



# Health Protection Report

weekly report

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## Current News

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- ▶ Continuing high levels of HIV diagnoses in men who have sex with men: HIV and AIDS in the United Kingdom - data to the end of December 2007.

## Infection Reports

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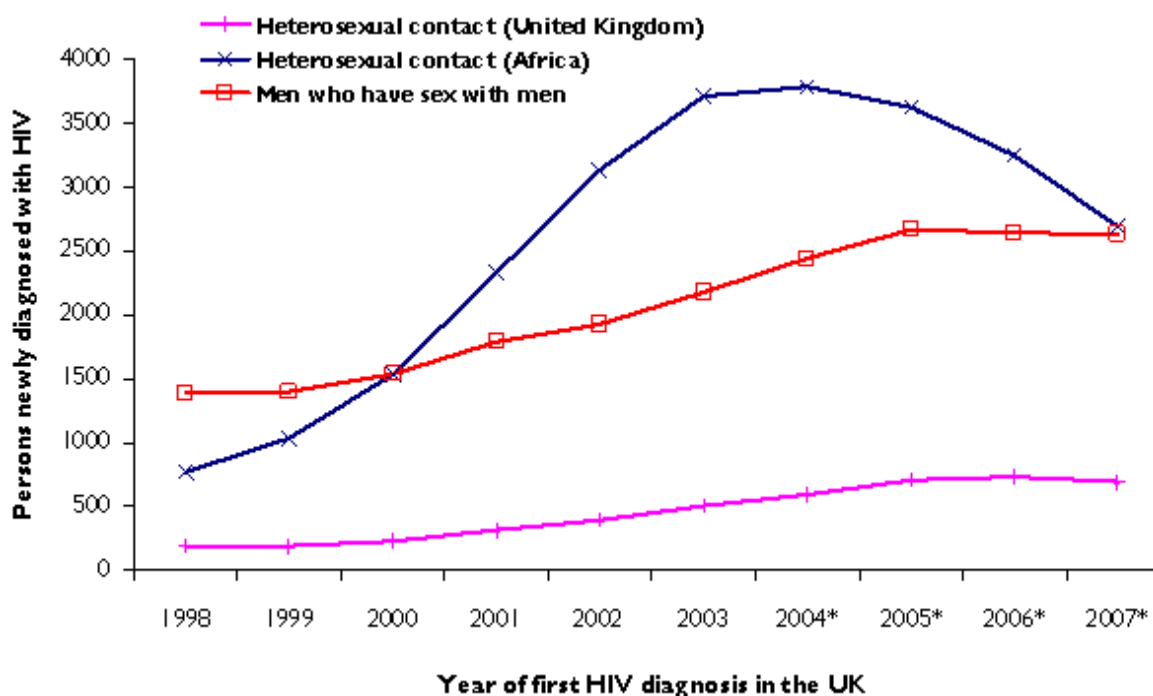
### Immunisation

- ▶ Surveillance of markers of infection detected in antenatal samples tested by the National Blood Service (NBS): England, 2007.
- ▶ COVER programme: October to December 2007. Quarterly vaccination coverage statistics for children aged up to five years in the United Kingdom.

▶ **Continuing high levels of HIV diagnoses in men who have sex with men: HIV and AIDS in the United Kingdom - data to the end of December 2007**

In 2007, there was no evidence of a fall in the current high rate of HIV transmission among men who have sex with men (MSM) within the United Kingdom (UK), which has remained at epidemic level. During the year, an estimated 6,840 cases of HIV infection (adjusted for reporting delays) were newly diagnosed in the UK [1]. This represents a 12% decline from a peak of 7,800 new HIV diagnoses that occurred in 2005. Almost all this decline in new HIV diagnoses was in HIV-infected heterosexuals from sub-Saharan Africa who were probably infected there. In contrast, the annual number of new HIV diagnoses in MSM has remained above 2,600 for the third year in succession (the highest levels ever).

**Figure 1: HIV diagnoses in men who have sex with men and in selected heterosexual groups. UK data\* to end December 2007 (adjusted for reporting delays)**



\* Data adjusted for reporting delays in last four years (2004-7)

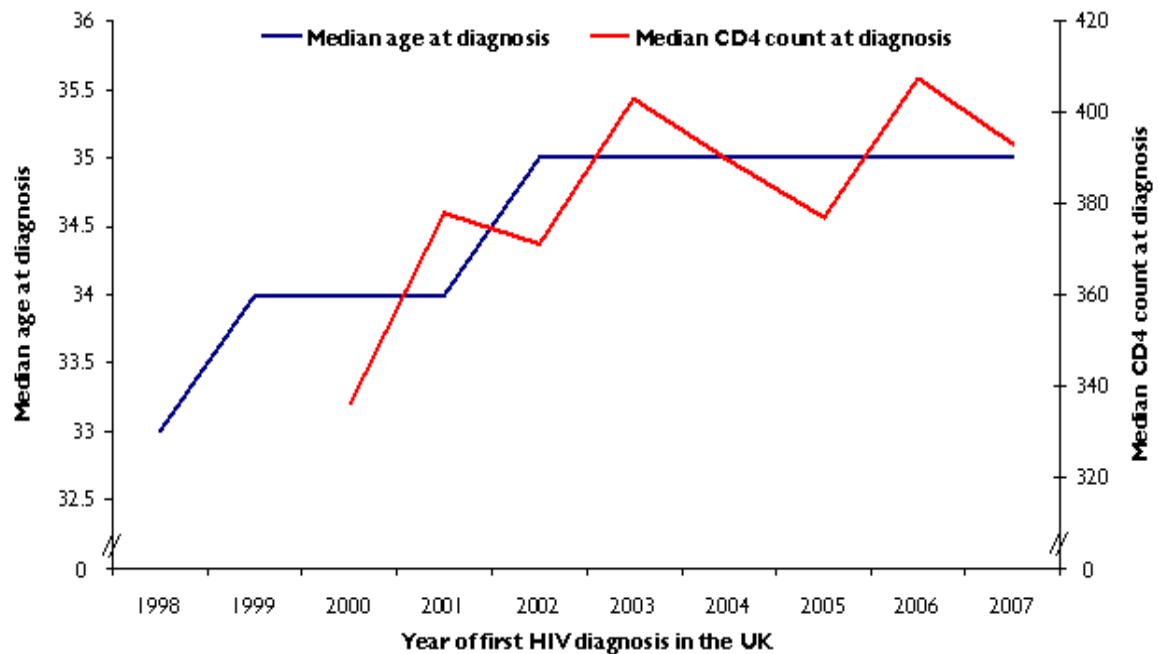
Of the 6,840 HIV infections diagnosed in 2007, an estimated 2,630 (38%) were in MSM and 3,860 (56%) were in heterosexual men and women. In each of the past three years over 2,600 new HIV diagnoses have been made in MSM (figure 1). Where probable country of infection was reported (1,519), 82% (1,240) of HIV-infected MSM newly diagnosed in 2007 were probably infected in the UK. Over recent years there has been no change in the median age at which HIV infection was diagnosed in MSM, and little change in the median CD4 count at HIV diagnosis (figure 2). The consistency of this pattern strongly suggests that new HIV infections are occurring at a similar rate to which infections are being diagnosed in this group (i.e. that transmission of HIV among MSM has stayed high since 2004 and remained at epidemic level).

There were an estimated 690 HIV infections diagnosed in 2007 that were probably due to heterosexual transmission within the UK. Numbers of infections acquired heterosexually within the UK have been steadily rising throughout the past decade (figure 1) so that for each of the

past three years there have been around 700 new diagnoses in this category, a clear indication that heterosexual HIV transmission is now firmly established within the UK.

The majority of the 2007 new HIV diagnoses in heterosexuals (70%; 2,690) were in individuals probably infected in Africa. This represents a 29% decline (figure 1) from the peak estimated in 2005 (3,790). These figures include individuals infected while travelling or living abroad, but mostly were individuals infected in their country of origin prior to migration to the UK. Other routes of infection represented less than 5% (280 cases) of estimated new diagnoses reported in 2007, of which 160 infections (2% of total) were among injecting drug users.

**Figure 2: Median age and median CD4 cell count at first HIV diagnosis among men who have sex with men**



During 2007 there were an estimated 750 new AIDS diagnoses and 540 deaths reported in HIV-infected individuals (adjusted for reporting delays). These numbers have continued to decline following the introduction of effective anti-retroviral therapy.

Source data: *The Health Protection Agency Centre for Infections, Health Protection Scotland, and the UCL Institute of Child Health (London).*

### References

1. New HIV diagnoses surveillance tables. UK data to the end of December 2007. London HPA, 2008. Available at [http://www.hpa.org.uk/infections/topics\\_az/hiv\\_and\\_sti/Stats/HIV/NewDiagoses/Quarterlies%202007/2007\\_\(Q4\)\\_Dec\\_Final.pdf](http://www.hpa.org.uk/infections/topics_az/hiv_and_sti/Stats/HIV/NewDiagoses/Quarterlies%202007/2007_(Q4)_Dec_Final.pdf)

# Infection reports

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## Immunisation

- ▶ **Surveillance of markers of infection detected in antenatal samples tested by the National Blood Service (NBS): England, 2007.**
- ▶ **COVER programme: October to December 2007. Quarterly vaccination coverage statistics for children aged up to five years in the United Kingdom.**

### Surveillance of markers of infection detected in antenatal samples tested by the National Blood Service (NBS): England, 2007

The National Blood Service (NBS) provides a testing service using antenatal samples from Primary and Acute Care Trusts in England. In addition to blood grouping, the NBS laboratories perform testing on the antenatal samples for hepatitis B surface antigen (HBsAg) and antibodies for HIV (anti-HIV), syphilis (antibodies to treponemes) and rubella. The number of antenatal samples tested, and those found to be positive, is reported by the testing laboratories to the NBS/HPA Centre for Infections Antenatal Surveillance Scheme each month. Confirmatory testing is undertaken on reactive samples. If an antenatal sample is positive for HBsAg, anti-HIV or syphilis, or negative for antibodies to rubella, the local health provider requesting the testing is advised to obtain a repeat sample for confirmatory testing by a local accredited microbiology testing laboratory, and to refer the patient for appropriate care.

In 2007, the NBS tested more than 170,000 antenatal samples from England for some or all four markers of infection for specific trusts where the NBS is contracted to provide testing. All centres were outside London. This was approximately one third of the antenatal screening tests in England. However, the number of women booking antenatal care within each trust was not available to the NBS; therefore uptake of testing is difficult to estimate from these data. A total of 819 antenatal samples were identified as positive for markers of infections (table 1). Of antenatal samples tested, 429 (0.28%) were positive for HBsAg, 165 (0.11%) were positive for anti-HIV, and 225 (0.13%) were positive for anti-*Treponema pallidum*. Of antenatal samples tested, 1798 (2.5%) lacked antibodies to rubella. The frequency of detection varied between markers as well as collection centres due to differences in the type of the population covered by each centre. It is likely that there will also be variation between maternity units using the same collection centre.

**Table 1: Infections detected in antenatal samples tested by the National Blood Service in England, 2007**

Collection centre*	Number	HBsAg	Anti-HIV	Anti- <i>T.pallidum</i>	Anti-rubella †
Birmingham and Oxford	Reactive	204	97	125	1,713
	Tested	64,602	64,325	64602	64,802
	<i>Frequency per 100,000 samples tested</i>	316	151	193	2643
Cambridge	Reactive	20	4	5	
	Tested	15,780	15,691	15790	
	<i>Frequency per 100,000 samples tested</i>	127	25	32	

Leeds	Reactive	13	–	13	
	Tested	3,526	3,522	13158	
	<i>Frequency per 100,000 samples tested</i>	369	–	99	
Manchester and Liverpool	Reactive	34	1	15	85
	Tested	13,089	4,122	25629	7,994
	<i>Frequency per 100,000 samples tested</i>	260	24	59	1063
Sheffield	Reactive	158	63	67	
	Tested	57,760	56,653	57807	
	<i>Frequency per 100,000 samples tested</i>	274	111	116	
<b>Total</b>	<b>Reactive</b>	<b>429</b>	<b>165</b>	<b>225</b>	<b>1,798</b>
	<b>Tested</b>	<b>154,757</b>	<b>144,313</b>	<b>176,986</b>	<b>72,796</b>
	<b><i>Frequency per 100,000 samples tested</i></b>	<b>277</b>	<b>114</b>	<b>127</b>	<b>2470</b>

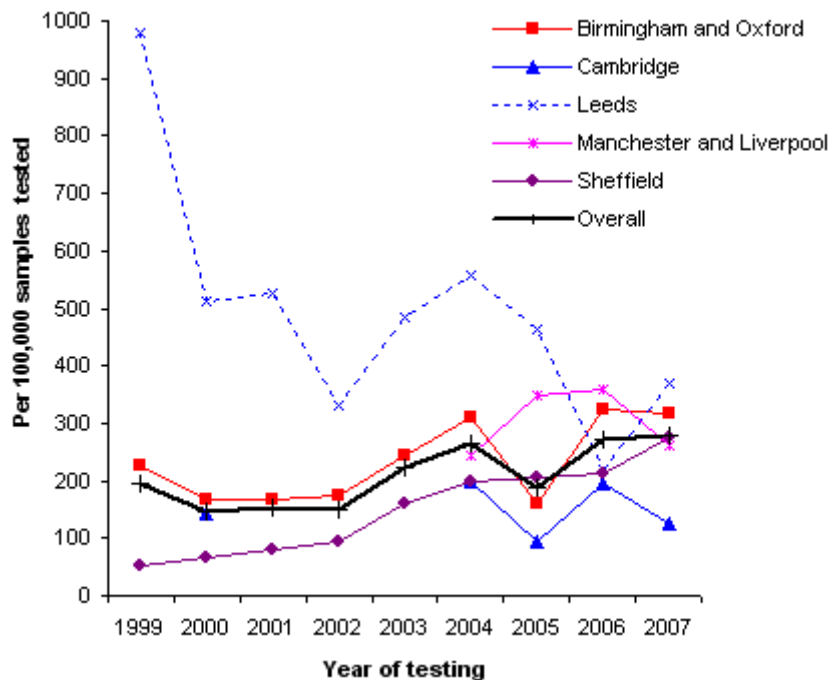
\* NHSBT centre where samples were received but not necessarily where samples have been tested.

† Includes samples confirmed non-reactive for rubella antibodies.

### Hepatitis B virus

In the period 1999-2007, the overall annual frequency of HBsAg positive antenatal samples changed from 195 per 100,000 in 1999 to 277 per 100,000 samples tested in 2007. Variation between centres may reflect differences in the antenatal populations covered by collection centres. The number of samples tested for HBsAg from Leeds collection centre was, overall, 10-fold lower than the number of samples tested from either Birmingham or Sheffield centres. There were changes in policy for offering hepatitis B (HBV) testing to antenatal women and increasing awareness of HBV transmission during this time, which may have caused changes in the populations tested.

**Figure 1: The frequency of HBsAg positive\* antenatal samples by NBS centre†, England 2000-2007**



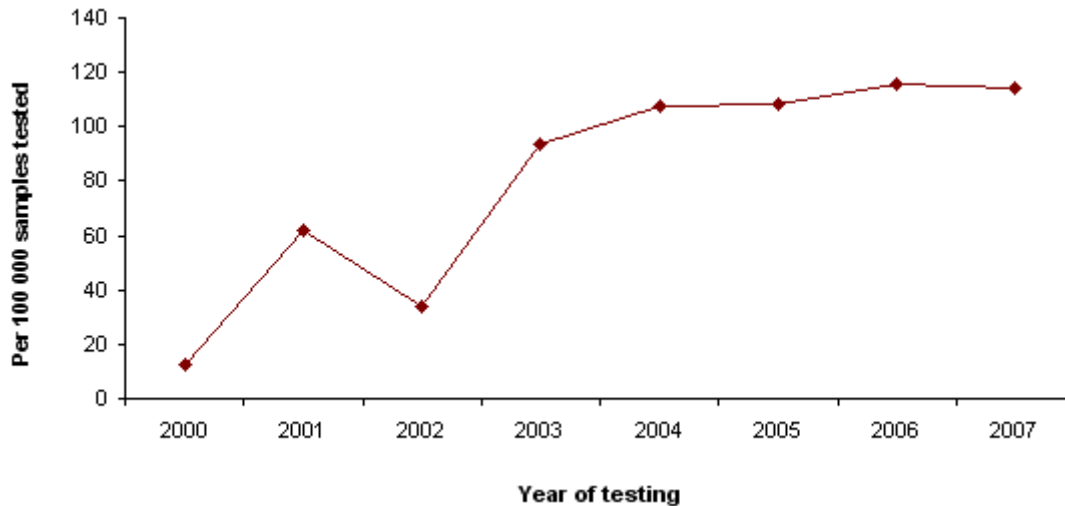
\* Confirmed NBS results for the sample; inconclusive results excluded.

† The number of antenatal samples tested varies between collection centre (see Table 1).

## HIV

Anti-HIV testing for antenatal women was introduced in 2000. Between 2000 and 2007 the overall annual frequency of antenatal samples positive for anti-HIV increased from 12 to 114 per 100,000 samples tested. However, between 2004 and 2007 the rate of increase appeared to stabilise (Figure 2). The overall increase may be due to an increase in uptake of HIV testing and greater awareness of the risk of transmission and benefits of detection during pregnancy.

**Figure 2: The frequency of anti-HIV positive\* antenatal samples tested by the NBS, England 2000-2007**



\* Confirmed NBS results for the sample; inconclusive results excluded.

## Syphilis

The NBS has undertaken surveillance of treponemal antibodies for antenatal samples since 2004. Since then the overall frequency of antenatal samples positive for treponemal antibodies slowly but steadily increased from 80 per 100,000 samples tested in 2004 to 127 per 100,000 samples tested in 2007.

## Rubella

Overall, the frequency of antenatal samples tested by the NBS lacking rubella antibodies increased from 1454 per 100,000 samples tested (1.45%) in 2004 to 2470 per 100,000 (2.47%) in 2007.

## Further surveillance information

For further information on NBS antenatal testing surveillance, see the HPA web page [http://www.hpa.org.uk/infections/topics\\_az/BIBD/nbs\\_antenatal\\_testing.htm](http://www.hpa.org.uk/infections/topics_az/BIBD/nbs_antenatal_testing.htm) or email [infection.surveillance@nbs.nhs.uk](mailto:infection.surveillance@nbs.nhs.uk)

Further regional information including areas not covered by NBS antenatal screening can be found on the HPA website in the Local and Regional Services publications pages [http://www.hpa.org.uk/lars\\_homepage.htm](http://www.hpa.org.uk/lars_homepage.htm)

Further information on national surveillance of antenatal screening for infections can be found under the STI prevention monitoring page [http://www.hpa.org.uk/infections/topics\\_az/hiv\\_and\\_sti/Sex\\_health/prev\\_monitoring.htm](http://www.hpa.org.uk/infections/topics_az/hiv_and_sti/Sex_health/prev_monitoring.htm)

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## **COVER programme: October to December 2007. Quarterly vaccination coverage statistics for children aged up to five years in the United Kingdom.**

*This report of the COVER programme presents quarterly coverage data for children in the United Kingdom (UK) who reached their first, second, or fifth birthday during the evaluation quarter, October to December 2007.*

Children who reached their first birthday in the quarter were the second cohort to have been scheduled to receive their primary vaccinations according to the new schedule introduced on 4 September 2006 [1]: three doses diphtheria, tetanus, acellular pertussis, polio and Haemophilus influenzae type b vaccine (DTaP/IPV/Hib vaccine), and two doses each of meningococcal serogroup C conjugate vaccine (MenC vaccine) and pneumococcal vaccine (PCV), completing between February 2007 and April 2007.

Children who reached their second birthday in the quarter would have been scheduled to receive their third-dose primary vaccinations between February 2006 and April 2006 and first measles, mumps, and rubella (MMR) vaccinations between November 2006 and April 2007. These children are the first cohort to be routinely scheduled to receive a booster dose of Hib and MenC vaccine (given as a combined Hib/MenC vaccine) at 12 months, and a PCV vaccine at 13 months of age [1].

Children who reached their fifth birthday would have been scheduled to receive their third-dose primary vaccinations between February 2003 and April 2003, their first MMR between November 2003 and April 2004, their pre-school diphtheria, tetanus, acellular pertussis, inactivated polio (DTaP/IPV) booster and second-dose MMR from February 2006 onwards.

### **Methods**

Methods of data collection for COVER, sentinel MMR coverage and neonatal hepatitis B vaccination coverage are described on the HPA website at:

[http://www.hpa.org.uk/infections/topics\\_az/cover/methods.htm](http://www.hpa.org.uk/infections/topics_az/cover/methods.htm)

### **Results**

Data were received from all Health Boards (HBs) in Scotland and Northern Ireland, Administrative Regions (ARs) in Wales, and 146 of the 152 Primary Care Trusts (PCTs) in England.

Several factors contribute to the continuing need for caution in evaluating the vaccination programme in London. All six PCTs unable to provide any data in this quarter were in London. Two use the Child Health Interim Application (CHIA) child health system and the other four have recently moved to using the RiO child health system. Several London PCTs are expected to be moving to the RiO system in the next year and therefore interruptions in reporting in London can be expected for some time. Problems with producing coverage data using the CHIA system have been reported previously [2] and ongoing data quality concerns and caveats have been issued by six of these PCTs.

Three of the 146 reporting English PCTs were unable to provide PCV2 coverage at 12 months, 11 were unable to provide PCV booster coverage at 24 months, and 20 were unable to provide Hib/MenC booster at 24 months.

Individual PCT data for this quarter are published on the HPA website at

[http://www.hpa.org.uk/infections/topics\\_az/cover/default.htm](http://www.hpa.org.uk/infections/topics_az/cover/default.htm)

### **Coverage at 12 and 24 months**

Fifty-seven of the 167 participating PCTs/HBs/ARs (34%) achieved at least 95% coverage at 12 months for three doses of diphtheria, tetanus, pertussis, polio and Hib vaccine (DTaP/IPV/Hib3) and 44 (26%) for at least two doses of MenC vaccine. In this second evaluation of PCV coverage at 12 months, 39/164 PCTs/HB/ARs (24%) achieved at least 95%. At least 90% coverage at 12 months for DTaP/IPV/Hib3, MenC2 and PCV2 was achieved for all countries

and all English SHAs apart from London and South East Coast SHAs. One hundred PCTs/HBs/ARs (60%) achieved at least 95% coverage at 24 months for DTaP/IPV/Hib3, and 96 (57%) for MenC. One Scottish HB achieved 95% coverage for MMR at 24 months.

UK coverage at 12 months for DTaP/IPV/Hib3 increased by 0.4% compared to that reported in the July to September 2007 quarter to 91.4% (table 1) [2]. Comparisons cannot be made with last quarter's UK MenC and PCV coverage at 12 months as data from Northern Ireland were unavailable; country-specific comparisons show Scotland maintained coverage at 96% for both antigens, Wales improved coverage by 0.5% and 0.7% respectively for MenC and PCV, and in England MenC coverage increased 1.1% to 89.3% (ranging from 94.0% in the North East to 73.9% in London) and PCV coverage increased 3.6% to 89.1% (range 93.5% in the North East, 75.3% in London) (table 1) [2].

UK DTaP/IPV/Hib coverage at 24 months remained at 94.1% while MenC at 93.7% was 0.3% lower than the July to September 2007 coverage. UK MMR coverage at 24 months decreased 0.9% to 84.3% from 85.2%. It was highest in Scotland and Northern Ireland, both achieving more than 90%. Coverage for English regions (excluding London) and Wales ranged from 80.9% to 88%. (table 2). London coverage decreased by 1.6% compared to the previous quarter to 71%.

UK coverage for PCV booster and Hib/MenC vaccination at 24 months is reported for the first time this quarter, and were 79.9% and 75.7% respectively, with variations at country and SHA levels. Scotland achieved the highest coverage for PCV (91%) whereas the highest coverage for Hib/MenC, 88.3%, was achieved by Wales (table 2).

**Table 1 Completed primary immunisations (all antigens) by 12 months: October to December 2007**

Strategic Health Authorities (SHAs)/Country	PCT/HB/AR*† (total)	DTaP/IPV/Hib3 %	MenC2 %	PCV2 %
<b>English SHAs</b>				
North East	12 (12)	95.0	94.0	94.9
North West	24 (24)	93.2	92.5	89.9
Yorkshire and the Humber	14 (14)	92.8	91.3	90.7
East Midlands	9 (9)	92.8	92.8	92.8
West Midlands	17 (17)	92.9	93.2	93.0
East of England	14 (14)	93.1	92.2	91.6
London	25 (31)	79.3	73.9	75.3
South Central	9 (9)	94.0	93.6	92.1
South East Coast	8 (8)	88.3	87.9	87.9
South West	14 (14)	92.8	93.6	92.1
<b>England (Total)</b>	<b>146 (152)</b>	<b>90.5</b>	<b>89.3</b>	<b>89.1</b>
<b>Wales</b>	<b>3 (3)</b>	<b>95.3</b>	<b>94.7</b>	<b>94.9</b>
<b>Northern Ireland</b>	<b>4 (4)</b>	<b>96.5</b>	<b>97.1</b>	<b>92.1</b>
<b>Scotland</b>	<b>14 (14)</b>	<b>96.6</b>	<b>96.2</b>	<b>96.4</b>
<b>United Kingdom</b>	<b>167 (173)</b>	<b>91.4</b>	<b>90.3</b>	<b>90.1</b>

\* Primary Care Trusts/health boards/administrative regions

† Number of trusts reporting DTaP/IPV/Hib3 coverage

**Table 2 Completed primary immunisations (all antigens) by 24 months:  
October to December 2007**

Strategic Health Authorities (SHAs)/Country	PCT/HB/AR*† (total)	DTaP/IPV/Hib3 %	Infant MenC%	PCV Booster%	Hib/MenC%	MMR1%
<b>English SHAs</b>						
North East	12 (12)	96.4	95.8	80.5	75.0	87.9
North West	24 (24)	95.7	94.4	82.4	73.6	85.8
Yorkshire and the Humber	14 (14)	93.9	94.5	75.8	75.3	84.1
East Midlands	9 (9)	95.9	96.2	82.7	75.1	88.0
West Midlands	17 (17)	96.0	96.2	86.2	82.8	87.6
East of England	14 (14)	95.1	95.9	78.4	74.6	83.6
London	25 (31)	84.8	83.2	59.9	51.1	71.0
South Central	9 (9)	94.8	94.5	81.6	80.9	85.3
South East Coast	8 (8)	91.8	91.7	76.1	78.8	80.9
South West	14 (14)	96.0	96.4	83.4	82.5	85.8
<b>England (Total)</b>	<b>146 (152)</b>	<b>93.5</b>	<b>93.2</b>	<b>78.3</b>	<b>75.1</b>	<b>83.1</b>
<b>Wales</b>	<b>3 (3)</b>	<b>97.2</b>	<b>94.7</b>	<b>84.6</b>	<b>88.3</b>	<b>87.8</b>
<b>Northern Ireland</b>	<b>4 (4)</b>	<b>97.4</b>	<b>97.4</b>	<b>83.1</b>	<b>73.8</b>	<b>91.5</b>
<b>Scotland</b>	<b>14 (14)</b>	<b>98.0</b>	<b>97.0</b>	<b>91.0</b>	<b>74.5</b>	<b>91.8</b>
<b>United Kingdom</b>	<b>167 (173)</b>	<b>94.1</b>	<b>93.7</b>	<b>79.9</b>	<b>75.7</b>	<b>84.3</b>

\* Primary Care Trusts/health boards/administrative regions.

† Number of trusts reporting DTaP/IPV/Hib3 coverage.

### Coverage at five years

All regions, except for London, achieved 90% coverage for DTP/Pol3, Hib3 and MenC, with the North East, East Midlands, South West, and Scotland reporting at least 95% coverage for all three (table 3). Excluding London, DTaP/IPV coverage ranged from 76.4% to 85.4% in England. MMR1 and MMR2 coverage for England decreased slightly to 86.7% and 72.8% respectively compared to the previous quarter [2]. MMR2 coverage in Wales, Northern Ireland, and Scotland all increased by 0.6%, 0.9% and 1.4% respectively. London coverage for all immunisations was lower than corresponding values for other English regions, in particular coverage for MMR2 was 50% and DTaP/IPV was 52.1%, at least 20% lower than coverage in any other region.

**Table 3. Completed primary immunisations and boosters (all antigens) by five years:  
October to December 2007**

Strategic Health Authorities (SHAs)/Country	PCT/HB/AR*† (total)	DTP/Pol3 %	Hib3 %	MenC %	MMR1 %	MMR2 %	DTaP/IPV %
<b>English SHAs</b>							
North East	12 (12)	96.3	96.0	96.1	92.1	81.9	85.4
North West	24 (24)	95.9	94.6	94.6	91.7	78.7	81.8
Yorkshire & Humber	14 (14)	93.7	92.4	93.1	89.2	76.3	78.8
East Midlands	9 (9)	96.1	95.3	95.1	91.3	77.6	83.9
West Midlands	17 (17)	95.2	94.2	94.5	89.6	79.0	84.2
East of England	14 (14)	93.2	92.4	92.9	85.0	74.7	79.4
London	25 (31)	81.2	78.6	78.3	74.3	50.0	52.1

South Central	9 (9)	92.6	91.9	91.5	88.5	74.5	80.4
South East Coast	8 (8)	91.3	91.4	91.1	83.5	70.2	76.4
South West	14 (14)	96.0	95.5	95.5	89.7	77.7	84.5
<b>England (Total)</b>	<b>146 (152)</b>	<b>92.5</b>	<b>91.5</b>	<b>91.4</b>	<b>86.7</b>	<b>72.8</b>	<b>77.2</b>
<b>Wales</b>	<b>3 (3)</b>	<b>95.2</b>	<b>94.7</b>	<b>92.8</b>	<b>89.7</b>	<b>79.4</b>	<b>85.6</b>
<b>Northern Ireland</b>	<b>4 (4)</b>	<b>96.3</b>	<b>95.2</b>	<b>92.4</b>	<b>94.0</b>	<b>87.0</b>	<b>90.7</b>
<b>Scotland</b>	<b>14 (14)</b>	<b>97.9</b>	<b>97.0</b>	<b>97.5</b>	<b>94.4</b>	<b>87.1</b>	<b>91.0</b>
<b>United Kingdom</b>	<b>167 (173)</b>	<b>93.1</b>	<b>92.2</b>	<b>92.0</b>	<b>87.7</b>	<b>74.7</b>	<b>79.1</b>

\* Primary Care Trusts/health boards/administrative regions

† Number of trusts reporting DTP/Pol3 coverage

### MMR sentinel surveillance scheme coverage in England

For methods of data collection see

[http://www.hpa.org.uk/infections/topics\\_az/cover/methods.htm](http://www.hpa.org.uk/infections/topics_az/cover/methods.htm)

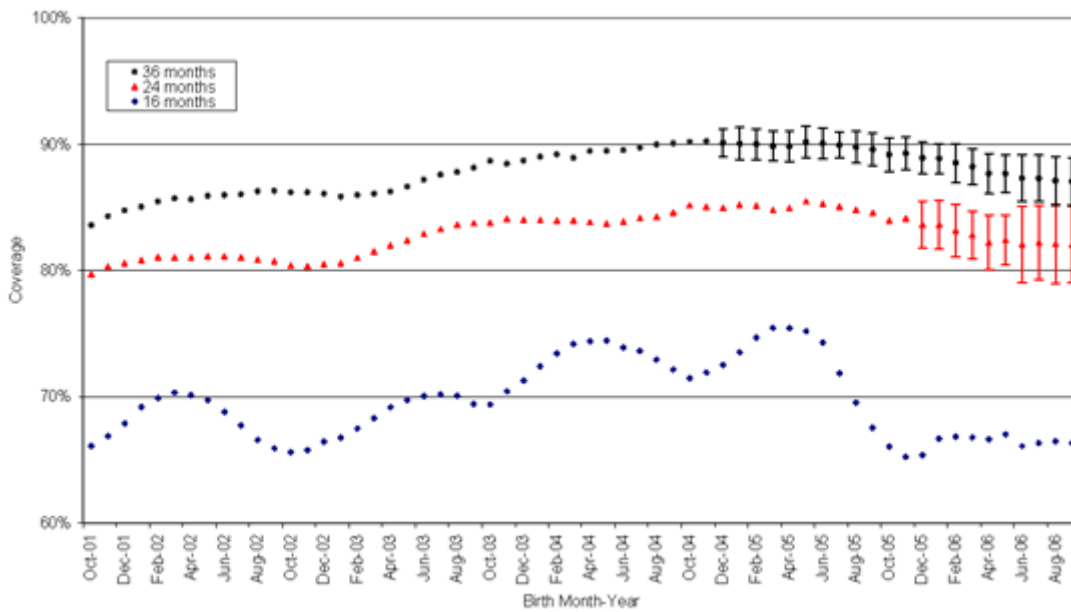
Data collected from December 2007 to February 2008 for children in the four age cohorts is summarised in table 4. The range for the three months was from 65.4 to 67.3%, at 16 months, 76.9 to 79.5% at 20 months, 83.6% to 85.1% at 24 months, and 89.9% to 90.3% at 36 months).

**Table 4. Monthly sentinel estimates of measles, mumps rubella (MMR) coverage at 16, 20, 24 and 36 months: December 2007 to February 2008**

Evaluation month	Proportion of children vaccinated at each age				
	Number of PCT/trusts	16 months	20 months	24 months	36 months
December 07	38	67.3	79.5	83.6	90.3
January 08	37	65.4	76.9	84.4	90.3
February 08	37	66.3	78.7	85.1	89.9

Figure 1 shows observed and projected MMR coverage at 16, 24 and 36 months in England for birth cohorts from October 2001 to September 2006. Projections of coverage at 24 and 36 months were made using the most recent coverage data for the same birth cohort and an estimate of the proportion -  $p$  - of those unvaccinated at each earlier age who were subsequently vaccinated by the later age. The proportion was estimated using the most recent 18 months data where final coverage was known. 95% confidence intervals were calculated based on the variability of  $p$  in the past data. The estimates of  $p$  were as follows: 46.6% for 16 to 24 months, 61.5% for 16 to 36 months, 18.6% for 20 to 24 months, 44.0% for 20 to 36 months and 32.5% for 24 to 36 months. Projections make the assumption that  $p$  remains constant over the period of the projection. Data at 20 months is not shown to simplify the graph as the line is close to that plotted for the 24 month data.

**Figure 1. Observed and projected MMR coverage at 16, 24, and 36 months by birth year and month in England**



Data shown are five-month moving averages.  
Projections are shown with 95% confidence intervals.

**Neonatal hepatitis B vaccine coverage data in England**

The data presented in table 5 represents coverage for three doses of hepatitis B vaccine in those infants born to hepatitis B surface antigen (HBsAg) positive mothers who reached the age of one year in this quarter (i.e. those born between October and December 2006), and coverage of four doses of vaccine in infants who reached two years of age (i.e. those born between October and December 2005).

**Table 5. Neonatal hepatitis B coverage in England: October to December 2007**

Region	Returns with 12 month data	12 month denominator	Coverage at 12 months	Returns with 24 month data	24 month denominator	Coverage at 24 months
North East	8 (12)	27	67%	8 (12)	15	60%
North West	22 (24)	51	67%	21 (24)	49	53%
Yorkshire & the Humber	12 (14)	26	77%	13 (14)	20	75%
East Midlands	6 (9)	19	79%	6 (9)	28	57%
West Midlands	17 (17)	67	57%	17 (17)	60	60%
East of England	13 (14)	51	65%	13 (14)	56	57%
London	21 (31)	180	77%	21 (31)	129	68%
South Central	9 (9)	21	95%	9 (9)	20	70%
South East Coast	7 (8)	10	60%	7 (8)	4	0%
South West	11 (14)	16	38%	11 (14)	2	0%
<b>Total</b>	<b>126 (152)</b>	<b>468</b>	<b>70%</b>	<b>126 (152)</b>	<b>383</b>	<b>62%</b>

Data was received for 126/152 (83%) PCTs in England, 3% more than reported in the last quarter although some of the returns may relate to only part of the PCT due to recent mergers [3]. Coverage in England for three doses in those aged one year remained at 70% compared to

the last quarter [2] (Table 6). Although this is lower than the coverage obtained for routine antigens at this age (table 1), the population at risk are highly mobile and high uptake is difficult to achieve [4-8]. By far the largest number of infants at risk is in London where coverage was above the national average at 77% at 12 months. Coverage in England for four doses in those aged 24 months increased by 18% to 62% compared to the last quarter [2].

### **Commentary**

Children who reached their first birthday in the quarter were the second cohort recorded by COVER to have been scheduled to receive their primary vaccinations according to the new schedule introduced on 4 September 2006. Children reaching their second birthday in the quarter were the first recorded by COVER to be offered - at 12 months and 13 months, respectively - the new booster vaccines, Hib/MenC and PCV, also introduced September 2006.

These data show routine PCV vaccine has been well accepted with UK coverage at 12 month achieving 90.1%, very similar to the 91.3% coverage achieved for MenC offered at the same age (table 1). Coverage was highest in Scotland at 96.4%, with Wales achieving 94.9% and Northern Ireland 92.1%; within England coverage exceeded 90% in all SHAs except London and South East Coast. The first estimates of 24 month coverage for children routinely receiving a PCV booster dose were 79.9% for the UK, ranging from 91% in Scotland to 78.3% in England. The impact of the PCV immunisation programme on invasive pneumococcal disease (IPD) in children under two has already been observed, with a significant reduction in IPD caused by the serotypes included in the vaccine [9,10].

An additional appointment was added to the schedule at 12 months for the delivery of the Hib/MenC booster. More modest estimates for coverage of this booster vaccine at 24 months were obtained, with 75.7% coverage for the UK as a whole, ranging from 88.3% in Wales to 73.8% in Northern Ireland. Although it is too early to draw any firm conclusions, these results are encouraging.

The quality of vaccine coverage data can be expected to be affected following any major changes to the immunisation schedule, including the addition of new vaccines. Decreased coverage of MMR at 16 months has been observed since the October to December 2006 COVER report [11] due to some parents or PCTs delaying MMR1 (normally scheduled at around 13 to 15 months of age) by several months to accommodate the newly introduced booster doses of Hib/MenC and PCV. These delays probably account for the drop of 0.9% to 84.3% in UK MMR coverage at 24 months observed this quarter and the smaller 0.4% drop seen last quarter [2]. It is important that children who have missed an appointment or delayed a vaccination are re-scheduled to ensure completion of the course.

### **Relevant links for country specific coverage data:**

#### **Wales**

<http://www.wales.nhs.uk/sites/page.cfm?OrgID=368&PID=2278>

#### **Scotland**

<http://www.show.scot.nhs.uk/scie/h/>

#### **Northern Ireland**

<http://www.cdscni.org.uk/surveillance/Coveragestats/default.asp>

#### **England**

<http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles/immunisation>

#### **Other relevant links**

[http://www.hpa.org.uk/infections/topics\\_az/cover/default.htm](http://www.hpa.org.uk/infections/topics_az/cover/default.htm)

<http://www.mmrthefacts.nhs.uk/>

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