdscotland.org/cancer. The next update of survival estimates will be in 2012.

For patients aged 15-99 years that were diagnosed with any type of cancer during the period 2003-2007, 59% of male and 66% of female patients survived to one year after diagnosis and 36% of male and 45% 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).

Age standardised five-year survival for cancer patients, relative to the life expectancy of the population in general, increased from 26% for males diagnosed in 1983-1987 to 44% for males diagnosed 2003-2007, and from 36% 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 in that time period, from (56% to 85%)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 female **breast** cancer patients has also increased substantially, from 61% for those diagnosed in 1983-1987 to 81% in 2003-2007¹. 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.

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.

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 38% of those diagnosed between 1983-1987. 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 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 65% to 77%), for patients with **Non-Hodgkin's lymphoma** (males: 33% to 58%; females 40% to 61%), **Hodgkin's disease** (males: 63% to 79%; females: 66% to 79%) and **leukaemia** (males: 29% to 50%; females: 27% to 49%).

Increases in the five year survival for **malignant melanoma of the skin** (64% to 85% in males, and 82% to 92% 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, and, particularly with pancreatic cancer, scanning technology has improved diagnosis rates; this may have translated into decreased survival rates in the most recent time period. However, survival has increased greatly for patients with **stomach** cancer (males: 9% to 15%; females: 11% to 18%) and **oesophageal** cancer in males: 5% to 10%.

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 1983-2007 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_information. 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 1996-2000.

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>.