

# Publication Report



## Cancer Mortality in Scotland (2014)

Publication date – 17 November 2015



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## Introduction

This publication by the Information Services Division provides information on deaths from cancer in Scotland, covering the years 1989-2014 for each main type of cancer.

This publication also includes an update of cancer incidence and mortality rates by the 2012 Scottish Index of Multiple Deprivation (SIMD) quintiles 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 malignant neoplasms (cancers) EXCLUDING non-melanoma skin cancers (NMSC). We use this classification to be consistent with our publication of [cancer incidence](#) information, which also excludes NMSC from the category 'all malignant neoplasms' because their recording is less likely to be complete than for other cancers. NMSC are very common, but do not usually result in death. More information can be found on our [FAQ](#) web page. Exclusion of NMSC from the mortality statistics for 'all malignant neoplasms' has very limited impact because case-fatality is so low. Statistics on deaths from 'all malignant neoplasms' INCLUDING NMSC 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 malignant neoplasms' INCLUDING NMSC accounted for 29% of all deaths in Scotland in 2014.

## Health Board Boundaries

On 1 April 2014, NHS Board boundaries were changed to align with those of local authorities. The purpose of this change was to help NHS Boards and local authorities to work closer together in the provision of care in the community. These new boundaries are used within this publication for the first time.

The impact of these changes on cancer mortality statistics is small for most NHS Boards. The largest differences can be seen in NHS Greater Glasgow and Clyde and NHS Lanarkshire as these were the two NHS Boards that were most affected by the boundary changes. [Appendix A1](#) has more details on the impact of the changes for these two Boards.

## Key points

- Over the last ten years, the overall age-standardised cancer (excluding non-melanoma skin cancers) mortality rate has fallen by 11%. Although the *rate* of death 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.
- Over the last ten years, the cancer mortality rate has fallen by 15% 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 over two-thirds higher in the most deprived compared with the least deprived areas.
- There is also considerable variation in trends for different types of cancer. For example, the rate of female deaths due to breast cancer has decreased by 20% 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 over 40% for both males and females.

## Results and Commentary

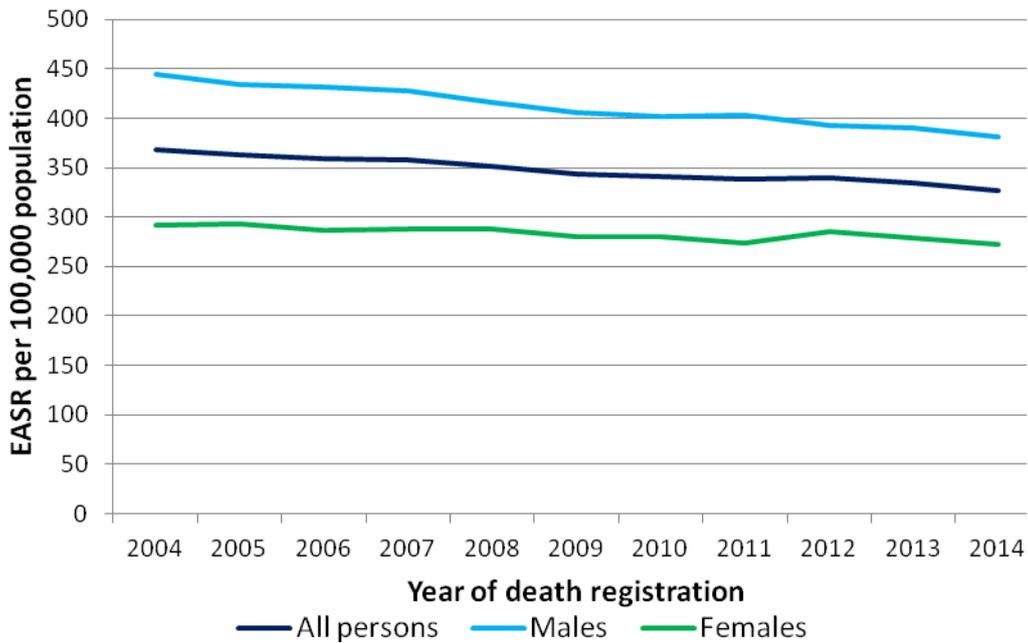
Statistics can be found by cancer site on the Information Services Division website [cancer topic area](#) and in the [Cancer in Scotland summary report](#).

### Cancer Mortality

In 2014, 15,746 people died from cancer (excluding non-melanoma skin cancers) in Scotland.

Age-standardised cancer mortality rates for all cancers combined have decreased by 11.3% over the 10 year period of 2004-2014 (figure 1), with a greater decrease in males than in females (14.9% and 5.7% decrease, respectively). The percentage changes in the mortality rate over the ten year period are estimated using Poisson regression.

**Figure 1. Recent trends (2004-2014) in age-standardised mortality rates for cancer<sup>1</sup> in Scotland. (EASR: European Age Standardised Rate – using ESP2013<sup>2</sup>)**



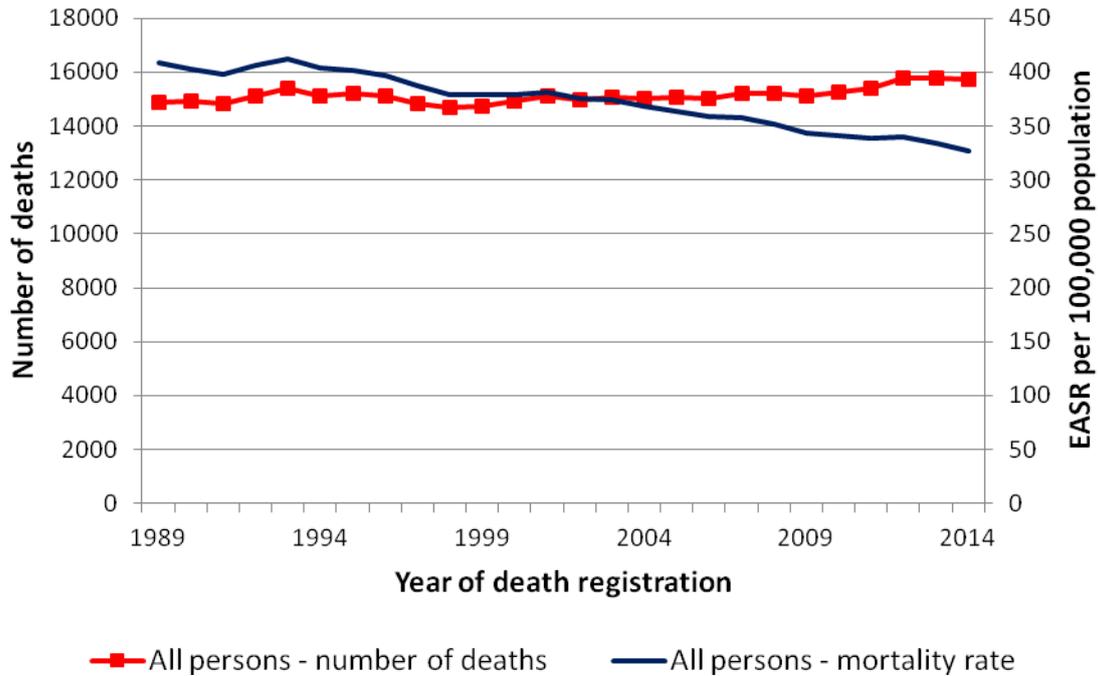
Source: National Records of Scotland.

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+.

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. Cancer<sup>1</sup> mortality in Scotland, 1989-2014. Number of deaths and age-standardised mortality rate. (EASR: European Age Standardised Rate – using ESP2013<sup>2</sup>)**



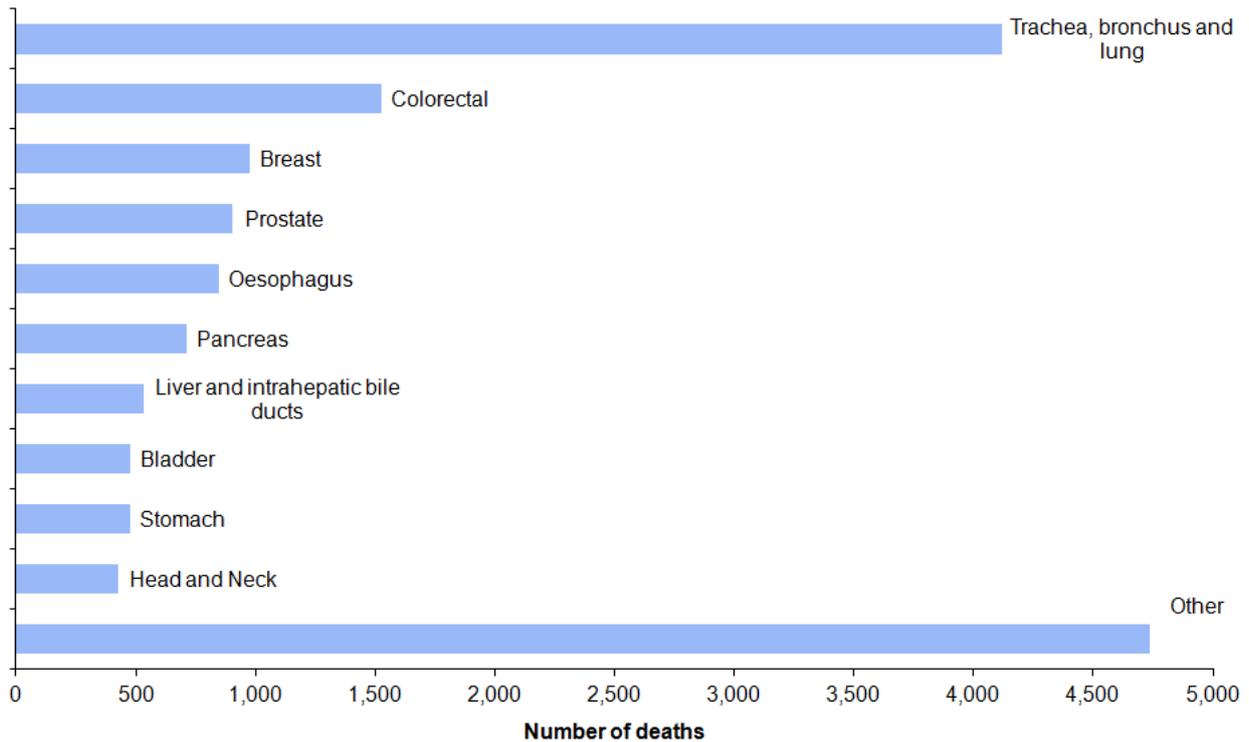
Source: National Records of Scotland.

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 2014. Cancers of the lung (4,117), colorectum (1,525), breast (976), prostate (906) and oesophagus (850) are responsible for more than half of the deaths from cancer in Scotland.

Figure 3. Deaths from cancer<sup>1</sup> in Scotland, 2014<sup>2</sup>



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. A p-value of less than 0.05 for the 10 year change indicates that this is statistically significant.

For men, the largest decreases in mortality rate in the ten most common causes of death from cancer have been in stomach, colorectal and lung cancer (36.2%, 22.4% and 21.4% respectively). Mortality rates from prostate cancer, the most frequently diagnosed cancer in males, have decreased by 10.3% over the 10 years to 2014. The mortality rate from cancer of the liver has increased by 42.4% in men over the last 10 years, a statistically significant trend.

For women, the largest decreases in mortality rates in the ten most common causes of death from cancer were observed in stomach, breast and ovarian cancer (29.2%, 20.0% and 15.5% 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 cervical cancer mortality rate has decreased by 18.6% over the same time period, in keeping with a longer term trend (data not shown in Table 1 as cervical cancer lies outside the ten most common causes of death from cancer).

**Table 1: Most common causes of death from cancer in Scotland in 2014: Rank, number, frequency and change in mortality rate since 2004**

Rank	Type of cancer	Number	Frequency	10 year % change <sup>1</sup>	p - value <sup>3</sup>
<b>All Persons</b>					
1	Trachea, bronchus and lung (C33-C34)	4,117	26.1%	-12.7	<0.001
2	Colorectal (C18-C20)	1,525	9.7%	-16.9	<0.001
3	Breast (C50) <sup>2</sup>	976	6.2%	x	x
4	Prostate (C61) <sup>2</sup>	906	5.8%	x	x
5	Oesophagus (C15)	850	5.4%	-10.1	0.003
6	Pancreas (C25)	713	4.5%	+5.9	0.083
7	Liver and intrahepatic bile ducts (C22)	535	3.4%	+43.0	<0.001
8	Bladder (C67)	480	3.0%	-9.9	0.413
9	Stomach (C16)	477	3.0%	-34.0	<0.001
10	Head and Neck (C00-C14, C30-C32)	429	2.7%	+7.0	0.047
	Other malignant neoplasms	4,738	30.1%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	15,746	100.0%	-11.3	<0.001
Rank	Type of cancer	Number	Frequency	10 year % change <sup>1</sup>	p - value <sup>3</sup>
<b>Males</b>					
1	Trachea, bronchus and lung (C33-C34)	2,119	26.2%	-21.4	<0.001
2	Prostate (C61)	906	11.2%	-10.3	0.002
3	Colorectal (C18-C20)	786	9.7%	-22.4	<0.001
4	Oesophagus (C15)	535	6.6%	-10.1	0.006
5	Pancreas (C25)	364	4.5%	+6.3	0.237
6	Liver and intrahepatic bile ducts (C22)	338	4.2%	+42.4	<0.001
7	Bladder (C67)	300	3.7%	-14.8	0.016
8	Head and Neck (C00-C14, C30-C32)	299	3.7%	+2.5	0.630
9	Stomach (C16)	285	3.5%	-36.2	<0.001
10	Kidney (C64-C65)	254	3.1%	-10.1	0.086
	Other malignant neoplasms	1,895	23.5%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	8,081	100.0%	-14.9	<0.001
Rank	Type of cancer	Number	Frequency	10 year % change <sup>1</sup>	p - value <sup>3</sup>
<b>Females</b>					
1	Trachea, bronchus and lung (C33-C34)	1,998	26.1%	+2.0	0.440
2	Breast (C50)	966	12.6%	-20.0	<0.001
3	Colorectal (C18-C20)	739	9.6%	-7.0	0.030
4	Ovary (C56)	375	4.9%	-15.5	0.000
5	Pancreas (C25)	349	4.6%	+5.4	0.336
6	Oesophagus (C15)	315	4.1%	-9.9	0.060
7	Liver and intrahepatic bile ducts (C22)	197	2.6%	+44.2	<0.001
8	Non-Hodgkin lymphoma (C82-C85)	196	2.6%	-9.3	0.106
9	Stomach (C16)	192	2.5%	-29.2	<0.001
10	Brain and other CNS (C70-C72, C75.1-C75.3)	182	2.4%	+9.2	0.253
	Other malignant neoplasms	2,156	28.1%	x	x
	All malignant neoplasms excluding non-melanoma skin cancer	7,665	100.0%	-5.7	0.000

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 21%) and females (an increase of 2%) reflects, in large part, historical trends in the prevalence of smoking, which has differed between men and women. A similar pattern is evident in incidence rates.

### 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 20% over the last ten years, probably as a consequence of breast screening, but also due to advances in treatment.

### Prostate cancer

Prostate cancer is the second most common cause of death from cancer in men. The mortality rate has decreased by 10% over the last ten years. The reason for the decrease in the mortality rate is not clear but improvements in treatment may be one possible explanation.

### Liver cancer

The increase in the mortality rate of liver cancer over the last ten years by 43% 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 is thought to be caused mainly by 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.

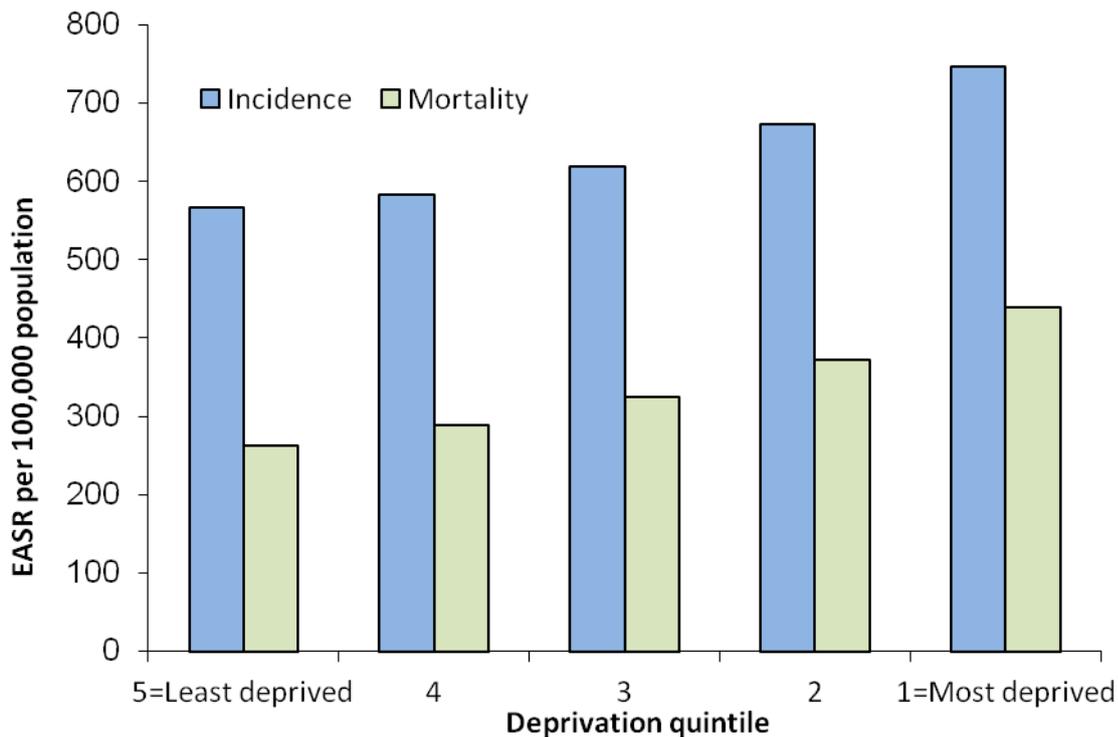
### Cervical cancer

The reduction in the mortality rate of cervical cancer over the last ten years by 19% is thought to be largely the result of improved detection and treatment of pre-malignant and early stage disease through the national cervical screening programme.

## 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 32% higher than the least deprived areas; mortality rates for all cancers combined are 68% higher in the most deprived areas compared with the least deprived (figure 4).

**Figure 4. Cancer<sup>1</sup> Incidence (2009-2013) and Mortality (2010-2014) by deprivation quintile<sup>2</sup> in Scotland. Age-standardised rates. (EASR: European Age Standardised Rate – using ESP2013<sup>3</sup>)**



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

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

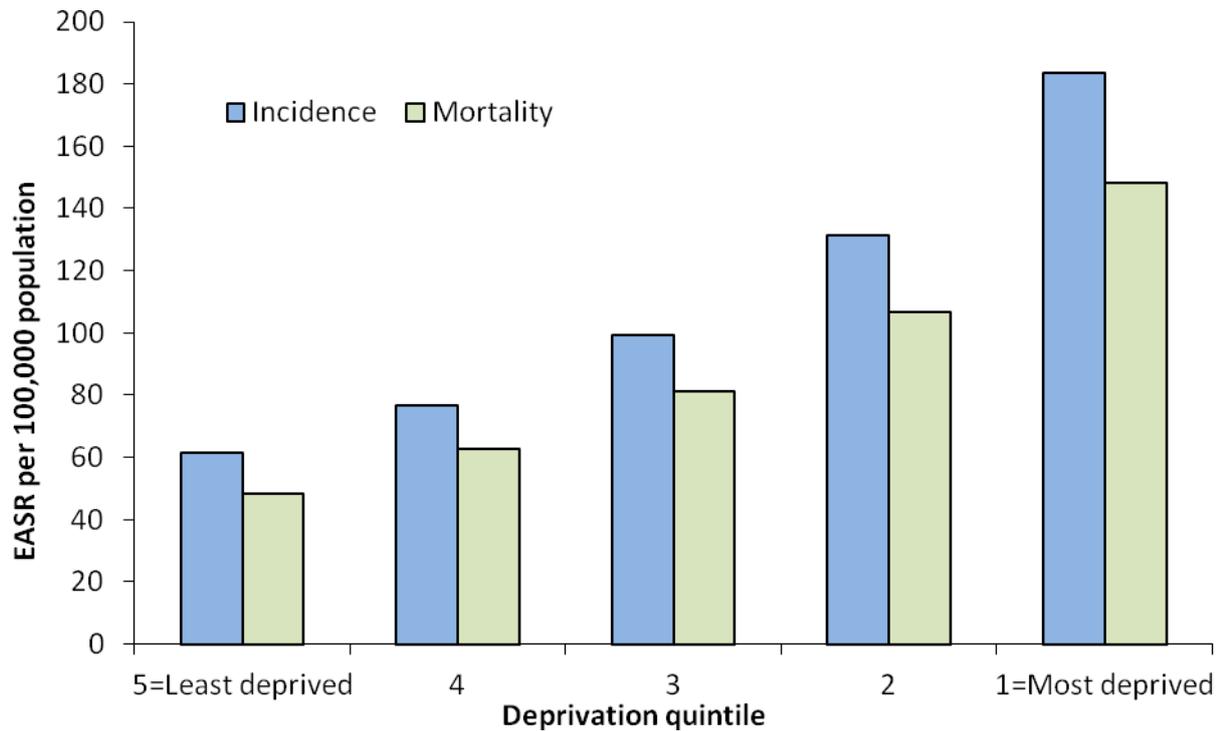
2 Deprivation quintile based on SIMD2012,

3 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+.

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, 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 over three times higher in the most deprived areas compared to the least deprived areas (figure 5).

**Figure 5. Lung Cancer<sup>1</sup> Incidence (2009-2013) and Mortality (2010-2014) by deprivation quintile<sup>2</sup> in Scotland. Age-standardised rates. (EASR: European Age Standardised Rate – using ESP2013<sup>3</sup>)**



The incidence of (and mortality from) [cervical cancer](#) tends 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 areas<sup>1</sup>.

<sup>1</sup> 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

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 <a href="#">here</a> .
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. Previous reports used ESP1976 to calculate EASRs. Figures using ESP1976 and ESP2013 are not comparable. Therefore, <u>findings from this publication are not comparable with previous ISD reports</u> .
ICD-10	The 10 <sup>th</sup> 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.

## List of Tables

Table No.	Cancer Mortality by year	Time period	File & size
0	<a href="#">Cancer in Scotland Summary</a>	2004-2014	PDF [264 kb]
1	<a href="#">All Cancers</a>	1989-2014	Excel [1024 kb]
2	<a href="#">Bladder</a>	1989-2014	Excel [982 kb]
3	<a href="#">Bone and Connective Tissues</a>	1989-2014	Excel [2050 kb]
4	<a href="#">Brain and CNS</a>	1989-2014	Excel [1577 kb]
5	<a href="#">Breast</a>	1989-2014	Excel [969 kb]
6	<a href="#">Colorectal</a>	1989-2014	Excel [2156 kb]
7	<a href="#">Female Genital Organs</a>	1989-2014	Excel [1516 kb]
8	<a href="#">Head and Neck</a>	1989-2014	Excel [5261 kb]
9	<a href="#">Hodgkin Lymphoma</a>	1989-2014	Excel [944 kb]
10	<a href="#">Kidney</a>	1989-2014	Excel [981 kb]
11	<a href="#">Leukaemias</a>	1989-2014	Excel [3210 kb]
12	<a href="#">Liver</a>	1989-2014	Excel [980 kb]
13	<a href="#">Lung and Mesothelioma</a>	1989-2014	Excel [1459 kb]
14	<a href="#">Male Genital Organs</a>	1989-2014	Excel [946 kb]
15	<a href="#">Multiple Myeloma</a>	1989-2014	Excel [973 kb]
16	<a href="#">Non-Hodgkin Lymphoma</a>	1989-2014	Excel [992 kb]
17	<a href="#">Oesophagus</a>	1989-2014	Excel [990 kb]
18	<a href="#">Pancreas</a>	1989-2014	Excel [990 kb]
19	<a href="#">Skin</a>	1989-2014	Excel [1506 kb]
20	<a href="#">Stomach</a>	1989-2014	Excel [991 kb]

Table No.	Summarised Cancer Mortality	Time period	File & size
21	<a href="#">All Cancers</a>	2010-2014	Excel [208 kb]
22	<a href="#">Bladder</a>	2010-2014	Excel [199 kb]
23	<a href="#">Bone and Connective Tissues</a>	2010-2014	Excel [308 kb]
24	<a href="#">Brain and CNS</a>	2010-2014	Excel [257 kb]
25	<a href="#">Breast</a>	2010-2014	Excel [202 kb]
26	<a href="#">Colorectal</a>	2010-2014	Excel [310 kb]
27	<a href="#">Female Genital Organs</a>	2010-2014	Excel [249 kb]
28	<a href="#">Head and Neck</a>	2010-2014	Excel [603 kb]
29	<a href="#">Hodgkin Lymphoma</a>	2010-2014	Excel [201 kb]
30	<a href="#">Kidney</a>	2010-2014	Excel [204 kb]

31	<a href="#">Leukaemias</a>	2010-2014	Excel [401 kb]
32	<a href="#">Liver</a>	2010-2014	Excel [200 kb]
33	<a href="#">Lung and Mesothelioma</a>	2010-2014	Excel [250 kb]
34	<a href="#">Male Genital Organs</a>	2010-2014	Excel [196 kb]
35	<a href="#">Multiple Myeloma</a>	2010-2014	Excel [199 kb]
36	<a href="#">Non-Hodgkin Lymphoma</a>	2010-2014	Excel [205 kb]
37	<a href="#">Oesophagus</a>	2010-2014	Excel [200 kb]
38	<a href="#">Pancreas</a>	2010-2014	Excel [204 kb]
39	<a href="#">Skin</a>	2010-2014	Excel [250 kb]
40	<a href="#">Stomach</a>	2010-2014	Excel [204 kb]

Table No.	Cancer Incidence and Mortality by deprivation quintile	Time period	File & size
41	<a href="#">All Cancers</a>	2010-2014	Excel [36 kb]
42	<a href="#">Bladder</a>	2010-2014	Excel [36 kb]
43	<a href="#">Bone and Connective Tissues</a>	2010-2014	Excel [36 kb]
44	<a href="#">Brain and CNS</a>	2010-2014	Excel [36 kb]
45	<a href="#">Breast</a>	2010-2014	Excel [36 kb]
46	<a href="#">Cervix</a>	2010-2014	Excel [36 kb]
47	<a href="#">Colon</a>	2010-2014	Excel [36 kb]
48	<a href="#">Colorectal</a>	2010-2014	Excel [36 kb]
49	<a href="#">Corpus Uteri</a>	2010-2014	Excel [36 kb]
50	<a href="#">Head and Neck</a>	2010-2014	Excel [36 kb]
51	<a href="#">Hodgkin Lymphoma</a>	2010-2014	Excel [36 kb]
52	<a href="#">Kidney</a>	2010-2014	Excel [36 kb]
53	<a href="#">Larynx</a>	2010-2014	Excel [36 kb]
54	<a href="#">Leukaemias</a>	2010-2014	Excel [36 kb]
55	<a href="#">Liver</a>	2010-2014	Excel [36 kb]
56	<a href="#">Lung and Mesothelioma</a>	2010-2014	Excel [36 kb]
57	<a href="#">Multiple Myeloma</a>	2010-2014	Excel [36 kb]
58	<a href="#">Non-Hodgkin Lymphoma</a>	2010-2014	Excel [36 kb]
59	<a href="#">Oesophagus</a>	2010-2014	Excel [36 kb]
60	<a href="#">Oral</a>	2010-2014	Excel [36 kb]
61	<a href="#">Ovary</a>	2010-2014	Excel [36 kb]
62	<a href="#">Pancreas</a>	2010-2014	Excel [36 kb]
63	<a href="#">Prostate</a>	2010-2014	Excel [36 kb]

64	<a href="#">Rectum &amp; Rectosigmoid junction</a>	2010-2014	Excel [36 kb]
65	<a href="#">Skin</a>	2010-2014	Excel [36 kb]
66	<a href="#">Stomach</a>	2010-2014	Excel [36 kb]
67	<a href="#">Testis</a>	2010-2014	Excel [36 kb]
68	<a href="#">Thyroid</a>	2010-2014	Excel [36 kb]

Table No.	Other updated files	Time period	File & size
69	<a href="#">All Cancers in under 75s</a>	1995-2014	Excel [283 kb]
70	<a href="#">Breast cancer screening</a>	1979-2014	Excel [57 kb]

## Contact

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## Further Information

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

The [Scottish Public Health Observatory](#) provides further reading on some of the types of cancers discussed in this report.

## Rate this publication

Please [provide feedback](#) on this publication to help us improve our services.

## Appendix

### 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

The Office for National Statistics (ONS) published a [comparison of incidence and mortality statistics](#) across the UK in 2012. The ONS have no plans to update the comparison in future.

Comparisons are also 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.

**Impact of Health Board boundary changes**

On 1<sup>st</sup> April 2014, Scottish NHS Board boundaries were changed to align with those of local authorities. The purpose of this change was to help NHS Boards and local authorities to work closer together in the provision of care in the community. More information on the background to this change can be found on the Scottish Government [website](#). The Boards most affected were NHS Greater Glasgow and Clyde and NHS Lanarkshire. Over 72,000 people were transferred from NHS Greater Glasgow and Clyde to NHS Lanarkshire. There were also over 16,000 people transferred from NHS Lanarkshire to NHS Greater Glasgow and Clyde. The new boundaries are used within this publication for the first time.

As expected, due to the changes in the populations of NHS Greater Glasgow and Clyde and NHS Lanarkshire, there are also some changes in the cancer mortality statistics. Tables A1.1 and A1.2 show how the number of deaths from cancer and EASRs differ between the 2006 NHS Board boundaries (which were used in previous editions of this publication) and the new 2014 NHS Board boundaries.

**Table A1.1. NHS Greater Glasgow & Clyde. Comparison of the number of deaths from cancer and European Age-Sex Standardised Rates (EASRs) for both sexes and all cancer types (excluding non-melanoma skin cancer) 2003-2013.**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Number of deaths</b>											
2006 configuration	3,849	3,797	3,702	3,787	3,759	3,759	3,644	3,536	3,628	3,763	3,801
2014 configuration	3,647	3,573	3,489	3,551	3,527	3,525	3,419	3,345	3,389	3,527	3,567
<b>EASR per 100,000 population</b>											
2006 configuration	424.3	417.4	404.3	413.6	405.2	399.2	385.4	365.5	375.3	380.4	381.1
2014 configuration	428.7	418.4	406.4	412.8	407.3	397.7	386.2	369.3	374.7	381.1	382.9

Source: National Records of Scotland

**Table A1.2. NHS Lanarkshire. Comparison of the number of deaths from cancer and European Age-Sex Standardised Rates (EASRs) for both sexes and all cancer types (excluding non-melanoma skin cancer) 2003-2013.**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Number of deaths</b>											
2006 configuration	1,524	1,547	1,560	1,592	1,630	1,620	1,586	1,703	1,642	1,728	1,648
2014 configuration	1,726	1,771	1,773	1,829	1,860	1,854	1,810	1,894	1,880	1,964	1,881
<b>EASR per 100,000 population</b>											
2006 configuration	383.9	381.3	374.5	373.7	379.5	365.5	355.0	375.6	354.8	363.5	337.6
2014 configuration	380.3	383.5	374.8	380.6	378.2	372.0	357.3	367.8	358.1	363.9	339.8

Source: National Records of Scotland

For NHS Greater and Glasgow and Clyde (Table A1.1), the number of deaths from cancer is smaller for the 2014 NHS Board configuration in comparison to the 2006 NHS Board configuration. The EASRs are generally similar between the two configurations.

For NHS Lanarkshire (Table A1.2), the number of deaths from cancer is larger for the 2014 NHS Board configuration in comparison to the 2006 NHS Board configuration. The EASRs are generally similar between the two configurations, with some larger differences in 2006, 2008 and 2010.

**A2 – Publication Metadata (including revisions details)**

<b>Metadata Indicator</b>	<b>Description</b>
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 2015
Release date	17 November 2015
Frequency	Annual
Timeframe of data and timeliness	Data up to 31 December 2014 for mortality data. No delays between receipt and processing of data for publication. Data up to 31 December 2013 for incidence.
Continuity of data	Reports data since 1989. NRS moved from ICD-9 to ICD-10 in 2000. ICD codes have been back-mapped to 1989 as accurately as possible for continuity of reporting.
Revisions statement	The historical data has been revised to take the NHS Board configuration into account (see below).
Revisions relevant to this publication	Scottish NHS Board boundaries changed on 1 <sup>st</sup> April 2014. This publication uses these new boundaries.
Concepts and definitions	<a href="#">Cancer Information FAQs</a>
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 <a href="#">National Records of Scotland</a> . 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 <a href="#">published guidelines</a> .
Coherence and clarity	All Cancer tables are accessible via the <a href="#">Cancer section of the ISD website</a> . 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 <a href="#">ISD protocol on Statistical Disclosure Protocol</a> is followed.
Official Statistics designation	National Statistics
UK Statistics Authority Assessment	May 2010
Last published	28 October 2014
Next published	25 October 2016
Date of first publication	2003
Help email	<a href="mailto:nss.isdcancerstats@nhs.net">nss.isdcancerstats@nhs.net</a>
Date form completed	22 October 2015

## **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.