

# Publication Report



## Scottish Bowel Screening Programme Statistics

For invitations between 1<sup>st</sup> November 2009 and 31<sup>st</sup> October 2011

Publication date – 28<sup>th</sup> August 2012



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## Introduction

The Scottish Bowel Screening Programme commenced a phased roll out in June 2007 and by December 2009 all NHS Boards in Scotland were participating in the Programme.

All men and women registered with a Community Health Index (CHI) number and aged between 50-74 years are invited to participate and to be screened every two years. Eligible men and women are posted a guaiac-based faecal occult blood test kit. The kit is completed at home and involves collecting 2 samples from each of three separate bowel movements. The kit is returned in a prepaid envelope to the central screening centre in Dundee and tested for hidden traces of blood in the stool.

This current release includes data for people invited between the 1<sup>st</sup> November 2009 and 31<sup>st</sup> October 2011. Information for NHS Fife is not presented as this NHS Board was unable to provide the required data before this report was prepared.

The publication report summarises the Key Performance Indicators (KPIs) which are a series of measures used to monitor and evaluate the Scottish Bowel Screening Programme. The KPIs are a series of rates and percentages with no raw numbers shown, and can be found [here](#).

## Key points

For the two year period November 2009 to October 2011:

- Overall in Scotland uptake was 54.5%, a rise of 0.8% compared with the two year period November 2008 to October 2010; and showing a steady increase since the programme started. The Healthcare Improvement Scotland (formerly known as NHS Quality Improvement Scotland) standard for Bowel Screening uptake is 60%. Uptake for females in Scotland was 57.9% and uptake for males was 51.0%.
- Uptake was lower in areas of higher deprivation. Uptake for females in the two least deprived quintiles exceeded the standard at 67.1% and 63.2% respectively. For males living in the most deprived quintile, 38.9% took up the offer of bowel screening.
- 7.9% of men and 5.7% of women who had a **positive** bowel screening test result (and who went on for further investigations) had either polyp cancer or invasive colorectal cancer.

## Results and Commentary

Please note that the following tables and charts are based on the pre-2006 Health Board configuration: NHS Highland does not include Argyll & Bute area and NHS Greater Glasgow does not include Clyde area. We were unable to present information for NHS Fife as this NHS Board was unable to provide the required data before this report was prepared.

Details of all bowel screening statistics included within this publication can be found in the bowel screening report on the [bowel screening homepage](#).

## Overall uptake of bowel screening

This relates only to persons successfully completing a bowel screening test i.e. an outright positive or negative result.

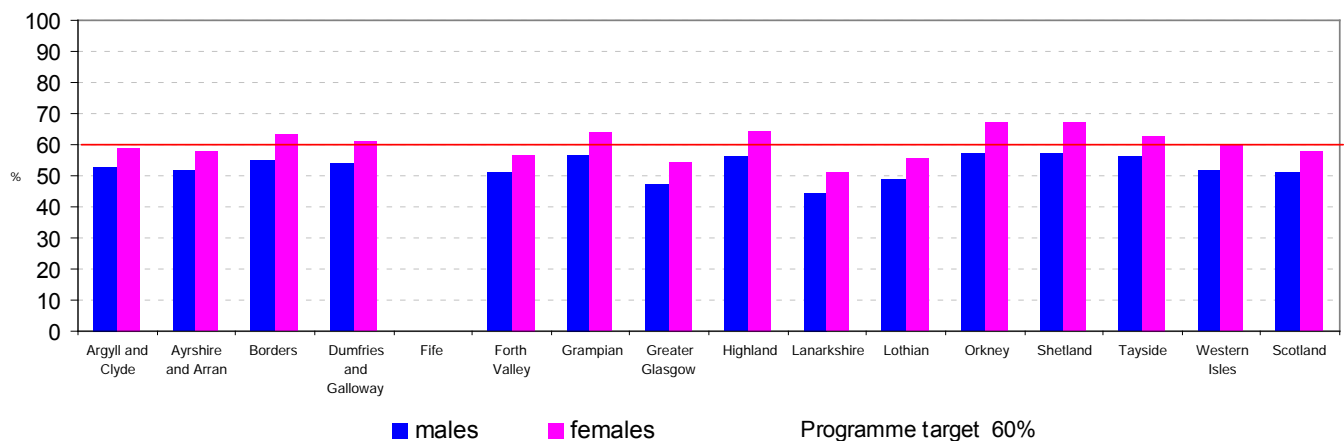
The population denominator used for calculating uptake includes all individuals invited between the 1<sup>st</sup> November 2009 and the 31<sup>st</sup> October 2011.

Overall in Scotland uptake was 54.5%, a rise of 0.8% compared with the two year period November 2008 to October 2010. The Healthcare Improvement Scotland (formerly known as NHS Quality Improvement Scotland) standard for Bowel Screening uptake is 60%. Uptake for females in Scotland was 57.9% and uptake for males was 51.0%.

**Table 1 Overall uptake of bowel screening, by NHS Board and sex, Nov 2009 to Oct 2011**

NHS Board	Males	Females	All persons
Argyll and Clyde	52.6	58.6	55.7
Ayrshire and Arran	51.5	57.6	54.7
Borders	55.0	63.6	59.4
Dumfries and Galloway	53.6	61.3	57.5
Fife	-	-	-
Forth Valley	50.9	56.5	53.8
Grampian	56.5	64.1	60.3
Greater Glasgow	47.2	54.2	50.7
Highland	56.2	64.7	60.5
Lanarkshire	44.2	50.9	47.7
Lothian	48.9	55.7	52.4
Orkney	57.5	67.0	62.2
Shetland	57.3	67.4	62.2
Tayside	56.0	62.7	59.4
Western Isles	51.9	60.1	55.9
<b>Scotland</b>	<b>51.0</b>	<b>57.9</b>	<b>54.5</b>

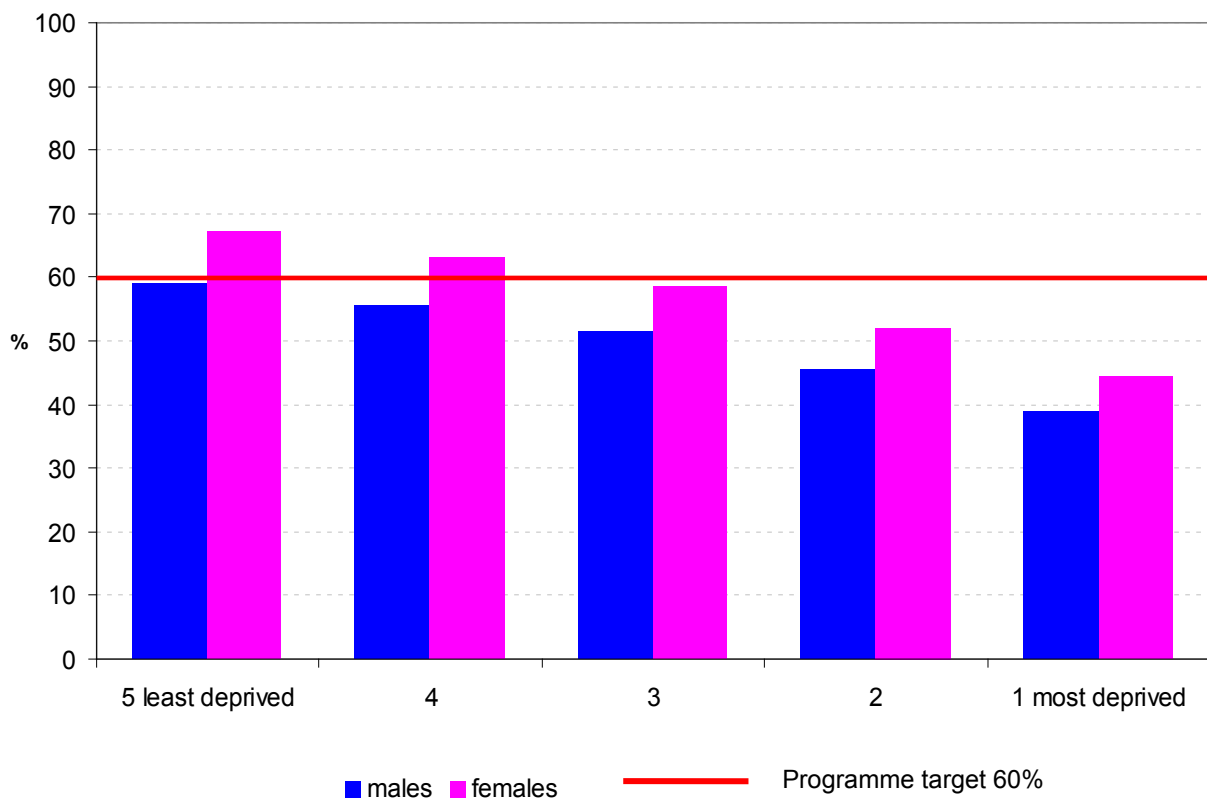
**Figure 1 Overall uptake of bowel screening, by NHS Board and sex, Nov 2009 to Oct 2010**



## Overall uptake of bowel screening by Scottish Index of Multiple Deprivation (SIMD) 2009

There is a characteristic pattern of uptake across the deprivation quintiles for both males and females – uptake decreases with increasing deprivation (Figure 2). Uptake for females in the two least deprived quintiles exceeded the standard at 67.1% and 63.2% respectively. Uptake in males living in the least deprived quintile fell just short of the standard at 59.2%. Only 38.9% of males living in the most deprived quintile take up the offer of bowel screening. The difference in uptake between males and females is at its greatest in the least deprived quintiles.

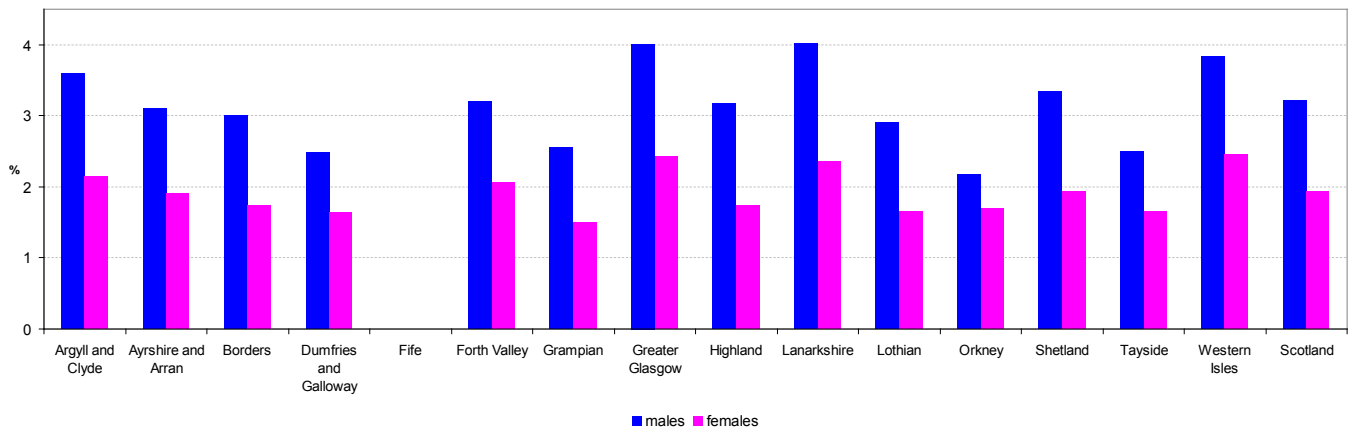
**Figure 2 Overall uptake of bowel screening for Scotland by deprivation quintile, Nov 2009 to Oct 2011**



## Positive bowel screening test result rate

Overall 2.5% of people who complete the screening test receive a positive result although this varies across Scotland and by sex (Figure 3). The highest positive screening test result rates (excluding NHS Western Isles) for both men and women were in NHS Lanarkshire and NHS Greater Glasgow (3.1%). Excluding NHS Orkney, the lowest positive screening test rates were in NHS Grampian, NHS Tayside and NHS Dumfries & Galloway (2.0%).

**Figure 3 Positive bowel screening test result rate, by NHS Board and sex, Nov 2009 to Oct 2011**



### Percentage of people with a positive bowel screening test going on to have a colonoscopy performed

Colonoscopy is the first line examination following a positive screening test and overall in Scotland around 80% of people with a positive test went on to have a colonoscopy performed (Table 2). This varied across Scotland and by sex from 72.7% to 89.1%. Some individuals undergo alternative investigative procedures and these are not included here. The main reasons for individuals not proceeding to colonoscopy were that they declined the offer or that it was clinically inappropriate. Individuals already on surveillance programmes may not always proceed to colonoscopy after a positive screening test as their surveillance colonoscopy may have been undertaken recently.

**Table 2 Percentage of people with a positive bowel screening test result going on to have a colonoscopy performed, by NHS Board and sex, Nov 2009 to Oct 2011**

NHS Board	Males	Females	Both sexes
Argyll and Clyde	76.9	75.0	76.1
Ayrshire and Arran	86.6	85.3	86.1
Borders	83.2	82.1	82.8
Dumfries and Galloway	85.4	83.2	84.4
Fife	-	-	-
Forth Valley	81.1	82.9	81.9
Grampian	79.1	72.7	76.5
Greater Glasgow	75.7	73.9	74.9
Highland	83.7	82.4	83.2
Lanarkshire	81.0	79.6	80.5
Lothian	76.8	73.9	75.6
Orkney	89.1	88.1	88.6
Shetland	81.9	80.9	81.5
Tayside	82.7	80.8	81.8
Western Isles	80.8	88.9	84.2
<b>Scotland</b>	<b>79.7</b>	<b>77.9</b>	<b>79.0</b>

Due to small numbers of positive test results recorded for NHS Orkney, NHS Western Isles and NHS Shetland any comparison of figures with these NHS Boards should be treated with caution.

## Crude cancer detection rate

This is the percentage of people with cancer out of those who completed a screening test, i.e. those who received an outright positive or negative test result. Screening detected around twice as many cancers in men (Table 3). The crude cancer detection rate varied across NHS Boards from 0.15% to 0.31% in men and 0.05% to 0.19% in women (excluding NHS Orkney and NHS Shetland).

**Table 3 Crude bowel cancer detection rate, by NHS Board and sex, Nov 2009 to Oct 2011**

NHS Board	Males	Females	Both sexes
Argyll and Clyde	0.19	0.09	0.13
Ayrshire and Arran	0.17	0.09	0.13
Borders	0.25	0.10	0.17
Dumfries and Galloway	0.29	0.19	0.23
Fife	-	-	-
Forth Valley	0.15	0.12	0.13
Grampian	0.18	0.05	0.11
Greater Glasgow	0.20	0.09	0.14
Highland	0.31	0.07	0.18
Lanarkshire	0.25	0.07	0.15
Lothian	0.19	0.07	0.12
Orkney	0.09	0.04	0.07
Shetland	0.33	0.29	0.31
Tayside	0.17	0.09	0.13
Western Isles	0.19	0.17	0.18
<b>Scotland</b>	<b>0.20</b>	<b>0.09</b>	<b>0.14</b>

Due to small numbers of positive test results recorded for NHS Orkney, NHS Western Isles and NHS Shetland any comparison of figures with these NHS Boards should be treated with caution.

## Overall adenoma detection rate

This is the percentage of people with adenomas detected out of those who completed a screening test. Adenomas can be a precursor to cancer and can be classed as high, medium or low risk depending on size and number. Screening detected more than twice as many adenomas in men as in women. The overall adenoma detection rate varied across NHS Boards from 0.42% to 1.46% in men and 0.12% to 0.62% in women.

**Table 4 Overall adenoma detection rate, by NHS Board and sex, Nov 2009 to Oct 2011**

NHS Board	Males	Females	Both sexes
Argyll and Clyde	0.42	0.12	0.26
Ayrshire and Arran	1.07	0.38	0.70
Borders	1.25	0.38	0.78
Dumfries and Galloway	1.08	0.48	0.75
Fife	-	-	-
Forth Valley	1.23	0.52	0.85
Grampian	0.78	0.31	0.53
Greater Glasgow	0.54	0.16	0.33

Highland	1.39	0.52	0.92
Lanarkshire	1.46	0.53	0.95
Lothian	0.99	0.34	0.63
Orkney	0.94	0.28	0.59
Shetland	1.44	0.49	0.94
Tayside	0.88	0.36	0.60
Western Isles	1.44	0.62	1.00
<b>Scotland</b>	<b>0.94</b>	<b>0.34</b>	<b>0.61</b>

Due to small numbers of positive test results recorded for NHS Orkney, NHS Western Isles and NHS Shetland any comparison of figures with these NHS Boards should be treated with caution.

## Positive predictive value of current bowel screening test to bowel cancer

This is the percentage of screen detected colorectal cancers found in people who had a positive test and went on for further investigation (normally a colonoscopy). 7.9% of men and 5.7% of women who had a positive screening test result (and who went on for further investigations) had either polyp cancer or invasive colorectal cancer (Table 5).

**Table 5 Positive Predictive Value of current bowel screening test to bowel cancer, by NHS Board and sex, Nov 2009 to Oct 2011**

<b>NHS Board</b>	<b>Males</b>	<b>Females</b>	<b>Both sexes</b>
Argyll and Clyde	6.7	5.3	6.2
Ayrshire and Arran	6.4	5.5	6.1
Borders	9.9	6.7	8.6
Dumfries and Galloway	13.5	13.9	13.7
Fife	-	-	-
Forth Valley	5.7	6.9	6.3
Grampian	8.8	4.6	7.2
Greater Glasgow	6.5	4.8	5.8
Highland	11.6	5.0	9.0
Lanarkshire	7.7	4.0	6.2
Lothian	8.5	5.7	7.4
Orkney	4.9	2.7	3.8
Shetland	11.9	18.4	14.4
Tayside	8.4	6.8	7.7
Western Isles	6.3	7.8	6.9
<b>Scotland</b>	<b>7.9</b>	<b>5.7</b>	<b>7.0</b>



## Glossary

Large bowel cancer                      colorectal cancer  
Adenoma                                      a benign epithelial tumour

### List of Tables

Table No.	Name	Time period	File & size
All	<a href="#">Full</a> Scottish Bowel Screening Report	November 2009 to October 2011	PDF (1,061 KB)

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## Further Information

Further information can be found on the [ISD website](#)

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## Appendix

### **A1 – Background Information**

In screening programmes when the screening test is first applied to the population, this is known as the prevalence round since it is to be expected that a number of prevalent cases will be detected. Potentially, some of these tumours may have been present for a number of years without causing symptoms or signs. In subsequent rounds of screening the cases detected will be known to have arisen in a fixed time period and these are known as incidence rounds. In the case of bowel screening the interval between rounds is two years.

Tayside, Grampian and Fife NHS Boards participated in the Scottish Bowel Screening Pilot which ran from March 2000 to May 2007. The pilot was successful and these Boards then proceeded to roll out in June 2007. The Pilot Boards and around half of the other NHS Boards have completed their prevalence round and are now established in their incidence round. The remainder of the NHS Boards are still within their prevalence round and also at different points within the rounds. Direct comparisons must be treated with caution; the publication in August 2012 will be the first report with all NHS Boards in their incidence rounds.

Due to small numbers of positive test results recorded for NHS Orkney, NHS Western Isles and NHS Shetland any comparison of figures with these NHS Boards should also be treated with caution.

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

<b>Metadata Indicator</b>	<b>Description</b>
Publication title	Scottish Bowel Screening Programme Statistics
Description	Fourth publication of the Scottish Bowel Screening Programme Key Performance Indicators and includes uptake, laboratory and clinical outcomes of screened individuals.
Theme	Health and Social Care
Topic	Conditions and Diseases
Format	PDF
Data source(s)	Scottish Bowel Screening Programme (SBoSP) Database
Date that data are acquired	May 2012
Release date	Tuesday 28 <sup>th</sup> August 2012
Frequency	Annual
Timeframe of data and timeliness	Data from 1 <sup>st</sup> November 2009 to 31 <sup>st</sup> October 2011. To increase completeness data published are at least six months after a positive test result.
Continuity of data	The roll out of the Scottish Bowel Screening Programme was completed in December 2009. This report is the first to contain figures for a full screening cycle for every NHS Board.
Revisions statement	Over time the Scottish Bowel Screening statistics may be published by financial year.
Revisions relevant to this publication	KPIs 4a, 4b, 4c and 5a have been removed.
Concepts and definitions	Please see Bowel Screening FAQs <a href="http://www.isdscotland.org/Health-Topics/Cancer/FAQ/">http://www.isdscotland.org/Health-Topics/Cancer/FAQ/</a>
Relevance and key uses of the statistics	ISD's Scottish Bowel Screening Programme statistics are designed for monitoring and evaluating the effectiveness of the Scottish Bowel Screening Programme, including progress against the specific national uptake standard and performance indicators. The statistics are used for a variety of other purposes, including: <ul style="list-style-type: none"> <li>• informing Scottish Government planning, including NHS spending and the development of the Scottish cancer care action plans;</li> <li>• informing Health Boards' planning and commissioning of cancer services;</li> <li>• health services research and clinical audit;</li> <li>• promoting changes in societal behaviour, such as increasing screening uptake rates;</li> <li>• targeting common strategies to areas of low uptake; and</li> <li>• providing information to compare with UK and international health data.</li> </ul>
Accuracy	Bowel screening data are subject to validation and quality assurance procedures when submitted to ISD.

Completeness	See note on 'Timeframe of data and timeliness'. Currently, we are accepting data from NHS Boards after 6 months in the anticipation that the data will be complete. Assessments of this completeness will be done after data are available from all NHS Boards.
Comparability	Bowel Screening data, both in Scotland and the UK as a whole, are fairly new data and once firmly established will be compared. It should be noted, however, that the four UK bowel screening programmes do not all invite individuals of the same age range.
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	The Bowel Screening report is accessible via the ISD website at <a href="http://www.isdscotland.org/Health-topics/Cancer">www.isdscotland.org/Health-topics/Cancer</a>
Value type and unit of measurement	All values reported as percentages, expressed numerically (e.g. 1.7%)
Disclosure	The <a href="#">ISD protocol on Statistical Disclosure Protocol</a> is followed. For this publication, at the levels of aggregation presented, the risk of disclosure was assessed as being low risk and so no further statistical disclosure control methods were employed.
Official Statistics designation	National Statistics
UK Statistics Authority Assessment	Assessment by UK Statistics Authority for National Statistics designation completed.
Last published	August 2011
Next published	August 2013
Date of first publication	August 2009
Help email	<a href="mailto:nss.isdcancerstats@nhs.net">nss.isdcancerstats@nhs.net</a>
Date form completed	23/08/2012

## **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 and, separately, those receiving extended Pre-Release Access.

#### **Standard Pre-Release Access:**

Scottish Government Health Department  
NHS Board Chief Executives  
NHS Board Communication leads

#### **Extended Pre-Release Access**

Extended Pre-Release Access of 8 working days is given to a small number of named individuals in the Scottish Government Health Department (Analytical Services Division). This Pre-Release Access is for the sole purpose of enabling that department to gain an understanding of the statistics prior to briefing others in Scottish Government (during the period of standard Pre-Release Access).

Scottish Government Health Department (Analytical Services Division)

#### **Early Access for Management Information**

These statistics will also have been made available to those who needed access to 'management information', ie as part of the delivery of health and care:

Members of the Bowel Screening Monitoring and Evaluation Group

#### **Early Access for Quality Assurance**

These statistics will also have been made available to those who needed access to help quality assure the publication:

NHS Board Bowel Screening Co-ordinators

## 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.