

Publication Report



Childhood Immunisation Statistics

Quarter and year ending 31 March 2011

Publication date – 23 June 2011



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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](#).

Introduction

Children in Scotland are protected through immunisation against many serious infectious diseases. Vaccination programmes aim both to protect the individual and to prevent the spread of these illnesses within the population. As a public health measure, immunisations have been hugely effective in reducing the burden of disease. It is of public health concern when immunisation rates fall, as this increases the possibility of disease transmission and, hence, complications arising from outbreaks of infectious diseases.

In Scotland the target of the national immunisation programme is for 95% of children to complete courses of the following childhood immunisations by 24 months of age: diphtheria, tetanus, pertussis (whooping cough), polio, Haemophilus influenzae type b (Hib) and Meningococcal group C (MenC). An additional national target of 95% uptake of one dose of MMR vaccine by 5 years of age (with a supplementary measure at 24 months) was introduced in 2006 to focus efforts on reducing the number of susceptible children entering primary school.

Childhood immunisation uptake rates for Scotland are monitored and published quarterly by NHS Board and Community Health Partnership (CHP). This release includes quarterly and annual data to 31 March 2011.

Childhood immunisation statistics in Scotland are published outwith the standard ISD timetable for National Statistics publications so that they are available at the same time as comparable statistics for other parts of the UK, published by the [Health Protection Agency](#).

[Statistics on Human Papilloma Virus \(HPV\) immunisation uptake](#) are published separately by ISD.

Key points

- In Scotland as a whole, quarterly uptake rates by 24 months of age for primary courses of immunisation against diphtheria, tetanus, pertussis, polio & Hib (DTP/Pol/Hib), MenC and PCV remain high and stable at around 96% to 98%.
- Quarterly uptake of one dose of MMR vaccine by 24 months is 93.3% (the previous quarterly figure was 92.7%). Quarterly uptake by 5 years of age is 96.2% (same as the previous quarterly figure).
- Quarterly uptake of the Hib/MenC and PCV boosters by 24 months remains relatively stable at around 93% to 94%.

Results and Commentary

For the quarter ending 31 March 2011, at Scotland level:

Change in presentation of uptake rates by 12 and 24 months of age

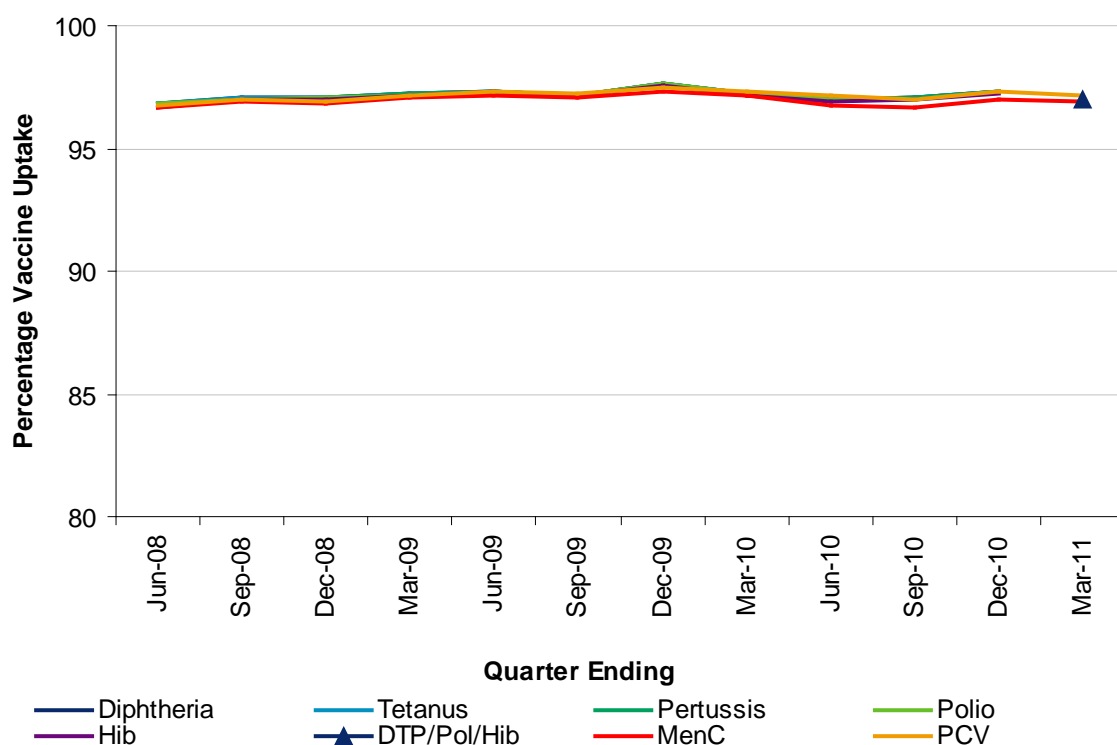
From this quarter, uptake rates for primary immunisation against each of Diphtheria, Tetanus, Pertussis, Polio and Hib will be shown as a single uptake rate (DTP/Pol/Hib). Although the single vaccine was introduced in September 2004, the 5 antigens (Diphtheria, Tetanus, Pertussis, Polio and Hib) continued to be recorded separately on the Scottish Immunisation & Recall System (SIRS) for several years, and were therefore presented separately in the uptake statistics. For children vaccinated in Scotland, this is now recorded as a single vaccine. Children vaccinated outwith Scotland will be included in the uptake rates if they have received 3 doses of each: Diphtheria, Tetanus, Pertussis, Polio and Hib. Uptake rates of primary immunisation against these diseases by 5 years and 6 years of age will continue to be reported separately for now, as these immunisations would have been recorded separately on SIRS for the children in these cohorts, and will be presented as a single uptake rate in due course.

Quarterly uptake rates by 12 months of age

(born 1 January to 31 March 2010)

In Scotland, coverage by 12 months of age for primary courses of immunisation against diphtheria, tetanus, pertussis, polio & Hib (DTP/Pol/Hib), MenC and PCV remains above 95%.

Primary Immunisation Uptake Rates, by 12 months of age, by quarter, Scotland



Source: SIRS, May 2011

Primary Immunisation Uptake Rates by 12 months of age, by NHS Board, quarter ending 31 March 2011

NHS Board	Number in Cohort ¹	% completed primary course by 12 months		
		DTP/Pol/Hib ³	MenC	PCV
Ayrshire & Arran	894	97.4	97.2	97.7
Borders	268	98.1	98.1	98.1
Dumfries & Galloway	370	98.9	98.9	98.9
Fife	1047	96.5	96.5	96.8
Forth Valley	815	98.2	97.5	97.7
Grampian	1505	97.5	96.8	97.1
Greater Glasgow & Clyde	3393	96.8	96.7	97.1
Highland	773	95.1	95.3	95.5
Lanarkshire	1592	97.9	98.2	98.6
Lothian	2373	96.2	96.2	96.5
Orkney	53	83.0	83.0	83.0
Shetland	65	100.0	98.5	98.5
Tayside	1053	97.8	97.5	97.6
Western Isles	54	98.1	98.1	98.1
NHS Board unknown ²	12	..	..	..
Scotland	14267	97.0	96.9	97.2

Source: SIRS, May 2011

1. Children reaching 12 months of age during the evaluation quarter 1 January to 31 March 2011 (i.e. born 1 January to 31 March 2010)
 2. For records from the former NHS Argyll & Clyde (which was dissolved on 31 March 2006), NHS board is derived from postcode. There are a small number of records which do not have a postcode recorded and therefore the health board is unknown.
 3. For this cohort of children the vaccination was recorded as one injection on the SIRS system. For children who received primary immunisations outwith Scotland it includes only those who received 3 doses of each: Diphtheria, Tetanus, Pertussis, Polio and Hib.
- .. Not Applicable.

Key:

DTP/Pol/Hib = Diphtheria, Tetanus, Pertussis, Polio and Hib (3 doses).

MenC = Meningococcal serogroup C conjugate vaccine (2 doses).

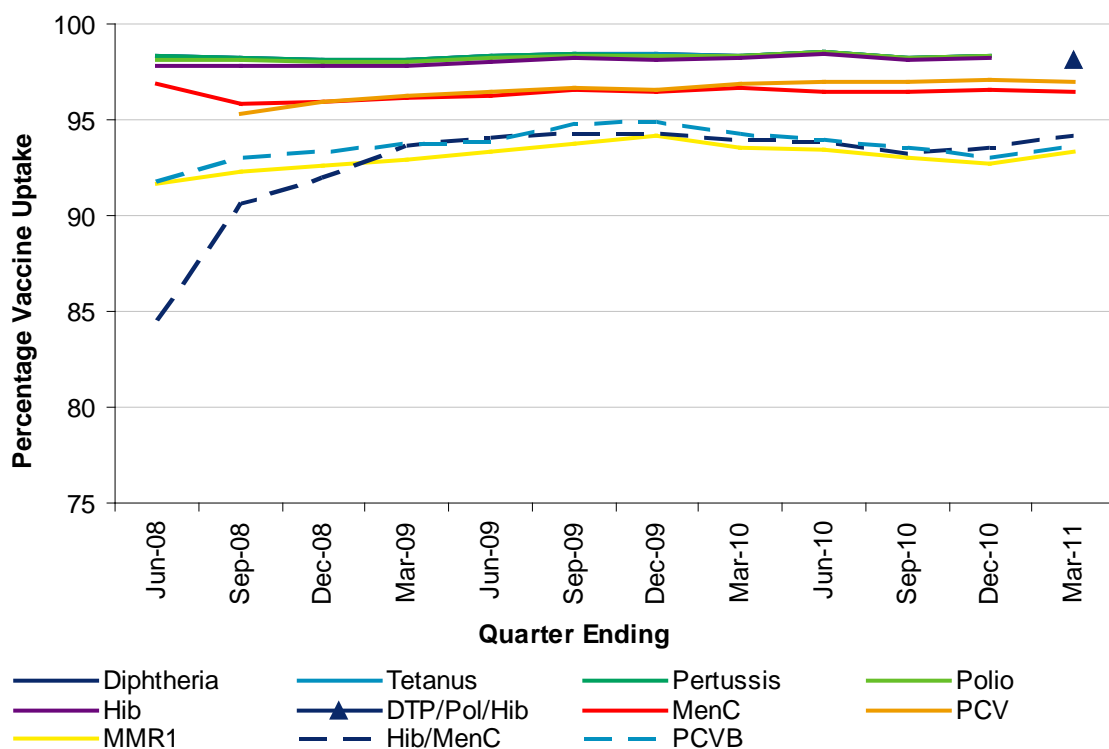
PCV = Pneumococcal conjugate vaccine (2 doses).

Quarterly uptake rates by 24 months of age

(born 1 January to 31 March 2009)

- At Scotland level, coverage by 24 months of age for primary courses of immunisation against diphtheria, tetanus, pertussis, polio & Hib (DTP/Pol/Hib), MenC and PCV remains high and stable at around 96% to 98%.
- The combined Hib/MenC booster was introduced in September 2006. Uptake of this vaccine by 24 months of age is 94.2% (the previous quarterly figure was 93.6%).
- A booster dose of PCV was also introduced in September 2006. Uptake of this vaccine by 24 months of age is 93.6% (the previous quarterly figure was 93.0%).
- Uptake of one dose of MMR vaccine (MMR1) by 24 months is 93.3% (the previous quarterly figure was 92.7%). MMR1 uptake rates by 24 months have continued to be above 90% since autumn 2005.

Primary and Booster Immunisation Uptake Rates, by 24 months of age, by quarter, Scotland



Source: SIRS, May 2011

Primary and Booster Immunisation Uptake Rates by 24 months of age, by NHS Board, quarter ending 31 March 2011

NHS Board	Number in Cohort ¹	% completed primary course by 24 months				% completed booster course by 24 months	
		DTP/Pol/Hib ³	MenC	PCV	MMR1	Hib/MenC	PCVB
Ayrshire & Arran	984	98.5	97.5	97.8	94.4	95.9	94.4
Borders	281	97.9	97.2	97.2	94.7	96.1	94.7
Dumfries & Galloway	374	98.7	97.6	97.6	94.4	96.5	95.2
Fife	1025	98.0	96.3	96.6	91.6	94.8	92.4
Forth Valley	787	98.7	96.8	97.3	94.4	94.9	94.3
Grampian	1499	98.1	96.1	97.1	95.1	95.5	94.7
Greater Glasgow & Clyde	3345	97.9	96.4	97.0	92.2	93.0	92.9
Highland	786	96.9	95.5	96.1	91.5	93.0	91.6
Lanarkshire	1557	98.5	97.3	97.8	94.3	94.7	95.5
Lothian	2380	97.9	95.7	96.6	93.4	93.8	93.5
Orkney	51	98.0	96.1	98.0	94.1	88.2	94.1
Shetland	62	100.0	100.0	100.0	93.5	95.2	88.7
Tayside	1050	98.5	95.8	96.7	92.9	93.1	92.9
Western Isles	46	97.8	95.7	95.7	97.8	95.7	97.8
NHS Board unknown ²	12	..	..	..	..	..	..
Scotland	14239	98.1	96.4	97.0	93.3	94.2	93.6

Source: SIRS, May 2011

1. Children reaching 24 months of age during the evaluation quarter 1 January to 31 March 2011 (i.e. born 1 January to 31 March 2009).
 2. For records from the former NHS Argyll & Clyde (which was dissolved on 31 March 2006), NHS board is derived from postcode. There are a small number of records which do not have a postcode recorded and therefore the health board is unknown.
 3. For this cohort of children the vaccination was recorded as one injection on the SIRS system. For children who received primary immunisations outwith Scotland it includes only those who received 3 doses of each: Diphtheria, Tetanus, Pertussis, Polio and Hib.
- .. Not Applicable.

Key:

DTP/Pol/Hib = Diphtheria, Tetanus, Pertussis, Polio and Hib (3 doses).

MenC = Meningococcal serogroup C conjugate vaccine (2 doses under 12 months).

PCV = Pneumococcal conjugate vaccine (2 doses under 12 months).

MMR1 = Measles, mumps, and rubella vaccine (1 dose).

Hib/MenC = Hib/MenC Booster (1 dose over 11 months).

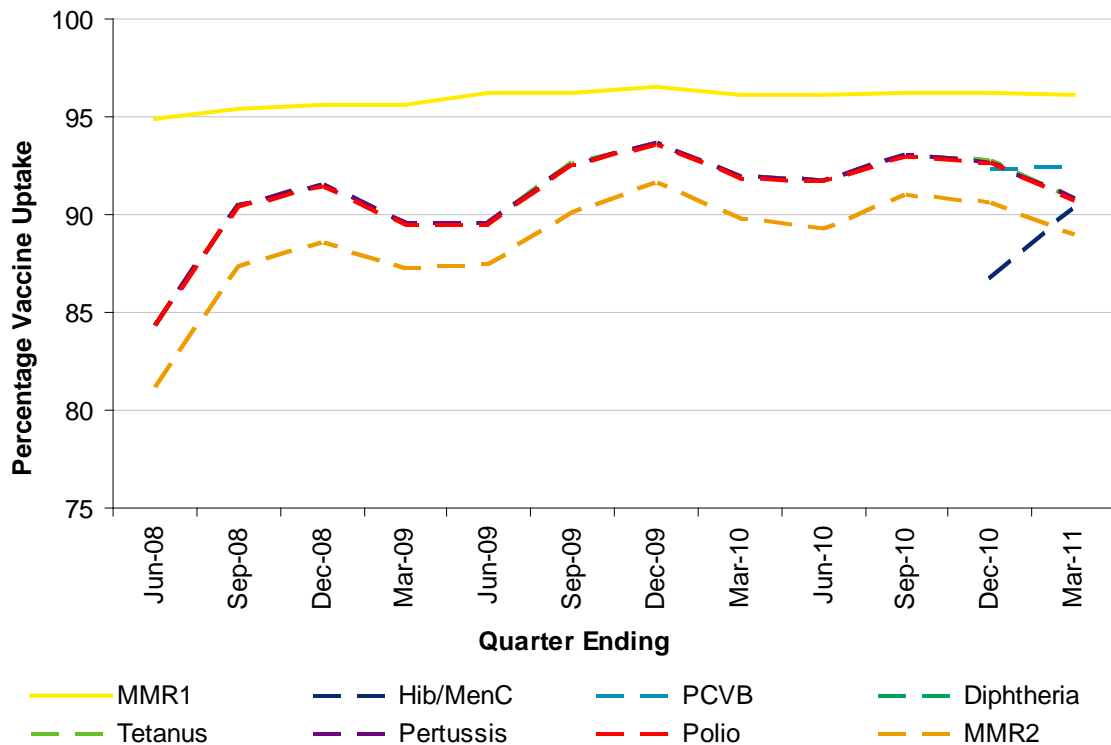
PCVB = Pneumococcal conjugate vaccine booster (1 dose over 12 months).

Quarterly uptake rates by 5 years of age

(born 1 January to 31 March 2006)

- Uptake of one dose of MMR vaccine (MMR1) by 5 years is 96.2% (the previous quarterly figure was also 96.2%). Uptake rates have remained above the 95% target since September 2008. By 24 months the reported uptake for this cohort of children was 91.2%, showing that a significant number of children are immunised beyond the standard age.
- Uptake of the second dose of MMR vaccine (MMR2) by 5 years old is 89.0% (the previous quarter figure was 90.6%). Uptake of the other pre-school booster vaccines is 90.8% (the previous quarterly figure was 92.7%).

MMR1 and Booster Immunisation Uptake Rates, by 5 years of age, by quarter, Scotland



Source: SIRS, May 2011

MMR1 and Booster Immunisation Uptake Rates by 5 years of age, by NHS Board, quarter ending 31 March 2011

NHS Board	Number in Cohort ¹	% completed MMR1/booster course by 5 years							
		MMR1	Hib/MenC	PCVB	D	T	P	Pol	MMR2
Ayrshire & Arran	936	97.3	92.4	94.8	92.9	92.9	92.9	92.9	91.7
Borders	291	96.9	95.9	95.2	93.1	93.1	93.1	93.1	91.4
Dumfries & Galloway	364	99.5	94.5	94.0	95.3	95.3	95.3	95.3	95.1
Fife	989	95.6	92.0	92.2	87.9	87.9	87.9	87.8	86.7
Forth Valley	802	95.1	92.5	91.5	91.3	91.3	91.3	91.3	88.4
Grampian	1367	96.2	84.1	87.6	93.9	93.9	93.9	93.8	92.0
Greater Glasgow & Clyde	3134	96.6	90.1	93.9	88.4	88.4	88.4	88.4	87.2
Highland	761	95.4	86.9	86.9	90.4	90.4	90.4	90.1	88.2
Lanarkshire	1552	95.8	87.8	95.2	93.0	93.0	93.0	92.9	90.6
Lothian	2044	96.5	95.2	93.7	91.1	91.1	91.1	91.1	89.2
Orkney	56	91.1	69.6	64.3	92.9	92.9	92.9	91.1	87.5
Shetland ³	67	91.0	59.7	71.6	71.6	71.6	71.6	71.6	67.2
Tayside	965	94.6	91.0	92.2	89.1	89.1	89.1	89.0	86.7
Western Isles	52	94.2	88.5	86.5	92.3	92.3	92.3	92.3	88.5
NHS Board unknown ²	9	..	..	..	..	..	..	..	..
Scotland	13389	96.2	90.3	92.4	90.8	90.8	90.8	90.7	89.0

Source: SIRS, May 2011

- Children reaching 5 years of age during the evaluation quarter 1 January to 31 March 2011 (i.e. born 1 January to 31 March 2006).
 - For records from the former NHS Argyll & Clyde (which was dissolved on 31 March 2006), NHS board is derived from postcode. There are a small number of records which do not have a postcode recorded and therefore the health board is unknown.
 - Recently identified recording issues may have affected the SIRS information for NHS Shetland. These data are currently being reviewed and will be corrected where necessary.
- .. Not Applicable.

Key:

MMR1 = Measles, mumps, and rubella vaccine (1 dose)

Hib/MenC = Hib/MenC Booster (1 dose over 11 months)

PCVB = Pneumococcal Conjugate Vaccine Booster (1 dose over 12 months)

D = Diphtheria vaccine (4th dose).

T = Tetanus vaccine (4th dose).

P = Pertussis vaccine (4th dose)

Pol = Polio vaccine (4th dose).

MMR2 = Measles, mumps, and rubella vaccine (2nd dose).

Quarterly uptake rates by 6 years of age

(born 1 January to 31 March 2005)

In Scotland uptake rates for the childhood booster vaccines (diphtheria, tetanus, pertussis and polio, and the second dose of MMR (MMR2)), have historically been reported by 6 years of age. In line with figures for the rest of the UK, from quarter ending December 2006, uptake rates for these vaccines are now reported by 5 years of age. For trend purposes, [uptake rates by 6 years of age](#) are also available.

Further Information

For more information on the latest quarterly uptake rates by 12 and 24 months, and 5 and 6 years, see:

[Uptake rates by NHS Board and quarter](#)

[Uptake rates by CHP and quarter](#)

For trend information at Scotland and NHS Board level please see List of Tables within this report.

Uptake rates in groups of children as they age, by quarterly birth cohort

In addition to tracking snapshots of immunisation uptake rates in children by 12 months and 24 months it is also possible to follow immunisation uptake in groups of children as they age.

Data shows that a significant number of children are immunised beyond these standard reporting ages, which may increase overall uptake as time progresses. For example by 24 months of age, uptake of one dose of MMR for children born January to March 2008 was 93.5%. Now, at age 36 months, the rate for these children has increased to 95.7%.

For more information see:

[Tracking MMR1 immunisation uptake rates in cohorts of children as they age](#)

Uptake rates by financial year

This release also provides an update to annual immunisation uptake rates to show data for the year ending 31 March 2011.

For more information on annual uptake rates by 12 and 24 months, and 5 and 6 years, see:

[Uptake rates by NHS Board and financial year](#)

[Uptake rates by CHP and financial year](#)

Annual uptake rates for NHS Boards and CHPs, by calendar year, are published in March each year. The [March publication](#) also includes calendar year information on uptake rates by deprivation.

Glossary

MMR	Measles, Mumps, Rubella
Pertussis	Whooping cough
Hib	Haemophilus influenzae type b
MenC	Meningitis C
PCV	Pneumococcal Conjugate Vaccine

List of Tables

Table No.	Name	Time period	File & size
1	Uptake rates by NHS Board and quarter	Quarter ending 31/03/11	Excel [114kb]
2	Uptake rates by NHS Board and financial year	Financial year 2010/11	Excel [115kb]
3	Uptake rates by CHP and quarter	Quarter ending 31/03/11	Excel [144kb]
4	Uptake rates by CHP and financial year	Financial year 2010/11	Excel [142kb]
5	Tracking MMR immunisation uptake rates in cohorts of children as they age	Quarter ending 31/03/11	Excel [3,770kb]
6	Trends in immunisation uptake by quarter, calendar and financial year - Scotland For trend data for individual NHS Boards see table below.	From 1995 to quarter ending 31/03/11	Excel [320kb]

Table No.	Trends in immunisation uptake by quarter, calendar and financial year by individual NHS Board:	From 1995 to quarter ending 31/03/11	File & size
6a	NHS Ayrshire & Arran	1995 to 2011	Excel [116kb]
6b	NHS Borders	1995 to 2011	Excel [125kb]
6c	NHS Dumfries & Galloway	1995 to 2011	Excel [125kb]
6d	NHS Fife	1995 to 2011	Excel [124kb]
6e	NHS Forth Valley	1995 to 2011	Excel [123kb]
6f	NHS Grampian	1995 to 2011	Excel [132kb]
6g	NHS Greater Glasgow & Clyde	1995 to 2011	Excel [197kb]
6h	NHS Highland	1995 to 2011	Excel [203kb]
6i	NHS Lanarkshire	1995 to 2011	Excel [124kb]
6j	NHS Lothian	1995 to 2011	Excel [126kb]
6k	NHS Orkney	1995 to 2011	Excel [123kb]
6l	NHS Shetland	1995 to 2011	Excel [128kb]
6m	NHS Tayside	1995 to 2011	Excel [126kb]
6n	NHS Western Isles	1995 to 2011	Excel [128kb]

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Further Information

Further information can be found on the [Childhood Immunisation](#) area of the ISD website.

Further information on other ISD publications and datasets can be found the on the [ISD website](#).

Appendix

A1 – Background Information

How the data is collected

Information on primary immunisation is recorded in the Scottish Immunisation and Recall System (SIRS), which covers all NHS boards in Scotland. Childhood immunisation uptake rates, at 12 and 24 months and 5 and 6 years, by NHS board are calculated quarterly, for quarters ending March, June, September and December, and annually for calendar and financial years.

Cohorts used in the calculation of uptake rates are based on all children reaching a specified age who were alive and registered on SIRS at the end of the reporting period. Direct comparison between an annual rate and rates for the corresponding quarters within the year is not possible due to movements of children in and out of NHS board areas, or any deaths that may have occurred during the year. In addition, annual rates may include vaccinations that were only recorded on the systems after the time when each of the quarterly rates were calculated and reported.

Cohorts presented in immunisation uptake trend analysis are only updated for the latest cohort of children and is based on the most recent information available. Information presented for previous evaluation periods remains unchanged and reflects immunisation uptake at those particular points, based on information available at that time.

Immunisation uptake statistics for other parts of the UK are published by the [Health Protection Agency](#).

A2 – Publication Metadata (including revisions details)

Metadata Indicator	Description
Publication Title	Childhood Immunisation Statistics
Description	Uptake rates of the routine childhood immunisations, by 12 months, 24 months, 5 years and 6 years. The data are presented at NHS Board and CHP level.
Theme	Health and Social Care
Topic	Child Health
Format	Excel workbooks, PDF
Data source(s)	Scottish Immunisation and Recall System (SIRS)
Date that data is acquired	16 May 2011
Release date	23 June 2011
Frequency	Quarterly
Timeframe of data and timeliness	Data up to 31 March 2011
Continuity of data	None
Revisions statement	These data are not subject to planned revisions.
Revisions relevant to this publication	From quarter ending June 2010 there has been a small change to the methodology used to calculate uptake rates for the primary course of MenC. This is a result of a system change to the Scottish Immunisation and Recall System (SIRS) which ISD were unaware had impacted on the calculation of primary MenC uptake rates for the period June 2008 to March 2010. Previously published data will not be revised as the impact on the reported rates is marginal (0.1 to 0.4 percentage points) and the resource required to revise the figures is considerable.
Concepts and definitions	Further information about the current immunisation programmes in Scotland, the vaccines available, and the diseases they protect against, can be found via the NHS Health Scotland Immunisation website .
Relevance and key uses of the statistics	Making information publicly available for planning, epidemiology, provision of services and providing comparative information.
Accuracy	Quality checks are conducted at data entry by NHS Boards. Figures are compared to previous years' figures and expected trends.
Completeness	Considered complete.
Comparability	Data are comparable with data for the rest of the UK which are published by the Health Protection Agency
Accessibility	It is the policy of ISD Scotland to make its

Coherence and clarity	web sites and products accessible according to published guidelines, available at http://www.isdscotland.org/About-ISD/Accessibility/
Value type and unit of measure	Data are available as a PDF and tables on the Childhood Immunisation area of the ISD website.
Disclosure	Numbers and percentages.
Official Statistics designation	Low risk of disclosure; no disclosure methods were employed
UK Statistics Authority Assessment	National Statistics
Last published	Awaiting assessment by UK Statistics Authority
Next published	24 March 2011
Date of first publication	29 September 2011
Help email	March 1995
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	May 2011

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
Health Protection Scotland

Extended Pre-Release Access:

Scottish Government Health Department (Analytical Services Division)

This extended Pre-Release Access 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).

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:

NHS Board Immunisation Co-ordinators

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

Health Protection Scotland
Chair of National Immunisation Co-ordinators Group
Chair of Scottish Immunisation and Recall System National User Group