



# CDR WEEKLY

**Current Issue:** Volume 14 Number 13 **Published on:** 25 March 2004

---

## MAIN STORIES THIS WEEK:

- ▾ [Surveillance of occupational exposures to bloodborne viruses in healthcare workers: 1997 to 2003](#)

---

## REPORTS BY INFECTION:

### Immunisation:

- ▾ [Laboratory reports of invasive meningococcal infections, England and Wales laboratory reports: weeks 45-48/2003](#)
- ▾ [Laboratory confirmed cases of pertussis infection England and Wales: January to December 2003](#)
- ▾ [Laboratory confirmed cases of measles, mumps, and rubella, England and Wales: October to December 2003](#)
- ▾ [COVER programme: October to December 2003](#)

---

## CDR SUBSCRIPTION:

- ▾ To subscribe to *CDR Weekly*, please visit: <<http://www.hpa.org.uk/cdr/contact.htm>>

## News

Last updated: 25 March 2004

Next update due: 1 April 2004

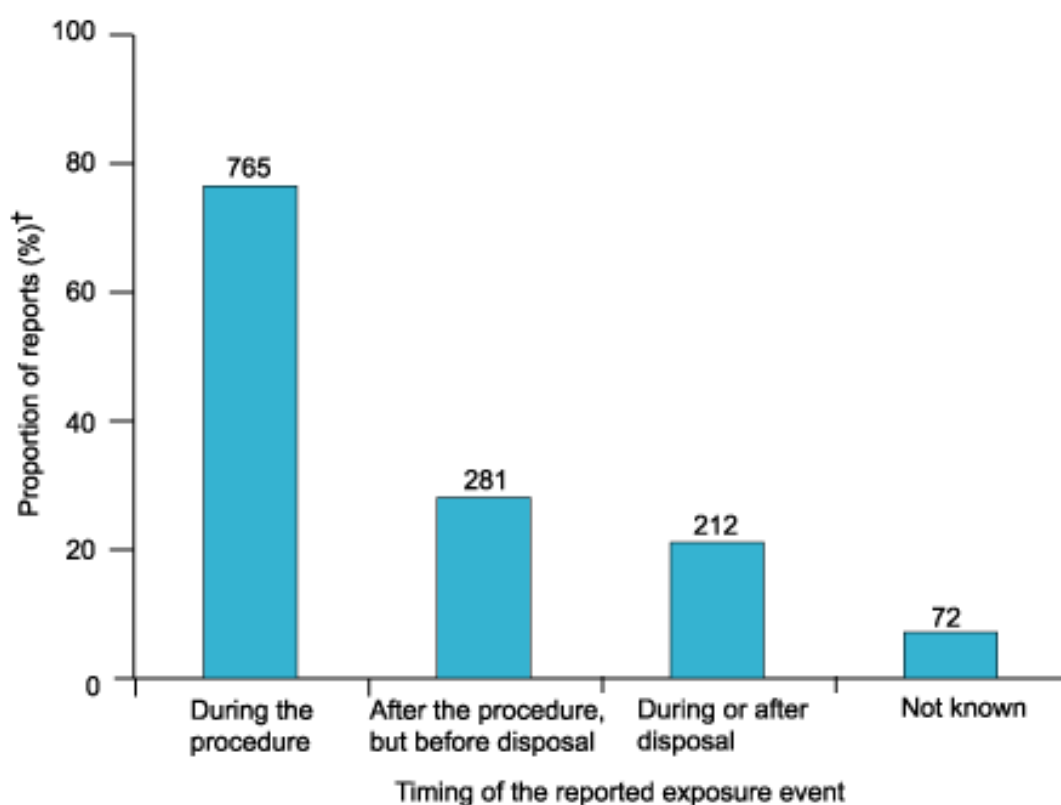
 [Surveillance of occupational exposures to bloodborne viruses in healthcare workers: 1997 to 2003](#)
**Surveillance of occupational exposures to bloodborne viruses in healthcare workers: 1997 to 2003** 

A report on six years of surveillance of the occupational exposures of healthcare workers (HCWs) to bloodborne viruses (BBVs) in England, Wales, and Northern Ireland has been published by the Health Protection Agency (1). Occupational exposures of HCWs to BBVs are a growing concern. Occupational acquisition of hepatitis C (HCV) has been illustrated in a recent European case-control study, with 60 documented cases of HCV seroconversion in HCWs following occupational exposure, in France, Italy, Spain, Switzerland, and the United Kingdom (UK) ten years (2). Similarly, 102 cases of HIV seroconversions in HCWs following occupational exposures have been documented in the literature and case reports worldwide (data to June 1999) (3).

In the UK, enhanced active surveillance of occupational exposures to BBVs in HCWs was developed in 1997, expanding an existing passive scheme for HIV exposures, initiated in 1984. The scheme includes incidents involving source patients who are HIV and/or hepatitis C virus (HCV) antibody positives, and/or hepatitis B surface antigen (HBsAg) positive. All incidents where a HCW initiated HIV post-exposure prophylaxis (PEP) are also included. Once reported to the surveillance system, depending on the type of exposure, more detailed information on the HCW's six week, 12 week, and six month follow up is actively collected from the reporters.

Between 1 July 1997 and 30 June 2003 the enhanced active surveillance scheme received 1800 initial reports, 1330 six-week reports, and 880 six-month reports. Percutaneous injury involving a hollow bore needle was the most commonly reported type of exposure (71%, 1282/1800), with nursing-related professions representing 43% (771/1800) of the initial reports, and doctors accounting for 35% (633/1800). A considerable number of these exposures were preventable with adherence to universal precautions and safe disposal of clinical waste. Where reported, 37% (493/1330) of exposures occurred after the procedure had been performed, but before disposal of the device and during, or after, disposal (figure 1). In those cases where the injury occurred during the procedure, some of these could have been prevented with adequate education and training.

**Figure 1** Timing of the exposure event involved (six-week forms)\*



\*Data from 1 July 1997 to 30 June 2003.

†Proportion (%) = the number of reports received as a proportion of the overall reports (n = 1330)

Data from the enhanced active surveillance scheme revealed that HIV post-exposure prophylaxis (HIV PEP) guidelines from the United Kingdom (UK) Chief Medical Officers' Expert Advisory Group on AIDS (EAGA) are adhered to (4). Most HCWs experiencing significant occupational exposure to known and unknown HIV source patients are commenced on HIV PEP (92%, 381/415) within 24 hours; most of these (59%, 244/415) initiating HIV PEP within two hours of the exposure. Although encouraging that a very few number of HCWs started HIV PEP after 24 hours of exposure (8%, 34/415), it is essential that local protocols and arrangements are in place to ensure that all HCWs at risk of exposure to BBVs have access to HIV PEP within 24 hours, and ideally within one hour of exposure, as stated in the guidelines.

Timely testing of source patients, where their status is not known at the time of the HCW's injury should be encouraged. Data from the surveillance system showed that where HCWs had initiated PEP but were subsequently found to have been exposed to an HIV negative source, 42% (54/128) stopped their regime within a day, and 80% (103/128) within a week.

Where post-exposure testing is undertaken for an exposure to an HCV positive source patient, appropriate tests are not always carried out in accordance with the guidelines (5). In some cases a test is performed for HCV RNA only at six, 12, and 24 weeks. A routine HCV RNA test is only an indication that the person has been infected with HCV and that the virus is continuing to replicate. Up to 20% of those exposed to HCV will clear the virus and develop antibodies to HCV. This group will present with a negative HCV RNA test. This result does not exclude exposure to HCV. To verify whether the HCW has been exposed to HCV and been infected by the source patient, it is vital that both HCV RNA and anti HCV testing is performed at 12 weeks. HCV RNA alone should be tested at six weeks because some patients will not have developed antibodies at this stage. The 12 week test of both HCV RNA and anti HCV, if positive, affords the HCW an opportunity for early referral to a hepatologist and early treatment, which has been shown to be beneficial in reducing the risk of progression to chronic HCV (6).

Virologists and microbiologists involved in carrying out tests on HCWs sustaining occupational exposures to BBVs should raise awareness of the need to carry out appropriate tests, adhering to national guidelines, for their timing

Within the six year period, three HCWs seroconverted to HCV and one to HIV. Prior to the initiation of the enhanced surveillance scheme, there were four documented cases of occupationally acquired HIV infections among HCWs in the UK. Fourteen HCWs with probable occupational acquisition of HIV have been diagnosed in the UK. These are HCWs where no baseline HIV test was available to be classified as documented cases, but they had not admitted risky exposures other than occupational exposure. The majority of these HCWs had worked in countries with high HIV prevalence.

Healthcare workers continue to be exposed to the real risk of acquiring BBV infection as a direct result of their work. It is vital that there is increased awareness of the risks involved and that proper preventative steps are taken at a local and national level in order to protect staff. Strict adherence to universal precautions, safer disposal of clinical waste, and effective education and training are vital in addressing this problem.

Incidents of HCWs occupationally exposed to bloodborne viruses in England, Wales and Northern Ireland, should be reported to Jane Aston or Sarah Tomkins at the Health Protection Agency's Communicable Disease Surveillance Centre (CDSC), tel: 020 8200 6868 ext 4152/4095.

A full version of the report, *Surveillance of significant occupational exposure to bloodborne viruses in health care workers. England, Wales, and Northern Ireland: six-year report: March 2004*, is available on Health Protection Agency website at: [http://www.hpa.org.uk/infections/topics\\_az/bbv/bbmenu.htm](http://www.hpa.org.uk/infections/topics_az/bbv/bbmenu.htm).





## References


1. HPA. *Surveillance of significant occupational exposure to bloodborne viruses in health care workers. England, Wales, and Northern Ireland: six-year report: March 2004*. London: HPA, 2004. Available at: [http://www.hpa.org.uk/infections/topics\\_az/bbv/bbmenu.htm](http://www.hpa.org.uk/infections/topics_az/bbv/bbmenu.htm).
2. Yazdanpanah Y, De Carli G, Miguera B, Lot F, Campins M, Colombo C, *et al*. Risk factors for HCV transmission after occupational exposure in health care workers: a European case-control study. Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC); Chicago, September 2003: poster no. 1087.
3. Public Health Laboratory Service (PHLS). *Occupational transmission of HIV. Summary of published reports. December 1999 Edition. Data to the end of June 1999*. [online] London: PHLS, 1999. [cited 25 March 2004]. Available at [http://www.hpa.org.uk/infections/topics\\_az/hiv\\_and\\_sti/publications/hiv\\_octr\\_1999.pdf](http://www.hpa.org.uk/infections/topics_az/hiv_and_sti/publications/hiv_octr_1999.pdf).
4. Department of Health. *HIV post-exposure prophylaxis: guidance from the UK Chief Medical Officers' Expert Advisory Group on AIDS*. London: Department of Health, July 2000.
5. Ramsay ME. Guidance on the investigation and management of occupational exposure to hepatitis C. *Commun Dis Public Health* 1999; **2**: 258-62.
6. Jaeckel E, Cornberg M, Wedemeyer H, Santantonio T, Mayer J, Zankel M. Treatment of acute hepatitis C with interferon alpha-2b. *N Engl J Med* 2001; **345**: 1452-7.

Current Issue: Volume 14 Number 13

Published on: 25 March 2004

**Immunisation**Last updated: **25 March 2004**Next update due: **22 April 2004**

-  [Laboratory reports of invasive meningococcal infections, England and Wales laboratory reports: weeks 45-48/2003](#)
-  [Laboratory confirmed cases of pertussis infection England and Wales: January to December 2003](#)
-  [Laboratory confirmed cases of measles, mumps, and rubella, England and Wales: October to December 2003](#)
-  [COVER programme: October to December 2003](#)

**Laboratory reports of invasive meningococcal infections, England and Wales laboratory reports: weeks 45-48/2003**


	Method of diagnosis			Total reports week 45-48/2003	Cumulative* total to week 48/2003
	CSF and blood Culture	Non-culture	Other sites		
Group A	–	–	–	–	1
B	77	65	13	155	1196
C	1	3	1	5	92
W135	3	3	–	6	34
X	–	–	1	1	4
Y	2	1	–	3	17
Z	–	–	–	–	–
29E	–	–	–	–	1
Ungroupable	–	–	–	–	3
Ungrouped	–	6	–	6	67
<b>Total</b>	<b>83</b>	<b>78</b>	<b>15</b>	<b>176</b>	<b>1415</b>

\* combined CDSC data and Meningococcal Reference Unit data latex antigen, microscopy, polymerase chain reaction.



## Laboratory confirmed cases of pertussis infection England and Wales: January to December 2003

**Table 1 Laboratory confirmed cases of pertussis infection England and Wales by age group: October to December 2003**

Age Group	PCR and/or serology only	Culture	Total
<3 months	4	7	11
3-5 months	1	2	3
6-11 months	–	–	–
1-4 years	1	1	2
5-9 years	12	1	13
10-14 years	3	–	3
≥15 years	17	–	17
Not known	–	–	–
<b>Total</b>	<b>38</b>	<b>11</b>	<b>49</b>

\* All data are provisional

Since January 2002, infants ≤6 months of age with suspected pertussis have been offered PCR testing through the Health Protection Agency's Respiratory and Systemic Infections Reference Laboratory (RSIL). Adults with a cough persisting for more than 21 days and children with a cough persisting for more than 14 days, have been offered serology testing through RSIL. These cases are likely to have been culture negative, and testing with PCR and/or serology have increased case ascertainment.

**Table 2 Laboratory confirmed cases of pertussis infection England and Wales by age group\*: January to December 2003**

Quarter 2003	PCR and/or serology only	Culture	PCR/serology reports as a % of total	Total
Jan to Mar	8	23	26	31
Apr to Jun	19	32	37	51
Jul to Sept	39	48	45	87
Oct to Dec	38	11	78	49
<b>Total</b>	<b>104</b>	<b>114</b>	<b>48</b>	<b>218</b>

\*All data are provisional.

The apparent increase particularly in adult cases is explained by the availability of enhanced diagnostic methods, which have been increasingly used during the year, as illustrated by the increasing proportion of reports diagnosed by PCR and or serology.



## Laboratory confirmed cases of measles, mumps, and rubella, England and Wales: October to December 2003

The monthly reporting of laboratory confirmed cases of measles, mumps, and rubella previously published in the *CDR Weekly* have been replaced by quarterly reporting. Cases include those confirmed by oral fluid IgM antibody tests and routine laboratory reports (table 1). Analyses are by date of onset. Regional breakdown figures relate to Government Office Regions rather than regional health authorities (pre-April 2002 definitions) as used previously in this section. Quarterly figures for cases confirmed by oral fluid antibody detection only from 1995 are available from:

- [http://www.hpa.org.uk/infections/topics\\_az/measles/data\\_not\\_confirmed.htm](http://www.hpa.org.uk/infections/topics_az/measles/data_not_confirmed.htm)
- [http://www.hpa.org.uk/infections/topics\\_az/mumps/data\\_quarter.htm](http://www.hpa.org.uk/infections/topics_az/mumps/data_quarter.htm)
- [http://www.hpa.org.uk/infections/topics\\_az/rubella/data\\_rub\\_not.htm](http://www.hpa.org.uk/infections/topics_az/rubella/data_rub_not.htm)

and annual total numbers of confirmed cases by health region and age from:

- [http://www.hpa.org.uk/infections/topics\\_az/measles/data\\_reg\\_age.htm](http://www.hpa.org.uk/infections/topics_az/measles/data_reg_age.htm)
- [http://www.hpa.org.uk/infections/topics\\_az/mumps/data\\_reg\\_age.htm](http://www.hpa.org.uk/infections/topics_az/mumps/data_reg_age.htm)
- [http://www.hpa.org.uk/infections/topics\\_az/rubella/data\\_reg\\_age.htm](http://www.hpa.org.uk/infections/topics_az/rubella/data_reg_age.htm)

**Table 1 Total confirmed cases of measles, mumps, and rubella, and oral fluid IgM antibody tests in cases notified to ONS\*: weeks 40-52/2003**

	Cases			Oral fluid†	IgM antibody	Results		
	Notified	Tested	%	Total positive	Recently vaccinated	Confirmed	Other lab confirmed	Total confirmed cases
Measles	554	630	113.7	64	5	59	8	<b>67</b>
Mumps	892	656	73.5	193	–	193	138	<b>331</b>
Rubella	277	203	73.3	2	–	2	8	<b>10</b>

\*ONS = Office for National Statistics

†Some oral fluid specimens were submitted early from suspected cases and may not have been subsequently notified, thus the proportion tested is artificially high for this quarter.

### Measles

Sixty-seven cases of confirmed measles with onset dates in the last quarter of 2003 were reported giving a provisional total of 442 cases for 2003, compared to 310 in 2002 and 70 in 2001. Sixty (90%) were aged under 15 years (nine aged under 1 year, 29 aged between 1 and 4 years, 19 aged between 5 and 9 years, and three aged between 10 and 14 years), and seven were adults aged between 20 and 54 years. Only six cases had a history of vaccination including one who had received single measles vaccine in 1980; the infection was acquired following a visit to South Africa.

The regions reporting ten or more cases this quarter were North West (23), and East Midlands (12). Cases in unvaccinated children and young adults belonging to, or associated with, travelling communities in the North West, East Midlands, and East of England regions account for many of the cases. Vaccine coverage, particularly measles, mumps, and rubella vaccine (MMR), is known to be low in these communities. Local health protection units have offered MMR vaccine to unvaccinated

individuals when cases have occurred in travellers in their areas; in some communities this has been well accepted but in others uptake has been poor.

Genotyping information was available for 17 of the cases. The same two genotypes, D4 and D8, identified in the previous quarter in travelling communities (1) were identified in the current quarter. Four of five D4 strains identified were from the North West, Wales, and the East Midlands were in travellers, the fifth case had travelled to South America. At least four of twelve D8 strains were associated with travelling communities in the North West and East of England regions. This genotype was also associated with a family cluster of four cases in Scotland in November (2).

## Mumps

Three hundred and thirty-one cases of mumps with onset dates in the last quarter of 2003 were confirmed, giving a provisional annual total of 1529 for 2003, compared to 777 and 497 cases in 2001 and 2002 respectively. This is the highest annual total since oral fluid surveillance began in 1995. The majority of cases were reported from Wales (110), the North East (74), and the North West (41). One case, M 20y, was associated with meningism.

The cohort at particularly high risk of mumps are those currently aged between 13 and 22 years (*ie*, born between 1982 and 1990), because they have either received no MMR vaccine, or only one dose (3). Seventy per cent of cases (232/331) in this quarter were born in this period. Outbreaks have moved from being predominantly in secondary schools (3-5) to being in universities and military establishments (1), and more than a third of cases this quarter were aged over 19 years (table 2).

The 'Green Book' *Immunisation against Infection Diseases 1996* (6) advises that students who have not received either measles and rubella (MR) or MMR vaccine, should be offered MMR immunisation. This advice was updated in March 2001 when the Department of Health recommended that teenagers who had not received MMR or had only had one dose should be offered MMR (7). It is unclear how many teenagers are not properly protected, but current outbreaks of mumps indicate that susceptibility remains high. Some universities and military establishments have offered MMR to first year entrants and others are considering taking similar action in response to local cases. Adequate stocks of MMR-II®, which is licensed for use in adults, are available.

**Table 2 Laboratory confirmed cases of mumps by age group and region, England and Wales: weeks 40-52/2003**

Region	Age group							NK*	Total
	<1y	1-4y	5-9y	10-14y	15-19y	≥20y			
North East	–	–	–	11	36	26	1	<b>74</b>	
North West	–	–	–	6	15	20	–	<b>41</b>	
Yorkshire and Humberside	–	–	–	1	5	2	–	<b>8</b>	
East Midlands	–	–	–	–	10	16	–	<b>26</b>	
West Midlands	1	–	1	–	3	5	–	<b>10</b>	
East of England	–	–	–	–	1	3	–	<b>4</b>	
London	–	–	1	–	2	2	–	<b>5</b>	
South East	1	–	–	–	22	8	–	<b>31</b>	
South West	–	–	–	–	5	6	–	<b>11</b>	
Wales	–	1	3	12	66	28	–	<b>110</b>	
Not known	–	–	1	3	7	–	–	<b>11</b>	
<b>Total</b>	<b>2</b>	<b>1</b>	<b>6</b>	<b>33</b>	<b>172</b>	<b>116</b>	<b>1</b>	<b>331</b>	

\*NK = Not known.

## Rubella

Ten cases of rubella with onset dates in the last quarter of 2003 were confirmed giving a provisional total of 32 cases in 2003, compared to 65 cases in 2002. All cases reported this quarter were adults aged between 22 and 44 years (three males and seven females).

## References

1. HPA. Laboratory confirmed cases of measles, mumps, and rubella, England and Wales: July to September 2003. *Commun Dis Rep CDR Wkly* [serial online] 2003 [cited 20 March 2004]; **13**(48): Immunisation. Available at <<http://www.hpa.org.uk/cdr/PDFfiles/2003/cdr4803.pdf>>.
2. Scottish Centre for Infection and Environmental Health (SCIEH). Vaccine preventable and childhood disease. *SCIEH Wkly Report 2004*; **38**(11). Available at <[http://www.show.scot.nhs.uk/scieh/PDF/weekly\\_report.pdf](http://www.show.scot.nhs.uk/scieh/PDF/weekly_report.pdf)>.
3. HPA. Laboratory confirmed cases of measles, mumps, and rubella, England and Wales: April to June 2003. *Commun Dis Rep CDR Wkly* [serial online] 2003 [cited 20 March 2004]; **13**(39): Immunisation. Available at <<http://www.hpa.org.uk/cdr/PDFfiles/2003/cdr3903.pdf>>.
4. PHLS. Laboratory confirmed cases of measles, mumps, and rubella, England and Wales, October to December 2002. *Commun Dis Rep CDR Wkly* [serial online] 2002 [cited 20 March 2004]; **13**(13): Immunisation. Available at <<http://www.hpa.org.uk/cdr/PDFfiles/2003/cdr1303.pdf>>.
5. PHLS. Laboratory confirmed cases of measles, mumps, and rubella, England and Wales, July to September 2002. *Commun Dis Rep CDR Wkly* [serial online] 2002 [cited 20 March 2004]; **12**(48): Immunisation. Available at <<http://www.hpa.org.uk/cdr/PDFfiles/2002/cdr4802.pdf>> .
6. Department of Health. *Immunisation against Infectious Disease* [online]. London: HMSO, 1996. Available at <<http://www.doh.gov.uk/greenbook/index.htm>>.
7. Department of Health. Salisbury D (personal communication). *Letter to District Immunisation Co-ordinators*. London: Department of Health, 12 March 2001.

---

## COVER programme: October to December 2003

### Vaccination coverage statistics for children up to five years of age in the United Kingdom

This report of the COVER programme presents coverage data for children in the United Kingdom (UK) who reached their first, second, or fifth birthday during the evaluation quarter – October to December 2003 (annual COVER begins on 1 April each year, *ie*, 1 April to 30 June 2003 is the first quarter). This is the fourteenth quarter to include coverage data on Meningococcal conjugate Group C vaccine (MenC) following its introduction in the UK vaccination programme in November 1999 (1).

Children who reached their first birthdays in the quarter would have been scheduled to receive their third-dose primary vaccinations (third-dose diphtheria, tetanus, pertussis [DTP vaccine], *Haemophilus influenzae* type b [Hib vaccine], polio vaccine, and MenC vaccine) during the period between February and April 2003. Children who reached their second birthdays would have been scheduled to receive their third-dose primary vaccinations between February and April 2002 and first measles, mumps, and rubella vaccination (MMR) between October 2002 and April 2003. Children who reached their fifth birthdays would have been scheduled to receive their third-dose primary vaccinations between February and April 1999, their first MMR during the period October 1999 and April 2001, their pre-school diphtheria, tetanus, acellular pertussis (DTaP) booster, polio, and second-dose MMR from February 2002 onwards. One catch-up dose of MenC would have been scheduled for these children from April 2001 onwards.

### Methods

Data from computerised child health information systems were submitted in February and March 2004 for children resident in Administrative Regions in Wales, Health Boards in Scotland and Northern Ireland, and British Forces Germany (BFG), and for children in the Primary Care Trust (PCT) responsible population (as defined below) in England, on 31 December 2003. Data were collected for those reaching their first, second, or fifth birthdays during the evaluation quarter (October to December 2003) and completing a primary course of each antigen: three doses of diphtheria (D3), tetanus (T3), pertussis (P3), polio (Pol3), *Haemophilus influenzae* type b (Hib3), Meningococcal conjugate Group C (MenC3) vaccines; and one dose of measles, mumps, and rubella vaccine (MMR1) given at any time up to their first or second birthdays. Numbers were also requested for children who had received a primary course of each antigen (DTPol3, P3, and Hib3), a pre-school booster dose (DTPol4), at least one MMR (MMR1), and two doses of MMR (MMR2) given at any time up to their fifth birthdays.

For this quarter, COVER data in England were collected by PCTs and summarised by Government Office Regions (GORs) (2). The PCTs and GORs have different boundaries and populations to health authorities and regional health authorities used in previous reports. The PCT responsible population for COVER data includes all children registered with a general practitioner (GP) whose practice forms part of the PCT, regardless of where the child is resident. In addition, the PCT responsible population will also include any children not registered with a GP, who are resident within the PCTs statutory geographical boundary. Children resident within the PCT geographical area, but registered with a GP belonging to another PCT, are the responsibility of the latter mentioned PCT <[http://www.hpa.org.uk/infections/topics\\_az/vaccination/eval\\_quarterly-.pdf](http://www.hpa.org.uk/infections/topics_az/vaccination/eval_quarterly-.pdf)>.

These data are evaluated against the World Health Organization (WHO) targets of 95% coverage annually for each antigen (except MenC) by two years of age at the national level and of at least 90% coverage annually in each strategic health authority (2).

## Results

### Coverage at 12 and 24 months

Data were received from 321 PCTs, Health Boards, and Administrative Regions (PCT/HB/AR) in England, Scotland, Northern Ireland, and Wales (tables 1 and 2). One hundred and nine of the participants (*ie*, PCT/HB/AR) (34%) achieved the 95% target at 12 months for three doses of diphtheria, tetanus, and polio vaccine (DTPol3). One hundred and two (32%) achieved the 95% target at 12 months for three doses of Hib vaccine (Hib3), and 93 (29%) for three doses of pertussis vaccine (P3). One hundred and seventy-eight participants (56%) achieved 95% coverage at 24 months for DTPol3, 162 (50%) for P3, and 170 (53%) for Hib3. All countries and all English regions, except for London, achieved at least 90% coverage for these antigens. No participants achieved 95% coverage for MMR at 24 months. Coverage for the UK at 12 months decreased by 0.1% for P3 and Hib3 and by 0.2% for DTPol3 and MenC compared to that reported in the previous quarter (3). Coverage for DTPol3, P3, Hib3, and MenC at 24 months all increased slightly (0.1% to 0.4%). Coverage for MMR1 at 24 months increased 1.3% from 79.8% to 81.1%.

**Table 1 Completed primary immunisations (all antigens) by 12 months: October to December 2003**

Region/Country	PCT/HB/AR * (total)	DTPol3 %	P3 %	Hib3 %	MenC %
<b>Regions of England</b>					
North East	16 (16)	93.1	92.9	93.2	93.4
North West	42 (42)	91.6	91.1	91.5	91.4
Yorkshire and Humberside	34 (34)	91.4	91.1	91.4	90.8
East Midlands	28 (28)	92.9	92.6	92.6	91.9
West Midlands	30 (30)	92	91.7	92.1	92.2
East of England	41 (41)	93.4	93	93.4	92.9
London	32 (32)	82.3	82.2	82.9	81.8
South East	45 (49)	92.3	91.9	92.3	92.1
South West	31 (32)	94.2	93.6	94	93.4
<b>England (Total)</b>	<b>299 (304)</b>	<b>90.6</b>	<b>90.3</b>	<b>90.6</b>	<b>90.2</b>
<b>Wales (provisional)</b>	<b>3 (3)</b>	<b>94.5</b>	<b>93.4</b>	<b>94.4</b>	<b>94.1</b>
<b>Northern Ireland</b>	<b>4 (4)</b>	<b>95.4</b>	<b>95</b>	<b>95.5</b>	<b>95.7</b>
<b>Scotland</b>	<b>15 (15)</b>	<b>95.6</b>	<b>95.4</b>	<b>95.4</b>	<b>94.7</b>
<b>United Kingdom</b>	<b>321 (326)</b>	<b>91.3</b>	<b>91</b>	<b>91.4</b>	<b>90.9</b>

\*PCTs/Health Boards/Administrative Regions.

**Table 2 Completed primary immunisations (all antigens) by 24 months: October to December 2003**

Region/Country	PCT/HB/AR * (total)	DTPol3 %	P3 %	Hib3 %	MenC %	MMR1%
<b>Regions of England</b>						
North East	16 (16)	95.4	94.9	95.4	95.4	84.2
North West	42 (42)	94.6	94	94.2	94.6	83.4
Yorkshire and Humberside	34 (34)	94.1	93.7	94	92.8	84.7
East Midlands	28 (28)	96.5	96.1	96.5	95.5	86.2
West Midlands	30 (30)	94.8	94.3	94.5	94.7	82.4
East of England	41 (41)	94.7	94.2	94.5	94.1	80.2
London	32 (32)	87.8	87.5	87.9	86.4	69.4
South East	45 (49)	94.1	93.6	94	93.4	79.4
South West	31 (32)	96	95.5	95.7	95.1	82
<b>England (Total)</b>	<b>299 (304)</b>	<b>93.6</b>	<b>93.2</b>	<b>93.5</b>	<b>92.9</b>	<b>80.2</b>
<b>Wales (provisional)</b>	<b>3 (3)</b>	<b>96</b>	<b>94.7</b>	<b>95.8</b>	<b>95.6</b>	<b>81</b>
<b>Northern Ireland</b>	<b>4 (4)</b>	<b>96.8</b>	<b>96.4</b>	<b>96.7</b>	<b>96.9</b>	<b>88.9</b>
<b>Scotland</b>	<b>15 (15)</b>	<b>97.3</b>	<b>97</b>	<b>97</b>	<b>96.3</b>	<b>87.6</b>
<b>United Kingdom</b>	<b>321 (326)</b>	<b>94.1</b>	<b>93.7</b>	<b>94</b>	<b>93.4</b>	<b>81.1</b>

\*PCTs/Health Boards/Administrative Regions.

The country specific 12-month coverage for MenC vaccine was 90.2% in England, 94.1% in Wales, 95.7% in Northern Ireland, and 94.7% in Scotland. Coverage for the 24 month cohort was 92.9% in England, 95.6% in Wales, 96.9% in Northern Ireland, and 96.3% in Scotland. This is the eighth 24 month cohort to be entirely routinely scheduled for three doses of MenC vaccine.

### Coverage at 5 years

Data were received from 306 PCT/HB/AR in England, Northern Ireland, and Wales. Coverage at five years decreased by 0.2% for Hib3 and by 0.3% for DTPol3 and P3, and increased by 0.1% for DTPol4 and MenC compared to the previous quarter. Coverage for MMR1 decreased by 0.7% to 90.5% and coverage for MMR2 increased by 0.2% to 76.1% (table 3) (2). Country-specific data for MenC catch-up coverage at five years was 88.3% in England, 92.6% in Wales, and 95.8% in Northern Ireland (table 3). Data for children reaching their sixth birthday in Scottish Health Boards were also received for DTPol4 and MMR2; coverage was 94.9% and 90.6% respectively.

**Table 3 Completed primary immunisations (all antigens) by 5 years: October to December 2003**

Region/Country	PCT/HB/AR * (total)	DTPol3 %	P3 %	Hib3 %	MenC %	MMR1 %	MMR2 %	DTPol4 %
<b>Regions of England</b>								
North East	16 (16)	95.5	94.7	95.3	91.6	93.3	82.1	84
North West	42 (42)	95.6	94.4	94.8	91.8	92.6	78.2	82.5
Yorkshire and Humberside	34 (34)	94.8	94	94.1	89	92.8	79.6	82.9
East Midlands	28 (28)	96.9	96.3	96.5	93.6	94.4	79.3	84.8
West Midlands	30 (30)	96	95.2	95	91.8	93.8	80.3	85
East of England	41(41)	94.7	93.9	94.3	90	90.6	80.5	85.5
London	32 (32)	85.4	84.8	85	74.2	80.4	57.6	62.8
South East	45 (49)	93.3	92.6	92.5	88.8	89.8	74.7	82.4
South West	31 (32)	97	96.1	96.2	92.8	92.6	81.2	87.5
<b>England (Total)</b>	<b>299(304)</b>	<b>93.7</b>	<b>92.9</b>	<b>93</b>	<b>88.3</b>	<b>90.3</b>	<b>75.6</b>	<b>80.7</b>
<b>Wales (provisional)</b>	<b>3 (3)</b>	<b>95.2</b>	<b>93.2</b>	<b>94.8</b>	<b>92.6</b>	<b>91.3</b>	<b>76.7</b>	<b>84.3</b>
<b>Northern Ireland</b>	<b>4 (4)</b>	<b>97.3</b>	<b>96.5</b>	<b>96.5</b>	<b>95.8</b>	<b>95.8</b>	<b>87.1</b>	<b>89.3</b>
<b>Scotland (6 years)</b>	<b>15 (15)</b>	-	-	-	-	-	<b>90.6</b>	<b>94.9</b>
<b>England, Wales, and Northern Ireland</b>	<b>321(326)</b>	<b>93.9</b>	<b>93</b>	<b>93.3</b>	<b>88.8</b>	<b>90.5</b>	<b>76.1</b>	<b>81.2</b>

\*PCTs/Health Boards/Administrative Regions.

† No data available at 5 years.

### British Forces Germany Health Service

Comparable COVER data have been received from the regions across British Forces Germany (BFG). The BFG child population is approximately 1500 and is spread over five separate geographical regions throughout Germany. The average coverage at 12 months (n=231) was 99.1% for all antigens except Hib3, for which coverage was 95.7%. Average coverage at 24 months (n=208) was 96.1% for DTPol3, P3, and Hib3, 95.7% for MenC, and 92.3% for MMR1. Average coverage at five years (n=201) was 96.5% for DTPol3, P3, Hib3, MMR1, and MenC, and 96.0% for MMR2 and DTPol4.

### MMR sentinel surveillance scheme coverage

In order to give a more timely indication of trends in MMR coverage, a sentinel surveillance scheme has monitored MMR coverage in a sample of children becoming 16 and 24 months of age in a particular month, in England, from April 1999. Initially, this information was requested every four months for all children in the participating trusts/health authorities who were turning 16 months or 24 months old in the defined one month period. From March 2001, the request was made quarterly so that the information coincided with routine COVER reports. Since March 2002, this information has been routinely collected every month and was extended in June 2002 to include coverage at 20 and 36 months of age to help determine whether there is further improvement in coverage as children get older, because some parents delay MMR vaccination for their children. This sentinel scheme is based on a sample of trusts/PCTs in England and represents approximately 20% of the population, although monthly reporting is not always complete for the whole sample. This means that these data are not geographically representative or sufficiently detailed to allow us to compare different regions, and will be subject to greater variability than the national data due to varying monthly sample size. Data collected from December 2003 to February 2004, for children in the four age cohorts, are summarised in table 4 (range for the three months was from 64.4% to 67.3% at 16 months, 77.1% to 78.2% at 20 months, 80.0% to 81.2% at 24 months, and 83.0% to 84.2% at 36 months).

**Table 4 Monthly sentinel estimates of measles, mumps rubella (MMR) coverage at 16, 20, 24 and 36 months: December 2003 to February 2004**

Evaluation month	Number of PCTs/trust	Age at vaccination			
		16 months	20 months	24 months	36 months
December 03	40	67.3%	78.2%	80.0%	83.6%
January 04	37	66.3%	78.3%	81.0%	84.2%
February 04	36	64.4%	77.1%	81.2%	83.0%

**Comments**

UK coverage of all antigens was very similar this quarter compared to last quarter with the exception of MMR at 24 months, which increased to 81.1% from 79.8% in the previous quarter (3). Two consecutive quarters running have now shown an encouraging trend towards a recovery in MMR coverage. Increases in coverage were seen in all regions of England (between 0.6% and 2.3%), Wales (2.4%), Northern Ireland (1.7%), and Scotland (1.2%). The increase in MMR coverage was predicted through the sentinel surveillance programme (4). Local initiatives to improve MMR coverage and data quality may explain why coverage has increased, although these data should be interpreted with some caution as this is only the third quarter summarising data by PCTs and GORs in England. Sentinel surveillance of MMR coverage at 16 months, however, suggests that we can expect to see fluctuations in future routine 24 month data.

**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.publications.doh.gov.uk/public/sb0316.htm>>.

**Other relevant links**

- <[http://www.hpa.org.uk/infections/topics\\_az/vaccination/vac\\_cover.htm](http://www.hpa.org.uk/infections/topics_az/vaccination/vac_cover.htm)>.
- <<http://www.mmrthefacts.nhs.uk/>>.

**References**

1. Chief Medical Officer, Chief Nursing Officer, Chief Pharmaceutical Officer. *Introduction of immunisation against group C meningococcal infection* (PL/CMO/99/2, PL/CNO/99/4, PL/CPHO/99/1). London: Department of Health, 1999.
2. WHO Regional Office for Europe. *Operational targets for EPI diseases*. 1996. EUR/ICP/CMDS 01 01 12 Rev. 1.
3. HPA. COVER programme: July to September 2003. *Commun Dis Rep CDR Wkly* [serial online] 2003 [cited 22 Jan 2004]; **14**(4): immunisation available at <<http://www.hpa.org.uk/cdr/PDFfiles/2004/cdr0404.pdf>>.
4. PHLS. COVER programme: January to March 2003. *Commun Dis Rep CDR Wkly* [serial online] 2003 [cited 22 Mar 2004]; **13**(26): immunisation available at <<http://www.hpa.org.uk/cdr/PDFfiles/2003/cdr2603.pdf>>.