

Cancer in Scotland

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Information Services Division
NHS National Services Scotland

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Cancer incidence

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

Approximately 14,500 males and 15,600 females were diagnosed with cancer in 2011. Non-melanoma skin cancers (NMSC), of which there were 10,661 registered in 2011, are excluded from the analysis of all cancers combined for three main reasons:

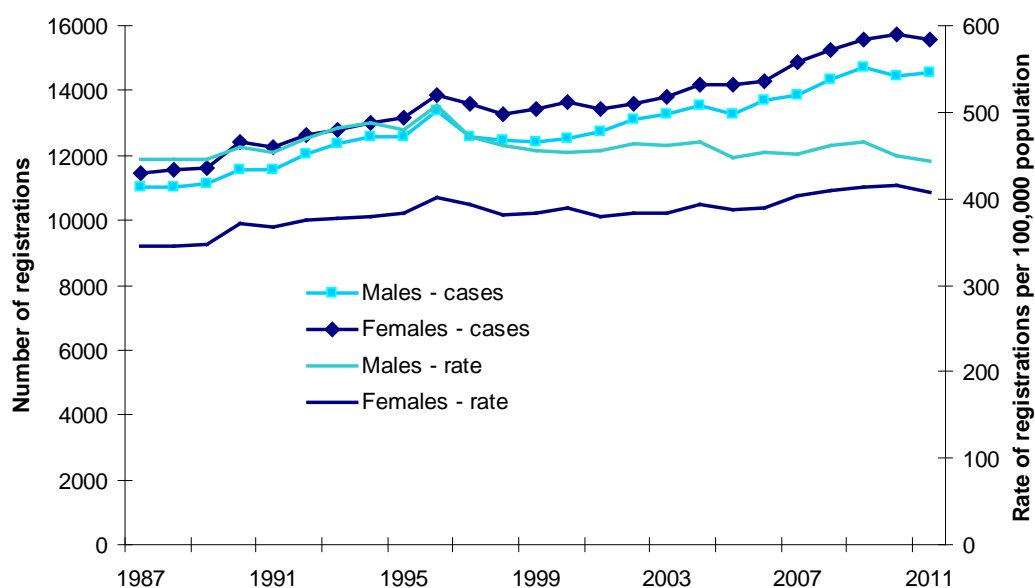
- In the interests of external comparison, because not all cancer registries collect data on NMSC;
- Because they are so common, only the first occurrence of a basal cell carcinoma (the most common type of NMSC) is collected in Scotland;
- Although numerically important in terms of NHS workload, NMSC is rarely fatal.

Excluding NMSC, the number of cancers diagnosed in Scotland has increased over the last 10 years from 26,150 cases in 2001 to 30,125 in 2011.

For males, the most common cancers are prostate, lung and colorectal cancers, collectively accounting for 53% of cancers in men (Table 1). For females, the most common cancers are breast, lung and colorectal cancers, accounting for 57% of cancer in women (Table 1).

Over the decade up to 2011, the age-standardised incidence rate of cancer has fallen for males (a 3% decrease) and shows a significant, increasing trend for females (9% increase) (Figure 1).

**Figure 1. New cancer¹ registrations in Scotland, 1987-2011:
number of cases and standardised rate²**



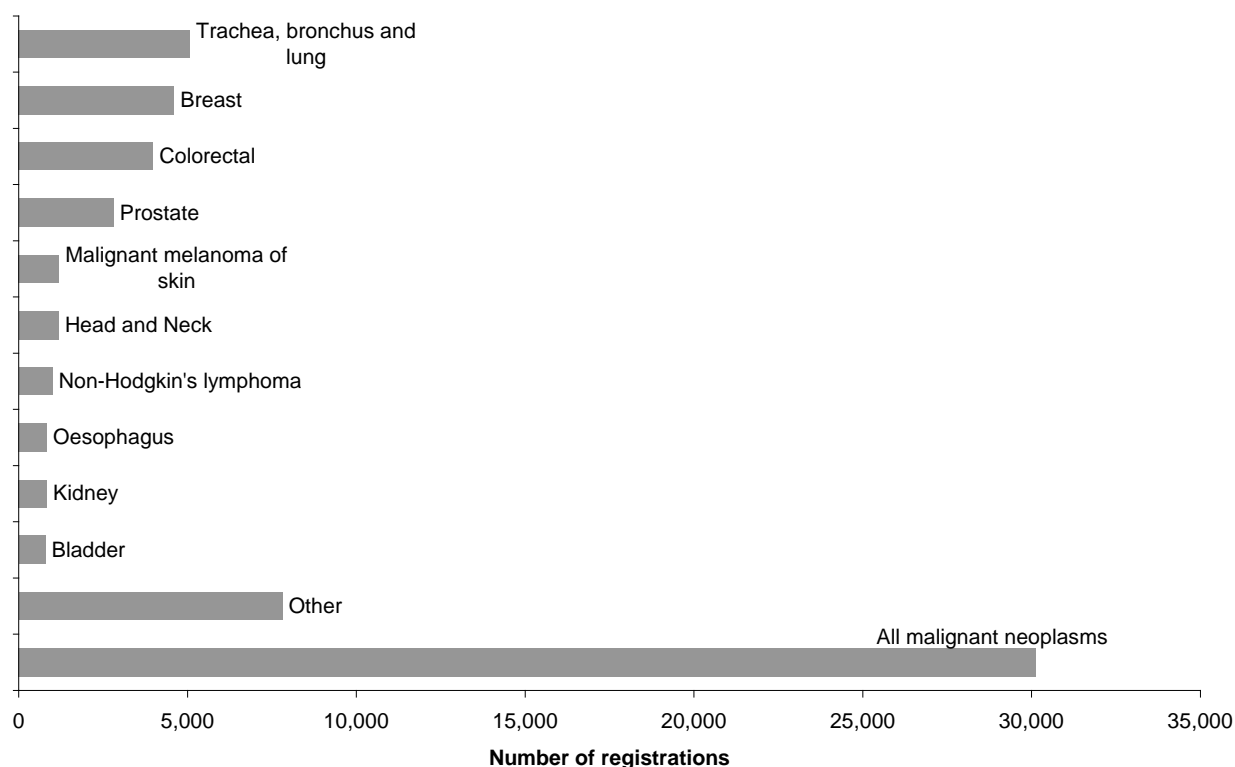
1 All cancers excluding non-melanoma skin cancers (ICD-10 C00-C97 excl C44)

2 European Age Standardised Rate

Source: Scottish Cancer Registry

For both males and females in Scotland combined, lung cancer is still the most common cancer overall (Figure 2), with 5,069 cases diagnosed in 2011 (17% of all cancers), compared to 4,604 cases (15%) of breast cancer and just under 4,000 cases of colorectal cancer (13%). The ranks and percentages of the three most common cancers are largely unchanged from 2010.

Figure 2. Top 10 Cancers in Scotland, 2011; all persons



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

Table 1 shows the numbers of cases in 2011, percentage frequency and percentage change over ten years for the most common cancers. A p-value of less than 0.05 for the 10 year change indicate that this is statistically significant.

When attempting to interpret trends in cancer incidence, it is important to remember that recent patterns of cancer are, for the most part, likely to reflect trends in the prevalence of risk (and protective) factors going back several decades.

Breast cancer is the most common cancer in women, with the incidence rate continuing to rise. Over the last decade the incidence rate has increased by 14%; this is partly due to increased detection by the Scottish Breast Screening Programme, which has seen a rise in attendance over the same time period, and an extension in the age range invited for screening to include women up to the age of 70 years, phased in over the 3-year period beginning 1st April 2003. However, increases in the incidence of breast cancer might also be anticipated with higher prevalence of known risk factors among the female population, such as increases in the mother's age at the birth of her first child, decreases in family size, increases in post-menopausal obesity, and increases in alcohol consumption.

Prostate and lung cancers are the most common cancers in men with relative frequencies of 19% and 18% respectively. The incidence rate of lung cancer

has been generally decreasing while the incidence rate of prostate cancer has risen approximately 2% over the last decade. The increased prostate cancer incidence rate is due, at least in part, to increased detection through use of the prostate specific antigen (PSA) test, and is not necessarily due to a genuine increase in the risk of developing the cancer.

Lung cancer incidence rates in females continue to increase, with a 20% increase over the last ten years. To a large extent, this trend reflects historic trends in the prevalence of smoking, which have differed between men and women.

Colorectal cancer has increased significantly in men (by just over 5%) with a lesser, non-significant increase in women (around 4%). Modifiable risk factors for colorectal cancer are thought to include diet, lack of physical exercise and long-term smoking. However, some of the recent observed increase in incidence may be associated with the introduction of the nationwide bowel screening programme.

Table 1. Most common cancers in Scotland in 2011

Males					
Rank	ICD-10 site grouping	Number	Frequency	10 year % change¹	p-value
1	Prostate (C61)	2,806	19.3%	+2.0	0.6712
2	Trachea, bronchus and lung (C33-C34)	2,591	17.8%	-14.3	<0.0001
3	Colorectal (C18-C20)	2,236	15.4%	+5.2	0.0244
4	Head and Neck (C00-C14, C30-C32)	821	5.6%	+4.3	0.2310
5	Malignant melanoma of skin (C43)	573	3.9%	+57.8	<0.0001
6	Bladder (C67)	544	3.7%	-16.8	<0.0001
7	Oesophagus (C15)	542	3.7%	-6.4	0.0425
8	Non-Hodgkin's lymphoma (C82-C85)	517	3.6%	+2.6	0.5132
9	Kidney (C64-C65)	483	3.3%	+28.3	<0.0001
10	Stomach (C16)	423	2.9%	-31.2	<0.0001
	Other malignant neoplasms	3,006	20.7%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	14,542	100.0%	-2.6	0.0156
Females					
Rank	ICD-10 site grouping	Number	Frequency	10 year % change¹	p-value
1	Breast (C50)	4,574	29.4%	+13.7	<0.0001
2	Trachea, bronchus and lung (C33-C34)	2,478	15.9%	+19.9	<0.0001
3	Colorectal (C18-C20)	1,750	11.2%	+4.1	0.1581
4	Corpus uteri (C54)	639	4.1%	+28.5	<0.0001
5	Malignant melanoma of skin (C43)	629	4.0%	+45.8	<0.0001
6	Ovary (C56)	583	3.7%	-10.1	0.0009
7	Non-Hodgkin's lymphoma (C82-C85)	484	3.1%	+15.7	0.0007
8	Pancreas (C25)	397	2.5%	+12.6	0.0125
9	Head and Neck (C00-C14, C30-C32)	365	2.3%	+3.8	0.5128
10	Kidney (C64-C65)	352	2.3%	+51.2	<0.0001
	Other malignant neoplasms	3,332	21.4%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	15,583	100.0%	+9.1	<0.0001
All persons					
Rank	ICD-10 site grouping	Number	Frequency	10 year % change¹	p-value
1	Trachea, bronchus and lung (C33-C34)	5,069	16.8%	-1.9	0.5429
2	Breast (C50)	4,604	15.3%	x	x
3	Colorectal (C18-C20)	3,986	13.2%	+4.8	0.0048
4	Prostate (C61)	2,806	9.3%	x	x
5	Malignant melanoma of skin (C43)	1,202	4.0%	+51.4	<0.0001
6	Head and Neck (C00-C14, C30-C32)	1,186	3.9%	+4.2	0.0667
7	Non-Hodgkin's lymphoma (C82-C85)	1,001	3.3%	+8.1	0.0031
8	Oesophagus (C15)	836	2.8%	-7.3	0.0254
9	Kidney (C64-C65)	835	2.8%	+36.0	<0.0001
10	Bladder (C67)	791	2.6%	-16.2	0.0001
	Other malignant neoplasms	7,809	25.9%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	30,125	100.0%	+2.7	<0.0001

'x' = not applicable.

¹ Calculated using Poisson regression analyses.

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

Source: Scottish Cancer Registry, ISD

Further information

A summary table showing numbers of cases and age-standardised incidence rates for each cancer, sex and year (2002-2011) 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 1987-2011 can be found within the cancer-specific categories listed on <http://www.isdscotland.scot.nhs.uk/Health-Topics/Cancer/>.

A 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 2015.

It is estimated that more than 2 in 5 people in Scotland will develop some form of cancer during their lifetime, and that around 1 in 8 males and 1 in 11 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 2 in 7 for females.

Table 2: Risk of being diagnosed with cancer over a lifetime (up to the age of 90), 2007-2011

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	7.6	41.7	2.4	10.9	39.7	2.5
Head and Neck (C00-C14, C30-C32)	0.7	2.3	43.1	0.3	1.0	105.0
Oral cavity (C01-C06)	0.3	0.8	128.8	0.1	0.5	211.6
Oesophagus (C15)	0.3	1.8	56.2	0.1	0.9	110.1
Stomach (C16)	0.2	1.6	63.6	0.1	0.8	119.9
Colorectal (C18-C20)	1.0	6.9	14.6	0.8	5.2	19.3
Colon (C18)	0.5	4.5	22.4	0.5	3.8	26.6
Rectum and rectosigmoid junction (C19-C20)	0.4	2.5	39.9	0.3	1.5	67.6
Liver and intrahepatic bile ducts (C22)	0.2	0.9	108.7	0.1	0.4	256.7
Pancreas (C25)	0.2	1.2	84.8	0.1	1.1	89.5
Larynx (C32)	0.2	0.7	135.7	0.0	0.2	586.1
Trachea, bronchus and lung (C33-C34)	0.9	8.6	11.6	0.8	7.4	13.5
Bone and connective tissue (C40-C41, C47, C49)	0.1	0.3	305.4	0.1	0.2	476.8
Malignant melanoma of the skin (C43)	0.5	1.5	65.0	0.8	1.7	57.3
Female breast (C50, females)	x	x	x	4.4	11.6	8.7
Cervix uteri (C53)	x	x	x	0.6	0.9	112.0
Corpus uteri (C54)	x	x	x	0.5	1.9	53.6
Ovary (C56)	x	x	x	0.6	1.8	55.1
Prostate (C61)	0.9	9.5	10.5	x	x	x
Testis (C62)	0.5	0.6	181.4	x	x	x
Kidney (C64-C65)	0.4	1.5	64.6	0.2	1.1	93.7
Bladder (C67)	0.1	1.8	56.6	0.1	0.8	132.5
Brain and other CNS (C70-C72, C75.1, C75.3)	0.3	0.7	139.5	0.2	0.5	182.6
Thyroid (C73)	0.1	0.2	605.2	0.3	0.4	233.0
Hodgkin's disease (C81)	0.2	0.3	355.4	0.1	0.2	488.8
Non-Hodgkin's lymphoma (C82-C85)	0.4	1.6	62.7	0.3	1.5	69.0
Multiple myeloma and malignant plasma cell neoplasms (C90)	0.1	0.7	141.1	0.1	0.6	180.3
Leukaemias (C91-C95)	0.3	1.2	81.3	0.2	0.8	124.9

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

Source: Scottish Cancer Registry, ISD

'x' = not applicable.

Data extracted: March 2013

For the most common cancers, for males, the lifetime risk of developing lung cancer is estimated as 1 in 12, of prostate cancer 1 in 11, and 1 in 15 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 14 for lung cancer, and 1 in 19 for colorectal cancer.

Prevalence of cancer

This section will next be updated in 2015.

Overall, 2.7% of men and 3.6% of women in Scotland are living with cancer (2,731 and 3,567 per 100,000 population, Table 3 and [All Cancer Types prevalence](#)).

Table 3: Cancer survivors (prevalence) at 31 December 2011, by time 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	420.0	1,005.1	701.8	603.8	2,730.8
Prostate (C61)	104.8	343.3	263.8	128.2	840.2
Colorectal (C18-C20)	72.3	190.1	120.4	115.0	497.8
Colon (C18)	45.4	120.8	73.2	71.5	310.8
Head and Neck (C00-C14, C30-C32)	27.4	71.3	52.4	46.8	198.0
Rectum, incl rectosigmoid junction (C19-C20)	27.7	71.1	49.2	45.2	193.2
Malignant melanoma of the skin (C43)	21.6	63.2	48.3	49.1	182.2
Bladder (C67)	17.0	37.7	30.6	57.7	142.9
Testis (C62)	7.6	30.9	37.6	64.4	140.5
Non-Hodgkin's lymphoma (C82-C85)	17.5	47.7	38.6	35.6	139.4
Trachea, bronchus and lung (C33-C34)	49.8	50.6	20.0	18.2	138.6
Kidney (C64-C65)	15.3	42.1	25.6	21.8	104.8
Leukaemias (C91-C95)	11.9	31.4	28.3	29.5	101.1
Larynx (C32)	8.6	23.9	19.7	20.9	73.2
Oral Cavity (C01-C06)	9.1	24.1	17.2	11.4	61.8
Hodgkin's disease (C81)	3.8	12.2	11.9	18.7	46.5
Stomach (C16)	10.4	13.6	8.8	8.9	41.7
Oesophagus (C15)	14.1	14.0	6.9	6.0	41.0
Multiple myeloma, mal plasma cell neo (C90)	7.1	17.1	7.4	3.0	34.6
Bone and connective tissue (C40-C41, C47, C49)	3.5	10.0	9.1	11.1	33.8
Brain and other CNS (C70-C72, C75.1-C75.3)	6.5	8.1	6.5	9.2	30.3
Thyroid (C73)	1.7	7.5	4.8	6.9	20.9
Liver and intrahepatic bile ducts (C22)	7.0	6.9	1.9	1.4	17.2
Pancreas (C25)	5.8	3.8	1.1	1.1	11.7

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

Data extracted: March 2013

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	441.3	1,174.1	920.6	1,031.0	3,567.0
Female breast (C50, females)	159.4	513.6	452.6	500.9	1,626.5
Colorectal (C18-C20)	52.8	144.4	103.1	113.2	413.5
Colon (C18)	37.2	103.1	71.1	79.8	291.1
Malignant melanoma of the skin (C43)	22.8	83.8	68.6	82.7	258.0
Corpus uteri (C54)	22.1	71.7	58.0	69.4	221.2
Ovary (C56)	16.7	45.7	36.1	47.1	145.6
Trachea, bronchus and lung (C33-C34)	49.0	54.2	19.8	15.3	138.4
Cervix uteri (C53)	10.6	34.3	32.1	61.2	138.2
Non-Hodgkin's lymphoma (C82-C85)	14.9	46.5	35.0	33.4	129.8
Rectum, incl rectosigmoid junction (C19-C20)	15.8	42.3	32.8	34.9	125.8
Head and Neck (C00-C14, C30-C32)	11.5	28.8	22.7	21.9	84.9
Kidney (C64-C65)	10.5	28.3	15.3	16.5	70.5
Leukaemias (C91-C95)	6.6	20.2	21.1	21.9	69.7
Thyroid (C73)	6.5	18.8	15.6	22.6	63.6
Bladder (C67)	6.2	12.7	11.0	23.9	53.8
Oral Cavity (C01-C06)	5.6	14.3	9.8	8.8	38.6
Hodgkin's disease (C81)	2.2	7.7	9.1	13.3	32.4
Stomach (C16)	5.8	8.1	6.1	7.2	27.2
Multiple myeloma, mal plasma cell neo (C90)	5.4	12.9	5.6	2.7	26.6
Bone and connective tissue (C40-C41, C47, C49)	2.3	6.4	6.3	8.0	22.9
Brain and other CNS (C70-C72, C75.1-C75.3)	3.9	6.9	4.0	7.0	21.9
Oesophagus (C15)	6.4	7.5	3.9	3.6	21.4
Larynx (C32)	1.4	5.4	4.8	4.9	16.5
Pancreas (C25)	6.5	3.0	1.0	1.0	11.5
Liver and intrahepatic bile ducts (C22)	2.5	2.9	1.0	0.8	7.2

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

Data extracted: March 2013

Cancers with high incidence along with favourable survival have the highest prevalence, in particular breast cancer; for example, 1.6% 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 12.0% of men and 10.6% of women (11,997 and 10,560 cases per 100,000 population, respectively) of people aged 65 and over living with cancer, compared to 2.7% of men and 4.7% 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 (4.8%) in men aged 65 and over is prostate cancer; in females 65 and over the most prevalent cancer is breast cancer (4.7%). Overall, 65% of males and 56% of females who are living with a diagnosis of cancer are aged 65 and over.

Table 4: Cancer survivors (prevalence) at 31 December 2011, current ages of those surviving up to 20 years following diagnosis

Males				
Age-specific 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	379.6	2,692.1	11,997.2	2,730.8
Prostate (C61)	0.6	483.5	4,777.5	840.2
Colorectal (C18-C20)	10.0	408.1	2,569.8	497.8
Colon (C18)	6.3	235.1	1,640.8	310.8
Head and Neck (C00-C14, C30-C32)	13.5	283.5	762.6	198.0
Rectum and rectosigmoid junction (C19-C20)	3.8	176.3	964.9	193.2
Malignant melanoma of the skin (C43)	42.7	251.9	600.3	182.2
Bladder (C67)	2.0	79.5	810.6	142.9
Testis (C62)	111.0	251.6	52.5	140.5
Non-Hodgkin's lymphoma (C82-C85)	28.4	189.9	480.8	139.4
Trachea, bronchus and lung (C33-C34)	4.2	110.3	715.7	138.6
Kidney (C64-C65)	10.6	136.8	414.2	104.8
Leukaemias (C91-C95)	40.4	95.1	349.2	101.1
Larynx (C32)	1.8	79.8	340.1	73.2
Oral cavity (C01-C06)	5.0	101.6	210.8	61.8
Hodgkin's disease (C81)	41.0	57.3	48.0	46.5
Stomach (C16)	1.6	34.5	211.4	41.7
Oesophagus (C15)	1.2	50.2	180.2	41.0
Multiple myeloma and malignant plasma cell neoplasms (C90)	1.2	42.4	150.6	34.6
Bone and connective tissue (C40-C41, C47, C49)	18.8	37.9	84.8	33.8
Brain and other CNS (C70-C72, C75.1, C75.3)	25.9	40.3	29.3	30.3
Thyroid (C73)	9.4	31.8	45.8	20.9
Liver and intrahepatic bile ducts (C22)	1.2	22.2	70.1	17.2
Pancreas (C25)	0.9	15.0	48.2	11.7

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

Data extracted: March 2013

Females				
Age-specific 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	566.0	4,718.1	10,559.6	3,567.0
Female breast (C50, females)	123.7	2,482.0	4,722.8	1,626.5
Colorectal (C18-C20)	12.9	303.5	1,729.3	413.5
Colon (C18)	8.4	189.5	1,254.4	291.1
Malignant melanoma of the skin (C43)	97.6	367.3	562.1	258.0
Corpus uteri (C54)	4.6	249.0	806.2	221.2
Ovary (C56)	36.5	226.6	342.8	145.6
Trachea, bronchus and lung (C33-C34)	3.8	126.1	544.7	138.4
Cervix uteri (C53)	87.7	248.3	123.9	138.2
Non-Hodgkin's lymphoma (C82-C85)	17.1	147.5	429.3	129.8
Rectum and rectosigmoid junction (C19-C20)	4.5	115.6	490.8	125.8
Head and Neck (C00-C14, C30-C32)	9.3	107.0	270.9	84.9
Kidney (C64-C65)	9.4	74.9	240.7	70.5
Leukaemias (C91-C95)	33.3	57.8	192.1	69.7
Thyroid (C73)	37.1	103.2	82.7	63.6
Bladder (C67)	1.4	27.3	243.7	53.8
Oral cavity (C01-C06)	3.3	49.2	124.9	38.6
Hodgkin's disease (C81)	32.7	35.7	26.6	32.4
Stomach (C16)	1.3	19.7	112.8	27.2
Multiple myeloma and malignant plasma cell neoplasms (C90)	0.8	25.3	102.9	26.6
Bone and connective tissue (C40-C41, C47, C49)	14.4	24.3	45.2	22.9
Brain and other CNS (C70-C72, C75.1, C75.3)	21.6	25.8	17.1	21.9
Oesophagus (C15)	0.5	18.0	86.7	21.4
Larynx (C32)	0.7	18.0	60.1	16.5
Pancreas (C25)	1.1	11.8	41.2	11.5
Liver and intrahepatic bile ducts (C22)	1.3	7.7	23.4	7.2

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

Data extracted: March 2013

Cancer mortality

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

Over 15,300 people died of cancer in Scotland in 2011. Lung cancer accounted for the largest number of deaths in both sexes, at approximately 28% of cancer deaths in males, and 27% 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, colorectal and lung cancer (36%, 21% and 20% respectively). Death rates from prostate cancer, the most frequently diagnosed cancer in males (Table 1), have decreased by 12% over the 10 years to 2011. The death rate from cancer of the liver has increased by 45% 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 (38% and 20% respectively) (Table 5). Death rates from breast cancer, the most frequently diagnosed cancer in females, have decreased by over 19% over the last 10 years, in spite of the increase in incidence of female breast cancer (Table 1). Cervical cancer deaths have decreased by 14% 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 2011: Rank, number, frequency and change in mortality rate since 2001

Males					
Rank	ICD-10 site grouping	Number	Frequency	10 year % change ¹	p-value
1	Trachea, bronchus and lung (C33-C34)	2,200	27.7%	-20.4	<0.001
2	Prostate (C61)	900	11.3%	-12.4	<0.001
3	Colorectal (C18-C20)	824	10.4%	-20.9	<0.001
4	Oesophagus (C15)	541	6.8%	-5.4	0.102
5	Pancreas (C25)	358	4.5%	+5.5	0.265
6	Bladder (C67)	294	3.7%	-19.4	0.000
7	Head and Neck (C00-C14, C30-C32)	293	3.7%	-7.6	0.127
8	Stomach (C16)	279	3.5%	-35.5	<0.001
9	Liver and intrahepatic bile ducts (C22)	263	3.3%	+44.6	<0.001
10	Leukaemias (C91-C95)	235	3.0%	+6.7	0.282
	Other malignant neoplasms	1,765	22.2%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	7,952	100.0%	-15.4	<0.001
Females					
Rank	ICD-10 site grouping	Number	Frequency	10 year % change ¹	p-value
1	Trachea, bronchus and lung (C33-C34)	1,978	26.6%	+11.1	0.000
2	Breast (C50)	1,036	14.0%	-19.3	<0.001
3	Colorectal (C18-C20)	702	9.5%	-12.7	<0.001
4	Ovary (C56)	363	4.9%	-13.6	0.007
5	Pancreas (C25)	344	4.6%	+5.3	0.306
6	Oesophagus (C15)	283	3.8%	-12.5	0.019
7	Non-Hodgkin's lymphoma (C82-C85)	206	2.8%	-19.8	0.001
8	Stomach (C16)	193	2.6%	-38.1	<0.001
9	Bladder (C67)	178	2.4%	-4.7	0.477
10	Leukaemias (C91-C95)	164	2.2%	-5.1	0.480
	Other malignant neoplasms	1,976	26.6%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	7,423	100.0%	-6.9	<0.001
All persons					
Rank	ICD-10 site grouping	Number	Frequency	10 year % change ¹	p-value
1	Trachea, bronchus and lung (C33-C34)	4,178	27.2%	-9.4	0.017
2	Colorectal (C18-C20)	1,526	9.9%	-17.9	<0.001
3	Breast (C50) ²	1,041	6.8%	x	x
4	Prostate (C61) ²	900	5.9%	x	x
5	Oesophagus (C15)	824	5.4%	-7.4	0.036
6	Pancreas (C25)	702	4.6%	+5.4	0.104
7	Stomach (C16)	472	3.1%	-36.3	<0.001
8	Bladder (C67)	472	3.1%	-15.5	0.021
9	Head and Neck (C00-C14, C30-C32)	426	2.8%	-3.2	0.951
10	Liver and intrahepatic bile ducts (C22)	420	2.7%	+33.4	<0.001
	Other malignant neoplasms	4,414	28.7%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	15,375	100.0%	-12.0	<0.001

'x' = not applicable.

¹ Calculated using Poisson regression analyses.

² Percentage change in mortality is not shown here for cancers occurring mainly or only in one sex.

Source: National Records of Scotland (NRS)

Date extracted: September 2012

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

EASR: Age-standardised rate, standardised to the European Standard Population

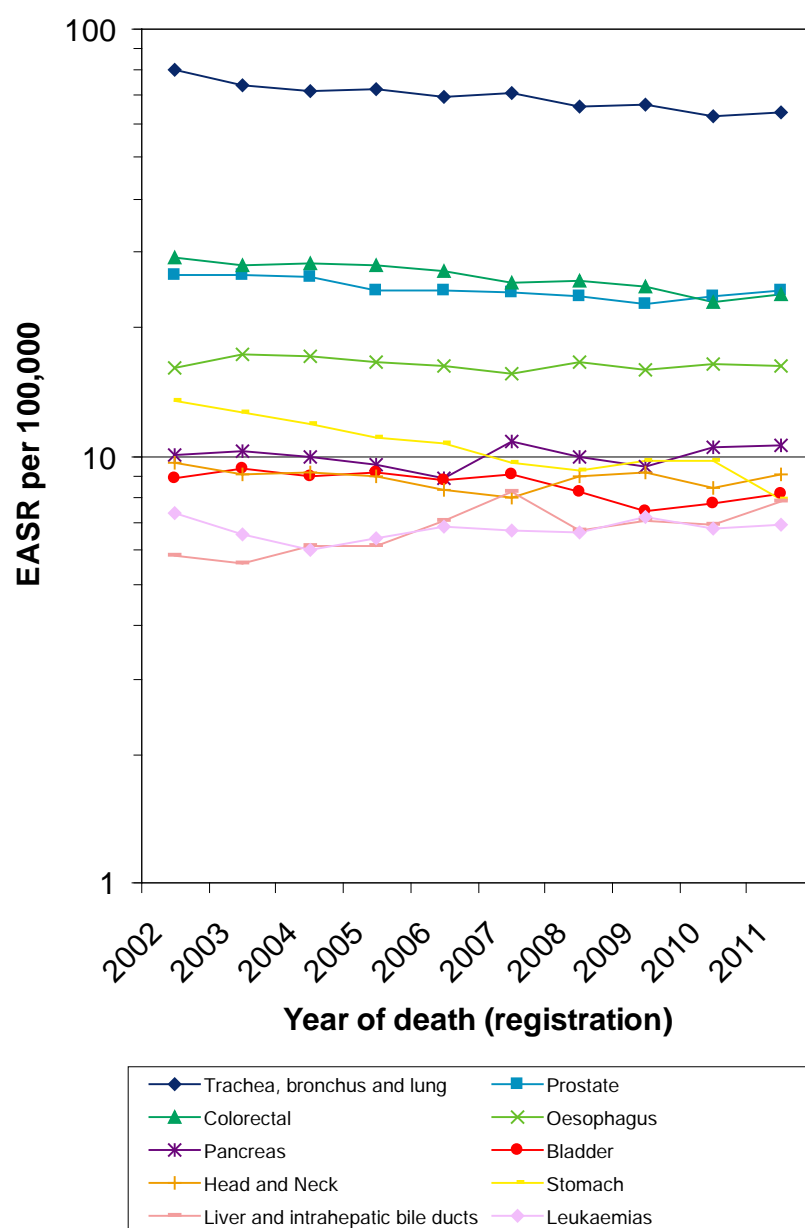
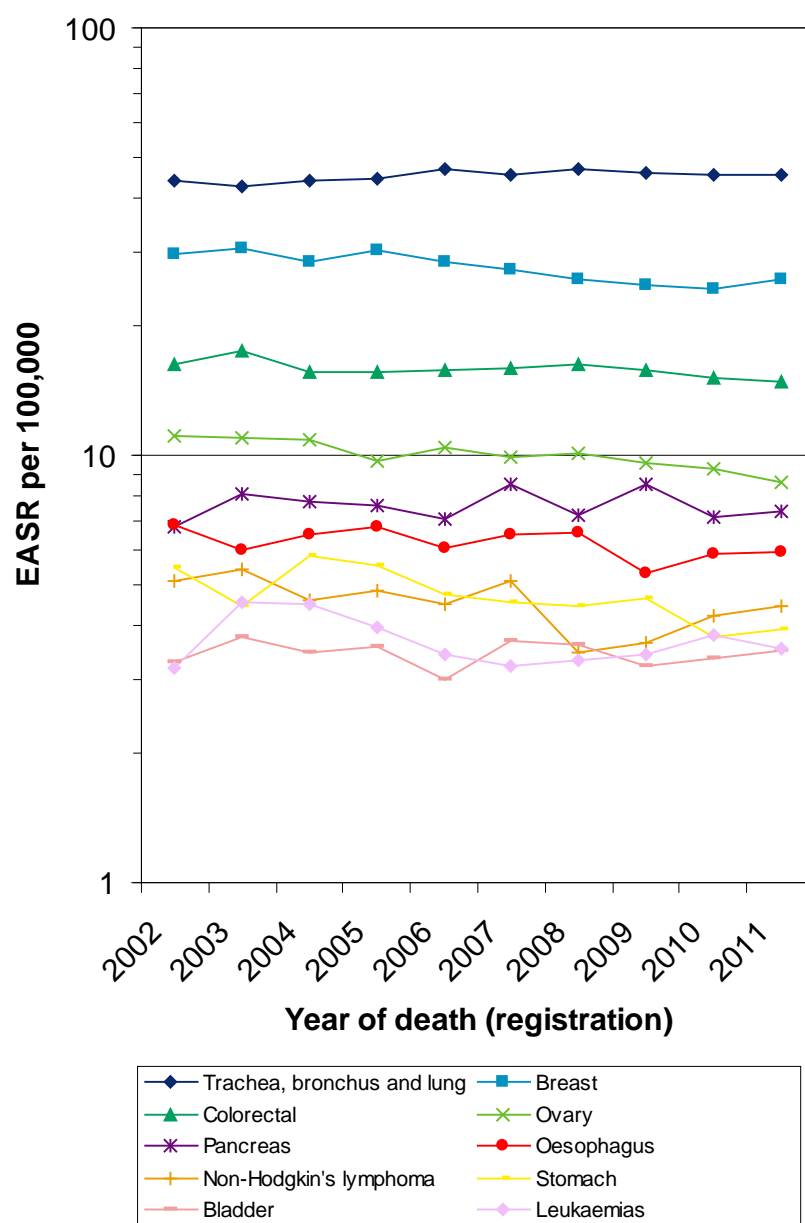


Figure 7: Trends in mortality from ten most common cancer causes of death, females

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 2013.

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>.