



Cancer Mortality in Scotland (2015)

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Introduction

This publication by the Information Services Division provides information on deaths from cancer in Scotland, covering the years 1990-2015 for each main type of cancer.

This publication also includes an update of cancer incidence and mortality rates by deprivation category for 28 major types of cancer. Detailed information on these types of cancer is provided on the [ISD Cancer Information website](#).

Using this publication

When using this publication, it is more informative to examine trends in mortality over a number of years, rather than focussing on a single year of mortality. In the case of rare cancers, striking changes from one year to the next are likely to reflect random fluctuation caused by small numbers of deaths and may be misleading.

Date of death registration

The cancer mortality statistics within this publication are based on the date of registration of the death rather than the date on which the death occurred. This is in order to be consistent with the information published by [National Records of Scotland](#). By law, a death should be registered within 8 days of the date of death.

Definitions

Throughout this publication, we refer to all cancers excluding non-melanoma skin cancer. We use this classification to be consistent with our publication of [cancer incidence](#) information, which also excludes non-melanoma skin cancer from the 'all cancers' category because their recording is less likely to be complete than for other cancers. Non-melanoma skin cancers are very common, but do not usually result in death. Exclusion of non-melanoma skin cancer from the mortality statistics for all cancers has very limited impact because case-fatality is so low.

Statistics on deaths from all cancers including non-melanoma skin cancer can be found on [our website](#) or on the website of the [National Records of Scotland](#). From the National Records of Scotland website, it is evident that all cancers including non-melanoma skin cancer accounted for 28% of all deaths in Scotland in 2015.

Main points

- Over the last ten years, the overall age-adjusted cancer mortality rate has fallen by 11%. Although the rate of deaths due to cancer has decreased over this period, the actual number of deaths due to cancer has not. This largely reflects an increase in older age groups within the population and the fact that cancer is a relatively common disease among the elderly.
- The age-adjusted cancer mortality rate has fallen by 14% for males and 6% for females.
- Lung cancer is the most common cause of death from cancer in Scotland. The number of deaths are more than double that of colorectal cancer, the next most common cause of death from cancer.
- Significant patterns exist when examining incidence and mortality rates by deprivation in Scotland. For all cancers combined, the most deprived areas have incidence rates that are almost a third higher than the least deprived areas. Mortality rates are almost two-thirds higher in the most deprived compared with the least deprived areas.
- There is considerable variation in trends for different types of cancer. For example, the rate of female deaths due to breast cancer has decreased by 21% over the last ten years. For males, the mortality rate due to stomach cancer has decreased by 36% over the last ten years. The mortality rate for cancer of the liver has increased by 46% for males and 69% for females over the same time.

Results and Commentary

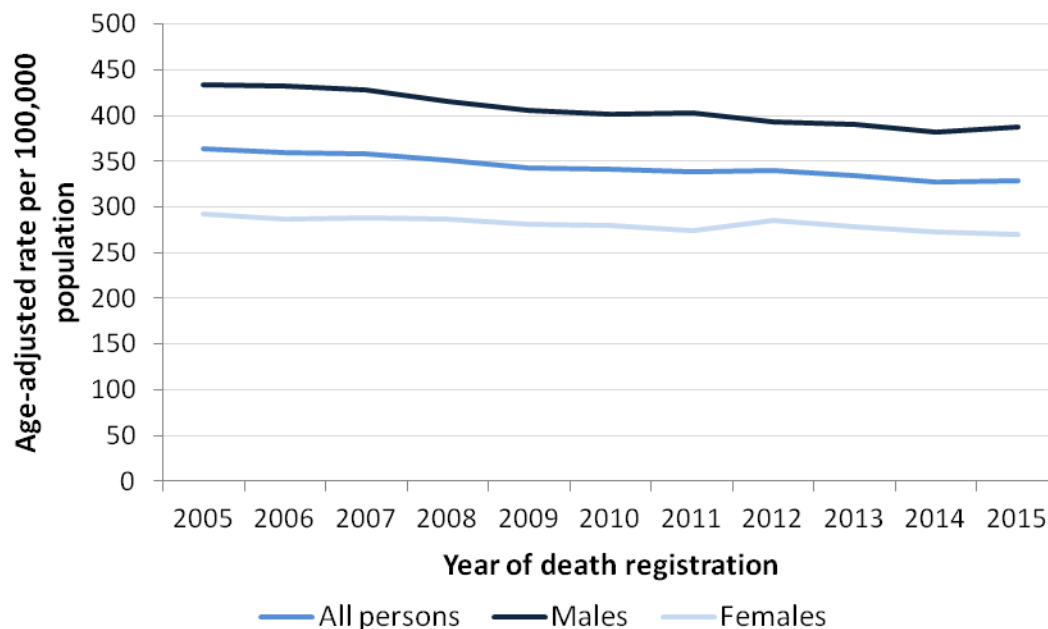
Statistics can be found by cancer site on the Information Services Division website [cancer topic area](#) and in the [Cancer in Scotland summary report](#).

Cancer Mortality

In 2015, 16,011 people died from cancer (excluding non-melanoma skin cancers) in Scotland.

The age-adjusted cancer mortality rate for all cancers combined has decreased by 11% over the 10 year period of 2005-2015 (figure 1), with a greater decrease in males than in females (14% and 6% decrease, respectively). The percentage changes in the mortality rate over the ten year period are estimated using Poisson regression.

Figure 1. Trends in age-adjusted¹ mortality rates for cancer² in Scotland (2005-2015).

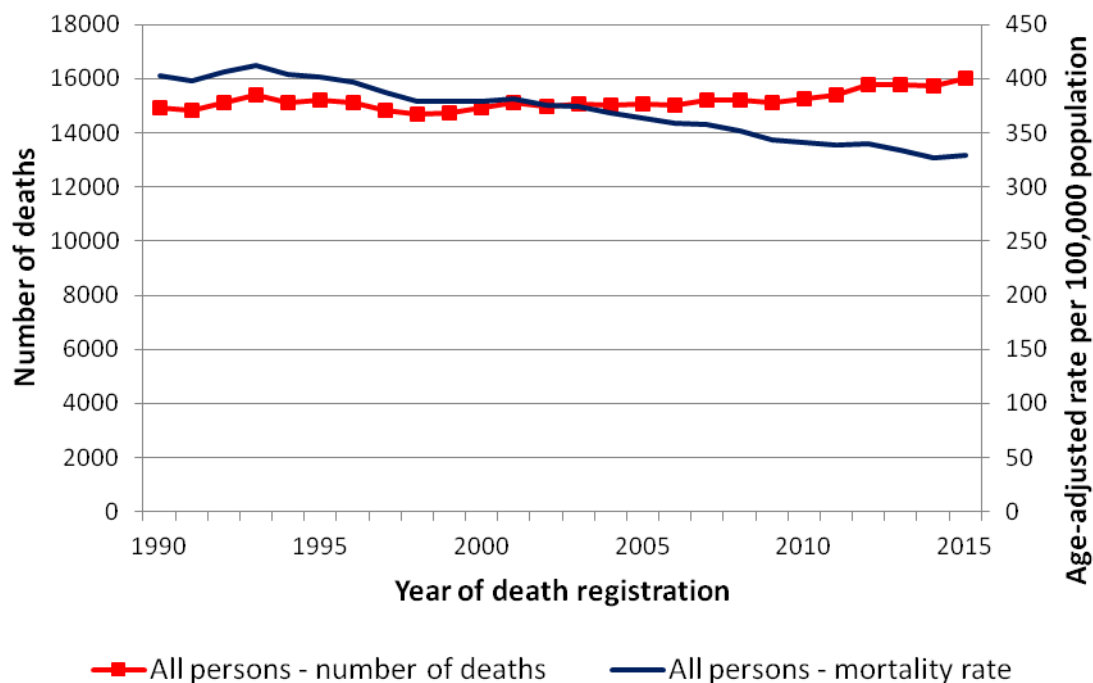


Source: National Records of Scotland.

- 1 European Age Standardised Rates (EASR). The EASR is calculated using ESP2013 and 5 year age groups 0-4, 5-9 up to an upper age group of 90+. The European Standard Population (ESP), which was first used in 1976, was revised in 2013. Figures using ESP1976 and ESP2013 are not comparable.
- 2 All cancers excluding non-melanoma skin cancers (ICD-10 C00-C97 excl C44)

The cancer mortality rate has decreased over the last decade but the actual number of deaths due to cancer has not (figure 2). This largely reflects an increase in older age groups within the population, and the fact that cancer is a relatively common disease among the elderly.

Figure 2. Cancer¹ mortality in Scotland, 1990-2015. Number of deaths and age-adjusted² mortality rate.



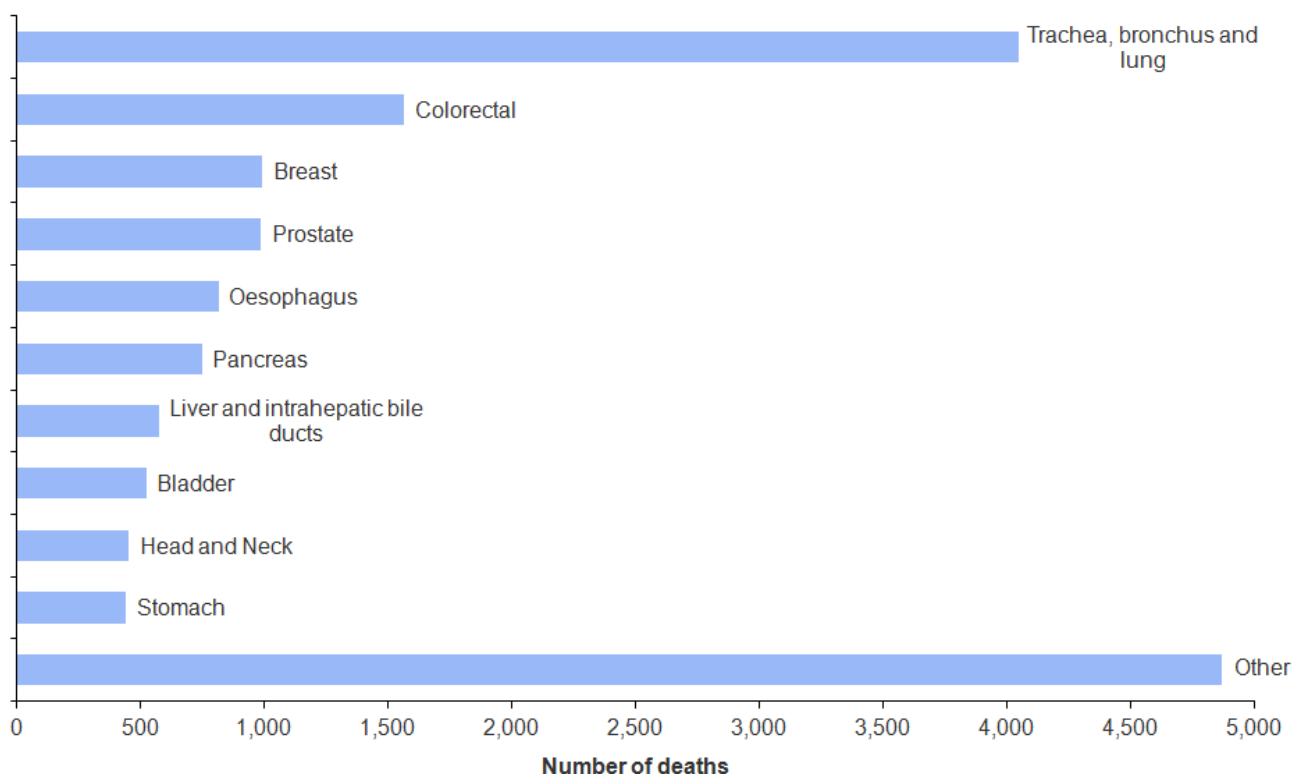
Source: National Records of Scotland.

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

2 The European Standard Population (ESP), which was first used in 1976, was revised in 2013. Figures using ESP1976 and ESP2013 are not comparable. The European Age Standardised Rate (EASR) is calculated using ESP2013 and 5 year age groups 0-4, 5-9 up to an upper age group of 90+.

Figure 3 shows the types of cancer that account for the greatest number of deaths in Scotland in 2015. Cancers of the lung (4,047), colorectum (1,565), breast (992), prostate (985) and oesophagus (816) are responsible for more than half of the deaths from cancer in Scotland.

Figure 3. Deaths from cancer¹ in Scotland by type of cancer, 2015²



Source: National Records of Scotland.

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

2 Based on year of registration of death

Table 1 shows the ten most common causes of death from cancer for both sexes combined and for men and women separately. It also shows the percentage frequency and percentage change in mortality rate over ten years for those types of cancer.

For women, the largest decreases in mortality rates in the ten most common causes of death from cancer were observed in breast, ovarian and oesophageal cancer (21%, 14% and 13% respectively). Mortality rates from breast cancer, the most frequently diagnosed cancer in females, have decreased in spite of an increase in incidence of female breast cancer. The largest increases in mortality rates in the ten most common causes of death from cancer were observed in cancers of the liver and corpus uteri (69% and 67% respectively).

For men, the largest decreases in mortality rate in the ten most common causes of death from cancer have been in stomach, lung and colorectal cancer (36%, 23% and 21% respectively). Mortality rates from prostate cancer, the most frequently diagnosed cancer in males, have decreased by 5% over the 10 years to 2015. The mortality rate from cancer of the liver has increased by 46% in men over the last 10 years.

Table 1: Most common causes of death from cancer in Scotland in 2015: Rank, number, frequency and change in mortality rate since 2005

Rank	Type of cancer	Number	Frequency	10 year % change ¹	p - value ³
All Persons					
1	Trachea, bronchus and lung (C33-C34)	4,047	25.3%	-15.1	<0.0001
2	Colorectal (C18-C20)	1,565	9.8%	-16.4	<0.0001
3	Breast (C50) ²	992	6.2%	x	x
4	Prostate (C61) ²	985	6.2%	x	x
5	Oesophagus (C15)	816	5.1%	-9.6	0.0036
6	Pancreas (C25)	749	4.7%	+5.8	0.1383
7	Liver and intrahepatic bile ducts (C22)	572	3.6%	+52.4	<0.0001
8	Bladder (C67)	522	3.3%	-6.9	0.7240
9	Head and Neck (C00-C14, C30-C32)	452	2.8%	+9.6	0.0073
10	Stomach (C16)	442	2.8%	-33.0	<0.0001
	Other malignant neoplasms	4,869	30.4%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	16,011	100.0%	-10.6	<0.0001
Rank	Type of cancer	Number	Frequency	10 year % change ¹	p - value ³
Males					
1	Trachea, bronchus and lung (C33-C34)	2,075	24.9%	-22.9	<0.0001
2	Prostate (C61)	985	11.8%	-4.7	0.1556
3	Colorectal (C18-C20)	844	10.1%	-20.9	<0.0001
4	Oesophagus (C15)	552	6.6%	-8.1	0.0106
5	Pancreas (C25)	365	4.4%	+6.3	0.2142
6	Liver and intrahepatic bile ducts (C22)	351	4.2%	+45.6	<0.0001
7	Bladder (C67)	329	4.0%	-11.4	0.0429
8	Head and Neck (C00-C14, C30-C32)	314	3.8%	+5.4	0.2435
9	Stomach (C16)	262	3.1%	-36.4	<0.0001
10	Brain and other CNS (C70-C72, C75.1-C75.3)	241	2.9%	-1.9	0.7763
	Other malignant neoplasms	2,003	24.1%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	8,321	100.0%	-13.5	<0.0001
Rank	Type of cancer	Number	Frequency	10 year % change ¹	p - value ³
Females					
1	Trachea, bronchus and lung (C33-C34)	1,972	25.6%	-2.3	0.3518
2	Breast (C50)	989	12.9%	-21.0	<0.0001
3	Colorectal (C18-C20)	721	9.4%	-8.5	0.0062
4	Pancreas (C25)	384	5.0%	+5.3	0.4183
5	Ovary (C56)	362	4.7%	-14.2	0.0011
6	Oesophagus (C15)	264	3.4%	-13.2	0.0108
7	Liver and intrahepatic bile ducts (C22)	221	2.9%	+68.6	<0.0001
8	Non-Hodgkin lymphoma (C82-C85)	203	2.6%	-8.7	0.0715
9	Bladder (C67)	193	2.5%	+5.2	0.4372
10	Corpus uteri (C54)	184	2.4%	+67.5	<0.0001
	Other malignant neoplasms	2,197	28.6%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	7,690	100.0%	-6.2	0.0001

Source: National Records of Scotland (NRS)

'x' = not applicable.

- 1 Estimated 10-year change in age-adjusted mortality rates, calculated using Poisson regression analyses.
- 2 Percentage change in mortality is not shown in the 'All Persons' table for cancers occurring mainly or only in one sex.
- 3 p-value is the probability that the 10 year percentage change occurred by chance. A p-value of less than 0.05 indicates that the change is statistically significant.

Cancer Mortality by Site

Cancer mortality rates are influenced by both trends in the incidence of cancer and trends in survival from cancer. When attempting to interpret trends in cancer mortality, it is important to remember that recent patterns of cancer mortality are, for the most part, likely to reflect trends in the prevalence of risk (and protective) factors going back several decades, as well as changes in prognosis associated with advances in therapy and a range of other factors that can affect survival. The commentary below relates to changes in the mortality rates of selected types of cancer over the last ten years.

Lung cancer

The change in mortality rates for lung cancer over the last ten years for males (a decrease of 23%) and females (a decrease of 2%) reflects, in large part, historical trends in the prevalence of smoking, which has differed between men and women. These historical trends in smoking prevalence also affect cancer incidence rates, where the incidence rate is decreasing for men and increasing for women. In addition, there have been slight but steady increases in survival in recent years.

Breast cancer

Breast cancer is the second most common cause of death from cancer in women. The incidence rates over the last ten years have increased, partly because of increased detection through screening but also because of an increase in the prevalence of known risk factors. The mortality rate has decreased by 21% over the last ten years, probably as a consequence of breast screening, but also due to advances in treatment, reflected by increasing survival over time.

Prostate cancer

Prostate cancer is the second most common cause of death from cancer in men. The mortality rate has decreased by 5% over the last ten years. The reason for the decrease in the mortality rate is not clear but improvements in treatment, reflected by increasing survival, may be one possible explanation.

Liver cancer

The increase in the mortality rate of liver cancer over the last ten years by 52% reflects the increase in incidence of this type of cancer. Survival from liver cancer is poor in most cases. The main risk factors for liver cancer are alcohol and infection with hepatitis B and C.

Stomach cancer

The reduction in the mortality rate for stomach cancer reflects a decrease in incidence which is thought to be due mainly to a decrease in the prevalence of infection with the bacterium *Helicobacter pylori*, perhaps as a result of improvements in social conditions. People infected with *Helicobacter pylori* have an increased risk of developing stomach cancer. The introduction of refrigeration has also probably had an effect on incidence as it reduced the need for potentially carcinogenic food preservatives.

Colorectal cancer

The mortality rate for colorectal cancer has decreased by 16% over the last ten years (21% in men and 8% in women). This reflects decreasing incidence and improvements in survival for colorectal cancer. These trends are probably being driven by a combination of historic changes in the prevalence of risk factors, the introduction of screening and advances in treatment.

Oesophageal cancer

There was a decrease in the mortality rate of 8% in males and 13% in females over the last ten years, reflecting the decrease in incidence over recent years and improving survival. Risk factors for oesophageal cancer include smoking, alcohol misuse, obesity and chronic gastro-oesophageal reflux disease.

Pancreatic cancer

While not statistically significant, there have been increases in the mortality rate of pancreatic cancer in both females (5%) and males (6%) over the last ten years. This reflects the increase in incidence of pancreatic cancer and the poor survival associated with this type of cancer. The causes of pancreatic cancer are poorly understood but smoking is one reasonably well-established risk factor.

Ovarian cancer

There has been a 14% decrease in mortality rates of ovarian cancer, reflecting a decrease in incidence (most probably due to changes in risk factor prevalence) and increasing survival (reflecting advances in treatment).

Cancer of the body of the uterus (corpus uteri)

The mortality rate for cancer of the body of the uterus has increased by 67% over the last ten years. This is associated with an increase in the incidence of this type of cancer, which may be due in part to longstanding changes in fertility (since childbearing appears to protect against endometrial cancer, the most common type of this cancer) and increases in levels of obesity (which increases the risk of developing this cancer). The decrease in rates of hysterectomy may be a further contributing factor as it leaves a larger population at risk of developing uterine cancer.

Bladder cancer

Over the last ten years, the mortality rate for bladder cancer has decreased by 11% in men but increased by 5% in women (the increase in women is not statistically significant). Smoking is one of the risk factors associated with bladder cancer. Men also have better survival from bladder cancer than women.

Head and neck cancer

The mortality rate for head and neck cancers has increased by 5% for men (this is not statistically significant) and 23% for women. Head and neck cancer does not appear in table 1 for females as it is not one of the ten most common causes of death from cancer in women. Cancer of the head and neck includes many different types of cancer such as cancer of the lip, oral cavity, pharynx, nasal cavity and larynx. These mostly share the risk factors of alcohol and

tobacco, but human papilloma virus (HPV) has been associated with some cases, especially oropharyngeal cancers.

Non-Hodgkin lymphoma

The mortality rate for non-Hodgkin lymphoma has decreased by 16% for men and 9% for women (the figure for women is not statistically significant). Non-Hodgkin lymphoma does not appear in table 1 for males as it is not one of the ten most common causes of death from cancer in men. Although immunosuppression has been associated with the development of non-Hodgkin lymphoma, much has still to be understood about the causes and so the reasons for the observed trends are unclear.

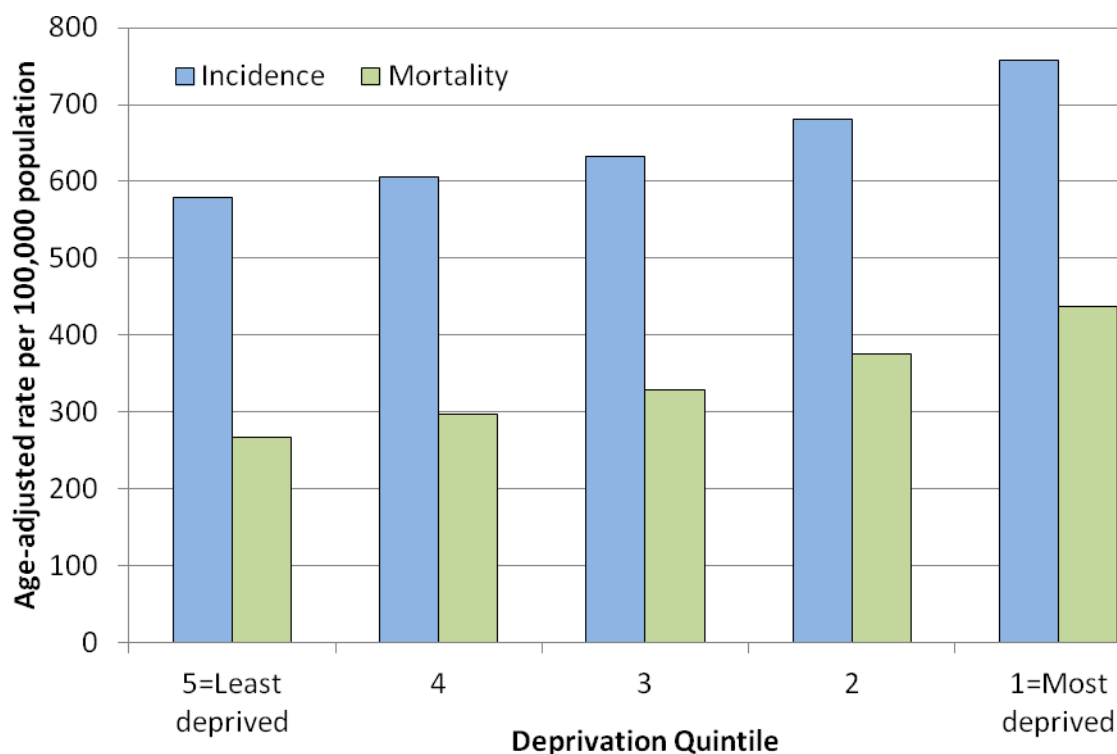
Cancer of the brain and central nervous system

The mortality rate for cancers of the brain and central nervous system has decreased by 2% in men (not statistically significant) and increased by 12% in women. This cancer does not appear in table 1 for females as it is not one of the ten most common causes of death from cancer in women. The risk factors for these types of cancer are not well understood.

Cancer Incidence and Mortality by Deprivation Quintile

Significant patterns exist when examining incidence and mortality rates by deprivation in Scotland. Considering all cancers combined, the most deprived areas have incidence rates that are 31% higher than the least deprived areas; mortality rates for all cancers combined are 64% higher in the most deprived areas compared with the least deprived (figure 4).

Figure 4. Age-adjusted¹ cancer² incidence rates (2010-2014) and mortality rates (2011-2015) by deprivation quintile³ in Scotland.



Source: Scottish Cancer Registry, ISD (registrations); National Records of Scotland (deaths)

1 The European Standard Population (ESP), which was first used in 1976, was revised in 2013. Figures using ESP1976 and ESP2013 are not comparable. The European Age Standardised Rate (EASR) is calculated using ESP2013 and 5 year age groups 0-4, 5-9 up to an upper age group of 90+.

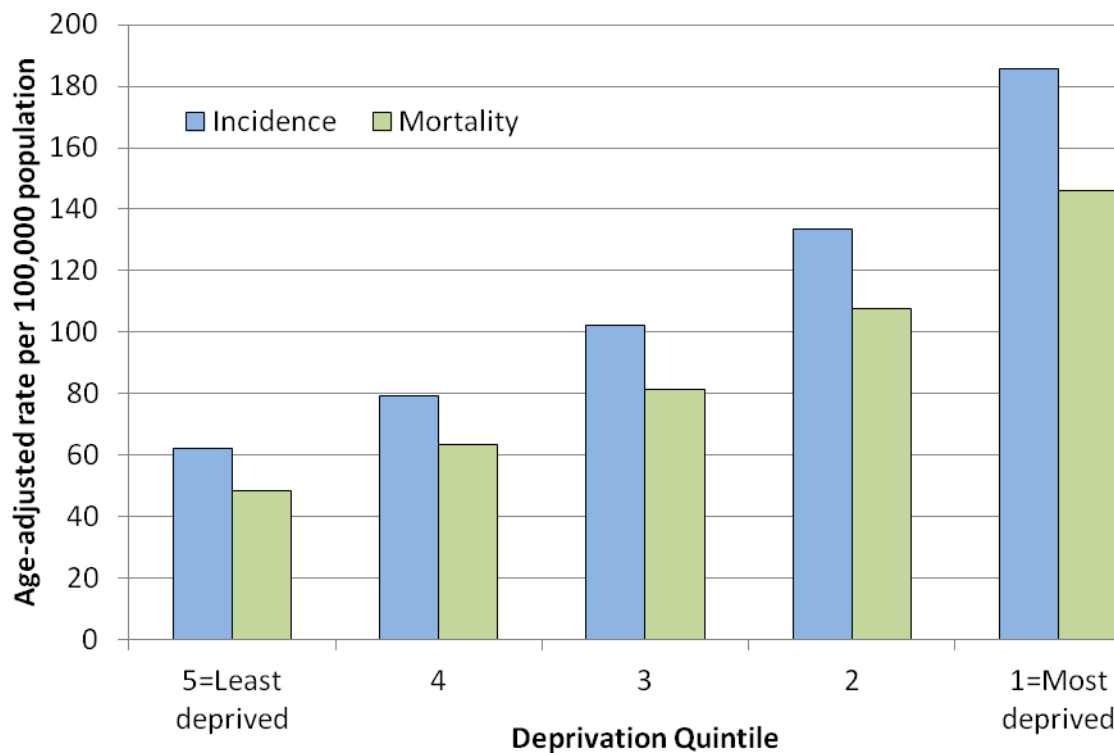
2 All cancers excluding non-melanoma skin cancers (ICD-10 C00-C97 excl C44)

3 Deprivation quintile based on SIMD2012.

There are variations in this pattern when looking at specific types of cancer. For example, while [lung cancer](#) incidence and mortality rates are higher in the most deprived areas of Scotland (figure 5), incidence and mortality rates of [malignant melanoma of the skin](#) (melanoma skin cancer) are higher in the least deprived areas of Scotland.

Cancers associated with smoking tend to be strongly correlated with deprivation by having the highest incidence and mortality rates in the most deprived areas; these include cancers of the [trachea, bronchus and lung](#), [oral cavity](#) and [larynx](#). For cancer of the trachea, bronchus and lung, incidence and mortality rates are three times higher in the most deprived areas compared with the least deprived areas (figure 5).

Figure 5. Age-adjusted¹ lung cancer² incidence rates (2010-2014) and mortality rates (2011-2015) by deprivation quintile³ in Scotland.



Source: Scottish Cancer Registry, ISD (registrations); National Records of Scotland (deaths)

1 The European Standard Population (ESP), which was first used in 1976, was revised in 2013. Figures using ESP1976 and ESP2013 are not comparable. The European Age Standardised Rate (EASR) is calculated using ESP2013 and 5 year age groups 0-4, 5-9 up to an upper age group of 90+.

2 Cancer of the trachea, bronchus and lung (ICD-10 C33-C34)

3 Deprivation quintile based on SIMD2012.

The incidence and mortality rates for [cervical cancer](#) tend to be higher in more deprived women, reflecting socio-economic differences in exposure to risk factors, and lower attendance for cervical screening which aims to prevent cervical cancer by diagnosing and treating pre-cancerous changes.

In contrast, the incidence of [breast cancer](#) tends to be higher in less deprived areas. Again, this is likely to reflect differences in exposure to risk factors, and higher rates of attendance at breast screening in less deprived areas, since breast screening is not designed to prevent breast cancer, but rather to diagnose the disease as early as possible, when treatment is more likely to be effective. Despite a lower incidence of breast cancer in more deprived areas, the mortality rate in these areas is not correspondingly lower – this is consistent with the observation that survival from breast cancer tends to be lower in patients from deprived areas.

For [prostate cancer](#), incidence is higher in the less deprived areas but mortality has no correlation with deprivation quintile. The higher incidence of prostate cancer in less deprived areas may reflect higher rates of prostate specific antigen (PSA) testing of the populations in these areas¹.

¹ Morgan RM, Steele RJ, Nabi G, McCowan C. Socioeconomic variation and prostate specific antigen testing in the community: a United Kingdom based population study. *J Urol.* 2013;190:1207-12.

Glossary

Age-adjusted rate	See European Age Standardised Rate (EASR) below.
Cancer registry	The Scottish Cancer Registry is responsible for the collection of information on all new cases of cancer arising in residents of Scotland. More detailed information is available on the ISD website here .
Confidence interval	The interval or range of values that is likely to contain the true value of a parameter.
Crude rate	The number of cases divided by the population. The crude rate does not attempt to adjust for differences in age and sex structures between different populations (see European age-standardised rate below). Typically expressed as the number of cases per 100,000 population.
EASR	European Age Standardised Rate; the rate that would have been found if the population in Scotland had the same age-composition as the hypothetical standard European population. The 2013 European Standard Population (ESP2013) has been used to calculate EASRs within this publication. The European Standard Population (ESP), which was first used in 1976, was revised in 2013. Reports prior to October 2014 used ESP1976 to calculate EASRs. Figures using ESP1976 and ESP2013 are not comparable. Therefore, findings from this publication are not comparable with ISD reports prior to October 2014.
ICD-10	The 10 th revision of the International Classification of Diseases produced by the World Health Organisation (WHO). It assigns codes to particular diseases and conditions.
Incidence	Incidence refers to the number of new cases of a condition in a defined population during a defined period and is typically expressed as the number of new cases per 100,000 population per year (or other suitable units).
Malignant tumour	Cancerous growth.
Mortality rate	The number of deaths as a rate per 100,000 population.
Neoplasm	Abnormal growth
NMSC	Non-melanoma skin cancer. A type of cancer that develops slowly in the upper layers of the skin.
Percentage	A rate, number or amount in each hundred.
PSA	Prostate specific antigen – a protein made in the prostate gland.
SIMD	Deprivation for individuals is estimated from aggregate data derived from the census and other routine sources. These are used to estimate the deprivation of small geographical areas. The Scottish Index of Multiple Deprivation (SIMD) has seven domains (income, employment, education, housing, health, crime, and geographical access) at datazone level, which have been combined into an overall index to pick out area concentrations of multiple deprivation.

List of Tables

Table No.	Cancer Mortality by year	Time period	File & size
0	Cancer in Scotland Summary	2005-2015	PDF [509 kb]
1	All Cancers	1990-2015	Excel [1022 kb]
2	Bladder	1990-2015	Excel [982 kb]
3	Bone and Connective Tissues	1990-2015	Excel [2050 kb]
4	Brain and CNS	1990-2015	Excel [1581 kb]
5	Breast	1990-2015	Excel [969 kb]
6	Colorectal	1990-2015	Excel [2151 kb]
7	Female Genital Organs	1990-2015	Excel [1519 kb]
8	Head and Neck	1990-2015	Excel [5263 kb]
9	Hodgkin Lymphoma	1990-2015	Excel [944 kb]
10	Kidney	1990-2015	Excel [981 kb]
11	Leukaemias	1990-2015	Excel [3199 kb]
12	Liver	1990-2015	Excel [977 kb]
13	Lung and Mesothelioma	1990-2015	Excel [1465 kb]
14	Male Genital Organs	1990-2015	Excel [946 kb]
15	Multiple Myeloma	1990-2015	Excel [968 kb]
16	Non-Hodgkin Lymphoma	1990-2015	Excel [987 kb]
17	Oesophagus	1990-2015	Excel [985 kb]
18	Pancreas	1990-2015	Excel [989 kb]
19	Skin	1990-2015	Excel [1510 kb]
20	Stomach	1990-2015	Excel [985 kb]

Table No.	Summarised Cancer Mortality	Time period	File & size
21	All Cancers	2011-2015	Excel [208 kb]
22	Bladder	2011-2015	Excel [199 kb]
23	Bone and Connective Tissues	2011-2015	Excel [308 kb]
24	Brain and CNS	2011-2015	Excel [257 kb]
25	Breast	2011-2015	Excel [202 kb]
26	Colorectal	2011-2015	Excel [307 kb]
27	Female Genital Organs	2011-2015	Excel [250 kb]
28	Head and Neck	2011-2015	Excel [599 kb]
29	Hodgkin Lymphoma	2011-2015	Excel [202 kb]

30	Kidney	2011-2015	Excel [200 kb]
31	Leukaemias	2011-2015	Excel [402 kb]
32	Liver	2011-2015	Excel [200 kb]
33	Lung and Mesothelioma	2011-2015	Excel [250 kb]
34	Male Genital Organs	2011-2015	Excel [197 kb]
35	Multiple Myeloma	2011-2015	Excel [203 kb]
36	Non-Hodgkin Lymphoma	2011-2015	Excel [205 kb]
37	Oesophagus	2011-2015	Excel [204 kb]
38	Pancreas	2011-2015	Excel [200 kb]
39	Skin	2011-2015	Excel [250 kb]
40	Stomach	2011-2015	Excel [204 kb]

Table No.	Cancer Incidence and Mortality by deprivation quintile	Time period	File & size
41	All Cancers	2011-2015	Excel [33 kb]
42	Bladder	2011-2015	Excel [32 kb]
43	Bone and Connective Tissues	2011-2015	Excel [32 kb]
44	Brain and CNS	2011-2015	Excel [33 kb]
45	Breast	2011-2015	Excel [28 kb]
46	Cervix	2011-2015	Excel [29 kb]
47	Colon	2011-2015	Excel [32 kb]
48	Colorectal	2011-2015	Excel [32 kb]
49	Corpus Uteri	2011-2015	Excel [28 kb]
50	Head and Neck	2011-2015	Excel [32 kb]
51	Hodgkin Lymphoma	2011-2015	Excel [32 kb]
52	Kidney	2011-2015	Excel [32 kb]
53	Larynx	2011-2015	Excel [32 kb]
54	Leukaemias	2011-2015	Excel [32 kb]
55	Liver	2011-2015	Excel [32 kb]
56	Lung and Mesothelioma	2011-2015	Excel [32 kb]
57	Multiple Myeloma	2011-2015	Excel [32 kb]
58	Non-Hodgkin Lymphoma	2011-2015	Excel [32 kb]
59	Oesophagus	2011-2015	Excel [32 kb]
60	Oral	2011-2015	Excel [32 kb]
61	Ovary	2011-2015	Excel [28 kb]

62	Pancreas	2011-2015	Excel [32 kb]
63	Prostate	2011-2015	Excel [28 kb]
64	Rectum & Rectosigmoid junction	2011-2015	Excel [32 kb]
65	Skin	2011-2015	Excel [32 kb]
66	Stomach	2011-2015	Excel [32 kb]
67	Testis	2011-2015	Excel [28 kb]
68	Thyroid	2011-2015	Excel [32 kb]

Table No.	Other updated files	Time period	File & size
69	All Cancers in under 75s	1995-2015	Excel [289 kb]
70	Breast cancer screening	1979-2015	Excel [50 kb]

Contact

Andrew Deas

Principal Information Analyst

andrew.deas@nhs.net

0131 275 7030

Further Information

The Information Services Division publish a wide range of cancer statistics. [You can find all our cancer information on our website](#) including cancer [incidence](#) and [survival](#) statistics.

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Appendices

A1 – Background Information

Source of data

Cancer mortality data are provided by the National Records of Scotland, as released on [their website](#) in August 2015.

The cancer mortality statistics within this publication are based on the date of registration of the death rather than the date on which the death occurred. This is in order to be consistent with the information published by [National Records of Scotland](#). By law, a death should be registered within 8 days of the date of death.

Note on trends

The cancer mortality rates for the less common cancers may be highly variable from year to year; this is due in part to random fluctuation due to small numbers. As such, cancer mortality trends are more stable when assessed over longer time periods, such as decades. All time trends were estimated using Poisson regression in SPSS (IBM®, Inc)

Comparisons – UK and international

Comparisons across the UK are produced by Cancer Research UK, and the most recent [mortality report](#) can be found on their [CancerStats page](#).

Comparison of Scottish and UK cancer data to that of other countries is a complex process because of the wide variation in data collection and coding practices, as well as variation in the quality and completeness of data. The International Agency for Research on Cancer maintain an online database, [Cancer Mondial](#), that is searchable for comparative data.

Standardised mortality rates

Based on the number of death registrations in each of the calendar years, the following rates were calculated for this publication:

Crude Rate

The crude rate is the total number of people with an illness (or who die) in a country or region, divided by the total population of that country or region, and is normally expressed 'per 1,000', 'per 10,000' or 'per 100,000'.

Making comparisons on the crude rate can be misleading if the age structures of the populations of the countries or regions are quite different. Areas with larger percentages of younger people are unlikely to have as high levels of death as areas with larger percentages of older people – and therefore if we don't adjust for these differences we may draw the wrong conclusion about the health of an area simply because of the age-structure of the population. European Age-Sex Standardised Rates (EASRs) allow us to make comparisons between different geographical areas as they allow the effects of having different age structures in either the same population over time or different geographies to be removed.

European Age-Sex Standardised Rate (EASR) using ESP2013

For each 5 year age group, the crude rate is calculated and then the weighted average of all age groups is taken based on the weightings of the 2013 European Standard Population, to give the overall EASR.

Revision of population estimates for 2012-2014

National Records of Scotland revised the Scottish [mid-year population estimates](#) for 2012-2014 in July 2016. This means that rates for these years have changed slightly since the last publication. The effect of these changes is minimal.

A2 – Publication Metadata (including revisions details)

Metadata Indicator	Description
Publication title	Cancer Mortality in Scotland
Description	Annual and 5 year summaries of deaths from cancer in Scotland, by Cancer Network Region and Health Board. Within Scotland and Network levels of reporting, the mortality figures are broken down by age group and sex. Summary of incidence and mortality by deprivation quintile.
Theme	Health and Social Care
Topic	Conditions and Diseases
Format	Excel workbooks
Data source(s)	National Records of Scotland (NRS), Scottish Cancer Registry (SMR06)
Date that data are acquired	September 2016
Release date	25 October 2016
Frequency	Annual
Timeframe of data and timeliness	Data up to 31 December 2015 for mortality data. No delays between receipt and processing of data for publication. Data up to 31 December 2014 for incidence.
Continuity of data	Reports data since 1990. NRS moved from ICD-9 to ICD-10 in 2000. ICD codes have been back-mapped to 1990 as accurately as possible for continuity of reporting.
Revisions statement	All revisions to data within this publication are planned and are due to changes in mid-year population estimates for 2012-2014 (see below).
Revisions relevant to this publication	National Records of Scotland revised the Scottish mid-year population estimates for 2012-2014 in July 2016. This means that rates for these years have changed slightly since the last publication. The effect of these changes is minimal.
Concepts and definitions	Cancer Information FAQs
Relevance and key uses of the statistics	The number and type of cancer deaths, by sex and geography, allow planning for provision of cancer treatment services and palliative care planning. Permits indirect measure of success of public health measures and interventions over the longer term.
Accuracy	For coding of deaths see the website of the National Records of Scotland . Reported data are compared to previous years' figures and to expected trends.
Completeness	At time of extraction, data for the most recent year are considered to be complete.

Comparability	Cancer mortality data are regularly compared with other UK countries and the UK as a whole (eg NCIS) and international reports (eg EUROCIM). In such comparisons, data are provided only at national (Scotland) level.
Accessibility	It is the policy of ISD Scotland to make its web sites and products accessible according to published guidelines .
Coherence and clarity	All Cancer tables are accessible via the Cancer section of the ISD website . Cancer sites are presented within Excel spreadsheets of cancer groupings, where appropriate. This should minimise the number of spreadsheets a user has to go through to find data, as well as ensure that they are selecting the correct data. Geographical hierarchies are also presented using drop down menus.
Value type and unit of measurement	Number of deaths from cancer as count; rates of deaths from cancer as crude, European age standardised, World Age standardised, and as Standardised mortality ratios. Number, eg 1.1
Disclosure	The ISD protocol on Statistical Disclosure Protocol is followed.
Official Statistics designation	National Statistics
UK Statistics Authority Assessment	May 2010
Last published	17 November 2015
Next published	31 October 2017
Date of first publication	2003
Help email	nss.isdcancerstats@nhs.net
Date form completed	04 October 2016

A3 – Early Access details (including Pre-Release Access)

Pre-Release Access

Under terms of the "Pre-Release Access to Official Statistics (Scotland) Order 2008", ISD are obliged to publish information on those receiving Pre-Release Access ("Pre-Release Access" refers to statistics in their final form prior to publication). The standard maximum Pre-Release Access is five working days. Shown below are details of those receiving standard Pre-Release Access.

Standard Pre-Release Access:

Scottish Government Health Department

NHS Board Chief Executives

NHS Board Communication leads

A4 – ISD and Official Statistics

About ISD

Scotland has some of the best health service data in the world combining high quality, consistency, national coverage and the ability to link data to allow patient based analysis and follow up.

Information Services Division (ISD) is a business operating unit of NHS National Services Scotland and has been in existence for over 40 years. We are an essential support service to NHSScotland and the Scottish Government and others, responsive to the needs of NHSScotland as the delivery of health and social care evolves.

Purpose: To deliver effective national and specialist intelligence services to improve the health and wellbeing of people in Scotland.

Mission: Better Information, Better Decisions, Better Health

Vision: To be a valued partner in improving health and wellbeing in Scotland by providing a world class intelligence service.

Official Statistics

Information Services Division (ISD) is the principal and authoritative source of statistics on health and care services in Scotland. ISD is designated by legislation as a producer of 'Official Statistics'. Our official statistics publications are produced to a high professional standard and comply with the Code of Practice for Official Statistics. The Code of Practice is produced and monitored by the UK Statistics Authority which is independent of Government. Under the Code of Practice, the format, content and timing of statistics publications are the responsibility of professional staff working within ISD.

ISD's statistical publications are currently classified as one of the following:

- National Statistics (ie assessed by the UK Statistics Authority as complying with the Code of Practice)
- National Statistics (ie legacy, still to be assessed by the UK Statistics Authority)
- Official Statistics (ie still to be assessed by the UK Statistics Authority)
- other (not Official Statistics)

Further information on ISD's statistics, including compliance with the Code of Practice for Official Statistics, and on the UK Statistics Authority, is available on the [ISD website](#).

The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics. Designation can be broadly interpreted to mean that the statistics:

- meet identified user needs;
- are well explained and readily accessible;
- are produced according to sound methods, and
- are managed impartially and objectively in the public interest.

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.