NHS Immunisation Statistics

England

2007-08

Experimental Statistics

The series collecting information on immunisation is well established. This year, there was additional information collected on the Pneumococcal conjugate vaccine (PCV).

This new part of the collection has been through quality assurance procedures, however since it is a new series with no previous results to compare it with, it has been labelled as an experimental statistic.

Further information is available at: http://www.statistics.gov.uk/cci/nugget.asp?id=173

We welcome feedback on the usefulness of this new statistic, and the data held within this report. Please send your feedback to enquiries@ic.nhs.uk .

Main Findings

- After falling to 80% in 2003-04 uptake of the MMR vaccine, for children reaching their second birthday, increased steadily to 85% in 2006-07 and has remained at 85% in 2007-08. (1)

- For children reaching their second birthday, uptake of vaccines against diphtheria, tetanus, polio, pertussis, Haemophilus influenzae type b and meningitis C was between 93% and 94% and has been unchanged for the last five years. (1)

- There were nearly 220,000 BCG vaccinations in 2007-08 an increase of 26% on the previous year (172,000) given to those in specified at risk categories. While this increase may be due, in part, to increased familiarity with the new BCG policy, it may also be due to better recording and reporting of BCG immunisation.

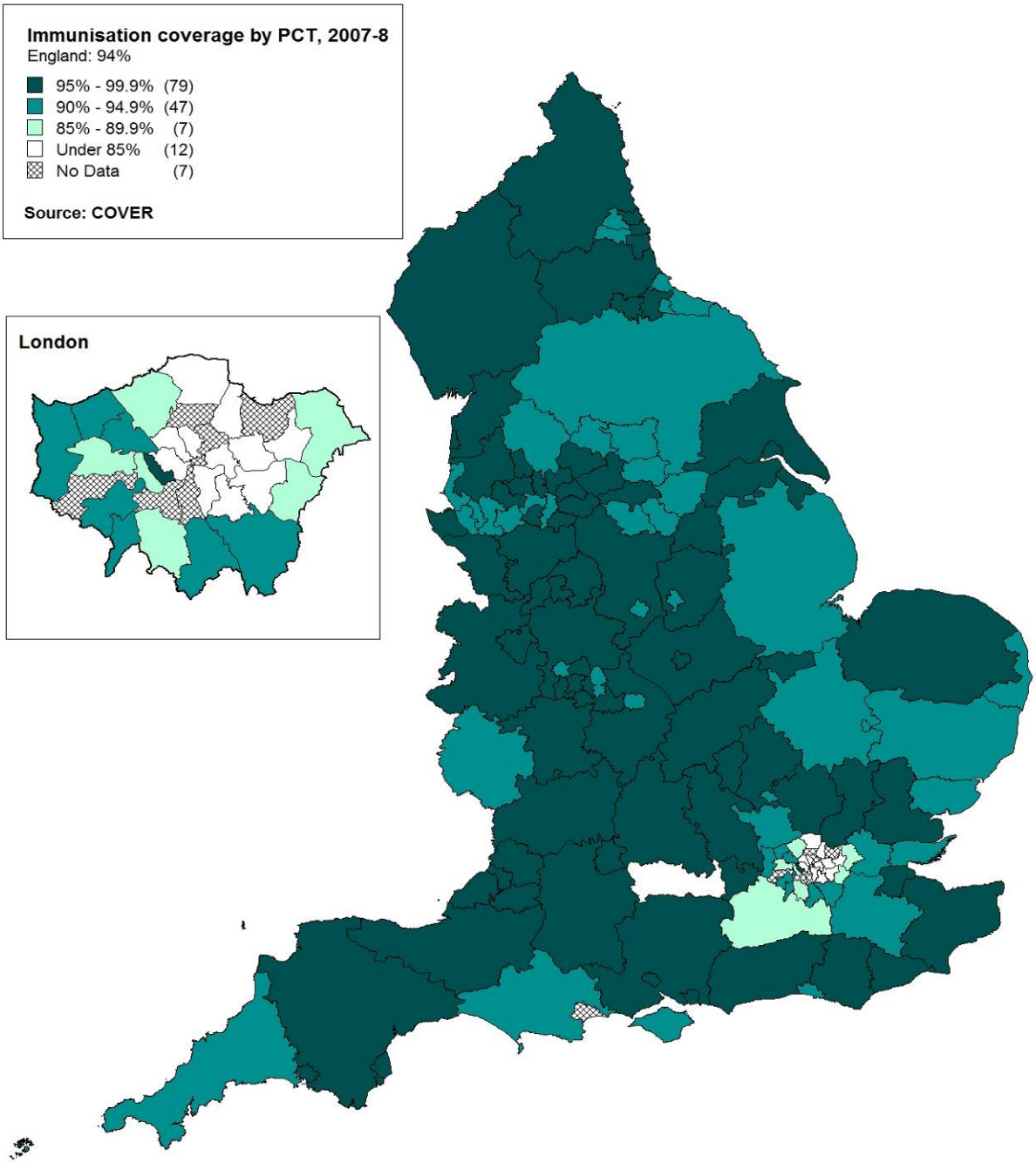
- In the first year of reporting (as experimental data), uptake of the Pneumococcal conjugate vaccine (PCV) was 84% for children immunised by their first birthday.

- The number of people aged 65 and over immunised against influenza was 74% in 2007-08, no change from the previous year.

(1) Data on childhood immunisation should be treated with some caution as small movements could be partly due to data issues in London where uptake rates are lower than elsewhere in the country. See section on Data Quality

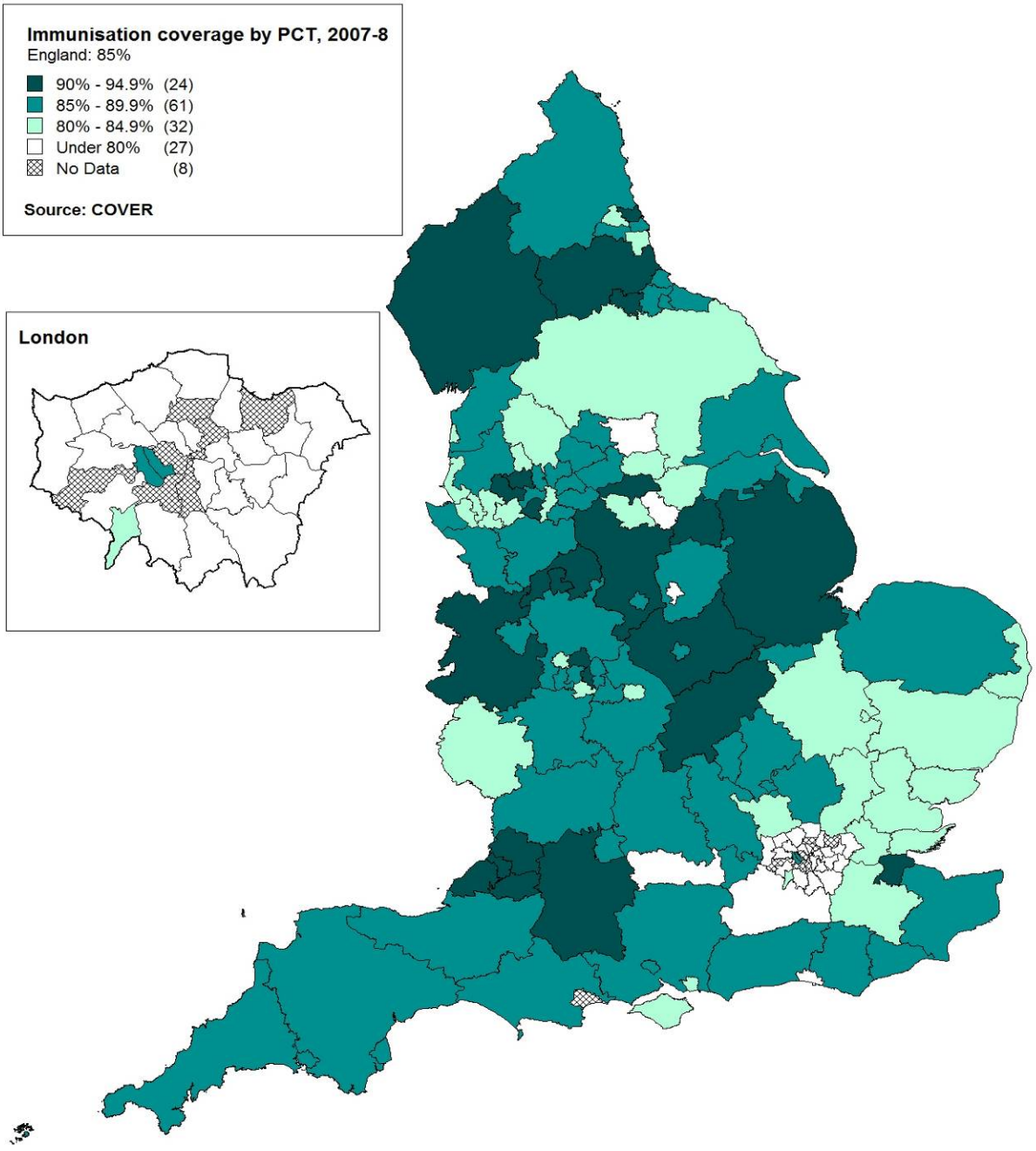
Contents

Figure 1: Percentage of children immunised against DTaP/IPV/Hib by their 2nd birthday, by Primary Care Trust 2007-8



Data Sources: ONS Boundary Files 2006, Health Protection Agency Cover

Figure 2: Percentage of children immunised against MMR by their 2nd birthday, by Primary Care Trust 2007-8



Data Sources: ONS Boundary Files 2006,
Health Protection Agency Cover

INTRODUCTION

The information in this bulletin, about immunisation statistics in England, comes from:

1) The Health Protection Agency (HPA) Centre for Infections (CfI) for information on:

- Childhood immunisation uptake at ages 1, 2 and 5 collected through the Cover of Vaccination Evaluated Rapidly (COVER) data collection for PCTs
- Persons aged 65 and over immunised against influenza for all PCTs

2) The Information Centre (IC) for information about the BCG programme and reinforcing doses on the KC50 return from known providers of immunisation services.

Current recommendations by the World Health Organisation (WHO) are that nationally at least 95% of children receive three primary doses of diphtheria, tetanus, polio and pertussis in the first year of life, and one dose of a measles, mumps and rubella vaccine by 2 years of age.

A revised immunisation schedule has been used from 4 September 2006 which now includes the pneumococcal vaccine (PCV) and a Hib/MenC booster. **(Table A)**

Table A: Immunisation Schedule from September 2006

Vaccine	Age	Notes
Diphtheria, tetanus, pertussis, polio and Hib (dTaP/IPV/Hib)	1st dose: 2 months 2nd dose: 3 months 3rd dose: 4 months	primary course
Pneumococcal infection (PCV)	1st dose: 2 months 2nd dose: 4 months	primary course
Meningitis C (Men C)	1st dose: 3 months 2nd dose: 4 months	primary course
Hib / Men C	around 12 months	Booster
Measles/mumps/rubella (MMR)	around 13 months	Primary course
Pneumococcal infection (PCV)	around 13 months	Booster
Diphtheria, tetanus, pertussis, and polio (dTaP/IPV or DTaP/IPV)	3yrs/4 mths to 5yrs	Booster: 3 yrs after completion of primary course
MMR second dose	3yrs/4 mths to 5yrs	
BCG	at or soon after birth, to 'at-risk' infants only	
Diphtheria, tetanus and polio (Td/IPV)	13 to 18yrs	Booster

Further details on the immunisation programme can be found at: http://www.immunisation.nhs.uk/

The BCG vaccination programme is targeted at those individuals who are at greatest risk. The programme identifies and vaccinates babies and older people who are most likely to catch the disease, especially those living in areas with a high rate of TB or whose parents or grandparents were born in a TB high prevalence country.
Full details of the at-risk groups can be found at:
http://www.dh.gov.uk/en/Publichealth/Healthprotection/Immunisation/Greenbook/DH_4097254

DATA QUALITY

- **COVER data**

There have been continuing difficulties in some London PCTs in moving from old child health systems to new systems supplied by the local service provider for the London Cluster.

The ongoing I.T. problem in managing childhood immunisation data in London means that, for a third consecutive year, there is an incomplete picture for the capital. Previous years' data show that uptake rates in London are lower than in other parts of the country.

Last year seven London PCTs were unable to report any data. This year it was six with a further seven having some data missing, mainly for the five year cohort. It has not been possible to determine the impact of this problem on the immunisation programme.

Their exclusion from the national totals is likely to have a marginal effect. But any assessment of vaccination uptake levels, particularly over time, needs to take into account the incomplete picture in London for the last three years and that its coverage rate tends to be lower than in other regions.

In addition to this, one PCT in the South West was not able to provide returns in this years' collection due to major problems with the child health computer system.

The South West uptake rates have remained similar to last years so the impact of this missing data is likely to be negligible.

CHANGES TO THIS REPORT

The cohorts evaluated in this report reflect the immunisation schedule that was current at the time. For some children reaching their first birthday in 2007-08 this will be the revised schedule (born 4th July 2006 to 31st March 2007). Those born between 1st April and 3rd July 2006 will have been vaccinated according to the former schedule.

The main changes in the schedule were:

- Meningitis C administered at three and four months of age with a third dose, combined with *Haemophilus influenzae* type b (Hib/MenC booster vaccine), given at 12 months. (Prior to this Meningitis C was given at two, three and four months of age.) Coverage data for the Hib/MenC booster should be available for publication next year in the table for children immunised by their second birthday.

- Introduction of Pneumococcal conjugate vaccine (PCV) given at two and four months with a booster dose around 13 months of age. Data are shown in the table for children immunised with 2 doses by their first birthday. Children born between 1st April and 3rd July 2006 will have been offered 2 doses of vaccine as part of the pneumococcal catch-up programme.These data have been validated as far as is feasible for a new data collection with the NHS and they will be clearly labelled as experimental statistics. Coverage data for the PCV booster should be available for publication next year in the table for children immunised by their second birthday.

- MenC is now administered in a two dose programme at three and four months as opposed to the three dose programme in previous years.

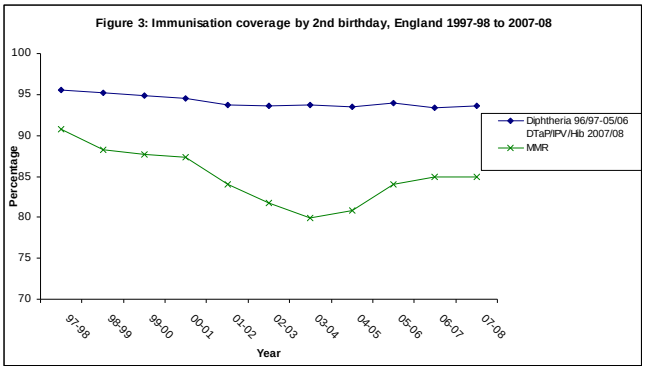
- There have been changes to the BCG programme in 2007-08. The previous skin tests were discontinued in 2005 and replaced by Mantoux tests.

- Since September 2004 reinforcing doses to school leavers have been administered in a single tetanus, diphtheria and polio combined vaccine (Td/IPV).

ANALYSIS AND COMMENTARY

Overview

For children reaching their second birthday, uptake of vaccines against diphtheria, tetanus, polio, pertussis, Hib (DTaP/IPV/Hib or '5 in 1') and meningitis C was between 93% and 94% and has been unchanged for the last five years.



These are mature programmes and changes from previous years are small unless otherwise stated.

After falling to 80% in 2003-04 uptake of the MMR vaccine, for children reaching their second birthday, increased steadily to 85% in 2006-07 and has remained at 85% in 2007-08.

Immunisation by first and second birthday (Tables 1, 2, 4, 7, 7a, 8 & 8a and Figures 1, 2, 3 & 4)

- **Diphtheria, Tetanus, Polio, Pertussis and Hib (DTaP/IPV/Hib)**

In 2007-08, 91% of children had completed primary immunisation courses against diphtheria, tetanus, polio, pertussis and Hib by their first birthday. The previous cohort, 91% of whom had been immunised by age 1 in 2006-07, reached their 2nd birthday in 2007-08, by which time a further 3% were immunised, bringing the 2-year uptake to 94%.

At a regional level **(Figure 4)** all 10 SHAs, with the exception of London, reported uptake rates above 90%, of which 7 were 95% or above.

At a local level **(Figure 1)**, 126 PCTs reported coverage by 2nd birthday of 90% or over, of which 79 were 95% and above. Only 19 PCTs reported coverage of less than 90%.

- **Measles, Mumps and Rubella (MMR)**

In 2007-08, 85% of children in England reaching the age of 2 had been immunised against measles, mumps and rubella with the combined MMR vaccine.

At a regional level **(Figure 4)** all 10 SHAs reported coverage of MMR vaccine below 90%. London was the only SHA to record uptake of less than 80%.

At a local level **(Figure 2)**, 24 PCTs reported uptake of 90% or above, although none were greater than 95%. 120 PCTs reported uptake below 90%, of which 27 had uptake of less than 80%.

Data on the use of single vaccines is not collected. As a result the proportion of children fully or partially protected against measles and rubella may be slightly higher than that identified by COVER.

- **Meningitis C (MenC)**

In 2007-08, 90% of children had completed primary immunisation courses against MenC by their first birthday, dropping by one per cent on 2006-07 figures.

This drop is likely to be due to the change from three to two doses required by 12 months of age introduced in September 2006 (see section on Changes to this report). Some children scheduled for only two doses of MenC may have been incorrectly recorded as not fully immunised due to technical difficulties within some child health systems. Where major recorded/reporting problems have been identified PCT figures for 2006/07 have been used as estimates for 2007/08.

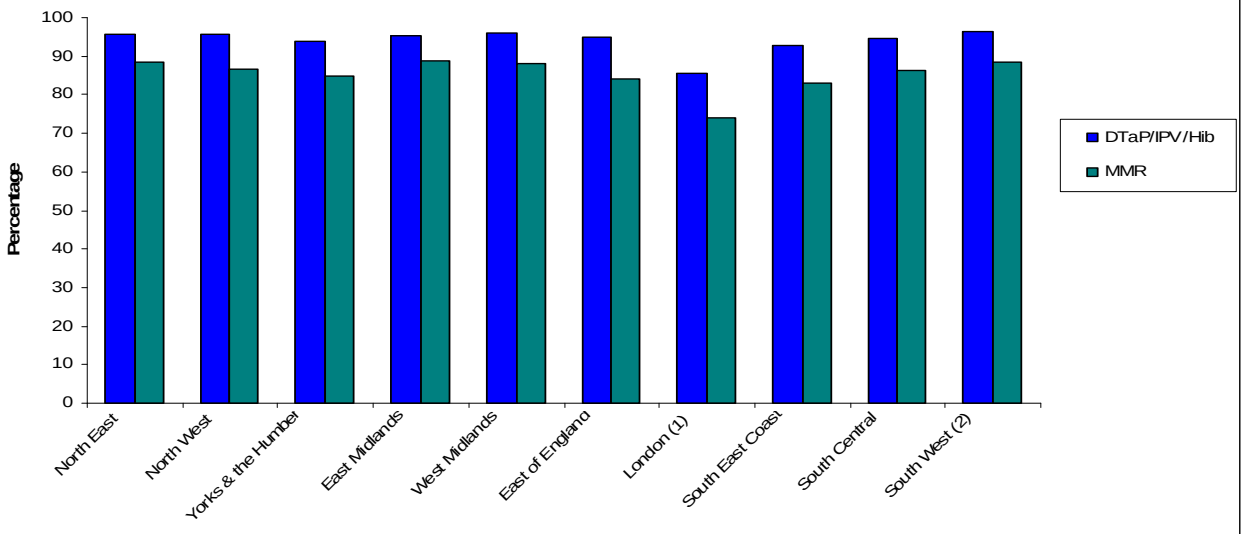
By their second birthday 93% of children had been immunised. These figures are the same to those for 2006-07.

Immunisation at age 5 (Tables 3, 9 & 9a)

The reported uptake suggests that for diphtheria, tetanus and polio, 78% of children have received their primary course and their booster by age 5 and 74% of children have received their first and second dose of MMR vaccine by age 5.

However, comparison of the uptake of primary immunisations recorded at 5 years of age to uptake for the same birth cohort at 2 years of age in 2003-04 suggest data reported by some PCTs is incomplete. This has been exacerbated by movement to new child health systems, particularly in London (see section on Data Quality).

Figure 4: DTaP/IPV/Hib and MMR immunisation coverage at 2 years of age by SHA, England 2007-08



(1) No data for 6 London PCTs due to system problems
(2) No data for 1 South West PCT due to system problems

Reinforcing doses given to school leavers (Tables 10 & 10a)

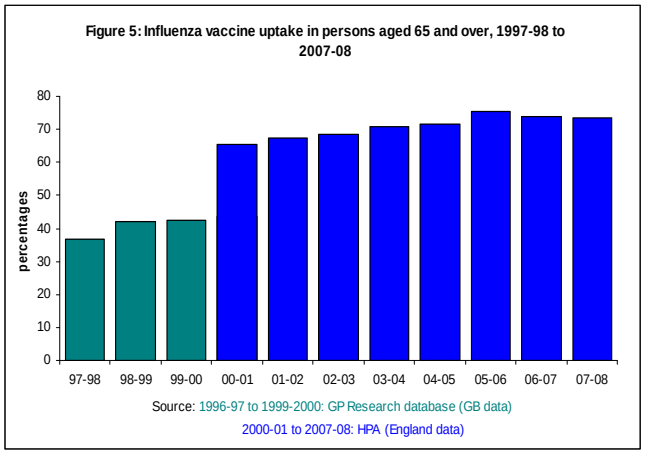
Over 383,600 children (aged 13-16) were reported as receiving reinforcing doses of diphtheria, tetanus and polio in 2007-08. This figure is likely to be inflated slightly as 34 out of 168 organisations on the return provided totals only and these may have included a small amount of 17-18 year olds.

BCG (Tables 5, 6, 10 & 10a)

The substantial decline in the number of skin tests and BCG vaccinations since 2005/06 is due to the introduction of the new BCG vaccination programme from September 2005 which replaced the programme delivered through schools with a more targeted vaccination programme.

There were nearly 220,000 BCG vaccinations in 2007-08 an increase of 26% on the previous year (172,000) given to those in specified at risk categories. Although babies, under the age of one, account for the nearly two thirds of the BCG vaccinations, most of this increase came from vaccination of those aged over one, which doubled to 74,000.

While this increase may be due, in part, to increased familiarity with the new BCG policy, it may also be due to better recording and reporting of BCG immunisation.



Provider level KC50 data (Table 10a)

Information by provider about BCG vaccinations and school leavers' reinforcing doses is shown in Table 10a. Although all trusts are listed in the table, immunisation services are provided by only about half of them.

Influenza vaccine (Tables 11 & 11a and Figure 5)

The targeted risk groups for vaccination against influenza are persons aged 65 and over, and persons in clinical high risk groups, which include those with chronic heart disease, lung disease (including asthma), renal disease or diabetes, and those with immuno-suppression.

A new campaign to immunise persons aged 65 and over against influenza was introduced in 2000-01. Uptake for this age group in England

Table B: Completed primary immunisations (all antigens) by 12 months and 24 months: 2007-08

Region/country	% coverage at 12 months		% coverage at 24 months		
	DTaP/IPV/Hib[1]	MenC	DTaP/IPV/Hib[1]	MMR	MenC
North East	94	93	96	88	96
North West	93	92	96	87	94
Yorkshire and The Humber	92	91	94	85	94
East Midlands	93	92	95	89	96
West Midlands	94	93	96	88	96
East of England	93	92	95	84	96
London[2]	82	80	85	74	84
South East Coast	89	89	93	83	92
South Central	94	93	95	86	94
South West[3]	95	94	96	88	96
England	91	90	94	85	93
Wales	95	94	97	88	94
Scotland	97	96	98	92	97
Northern Ireland	96	96	98	91	97
United Kingdom	92	91	94	86	94

[1] DTaP/IPV/Hib denotes Diphtheria, Tetanus, Pertussis, Polio and Hib

[2] No data for 6 PCTs in London

[3] No data for 1 PCT in SouthWest

was 74% in 2007-08, remaining the same as in the 2006-07 return. **(Figure 5)**

UK data (Table B)

The COVER system also receives data from equivalent bodies in Wales, Scotland and Northern Ireland. Tables of COVER statistics on uptake in the whole of the UK are published quarterly by CfI in the Health Protection Report: http://www.hpa.org.uk/infections/topics_az/cover/default.htm).

Table B is an annual version for 2007-08 of these tables and shows that England has considerably lower coverage for all antigens than the other UK countries. This is primarily because coverage is lower in London than in any other region.

DEFINITIONS

COVER data relates to children for whom the PCT is responsible (See COVER request form for definitions).

Where a primary course consists of more than one dose of vaccine, administered at set intervals, immunised means having had the full course of vaccinations.

A copy of the KC50 and guidance notes is at the end of this bulletin together with the COVER data request form.

TABLE CONVENTIONS

The following symbols are used in the tables:

.. = not available
. = not applicable
- = zero

EDITORIAL NOTES

Any enquiries about the data contained in this Bulletin or requests for further information should be addressed to:

The Information Centre
1 Trevelyan Square
Boar Lane
Leeds
LS1 6AE

Tel: 0845 300 6016
Email: enquires@ic.nhs.uk

This bulletin can be found on the internet at:
http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles/immunisation

Copies of previous publications can also be accessed via this link.

Media enquiries should be made to the media relations manager.

Tel: 0845 300 6016
Email: media@ic.nhs.uk

Further information on immunisation can be found on the Health Protection Agency's website:
http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1204031507699

September 2008

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Annex A – KC50 form

Part A

Immunisations given to school leavers and other children aged 13-18

	Number of Td/IPV reinforcing doses given to children age 13-18 only in the year		Number of courses of MMR completed in the year for children aged 13-18	
	(1) number of children	(2) number vaccinated	(3) number of children	(4) number vaccinated
(1) Age 13				
(2) Age 14				
(3) Age 15				
(4) Age 16				
(5) Age 17				
(6) Age 18				
(7) Total all ages 13 - 18				

Part B - BCG (Tuberculosis) persons aged 1 or over in at-risk categories

		Number of vaccinations in the year	
	(5) Number of Mantoux tests carried out in the year to determine whether BCG vaccine should be given	(6) Number identified as requiring vaccination	(7) Vaccinated
(1) Under 1*			
(2) 1-5			
(3) 6-15			
(4) 16 or over			
(5) Total			

*** See Part C for neonatal BCG vaccinations**

Part C - BCG (Tuberculosis) persons aged under 1

	(8) Number identified as requiring vaccination	(9) Number vaccinated
(1) All neonates vaccinated routinely		
(2) Neonates in selective high-risk groups only		
(3) Other programmes and opportunistic		
(4) Total aged under 1		

Annex B – Guidance notes for KC50

GUIDANCE NOTES FOR REVISED KC50 2007/08

KC50: IMMUNISATION PROGRAMMES – ACTIVITY ADDITIONAL GUIDANCE NOTES

In compiling information about vaccination and immunisation programmes, it is suggested that Information Managers liaise with Immunisation Co-ordinators locally.

The following groups of children are to be included as PCT responsible population for KC50 data.

Children for whom the PCT is responsible for are:
- all children registered with a GP whose practice forms part of the PCT, regardless of where the child is resident, plus
- any children not registered with a GP, who are resident within the PCT's statutory geographical boundary

Note that children resident within the PCT geographical area, but registered with a GP belonging to another PCT, are the responsibility of that other PCT.

1. The KC50 return relates to the number of courses of immunisation completed in the year. With the extension of the COVER collection (see below), the KC50 return is now to be used only for BCG (at any age), and for booster doses given to school leavers and other 13-18 year olds.

2. Information about uptake of immunisation at ages 1, 2 and 5, formerly collected on the KC51 return, is collected through the "COVER" (cover of vaccination evaluated rapidly) returns made to the Communicable Disease Surveillance Centre (CDSC).

3. Trusts are asked to ensure that all the relevant immunisation activity in their area is recorded, including that provided by GPs or other community/primary care staff. If necessary please liaise with neighbouring Trusts to ensure that full information about your Trust's immunisation programme is obtained, and that there is no duplication. If you are unable to provide complete data for your trust please say so on the KC50 return in the box provided on the front sheet.

Part A – Immunisations given to school leavers and other children aged 13-18

4. Note that this relates only to school leavers and other children aged 13-18 in the financial year eg children aged 13 years are defined as being born between 1 April 1994 to 31 March 1995 (inclusive).

5. Record in columns 1-2 the number of booster low dose Diphtheria, Tetanus and Polio (Td/IPV) given to school leavers during the financial year. Provide a denominator (column 1) if available (for example, children aged 13 years are defined as being born between 1 April 1994 to 31 March 1995 (inclusive).

6. Record in column 3-4 the number of 13-18 year olds receiving MMR vaccination in the financial year. Provide a denominator (column 3) if available (as above).

Part B - BCG (Tuberculosis) Persons aged 1 or over in at-risk categories

7. Part B relates to persons aged 1 or over who receive BCG vaccinations as part of the risk-based immunisation programme (Immunisation Against Infectious Disease, 2006 (The 'Green Book'). Please note that the recording of BCG vaccinations for neonates and other children aged under 1 is now in part C of the KC50 return.

8. Record the number of skin tests carried out in the year to determine whether BCG vaccine should be given, in column 5. A tuberculin skin test is necessary prior to BCG vaccination for individuals aged six years and over; infants and children under 6 years of age with a history of residence or prolonged stay (more than 3 months) in a country with an annual TB incidence of 40/100,000 or greater; those who have had close contact with a person with known TB; and those who have a family history of TB within the last five years. Record the estimated number of people that fell into the high-risk groups covered and the number of vaccinations given (columns 6-7).

Part C - BCG (Tuberculosis) Children aged under 1

9. Column 8 should be used as follows: where all neonates are routinely vaccinated, enter the number of births the trust is responsible for; where vaccination is limited to selective high-risk groups, enter the estimated number of births that fell into the high-risk groups covered.

10. Enter in column 9 the actual number of under-1s vaccinated. For routine and high-risk programmes, this should relate only to those infants shown in column 8; but if this information is not available enter the actual number vaccinated. For other and opportunistic, enter the number of vaccinations given in the year.

Annex C – COVER data collection form

PCT Name/Code:

2007/2008 REQUEST PARAMETERS FOR COVER DATA: ANNUAL REQUEST 01/04/07 to 31/03/08

The following groups of children are to be <u>included</u> as PCT responsible population for COVER data.
Children for whom the PCT is responsible are:

- **all children registered with a GP whose practice forms part of the PCT, regardless of where the child is resident, plus**
- **any children not registered with a GP, who are resident within the PCT's statutory geographical boundary**

Note that children resident within the PCT geographical area, but registered with a GP belonging to another PCT, are the responsibility of that other PCT.

Request 1: 12 MONTH COHORT

1. Total number of children for whom the PCT is responsible on 31/03/08 reaching their 1st birthday during the above evaluation quarter.

2. Total number and percentage vaccinated (to one decimal place) included in line 1 completing a course* at any time up to their 1st birthday for each of the following:

DTaP/IPV/Hib	MenC	PCV
%	%	%

Request 2: 24 MONTH COHORT

3. Total number of children for whom the PCT is responsible on 31/03/08 reaching their 2nd birthday during the above evaluation quarter.

4. Total number and percentage vaccinated (to one decimal place) included in line 3 completing a course** at any time up to their 2nd birthday and also total number and percentage included in line 3 receiving boosters for each of the following:

DTaP/IPV/Hib	MMR	MenC *infant*	Hib/MenC** *Booster*	PCV** *Booster*
%	%	%	%	%

Request 3: 5 YEAR COHORT

5. Total number of children for whom the PCT is responsible on 31/03/08 reaching their 5th birthday during the above evaluation quarter.

6. Total number and percentage vaccinated (to one decimal place) included in line 5 completing a course*** at any time up to their 5th birthday and also total number and percentage included in line 5 receiving boosters for each of the following:

DT/Pol *Primary*	Pertussis *Primary*	Hib *Infant*	MMR *1st dose*	MenC *Infant*	PCV *Infant*
%		%	%	%	%

7. Total number included in line 5 and receiving boosters at any time before their fifth birthday against:

DTaP/IPV	Hib/MenC	MMR	PCV
Booster	*Booster*	*2nd dose*	*Booster*
%	%	%	%

PCT Name/Code:

HEPATITIS B - 12 MONTH COHORT

8. Total number included in line 1 with maternal HB status positive****
and reaching their first birthday during the above evaluation period
(i.e. born between 01/04/06 - 31/03/07)

9. Total number included in line 8 receiving 3 doses of Hep B before their 1st birthday

HEPATITIS B - 24 MONTH COHORT

10. Total number included in line 3 with maternal HB status positive****
and reaching their second birthday during the above evaluation period
(i.e. born between 01/04/05 - 31/03/06)

11. Total number included in line 10 receiving 4 doses of Hep B before their 2nd birthday

Footnotes:

*__at 12 months__ completed course of DTaP/IPV/Hib is 3 doses, MenC and PCV is 2 doses
**__at 24 months__ completed course of DTaP/IPV/Hib is 3 doses, MMR is one dose, infant MenC is at least 2 doses before 12 months
Hib/MenC booster is one dose on or after 12 months (irrespective of the number of doses before that age)
PCV booster is one dose on or after 13 months (irrespective of the number of doses before that age)
***__at 5 years__ completed course of DT/Pol and pertussis is 3 doses, MMR is one dose
infant Hib is 3 doses before 12 months, infant MenC is at least 2 doses and PCV is 2 doses before 12 months
DTaP and polio is 4 doses, MMR is 2 doses
Hib/MenC booster is one dose on or after 12 mths, PCV one dose on or after 13 mths (both irrespective of number of doses before that age)
**** *maternal HB status positive: HBsAg+ve*

Notes:

1. Although many child health systems do not have the capacity to produce statistics or even hold information on hepatitis B vaccines, this information is requested in the same format as the current COVER outputs. This is designed to ensure that collection of hepatitis B data is integrated into the routine collection and coverage data can be compared. It is hoped that this data will be generated from manual systems or from standalone databases managed by or on behalf of the PCT.

2. The format is based on the 0,1,2,12 month schedules recommended in the HSC 1998. will be collected via Regions and can be used to validate the completeness of identification of children at risk in future cohorts.

3. The HSC recommended universal screening of pregnant women from April 2000. Data on antenatal prevalence will be collected via Regions and can be used to validate the completeness of identification of children at risk in future cohorts.

4. CfI have aimed only to collate information on completion of vaccination, although realises that first dose coverage and timeliness may be more important in the prevention of infection.

Please note that the collection of these data has been mandated by the Secretary of State, through the Review of Central Returns (ROCR), to the HPA.
Reference: ROCR/OR/0105/003 (ROCR aims to minimise the burden of data collection on the NHS: More details can be found at: http://www.ic.nhs.uk/rocr

Return by 30 May 2008 to:
e-mail: COVER@hpa.org.uk / Fax: 020 8327 7404/or by post:
COVER
Immunisation Department
Centre for Infections
Health Protection Agency
61 Colindale Avenue
LONDON NW9 5EQ
copies of this can also be found at: http://www.hpa.org.uk/infections/topics_az/vaccination/vac_cover.htm

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