



# Health Protection Report

weekly report

Volume 4 Number 12 Published on: 26 March 2010

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### DH guidance on new health protection legislation

New regulations will shortly come into force which complete the modernised legal framework for health protection in England. Three sets of Regulations complement the updated Public Health (Control of Disease) Act 1984, which was substantially amended by the Health and Social Care Act 2008 [1].

The 2008 Act introduced an “all hazards” approach to health protection whereby the need for action is determined by the potential for a case of human infection or contamination to present a significant public health hazard, rather than by reference to a list of specified infectious diseases, as has been the case since the late 19th century.

The Health Protection (Notification) Regulations 2010 (SI 2010/659), coming into force on 6 April (except for provisions relating to laboratory notifications, which apply from 1 October), significantly improve and extend the existing arrangements for statutory notification of infectious diseases in England.

The new system aims to facilitate prompt investigation of, and response to, public health risks. It requires registered medical practitioners (RMPs), and laboratories, to notify not only a specific list of notifiable infectious diseases and causative agents (listed in Schedules to the regulations), but also requires RMPs to notify cases of other infections (such as those caused by new or emerging diseases) or contamination, such as with chemicals or radiation, that may pose a significant risk to public health.

The Health Protection (Local Authority Powers) Regulations 2010 (SI 2010/657) and the Health Protection (Part 2A Orders) Regulations 2010 (SI 2010/658), also coming into force from 6 April, set out, with the amended 1984 Act, the powers and duties of local authorities and justices of the peace to take action to protect public health from a risk of significant harm from infection or contamination, if voluntary cooperation cannot be secured. They provide a wider and more flexible set of powers than previously existed.

The Department of Health and the HPA, in collaboration with the Chartered Institute of Environmental Health with contributions from other stakeholders, have prepared guidance setting out the detail of the new arrangements, including operational guidance to assist those who have duties or related responsibilities under the regulations [2].

### References

1. The Health Protection (LA powers) Regulations 2010 (SI 2010/657); the Health Protection (Part 2A orders) Regulations 2010 (SI 2010/658); and the Health Protection (Notification) Regulations 2010 (SI 2010/659). Downloadable at: Office of Public Sector Information, <http://www.opsi.gov.uk/si/si-2010-index>.
2. HPA/CIEH/NHS. Health Protection Legislation (England) Guidance 2010 (in electronic PDF format only), produced by the HPA and the Department of Health in consultation with the Chartered Institute of Environmental Health, 25 March 2010. Downloadable at: [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_114510](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_114510) [2.35 MB PDF].

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### Good practice reminder on open farms

The Health Protection Agency, the Health and Safety Executive and the Local Authorities Co-ordinators of Regulatory Services have jointly published a reminder of good practice in reducing the risk of infection to visitors to open farms which, it is recognised, cannot be completely eliminated.

The reminder note, which complements the existing HSE guidance, has been sent to all local authorities who are responsible for regulating the safety of open farms, and to members of the National Farm Attractions Network.

#### Reference

1. Understanding and managing the risks from *E. coli* O157 in an open farm context, 23 March. HPA website (PDF, 408 KB).

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### European survey of campylobacter and salmonella in chicken at slaughterhouses

The European Food Safety Authority (EFSA) has published the results of a survey on *Campylobacter* and *Salmonella* in chicken at slaughterhouses in the European Union. In most EU Member States, a high prevalence of *Campylobacter* was found in chickens, whereas *Salmonella* was less frequently detected. These zoonoses are the cause of the two most reported food-borne diseases in humans in the EU: campylobacteriosis and salmonellosis. This was EFSA's sixth baseline survey on food-borne bacteria carried out at an EU level and the first to directly investigate the presence of *Campylobacter* and *Salmonella* in chickens at slaughter.

#### Reference

1. "Analysis of the baseline survey on the prevalence of *Campylobacter* in broiler batches and of *Campylobacter* and *Salmonella* on broiler carcasses in the EU, 2008", 23 March. Available at: <http://www.efsa.europa.eu/en/scdocs/scdoc/1503.htm>.

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## Infection reports

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### Immunisation

- ▶ **Surveillance of markers of infection detected in antenatal samples tested by NHS Blood and Transplant (NHSBT): England, 2009**
- ▶ **Vaccination coverage statistics for children aged up to five years in the United Kingdom: July to December 2009**

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### Surveillance of markers of infection detected in antenatal samples tested by NHS Blood and Transplant (NHSBT): England, 2009

NHS Blood and Transplant (NHSBT) provides a testing service for antenatal samples from Primary and Acute Care Trusts in England. In addition to blood grouping, NHSBT laboratories perform testing 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 found to be reactive was reported by the testing laboratories to the NHSBT/HPA Centre for Infections Antenatal Surveillance Scheme each month. Additional testing by the NHSBT National Transfusion Microbiology Reference Laboratory (NTMRL) was undertaken on reactive samples (or if screen negative for rubella) and also reported to the scheme. Data on age and ethnicity were obtained via NHSBT Red Cell Immunohaematology for all samples tested. When an antenatal sample tested positive for HBsAg, anti-HIV or syphilis, or negative for antibodies to rubella (as tested by NTMRL), the local health provider was advised to obtain a repeat sample from the woman for confirmatory testing by a local accredited microbiology testing laboratory and to refer them for appropriate follow-up.

#### Annual data, England: January to December 2009

In 2009, NHSBT tested around 165,000 antenatal samples for some or all four markers of infection for specific English trusts (all outside London) where NHSBT held the service contract. The number tested decreased by approximately 7% from 2008. The number of women booking antenatal care within each trust was not available to NHSBT therefore uptake of testing was difficult to estimate from these data.

A total of 933 antenatal samples were identified as positive for markers of infection. HBsAg was the most frequently detected marker (table 1). The frequency of infection detected varied between markers as well as collection centres due to differences in the population of antenatal women covered by each centre.

Additional hepatitis B virus (HBV) testing for HBV e antigen (HBeAg) and anti-HBe was performed on 452 of the 525 antenatal samples positive for HBsAg by NTMRL; 84.9% (n=384) were anti-HBe positive and 15.7% (n=71) were HBeAg positive including three which were positive for both anti-HBe and HBeAg. Seventy three samples were not anti-HBe/HBeAg tested where the woman's status was known from previous results. The percentage who were both HBsAg and HBeAg positive had increased slightly compared with 2008 (13.3 %) although this was not significant.

The average age of women with positive samples was 28, 31 and 29 years for HBV, HIV and syphilis respectively and 23 years for women with rubella negative samples. Ethnicity was known for about 50% of those tested for HBsAg, anti-HIV and anti-treponemes and for about 80% of those tested for

rubella antibodies, but mainly reflected the population tested at Birmingham (where the majority of the ethnicity data came from). While the majority tested were Caucasian, the percent positive was generally lower in this group than other ethnic groups although the numbers were small in some categories. A more detailed breakdown is available on the HPA website.

**Table 1. Markers of infection detected in antenatal samples tested by NHS Blood and Transplant in England, 2009**

Collection centre*	Number	HBsAg	Anti-HIV	Anti- <i>T.pallidum</i>	Anti-rubella †
Birmingham and Oxford	Positive samples§	285	106	127	2339
	Samples tested	68795	69134	67716	68880
	<i>Percent positive</i>	0.41%	0.15%	0.19%	3.40%
	HBeAg positive (% of HBsAg) §§	35 (14.3)	–	–	–
Cambridge	Positive samples §§	31	7	13	–
	Samples tested	15888	15882	15863	–
	<i>Percent positive</i>	0.20%	0.04%	0.08%	–
	HBeAg positive (% of HBsAg) §§	5 (18.5)	–	–	–
Leeds	Positive samples §	2	0	3	–
	Samples tested	1066	1064	4591	–
	<i>Percent positive</i>	0.19%	0.00%	0.07%	–
	HBeAg positive (% of HBsAg) §§	0 (0.0)	–	–	–
Manchester and Liverpool	Positive samples §	34	0	7	8
	Samples tested	6526	219	17476	226
	<i>Percent positive</i>	0.52%	0.00%	0.04%	3.54%
	HBeAg positive (% of HBsAg) §§	8 (26.7)	–	–	–
Sheffield	Positive samples §	173	55	90	–
	Samples tested	59352	58983	59391	–
	<i>Percent positive</i>	0.29%	0.09%	0.15%	–
	HBeAg positive (% of HBsAg) §§	23 (15.4)	–	–	–
<b>Total</b>	<b>Positive samples §</b>	<b>525</b>	<b>168</b>	<b>240</b>	<b>2347</b>
	<b>Samples tested</b>	<b>151627</b>	<b>145282</b>	<b>165037</b>	<b>69106</b>
	<b><i>Percent positive</i></b>	<b>0.35%</b>	<b>0.12%</b>	<b>0.15%</b>	<b>3.40%</b>
	<b>HBeAg positive (% of HBsAg) §§</b>	<b>71 (15.7)</b>	<b>–</b>	<b>–</b>	<b>–</b>

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

† Samples negative for rubella antibodies.

§ Reactive (non-reactive for rubella) on initial testing and positive (negative for rubella) when sample retested at NHSBT NTMRL.

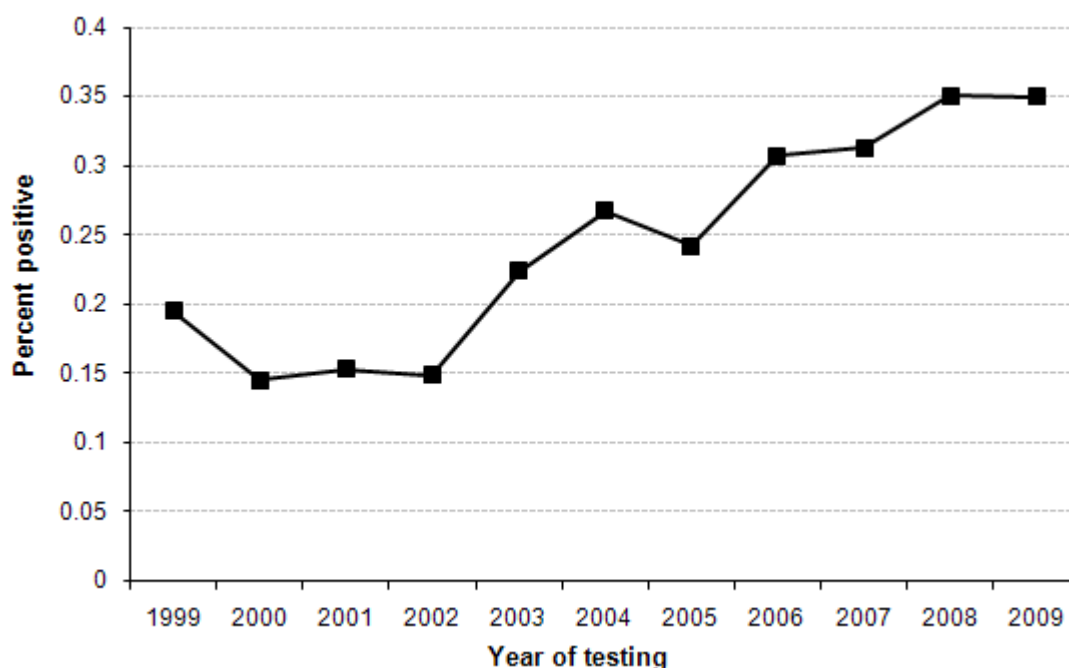
§§ 73/525 samples were not tested for anti-HBe/HBeAg where known from previous results and/or not requested.

## Cumulative data, England : 1999 to 2009

### HBV

In the period 1999-2009, there was a 9% increase in HBsAg positive antenatal samples on average each year (IRR 1.092,  $p < 0.001$ , 95%CI 1.081-1.105) (figure 1). However not all centres were collecting samples before 2004. The majority of samples tested were collected via Birmingham and Sheffield. There was variation by centre which is likely to reflect differences in the antenatal populations being tested including differences in the population of women of childbearing age born in or to parents from HBV endemic countries. During the period of surveillance, there has been increasing awareness of HBV transmission. Responsibility for offering testing to all women moved to the local provider in April 2002 supported by Department of Health standards [1].

**Figure 1. The overall percentage of HBsAg positive\* antenatal samples tested by NHSBT, England 1999-2009**

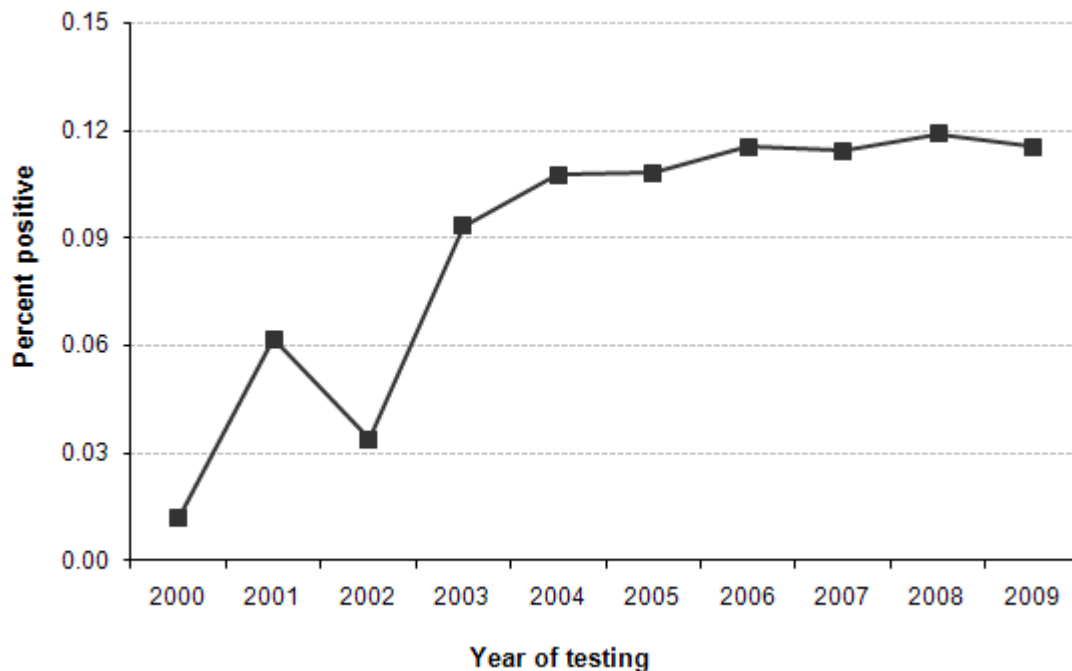


\* Reactive on initial testing and positive when sample retested at NHSBT NTMRL.

### HIV

Anti-HIV testing for antenatal women was introduced in 2000. In the period 2000-2009, there was an 8% increase in anti-HIV positive antenatal samples on average each year (IRR 1.084,  $p < 0.001$ , 95%CI 1.057-1.113). The reported number of samples tested increased between 2000 and 2005 from below 20,000 to over 130,000, probably due to a combination of changes to testing contracts, an increase in uptake of HIV testing and greater awareness of the risk of transmission and the benefits of detection during pregnancy. However, between 2004 and 2009, as the number of samples tested stabilised, the proportion of samples positive for HIV remained relatively stable (figure 2).

**Figure 2. The percentage of anti-HIV positive\* antenatal samples tested by NHSBT, England 2000 to 2009**

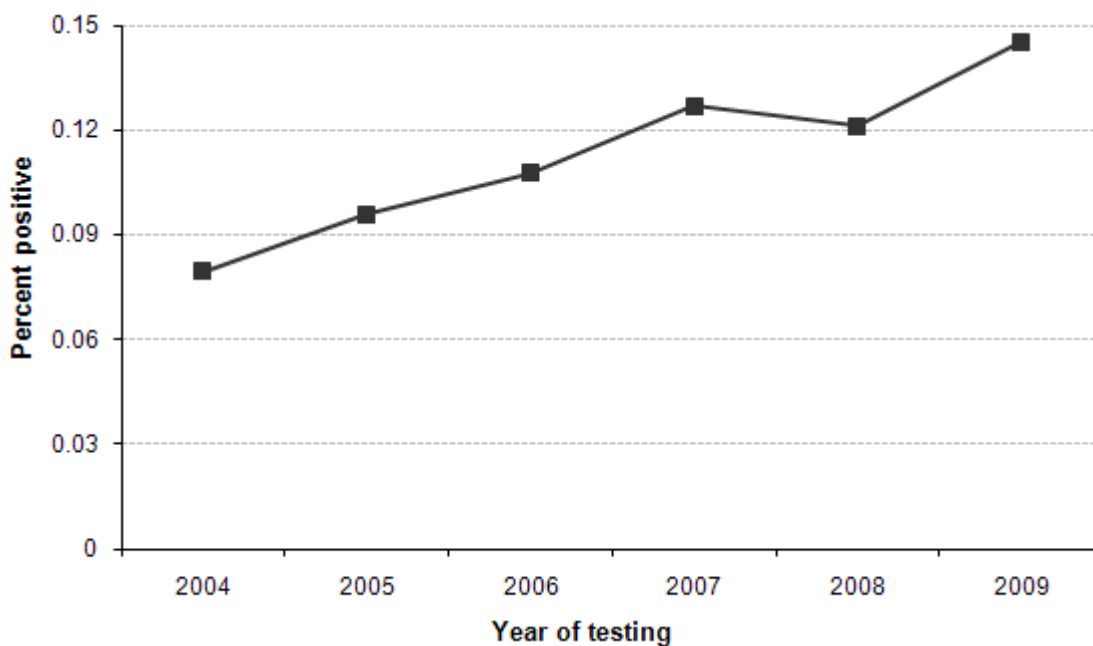


\* Reactive on initial testing and positive when sample retested at NHSBT NTMRL.

### **Syphilis**

Surveillance data on treponemal positivity has been reported to the Infection Surveillance Antenatal Testing Scheme since 2004. There was a 10% increase in anti-treponemal positive antenatal samples on average each year (IRR 1.096,  $p < 0.001$ , 95%CI 1.058-1.136) (figure 3). The treponemal positivity rate in antenatal women screened by NHSBT was consistently lower than that of other infections between 2004 to 2006. However from 2007 to 2009 it was equal to or higher than HIV.

**Figure 3. The percentage of anti- *T. pallidum* (syphilis) positive\* antenatal samples tested by NHSBT, England 2004 to 2009**

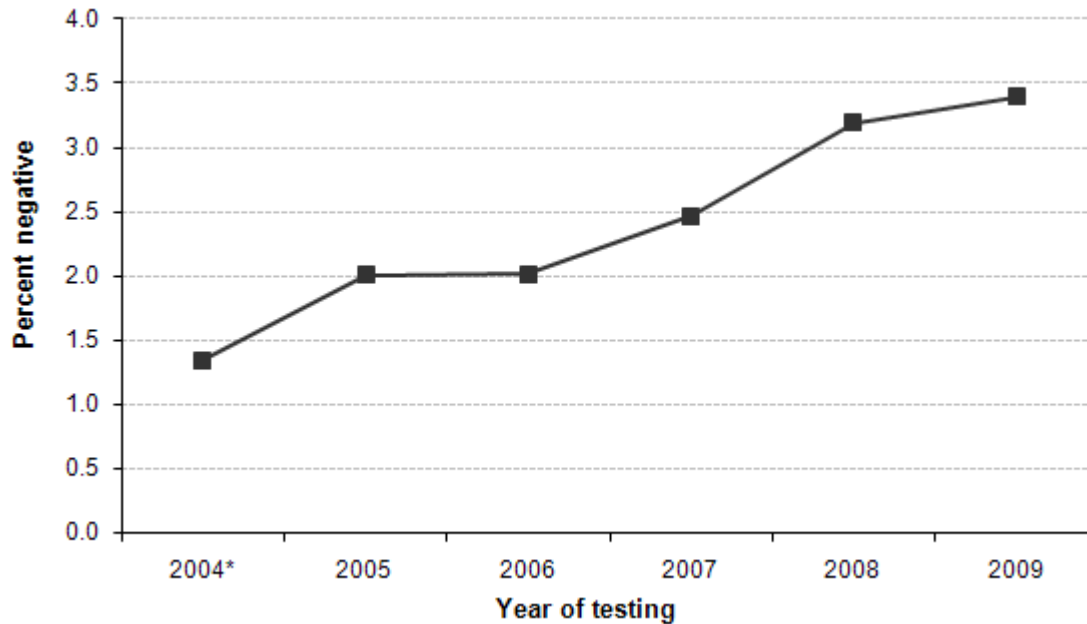


\* Reactive on initial testing and positive when sample retested at NHSBT NTMRL.

## Rubella

Testing for rubella susceptibility has been carried out in two centres since 2004 covering samples from Birmingham & Oxford and Manchester & Liverpool, with approximately 70 000 samples tested each year. All antenatal samples that were either non-reactive or close to the test cut-off value were sent to NTMRL for further testing. In the period 2004-2009 the rubella susceptibility rate increased by 19% on average each year (IRR 1.188,  $p < 0.001$ , 95%CI 1.174-1.202) (figure 4). A more detailed analysis of rubella susceptibility is being prepared for publication.

**Figure 4. The percentage of anti-rubella negative† antenatal samples tested by NHSBT, England 2004 to 2009**



† Non-reactive on initial testing and negative when sample retested at NHSBT NTMRL

\* 2004 was not a complete year of testing.

For further information please see the HPA website ([homepage](#) > [Topics A-Z](#) > [Antenatal testing for infection by NHS Blood and Transplant](#)).

## Reference

1. Department of Health (2003). [Screening for infectious diseases in pregnancy: standards to support the UK antenatal screening programme](#).

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## Vaccination coverage statistics for children aged up to five years in the United Kingdom: July to December 2009

This report presents childhood immunisation data covering the second half of 2009, bringing together two consecutive quarterly reports that would normally have been published separately. These cover:

- **July to September 2009**
- **October to December 2009**

(The collection of data for the first of the two periods was postponed due to the burden of unscheduled work associated with the pandemic (H1N1) 2009 influenza vaccination programme during the autumn of 2009 - see commentary section of the last published COVER report [1]).

The two reports cover the periods July to September 2009 and October to December 2009. Each contains the routine tabulations for coverage evaluated at 12 months, 24 months and 5 years by region and devolved administrations. Monthly coverage data for the MMR sentinel surveillance scheme has been combined for the 6-month period and appears at the end of the October to December 2009 report. The following commentary relates to both quarterly reports.

### Commentary

UK vaccine coverage for many of the immunisations evaluated at 12 months, 24 months, and five years of age have increased to record levels during the six-month period July to December 2009.

At 12 months, coverage of DTaP/IPV/Hib3 is now 94%, the highest level recorded since UK statistics were first produced in 1995, with primary MenC and PCV at 12 months only marginally lower at 93.4% and 93.7% respectively. Seven English regions, Wales, Northern Ireland and Scotland all achieved at least 94% coverage for all three immunisations in the October to December 2009 quarter.

For both quarters, UK coverage for DTaP/IPV/Hib3 at 24 months exceeded the WHO target of 95% which was last achieved in 2000. Coverage at 24 months for MMR1 was 88.6% and for the PCV booster it was 88.5% in the October to December quarter; Hib/MenC booster exceeded 90% for both quarters. Four English regions, Wales, Northern Ireland and Scotland all achieved coverage of at least 90% for both PCV and Hib/MenC boosters. Substantial increases for MMR1, PCV and Hib/MenC boosters were reported in London during the two quarters and coverage for these antigens in the October to December quarter were 80.5%, 79.6% and 80.7% respectively.

During the two quarters UK coverage of the pre-school booster (DTaP/IPV) evaluated at five years of age increased by 1% to 85.5%, MMR1 and MMR2 coverage increased by a similar percentage to 92.1% and 83.2% respectively.

In England, the introduction of immunisation performance within the Vital Signs programme, as part of the NHS Operating Framework, correlates with the continuing upwards trend in coverage of the childhood vaccines. The attention given to improving performance on immunisation over 2008/09 and 2009/10 by both PCTs and SHAs, directly attributable to inclusion in Vital Signs, has produced a measurable improvement in outcome. There have been particularly significant increases in vaccine coverage in London which correlate with the introduction of NHS London's Immunisation Improvement Programme.

In contrast to the increases in coverage for the routine childhood immunisation, coverage of the selective neonatal hepatitis B vaccination programme, which is not included in Vital Signs, has shown no such improvement. Although reporting coverage for infants born to hepatitis surface antigen (HBsAg) positive mothers has been part of the mandatory immunisation data collection in England since April 2005, returns for neonatal hepatitis B data to the COVER programme have consistently been incomplete and only just over 75% of English PCTs made returns for the two quarters evaluated here. Coverage for three doses of hepatitis B vaccine in infants born to HBsAg positive mothers who

reached the age of one year in the October to December 2009 quarter was 74%, 1% higher than in the July to September 2009 quarter. Coverage of four doses of vaccine in infants who reached two years of age in the July to September 2009 and October to December 2009 quarters was 43% and 50% respectively. These levels remain similar to those reported in the 2008/09 annual report [2].

Coverage of hepatitis B is considerably lower than that obtained for routine antigens at 12 and 24 months (tables 1 and 2). The largest numbers of infants at risk reside in London, where coverage was above the national average (79% at 12 months).

Although poor coverage has often been attributed to the population at risk being highly mobile [3-5], a recent London study investigating factors associated with incomplete vaccination of babies at risk of hepatitis B found that the majority of HBsAg positive mothers delivered in the trust where they received antenatal care and few families were lost to follow-up after 15 months [6]. The main determinant of complete vaccination was the organisation of the health services rather than the population characteristics.

Collection of these data are also difficult in some areas as not all child health systems have the capacity to produce statistics or even hold information on hepatitis B vaccines, although returns generated from manual systems or from standalone databases managed by or on behalf of the PCT can be submitted to the COVER programme.

Currently, there are a number of strategies to improve neonatal hepatitis B coverage including specific recommendations made in the recently published NICE guidance which focuses on the hepatitis B vaccination programme [7].

### **COVER programme: July to September 2009: 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, July to September 2009.

Children who reached their first birthday in the quarter (born July to September 2008) were the ninth quarterly birth cohort to have been scheduled to receive their primary vaccinations according to the new schedule introduced on 4<sup>th</sup> September 2006 [8] (three doses diphtheria, tetanus, acellular pertussis, polio, and Haemophilus influenzae type b vaccine (DTaP/IPV/Hib vaccine), two doses each of meningococcal serogroup C conjugate vaccine (MenC vaccine) and pneumococcal conjugate vaccine (PCV), completing between November 2008 and January 2009.

Children who reached their second birthday in the quarter (born July to September 2007) would have been scheduled to receive their third dose primary vaccinations between November 2007 and January 2008 and first measles, mumps, and rubella (MMR) vaccination between August 2008 and January 2009. These children are the eighth quarterly birth 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 [8].

Children who reached their fifth birthday in the quarter (born July to September 2004) would have been scheduled to receive their third dose primary vaccinations between November 2004 and January 2005, their first MMR between August 2005 and December 2005, their pre-school diphtheria, tetanus, acellular pertussis, inactivated polio (DTaP/IPV) booster and second dose MMR from August 2007 onwards, and a catch-up dose of a Hib-containing vaccine from September 2007 [9].

### **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/webw/HPAweb&Page&HPAwebAutoListDate/Page/1209454766294?p=1209454766294>.

## Results

Data were received from all Health Boards (HBs) in Scotland and Northern Ireland and Wales, and all Primary Care Trusts (PCTs) in England. This is the first quarter that Wales have reported by Local Health Board area after the recent reconfiguration of the regional Administrative Regions (AR) into seven Local Health Boards. This is the fourth consecutive quarter that all 31 London PCTs have submitted a return. Data quality in London PCTs is improving and many PCTs previously using the CHIA child health information system have moved onto the RiO child health system. However, four London PCTs have still issued caveats regarding ongoing data quality concerns this quarter. Additionally, data for several antigens in the five year cohort reported by four PCTs in different regions (one in London) have been excluded from the regional and national totals (table 3).

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 months

Compared to the previous quarter, UK coverage at 12 months for DTaP/IPV/Hib3 increased by 1.2% to 93.9%, coverage for MenC2 increased by 0.8% to 92.9%, and PCV2 increased by 1% to 93.4% (Table 1) [1]. Country-specific comparisons at 12 months show Scotland, Wales and Northern Ireland achieved at least 95.9% coverage for all three immunisations. In England, six regions (North East, North West, East Midlands, West Midlands, East of England and South West) achieved at least 94% coverage for all three immunisations. Although London was the only English region to report coverage below 90% for any immunisation at 12 months, compared to the previous quarter, substantial increases in coverage were reported: DTaP/IPV/Hib3 was up by 4.5%, MenC2 by 4.1%, and PCV2 by 3.8% (table 1) [1].

Eighty-two of the 177 participating PCTs/HBs/ARs (46%) achieved at least 95% coverage at 12 months for DTaP/IPV/Hib3, and 78 (44%) achieved 95% for two doses of PCV and 71 (40%) for 2 doses of MenC vaccine.

**Table 1 (July-Sept 2009). Completed primary immunisations (all antigens) by 12 months**

Strategic Health Authorities (SHAs)/Country	PCT/HB/AR*† (total)	DTaP/IPV/Hib3 %	MenC2 %	PCV2 %
<b>English SHAs</b>				
North East	12 (12)	95.9	95.7	95.4
North West	24 (24)	94.6	94.2	94.3
Yorkshire and the Humber	14 (14)	94.1	93.2	93.4
East Midlands	9 (9)	95.1	94.2	94.7
West Midlands	17 (17)	95.2	94.8	95.0
East of England	14 (14)	95.0	94.2	94.6
London	31 (31)	87.3	85.1	86.1
South Central	9 (9)	95.1	93.6	95.3
South East Coast	8 (8)	92.6	90.7	91.8
South West	14 (14)	95.1	94.7	95.0
<b>England (Total)</b>	<b>152 (152)</b>	<b>93.3</b>	<b>92.2</b>	<b>92.8</b>
<b>Wales</b>	<b>7 (7)</b>	<b>96.1</b>	<b>95.9</b>	<b>95.9</b>
<b>Northern Ireland</b>	<b>4 (4)</b>	<b>97.8</b>	<b>97.7</b>	<b>97.9</b>
<b>Scotland</b>	<b>14 (14)</b>	<b>97.2</b>	<b>97.1</b>	<b>97.2</b>
<b>United Kingdom</b>	<b>177 (177)</b>	<b>93.9</b>	<b>92.9</b>	<b>93.4</b>

\* Primary Care Trusts/health boards/administrative regions

† Number of trusts reporting DTaP/IPV/Hib3 coverage

## Coverage at 24 months

Compared to the previous quarter, MMR coverage in the UK increased by 1.2%, with England increasing by 1.3%; the greatest improvement in an English region reported by London (up 2.9% to 79.7%), followed by South Central (up 1.7% to 91.5%). [1] (table 2). The North East, North West, West Midlands and South Central regions, Wales, Northern Ireland, and Scotland all achieved MMR coverage of at least 90%.

Quarterly UK PCV booster coverage, reported for the eighth time this quarter, increased by 1% for the second successive quarter, up to 87.8%, and Hib/MenC booster increased by 1.1% to 90.2% compared to the previous quarter (table 2) [1]. East Midlands, North East and South Central regions, Northern Ireland, Wales and Scotland all achieved coverage of at least 90% for both Hib/MenC and PCV boosters. Although substantial increases for both PCV and Hib/MenC boosters were reported in London (up 2.3% and 3.1% respectively) coverage remained below 80%.

UK coverage for DTaP/IPV/Hib at 24 months exceeded the WHO target of 95% for the first time since the July to September 2000 quarter. London coverage improved by 3.3% to 89.7%, but it remains the only region not achieving at least 95%. (table 2) [1].

95% coverage at 24 months was achieved by 121 of the 177 PCTs/HBs/ARs (68%) for DTaP/IPV/Hib3, by 108/177 (61%) for MenC, by 25 for the Hib/MenC booster and 11 for the PCV booster, and by one Scottish Health Board and three English PCTs for MMR.

**Table 2 (July-Sept 2009). Completed primary immunisations (all antigens) by 24 months**

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)	96.7	96.7	91.0	93.7	91.0
North West	24 (24)	96.5	94.9	89.3	91.4	91.1
Yorkshire and the Humber	14 (14)	96.1	96.2	89.4	93.0	88.4
East Midlands	9 (9)	96.7	95.7	90.1	92.0	89.2
West Midlands	17 (17)	96.4	95.2	89.8	92.0	90.0
East of England	14 (14)	95.6	96.0	87.4	92.3	87.0
London	31 (31)	89.8	86.1	76.2	79.3	79.7
South Central	9 (9)	97.0	95.1	90.9	92.2	91.5
South East Coast	8 (8)	95.6	93.5	87.4	89.0	87.0
South West	14 (14)	96.5	95.9	89.9	92.2	89.1
<b>England (Total)</b>	<b>152 (152)</b>	<b>95.1</b>	<b>93.7</b>	<b>86.9</b>	<b>89.6</b>	<b>87.6</b>
<b>Wales</b>	<b>7 (7)</b>	<b>97.4</b>	<b>95.9</b>	<b>90.4</b>	<b>93.4</b>	<b>91.9</b>
<b>North. Ireland</b>	<b>4 (4)</b>	<b>98.4</b>	<b>97.1</b>	<b>93.1</b>	<b>92.9</b>	<b>92.3</b>
<b>Scotland</b>	<b>14 (14)</b>	<b>98.4</b>	<b>96.6</b>	<b>94.8</b>	<b>94.3</b>	<b>93.8</b>
<b>United Kingdom</b>	<b>177 (177)</b>	<b>95.5</b>	<b>94.1</b>	<b>87.8</b>	<b>90.2</b>	<b>88.4</b>

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

† Number of trusts reporting DTaP/IPV/Hib3 coverage

## Coverage at 5 years

All countries and English regions, except for London, achieved at least 92% coverage for DTP/Pol3, Hib3 and MenC, with Scotland and three English regions (North East, West Midlands and South West) reporting at least 95% coverage for all three immunisations (table 3).

Compared to the previous quarter, MMR1 coverage in the UK increased by 0.9% to 91.6%; both Scotland and Northern Ireland achieving at least 95%. UK MMR2 coverage also increased by 1% (to 83%) and DTaP/IPV booster increased by 0.7% (to 85.1%) with most countries/regions reporting increased coverage for both these pre-school booster vaccines [1]. The greatest increases in booster coverage were seen in the North East region where coverage for MMR2 increased by 4.7% and DTaP/IPV increased by 3.9%. London coverage is still lower than other English regions and in particular, pre-school booster coverage for MMR2 and DTaP/IPV is at least 10% lower than other regions.

**Table 3 (July-Sept 2009). Completed primary immunisations and boosters (all antigens) by 5 years**

Strategic Health Authorities (SHAs)/country	PCT/HB/AR* † (total)	Primary				Pre-school booster	
		DTP/Pol3 %	Hib3 %	MenC %	MMR1 %	MMR2 %	DTaP/IPV %
<b>English SHAs</b>							
North East	12 (12)	96.6	96.1	96.5	94.1	88.3	90.7
North West	24 (24)	96.1	95.0 §	94.8	94.1	85.5	87.6
Yorkshire & Humber	14 (14)	95.1	94.4	95.2	92.5	85.0	85.9
East Midlands	9 (9)	92.4	92.3	92.9	91.3	84.2	85.3
West Midlands	17 (17)	96.0	95.1	95.2	93.2	85.7 §	88.7
East of England	14 (14)	94.3	93.8	94.4	89.0	82.3	85.7
London	31 (31)	86.7	85.6	83.3	85.5	70.3	68.9 §
South Central	9 (9)	94.1	93.4	93.0	92.3	84.4	88.3
Sth. East Coast	8 (8)	92.6	92.9	92.0	89.9	80.5	84.7
South West	14 (14)	96.4	96.2	95.7	92.9	85.1	88.6 §
<b>England (Total)</b>	<b>152 (152)</b>	<b>93.4</b>	<b>92.8</b>	<b>92.4</b>	<b>90.9</b>	<b>81.9</b>	<b>83.9</b>
<b>Wales</b>	<b>7 (7)</b>	<b>96.5</b>	<b>95.9</b>	<b>93.9</b>	<b>93.4</b>	<b>85.6</b>	<b>89.8</b>
<b>Northern Ireland</b>	<b>4 (4)</b>	<b>97.6</b>	<b>94.7</b>	<b>95.3</b>	<b>96.3</b>	<b>90.0</b>	<b>91.9</b>
<b>Scotland</b>	<b>14 (14)</b>	<b>98.5</b>	<b>97.5</b>	<b>97.6</b>	<b>96.2</b>	<b>90.1</b>	<b>92.6</b>
<b>United Kingdom</b>	<b>177 (177)</b>	<b>94.1</b>	<b>93.3</b>	<b>93.0</b>	<b>91.6</b>	<b>83.0</b>	<b>85.1</b>

\* Primary Care Trusts/health boards/administrative regions

† Number of trusts reporting DTP/Pol3 coverage

§ Unreliable data for 1 PCT excluded.

## Neonatal hepatitis B vaccine coverage data in England

The data presented in table 4 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 (ie those born between April and June 2008), and coverage of four doses of vaccine in infants who reached two years of age (ie those born between April and June 2007).

**Table 4 (July-Sept 2009). Neonatal hepatitis B coverage in England**

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)	11	100%	7(12)	9	33%
North West	15 (24)	46	65%	15 (24)	30	77%
Yorkshire & the Humber	12 (14)	65	55%	12 (14)	80	30%
East Midlands	6 (9)	11	73%	6 (9)	12	100%
West Midlands	14 (17)	43	86%	14 (17)	44	43%
East of England	11 (14)	31	71%	11 (14)	33	67%
London	26 (31)	264	76%	26 (31)	327	35%
South Central	7 (9)	19	100%	7 (9)	24	92%
South East Coast	7 (8)	1	100%	7 (8)	2	50%
South West	10 (14)	8	25%	10 (14)	4	25%
<b>Total</b>	<b>116 (152)</b>	<b>499</b>	<b>73%</b>	<b>115 (152)</b>	<b>565</b>	<b>43%</b>

Data were received from 116/152 (76%) PCTs in England, 7% less than reported in the last quarter [1]. Some of the returns may relate to only part of the PCT due to mergers. Coverage in England for three doses in those aged one year increased by 6% to 73% [1] (Table 4). Coverage in England for four doses in those aged 24 months decreased by 8% to 43% compared to the last quarter [1].

## **COVER programme: October to December 2009: 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 2009.

Children who reached their first birthday in the quarter (born October to December 2008) were the tenth quarterly birth cohort to have been scheduled to receive their primary vaccinations according to the new schedule introduced on 4 th September 2006 [8] (three doses diphtheria, tetanus, acellular pertussis, polio, and Haemophilus influenzae type b vaccine (DTaP/IPV/Hib vaccine), two doses each of meningococcal serogroup C conjugate vaccine (MenC vaccine) and pneumococcal conjugate vaccine (PCV), completing between February and April 2009.

Children who reached their second birthday in the quarter (born October to December 2007) would have been scheduled to receive their third dose primary vaccinations between February and April 2008 and first measles, mumps, and rubella (MMR) vaccination between November 2008 and April 2009. These children are the ninth quarterly birth 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 [8].

Children who reached their fifth birthday in the quarter (born October to December 2004) would have been scheduled to receive their third dose primary vaccinations between February and April 2005, their first MMR between November 2005 and March 2006, their pre-school diphtheria, tetanus, acellular pertussis, inactivated polio (DTaP/IPV) booster and second dose MMR from November 2007 onwards, and a catch-up dose of a Hib-containing vaccine from September 2007 [9].

### **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/webw/HPAweb&Page&HPAwebAutoListDate/Page/1209454766294?p=1209454766294>.

### **Results**

Data were received from all Health Boards (HBs) in Scotland , Northern Ireland and Wales, and all Primary Care Trusts (PCTs) in England. This is the fifth consecutive quarter that all 31 London PCTs have submitted a return. Data quality in London PCTs is improving and many PCTs previously using the CHIA child health information system have moved onto the RiO system. However, four London PCTs have still issued caveats regarding ongoing data quality concerns this quarter. Additionally, unreliable data for several antigens reported by four PCTs in different regions (none in London) have been excluded from the regional and national totals (table 2 and 3).

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 months**

Compared to the previous quarter, UK coverage at 12 months for DTaP/IPV/Hib3 increased by 0.1% to 94.0%, coverage for MenC2 increased by 0.4% to 93.4%, and PCV2 increased by 0.3% to 93.7% (Table 1). Country-specific comparisons at 12 months show Scotland and Northern Ireland achieved at least 97% coverage for all three immunisations, Wales achieved at least 95%. In England , seven regions (North East, North West , Yorkshire and the Humber, East Midlands, West Midlands , East of England and South West) achieved at least 94% coverage for all three immunisations. Although London was the only English region to report coverage below 90% for any immunisation at 12 months, the substantial increases in coverage reported in the previous quarter were maintained and coverage for each of the three immunisations is now above 86% (table 1).

Eighty-two of the 177 participating PCTs/HBs/ARs (46%) achieved at least 95% coverage at 12 months for DTaP/IPV/Hib3, and 76 (43%) achieved 95% for two doses of PCV and 64 (36%) for two doses of MenC vaccine .

**Table 1 (Oct-Dec 2009). Completed primary immunisations (all antigens) by 12 months**

Strategic Health Authorities (SHAs)/Country	PCT/HB/AR*† (total)	DTaP/IPV/Hib3 %	MenC2 %	PCV2 %
<b>English SHAs</b>				
North East	12 (12)	95.6	95.2	95.3
North West	24 (24)	94.8	94.6	94.6
Yorkshire and the Humber	14 (14)	94.7	94.1	94.4
East Midlands	9 (9)	94.5	94.2	94.3
West Midlands	17 (17)	95.0	94.9	95.0
East of England	14 (14)	95.2	94.6	95.0
London	31 (31)	88.0	86.7	87.1
South Central	9 (9)	95.2	93.8	95.2
South East Coast	8 (8)	92.8	91.2	92.3
South West	14 (14)	94.9	94.9	95.0
<b>England (Total)</b>	<b>152 (152)</b>	<b>93.5</b>	<b>92.8</b>	<b>93.2</b>
<b>Wales</b>	<b>7 (7)</b>	<b>95.6</b>	<b>95.3</b>	<b>95.6</b>
<b>Northern Ireland</b>	<b>4 (4)</b>	<b>97.4</b>	<b>97.3</b>	<b>97.3</b>
<b>Scotland</b>	<b>14 (14)</b>	<b>97.6</b>	<b>97.3</b>	<b>97.5</b>
<b>United Kingdom</b>	<b>177 (177)</b>	<b>94.0</b>	<b>93.4</b>	<b>93.7</b>

\* Primary Care Trusts/health boards/administrative regions

† Number of trusts reporting DTaP/IPV/Hib3 coverage

### Coverage at 24 months

MMR coverage in the UK increased by 0.2% to 88.6% this quarter with four English regions (North East, North West, West Midlands, and South Central) achieving at least 90% coverage, and Scotland, Wales and Northern Ireland achieving at least 92%.

Quarterly UK PCV booster coverage increased by 0.7% to 88.5%, and Hib/MenC booster increased by 0.3% to 90.5% compared to the previous quarter (table 2) [3] with North East, North West, West Midlands, and South Central regions in England, and Northern Ireland, Wales, and Scotland all achieving coverage of at least 90% for both boosters. Substantial increases for both PCV and Hib/MenC boosters were reported in London . PCV booster increased by 3.4% to 79.6% and Hib/MenC rose by 0.8% to 80.7%.

UK coverage for DTaP/IPV/Hib at 24 months exceeded the WHO target of 95% for the second successive quarter since the July to September 2000 quarter. London coverage for this immunisation exceeded 90% for the first time, up 1.9% to 90.8%, but still remains the only region not achieving at least 95%. (table 2).

95% coverage at 24 months was achieved by 132 of the 177 PCTs/HBs/ARs (75%) for DTaP/IPV/Hib3, by 104/177 (59%) for MenC, by 29 for the Hib/MenC booster and 15 for the PCV booster, and by two Scottish Health Board and five English PCTs for MMR.

**Table 2 (Oct-Dec 2009). Completed primary immunisations (all antigens) by 24 months**

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)	96.9	97.1	91.7	94.2	91.7
North West	24 (24)	96.2	94.7	88.9	91.3	90.5
Yorkshire and the Humber	14 (14)	96.4	96.4	89.8	93.2	88.8
East Midlands	9 (9)	97.2	96.9	89.5	92.5	89.1
West Midlands	17 (17)	96.5	95.5	90.5	92.4	90.7
East of England	14 (14)	95.9	96.2	88.2	92.6	87.4
London	31 (31)	90.8	88.0	79.6	80.7	80.5
South Central	9 (9)	96.6	95.3 §	91.4	91.7	91.1
South East Coast	8 (8)	94.5	93.6	86.6	88.3	86.7
South West	14 (14)	96.9	96.3	89.3	91.1	88.8
<b>England (Total)</b>	<b>152 (152)</b>	<b>95.3</b>	<b>94.2</b>	<b>87.6</b>	<b>89.8</b>	<b>87.7</b>
<b>Wales</b>	<b>7 (7)</b>	<b>97.5</b>	<b>96.4</b>	<b>91.9</b>	<b>94.5</b>	<b>93.1</b>
<b>North. Ireland</b>	<b>4 (4)</b>	<b>98.6</b>	<b>97.0</b>	<b>93.0</b>	<b>94.8</b>	<b>92.1</b>
<b>Scotland</b>	<b>14 (14)</b>	<b>98.3</b>	<b>96.5</b>	<b>94.9</b>	<b>94.2</b>	<b>94.2</b>
<b>United Kingdom</b>	<b>177 (177)</b>	<b>95.7</b>	<b>94.6</b>	<b>88.5</b>	<b>90.5</b>	<b>88.6</b>

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

† Number of trusts reporting DTaP/IPV/Hib3 coverage

§ Unreliable data for 1 PCT excluded.

### Coverage at 5 years

All countries and English regions, except for London, achieved at least 92% coverage for DTP/Pol3, Hib3 and MenC, with Scotland and four English regions (North East, Northern and Yorkshire, West Midlands and South West) reporting at least 95% coverage for all three immunisations (table 3).

Compared to the previous quarter, MMR1 coverage in the UK increased by 0.5% to 92.1%; both Scotland and Northern Ireland achieving at least 95%. UK MMR2 coverage increased by 0.2% (to 83.2%) and DTaP/IPV booster increased by 0.4% (to 85.5%). London coverage is still lower than other English regions and in particular, pre-school booster coverage for MMR2 and DTaP/IPV is at least 10% lower than other regions.

**Table 3 (Oct-Dec 2009). Completed primary immunisations and boosters (all antigens) by 5 years**

Strategic Health Authorities (SHAs)/country	PCT/HB/AR* † (total)	Primary				Pre-school booster	
		DTP/Pol3 %	Hib3 %	MenC %	MMR1 %	MMR2 %	DTaP/IPV %
<b>English SHAs</b>							
North East	12 (12)	97.2	96.7	96.7	94.8	89.0	90.8
North West	24 (24)	96.5	95.3 §	94.9	93.8	85.1	87.3
Yorkshire & Humber	14 (14)	96.0	95.1	95.6	93.5	85.9	86.7
East Midlands	9 (9)	95.2	94.4	96.0	92.7	85.5	86.3
West Midlands	17 (17)	96.4	95.5	95.2	93.5	86.2 §	89.6
East of England	14 (14)	94.5	94.1	94.4	89.2	81.7	84.9
London	31 (31)	88.3	86.8	84.9	86.3	70.0	69.9
South Central	9 (9)	93.1	92.5	92.2	91.7	84.6	89.4 §
Sth. East Coast	8 (8)	93.9	94.1	93.1	92.0	80.7	85.3
South West	14 (14)	96.3	96.2 §	95.4	92.4	83.9	87.7
<b>England (Total)</b>	<b>152 (152)</b>	<b>94.2</b>	<b>93.4</b>	<b>93.1</b>	<b>91.5</b>	<b>82.0</b>	<b>84.3</b>
<b>Wales</b>	<b>7 (7)</b>	<b>96.4</b>	<b>95.9</b>	<b>95.1</b>	<b>93.6</b>	<b>86.4</b>	<b>90.0</b>
<b>Northern Ireland</b>	<b>4 (4)</b>	<b>97.4</b>	<b>94.4</b>	<b>95.0</b>	<b>96.2</b>	<b>90.8</b>	<b>92.5</b>
<b>Scotland</b>	<b>14 (14)</b>	<b>98.5</b>	<b>97.6</b>	<b>97.6</b>	<b>96.6</b>	<b>91.6</b>	<b>93.6</b>
<b>United Kingdom</b>	<b>177 (177)</b>	<b>94.7</b>	<b>93.9</b>	<b>93.6</b>	<b>92.1</b>	<b>83.2</b>	<b>85.5</b>

\* Primary Care Trusts/health boards/administrative regions

† Number of trusts reporting DTP/Pol3 coverage

§ Unreliable data for 1 PCT excluded.

### Neonatal hepatitis B vaccine coverage data in England

The data presented in table 4 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 2008), and coverage of four doses of vaccine in infants who reached two years of age (i.e. those born between October and December 2007).

**Table 4 (Oct-Dec 2009). Neonatal hepatitis B coverage in England**

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	7 (12)	9	78%	6(12)	5	60%
North West	14 (24)	37	57%	14 (24)	38	58%
Yorkshire & the Humber	12 (14)	21	86%	12 (14)	29	62%
East Midlands	7 (9)	36	64%	7 (9)	28	79%
West Midlands	15 (17)	62	71%	15 (17)	53	55%
East of England	12 (14)	31	55%	12 (14)	28	71%
London	27 (31)	257	79%	27 (31)	275	40%
South Central	7 (9)	31	94%	7 (9)	14	86%
South East Coast	6 (8)	0	-	6 (8)	1	0
South West	10 (14)	6	67%	10 (14)	4	25%
<b>Total</b>	<b>117(152)</b>	<b>490</b>	<b>74%</b>	<b>116 (152)</b>	<b>475</b>	<b>50%</b>

Data were received from 117/152 (77%) PCTs in England, a similar number to that which reported in the last quarter [3]. Some of the returns may relate to only part of the PCT due to mergers [4]. Coverage in England for three doses in those aged one year has remained similar at 74% [3] (Table 4). Coverage in England for four doses in those aged 24 months increased by 7% to 50% compared to the last quarter and is similar to that reported in the April to June 2009 quarter.

## MMR sentinel surveillance scheme coverage in England

MMR sentinel surveillance scheme coverage in England

For methods of data collection see

<http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListDate/Page/1209454766294?p=1209454766294>

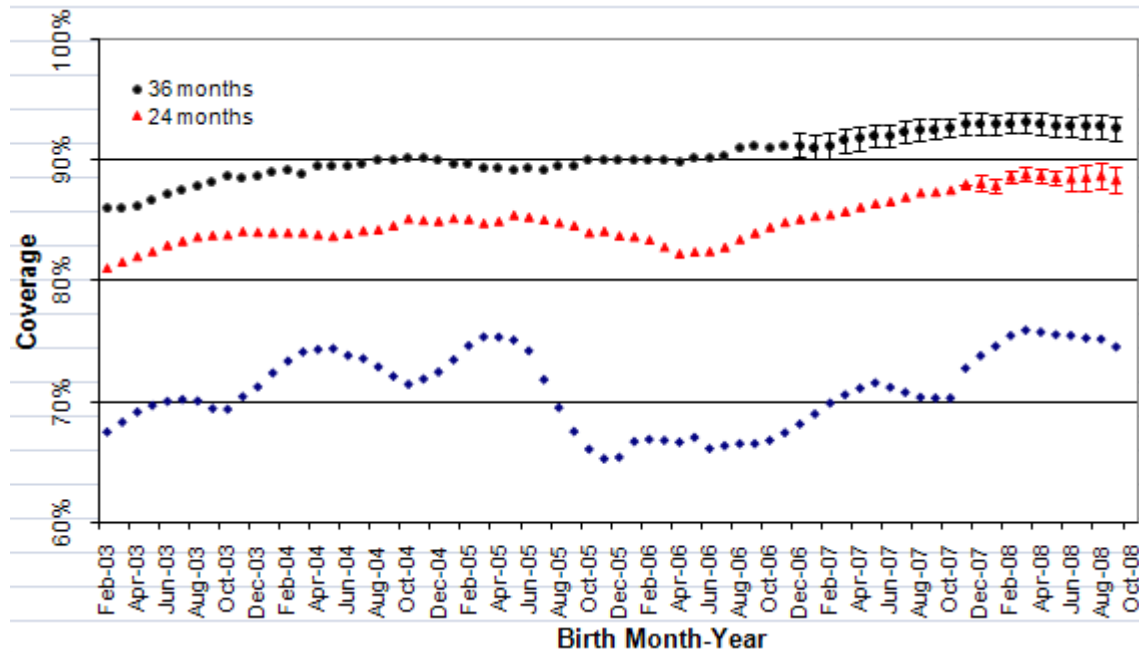
Data collected from September to February 2010 for children in the four age cohorts is summarised in table 4, and ranged from 74.0 to 77.2% at 16 months, 83.9 to 86.1% at 20 months, 86.8% to 88.7% at 24 months, and 90.7% to 92.5% at 36 months.

**Table 5 (Oct-Dec 2009). Monthly sentinel estimates of measles, mumps rubella (MMR) coverage at 16, 20, 24 and 36 months: September 2009 to February 2010**

Evaluation month	Proportion of children vaccinated at each age				
	Number of PCT/trusts	16 months	20 months	24 months	36 months
September 2009	35	76.6	83.9	86.8	91.0
October 2009	35	75.7	85.7	87.6	90.7
November 2009	34	77.2	86.1	88.6	92.5
December 2009	35	75.4	85.5	87.2	90.9
January 2010	35	74.0	84.3	87.6	89.9
February 2010	35	74.4	84.2	88.7	91.5

The figure shows observed and projected MMR coverage at 16, 24 and 36 months in England for birth cohorts from October 2002 to September 2008. 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: 54.2% for 16 to 24 months, 70.9% for 16 to 36 months, 24% for 20 to 24 months, 53.4% for 20 to 36 months and 40.7% for 24 to 36 months. Projections make the assumption that  $p$  remains constant over the period of the projection, however, this assumption is likely to be affected by the current MMR catch-up campaign and therefore the projections will probably be under-estimated. Data at 20 months is not shown to simplify the graph as the line is close to that plotted for the 24 month data.

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



Data shown are 5 month moving averages.  
Projections are shown with 95% confidence intervals

**Relevant links for country-specific coverage data are as follows:**

**England**

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

**Northern Ireland**

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

**Scotland**

<http://www.show.scot.nhs.uk/scieh/>

**Wales**

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

**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/>

## References

1. "COVER programme: April to June 2009", in *Health Protection Report* **3**(38): immunisation. Available online at: <http://www.hpa.org.uk/hpr/archives/2009/hpr3809.pdf>
  2. HPA. Annual neonatal hepatitis B vaccine coverage data in England: 2006/07- 2008/09. *Health Protection Report* **3**(34): Immunisation . Available online at <http://www.hpa.org.uk/hpr/archives/2009/hpr3409.pdf>
  3. Smith CP, Parle M, Morris DJ. Implementation of government recommendations for immunising infants at risk of hepatitis B. *BMJ* 1994; **309**: 1339
  4. Wallis DE and Boxall EH. Immunisation of infants at risk of perinatal transmission of hepatitis B: retrospective audit of vaccine uptake. *BMJ*. 1999 Apr 24; **318** (7191): 1112-3.
  5. Dunn J, Shukla R, Neal K. Survey of neonatal hepatitis B vaccination in Leicestershire. *Comm Dis and Pub Health*. 1999; **2**(3): 218-9.
  6. Giraudon I, Permalloo N, Nixon G et al. Factors associated with incomplete vaccination of babies as risk of perinatal hepatitis B transmission: a London study in 2006. *Vaccine* 2009; **27**: 2016-2022.
  7. NHS National Institute for Health and Clinical Excellence. NICE public health guidance 21. Reducing differences in the uptake of immunisations (including targeted vaccines) among children and young people under 19 years. September 2009. <http://www.nice.org.uk/PH21>.
  8. Department of Health. Important changes to the childhood immunisation programme. PL CMO (2006) 1. Available online at: [http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Professionalletters/Chiefmedicalofficerletters/DH\\_4137171](http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Professionalletters/Chiefmedicalofficerletters/DH_4137171)
  9. Department of Health. *Haemophilus influenzae* type b (Hib) vaccine for young children – catch-up programme. PL/CMO/2007/5, PL/CNO/2007/3, PL/CPHO/2007/2. 23 July 2007. Available online at: [http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Professionalletters/Chiefmedicalofficerletters/DH\\_076964](http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Professionalletters/Chiefmedicalofficerletters/DH_076964).
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## Infection reports

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### Travel Health

#### Football World Cup in South Africa: travel advice for UK fans

The 2010 FIFA World Cup will be taking place in South Africa in June and July and over 21,000 people from the UK are expected to attend. The host cities are situated throughout South Africa in all provinces except Northern Cape. The National Travel Health Network and Centre (NaTHNaC) has published a clinical update that summarises the possible health and safety risks that may be associated with travelling to the event together with recommendations on how to prevent them [1].

The key messages are:

- Obtain travel health insurance.
- Be safe – watch out for accidents, injuries and theft.
- Avoid unprotected sexual contact.
- Ensure you are up to date with the British Schedule of vaccination, including measles, mumps and rubella (MMR).
- Avoid insect bites; see the NaTHNaC advice sheet on insect bite avoidance.
- Check to see if additional vaccinations and malaria prevention are necessary on the NaTHNaC Country Information Page for South Africa.

It was recently announced by the Department of Health that monovalent pandemic H1N1 influenza vaccine would be recommended for travellers going to southern hemisphere countries; this includes South Africa for the World Cup [2,3].

Current outbreaks in South Africa

#### Measles

There is currently an outbreak of measles ongoing in South Africa. As of 19 March 2010, 9,583 confirmed cases have been confirmed in an outbreak that started in January 2009 [4]. Although all nine provinces are reporting cases, the highest number of cases has been reported in Gauteng province (4,608). Most adult travellers from the UK should be immune to measles; those born before 1970 will probably have immunity from having had measles infection. Younger adults should have been offered one or more doses of a measles-containing vaccine (single measles, MR or MMR vaccine). Any individuals who are in doubt should have an MMR vaccine before travelling.

#### Rift Valley fever

An extensive outbreak of Rift Valley fever (RVF) in livestock is ongoing in six provinces in South Africa. Free State province has been most affected, where one of the host cities, Bloemfontein is situated. Forty-seven human cases have now been confirmed according to media reports [5]; the majority of which have been reported in Free State (41 cases including two deaths). Most cases have been in those who have had close contact with infected animals such as farm workers and veterinarians. RVF can also be transmitted by mosquitoes although this is a less common mode of transmission and the risk to most travellers is low. Travellers should ensure they practise insect bite avoidance [6].

Other possible risks are detailed in the NaTHNaC World Cup update [1] and the NaTHNaC Country Information Page for South Africa.

## References

1. NaTHNaC. 2010 FIFA World Cup, South Africa – advice for UK football fans. Clinical Update 24 March 2010 [accessed 25 March 2010]. Available at: [http://www.nathnac.org/pro/clinical\\_updates/2010worldcup\\_150210.htm](http://www.nathnac.org/pro/clinical_updates/2010worldcup_150210.htm)
  2. NaTHNaC. Pandemic H1N1 (2009) influenza vaccination for travellers to the Southern Hemisphere. Clinical Update 22 March 2010 [accessed 25 March 2010]. Available at: [http://www.nathnac.org/pro/clinical\\_updates/h1n1vaccine\\_220310.htm](http://www.nathnac.org/pro/clinical_updates/h1n1vaccine_220310.htm)
  3. HPA. Pandemic (H1N1) 2009 influenza vaccine for travel. Health Protection Report 4(11): news. Available at: <http://www.hpa.org.uk/hpr/news/default.htm#h1n1>.
  4. National Institute for Communicable Diseases [South Africa]. Measles update, 23 March 2010. [accessed 25 March 2010]. Available at: [http://www.nicd.ac.za/measles\\_out/measles\\_current.pdf](http://www.nicd.ac.za/measles_out/measles_current.pdf)
  5. ProMED-Mail. Rift Valley fever – South Africa, 24 March 2010 [accessed 25 March 2010]. Archive No: 20100324.0935. Available at: <http://www.promedmail.org>
  6. NaTHNaC. Rift Valley fever in Free State and Northern Cape provinces, South Africa. Clinical Update 12 March 2010 [accessed 25 March 2010]. Available at: [http://www.nathnac.org/pro/clinical\\_updates/rvf\\_sa\\_120310.htm](http://www.nathnac.org/pro/clinical_updates/rvf_sa_120310.htm).
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