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Toxigenic *Corynebacterium diphtheriae* var *mitis* isolated from a child from north west England

A toxigenic strain of *Corynebacterium diphtheriae* var *mitis* was isolated from a throat swab from an eleven year old boy from a religious community in north west England on 14 January 2002. The organism was identified by the PHLS Streptococcus and Diphtheria Reference Unit (SDRU) at the Respiratory and Systemic Infection Laboratory.

The child had developed a sore throat on 5 January, six days after returning from a one- week holiday with four members of his family in Jerusalem, Israel. The swab was taken on 7 January. A seven-day course of antibiotic treatment (azithromycin) was started as soon as the isolation of a toxigenic strain of *C. diphtheriae* var *mitis* was reported. He has been excluded from school until post-treatment throat swabs are negative. The organism was detected because throat swabs are routinely screened for corynebacteria (1). The child remained well and did not develop any signs or symptoms of diphtheria.

Close contacts of the child were identified as household members, two relatives in London and two household relatives in Israel with whom the carrier had stayed overnight in the previous seven days. Nose and throat swabs were taken from all family members in Salford and a three-day course of azithromycin was prescribed. The family comprise two adults, and nine children aged between 2 and 17 years. The children all attend schools in the local area and two family members are teachers. All child contacts were excluded from school for three days until treatment was completed (2). Immunisation histories revealed that all the family had received appropriate age-specific vaccinations, and in line with current guidance, a booster dose was given. Nose and throat swabs were also taken from the London contacts and they received antibiotics and a booster dose of vaccine. All swabs taken from the north west England and London contacts were negative for *C. diphtheriae*. The contacts in Jerusalem were informed of the microbiological findings by their relatives in north west England. Their local doctor in Jerusalem has taken throat cultures and given antibiotic prophylaxis.

C. diphtheriae strains can be readily re-introduced into a population as shown by the re-emergence of diphtheria in Russia and the former Soviet Union during the 1990s (3). This incident further demonstrates the importance of ensuring and maintaining high levels of diphtheria vaccination in the United Kingdom population.

Genotyping (ribotyping) is currently being undertaken by the SDRU. Preliminary findings indicate that this is an uncommon ribotype that has not been seen within the European region for more than a decade. SDRU, which carried out the typing, is a World Health Organization (WHO) collaborating centre and co-ordinates the European Laboratory Working Group on Diphtheria (ELWGD). The ELWGD was established in 1993 at the request of the WHO Regional Office for Europe in response to the diphtheria epidemics in the former Soviet Union (4)

www.phls.co.uk/international/diphtheria/diphtheria. The network comprises representatives from 35

diphtheria reference laboratories and facilities in all European Union (EU) member states, as well as some associated countries and other countries in all WHO regions.

This network is currently being enhanced by an EU DG SANCO funded programme (122/SID/2001) led by the PHLS in the United Kingdom. This feasibility study started in 1 December 2001. It aims to encompass and integrate microbiological and public health aspects in developing a diphtheria surveillance network covering all European states.

The death of an unvaccinated 3 month old infant in Finland in November 2001, following infection with *C. diphtheriae* var *mitis* has also been reported (5). The 7 year old sister of the patient was identified as an asymptomatic carrier. Many of the people with whom the patient and his sister had been in contact prior to the onset of illness had recently visited Russia. DNA typing results showed that the bacterial strain was very similar to strains recently detected circulating in Russia. Eight cases of microbiologically confirmed diphtheria were reported in Finland from 1995 to 2001 – all had a link with Russia.

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2. Bonnet JM, Begg NT. Control of diphtheria: guidance for consultants in communicable disease control. *Commun Dis Public Health* 1999; **2**: 242-9.
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Related link:

<http://www.phls.org.uk/facts/Immunisation/Diphtheria/dip.htm>

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Outbreaks of Norwalk-like virus infection

There have been a number of recent reports of outbreaks infection with Norwalk-like virus (NLV) (commonly referred to in the mass media as winter vomiting disease or gastric 'flu), although levels do not appear to be out of proportion to peaks seen in previous winters. There have been 277 laboratory reports in the first four weeks of 2002, compared with 163 in the same period of 2001, which had the lowest levels of NLV reporting since 1993.

From 1992 to 2000 CDSC received reports of 1877 laboratory confirmed outbreaks of NLV infection in England and Wales, affecting 57,000 people, 24 of whom died. There were 754 outbreaks in hospitals, 724 outbreaks in residential care homes, 147 outbreaks in hotels, 105 restaurants, and 73 in schools. In 85% of cases the mode of transmission was person to person spread, and only 10% were foodborne.

In healthy adults, NLV gives rise to unpleasant, but not severe, symptoms of gastroenteritis, characterised by projectile vomiting with some diarrhoea. As disease tends to be mild and short lived few of those infected seek medical attention, and therefore a very small proportion of cases will be sampled by general practitioners for laboratory confirmation. Estimates from the Study of Infectious Intestinal Disease (IID) in England (1), suggest that there are about 600,000 to 1 million cases every year. A recent population-based study, has shown that NLV is the most commonly identified microbial cause of gastroenteritis in the Netherlands, giving rise to 11% of all IID (2). It is also thought to be the most common microbial cause of IID in the United States.

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2. de Wit MAS, Koopmans MPG, Kortbeek LM, Wannet WJB, Vinjé J, van Leusden F, *et al*. Sensor, a population-based

Related article:

[Reporting of small round structured viruses \(Norwalk-like viruses\)](#)

(Published 29 March 2001)

Related link:

<http://www.phls.org.uk/facts/Gastro/srsv/srsv.htm>

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HIV in Vietnamese sex workers

Vietnam is likely to receive around 5000 (although much higher numbers have also been quoted) female commercial sex workers (CSWs) who have been made to leave Cambodia. (1,2). Cambodian authorities have ordered all bars, nightclubs, discos, and karaoke clubs to be shut down to reduce vice and illicit drug use. Many Vietnamese CSWs worked in these establishments and it is estimated that up to a third of them may be infected with HIV. This will add to the already increasing numbers of CSWs in Vietnam infected with HIV, particularly Ho Chi Minh City where the percentage of infected CSWs has risen sharply since 1998, reaching more than 20% by 2000 (3).

Vietnam is not the only country in the area that has a problem with increasing HIV prevalence among CSWs. In China, especially in Guangxi province, which borders northern Vietnam, the prevalence has increased rapidly since 1996 when it was undetectable, to more than 10% in 2000. In Bangladesh and the Philippines the HIV prevalence in CSWs has so far remained low, but behavioural risk factors provide the potential for HIV transmission. Sex workers do not use condoms consistently and may be seeing up to 19 clients a week (4). Prevention programmes in large parts of Asia and the Pacific are poorly resourced, and any ongoing projects tend to be small and scattered. There are also political hurdles to overcome, as many high-risk practices are frowned upon and even criminalized, making education programmes difficult to implement.

From an international public health perspective, it is important that travellers are aware of the potential risks they face by having unprotected sex abroad with CSWs and other residents, and if they intend to indulge in high-risk behaviour to use condoms at all times.

1. HIV and STD, imported – Vietnam ex Cambodia. Vietnam Braces for Return of 60000 [Female Sex Workers] from Cambodia. *In ProMed Mail* [online]. Boston US: International Society for Infectious Diseases, 5 January 2002 [cited 17 January 2002]. Available at <http://www.promedmail.org> <[Link to report](#)>

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4. National Centre in HIV Epidemiology and Clinical Research. The status and trends of HIV/AIDS/STI epidemics in Asia and the Pacific. *Australian HIV Surveillance Report* 2001; **17** (4), 1-6. Available at <www.med.unsw.edu.au/ncheccr/default.htm>.

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Invasive meningococcal infections, England and Wales: laboratory reports, weeks 39-46/01

	Method of diagnosis			Total reports 39-46/01	Cumulative total* 2001	Annual total 2000
	CSF and blood		Other sites			
	culture	non-culture**	culture			
Group A	–	–	–	–	2	2
Group B	111	106	26	243	1510	1645
Group C	20	8	1	29	292	712
Group W135	12	5	1	18	120	109
Group X	1	–	1	2	7	4
Group Y	3	–	1	4	27	29
Group Z	–	–	–	–	–	–
Group 29E	–	–	–	–	–	–
Ungroupable	–	–	–	–	9	22
Ungrouped	–	11	–	11	128	137
Total	147	130	30	307	1795	2095

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

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Virus infections, England and Wales: laboratory reports, weeks 47-52/01

Laboratory reports	Number of reports received						Total reports 47-52/01	2001 total
	47/01	48/01	49/01	50/01	51/01	52/01		
Coxsackie A	1	–	–	1	–	–	2	29
Coxsackie B	6	1	1	1	–	–	9	115
Cytomegalovirus	29	15	9	27	15	1	96	916
Echovirus	39	9	15	28	21	2	114	759
Parvovirus B19	22	1	10	3	11	2	49	574
Varicella zoster virus	17	7	8	6	7	2	47	445

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Virus infections, England and Wales: laboratory reports, weeks 01-03/02

Laboratory reports	Number of reports received			Total reports 01- 03/02	Cumulative total 2002
	01/02	02/02	03/02		
Coxsackie A	–	1	2	3	3
Coxsackie B	2	1	3	6	6
Cytomegalovirus	24	6	49	79	79
Echovirus	14	2	35	51	51
Parvovirus B19	11	7	26	44	44
Varicella zoster virus	9	2	28	39	39

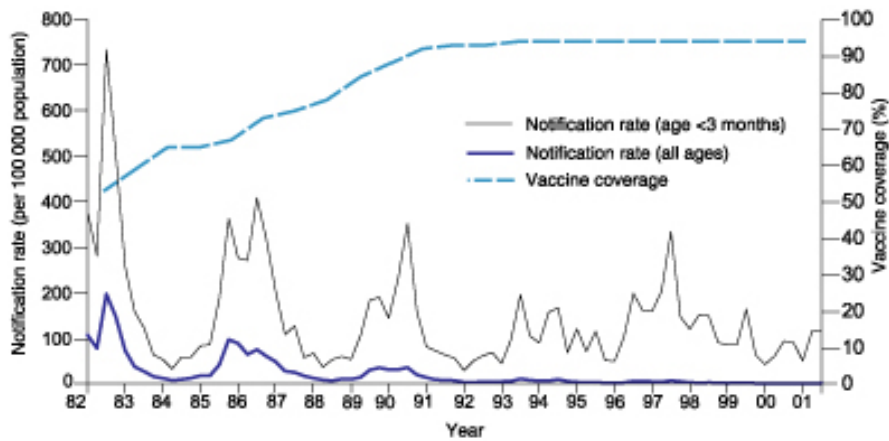
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Enhanced surveillance of laboratory confirmed cases of *Bordetella pertussis*, England and Wales: quarterly data from January 1999 to September 2001

Table Laboratory confirmed cases of pertussis by age group, England and Wales: 1999 to the third quarter of 2001

Age group	1999 (quarters)				2000 (quarters)				2001 (quarters)			Total
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	
<3 months	39	39	61	21	21	24	29	23	26	50	58	391
3-5 months	13	12	16	3	2	7	13	4	8	7	19	104
6-11 months	1	5	4	3	2	2	6	–	1	1	5	30
1-4 years	9	8	27	6	7	7	18	5	1	7	17	112
5-9 years	10	8	18	3	3	4	8	1	1	5	9	70
10-14 years	4	1	5	2	–	3	–	1	2	1	2	21
15+ years	5	2	3	1	–	2	4	1	4	2	1	25
Not known	–	–	1	–	–	–	4	1	1	2	2	11
Total	81	75	135	39	35	49	82	36	44	75	113	764

Quarterly notification rates of whooping cough (all ages and infants aged 0-2 months, per 100, 000 population) and pertussis vaccine coverage: England and Wales, 1982-2001* (3rd quarter)



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COVER programme : July to September 2001

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, July to September 2001. This is the fifth quarter to also 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 for their third dose primary vaccinations (third dose diphtheria, tetanus, pertussis (DTP vaccine), Haemophilus influenzae type b (Hib vaccine), polio vaccine, and MenC vaccine) from November 2000 to January 2001. Children who reached their second birthdays would have been scheduled for their third dose primary vaccinations from November 1999 to January 2000 and first measles, mumps and rubella (MMR) vaccination from July 2000 to January 2001. Three doses of MenC were scheduled from November 1999 or two doses from January 2000 according to age. Children who reached their fifth birthdays would have been scheduled for their third dose primary vaccinations from November 1996 to January 1997, their first MMR from July 1997 to January 1998, and their pre-school booster DT, polio and second dose MMR from November 1999 onwards. One catch-up dose of MenC would have been scheduled from April 2000 onwards.

Methods

Data from computerised child health information systems were submitted in November and December 2001 for children resident in UK health authorities and health boards on 30 September 2001 and reaching their first, second or fifth birthdays during the evaluation quarter (July to September 2001). Details of the data requested have been published (2). These routine request parameters now include MenC.

Results

Coverage at 12 and 24 months

Data were received from all health authorities and health boards in England, Wales, Northern Ireland, and Scotland (tables 1 and 2). Three English trusts, each serving part of a health authority, were unable to provide data this quarter. Twenty of the participating health authorities/boards (17%) achieved the 95% target for three doses of diphtheria, tetanus, and polio vaccine (D3), 13 (11%) for three doses of pertussis vaccine (P3) and 19 (16%) for three doses of Hib vaccine (Hib3) at 12 months of age. Seventy-one health authorities/boards (60%) achieved 95% coverage for D3, 57 (48%) for P3, and 69 (58%) for Hib3 at 24 months of age and all countries/regions, except for London, achieved at least 90% coverage for these antigens. No health authority/board achieved 95% coverage for MMR at 24 months. UK coverage of all antigens at 12 months was similar to that reported in the previous quarter, except MenC

which rose 0.4% to 89.5% (3). Compared to the previous quarter, UK coverage at 24 months for D3, P3, and Hib3 fell between 0.2% and 0.4%, but MMR1 remained at 84.2%. The cohort of children evaluated for MenC at 24 months should have been scheduled for two or three doses, but may have completed with fewer doses due to delayed attendance. Some child health systems, however, are unable to classify these children as fully vaccinated and hence MenC coverage was 1.2% lower than the previous quarter.

Table 1 Completed primary immunisations (all antigens) by 12 months: July to September 2001

Region/country	HA* (total)	D3	P3	Hib3	MenC
England					
Northern & Yorkshire	13 (13)	91.3	90.7	90.9	89.6
Trent	11 (11)	92.1	91.7	91.6	90.9
Eastern	7 (7)	92.8	92.2	92.6	91.5
London	14 (14)	83.4	83.0	83.1	80.9
South East	13 (13)	91.8	91.2	91.6	90.1
South West	8 (8)	92.0	91.4	91.8	90.4
West Midlands	13 (13)	91.7	90.9	91.5	90.6
North West	16 (16)	90.9	90.2	90.6	90.2
England (total)	95 (95)	90.3	89.7	90.0	88.8
Wales	5 (5)	92.7	91.4	92.3	91.6
Northern Ireland	4 (4)	94.4	93.9	94.3	93.9
Scotland	15 (15)	94.2	93.7	94.0	93.3
United Kingdom	119 (119)	90.9	90.2	90.6	89.5

* Health authority

Table 2 Completed primary immunisations (all antigens) by 24 months: July to September 2001

Region/country	HA* (total)	D3	P3	Hib3	MenC	MMR1
Northern & Yorkshire	13 (13)	94.1	93.4	93.7	84.5	86.3
Trent	11 (11)	95.8	95.3	95.7	89.2	88.6
Eastern	7 (7)	94.9	93.9	94.5	87.8	86.1
London	14 (14)	87.5	87.1	86.9	63.5	73.4
South East	13 (13)	94.0	93.3	93.7	82.8	84.4
South West	8 (8)	94.3	93.4	94.0	81.1	84.4
West Midlands	13 (13)	95.4	94.3	95.0	78.2	85.7
North West	16 (16)	94.6	93.7	94.2	88.0	85.6
England (total)	95 (95)	93.5	92.7	93.1	81.1	83.7
Wales	5 (5)	95.5	93.7	95.2	90.6	84.5
Northern Ireland	4 (4)	96.8	95.8	96.9	84.1	89.3
Scotland	15 (15)	97.3	96.5	97.3	94.3	86.9
United Kingdom	119 (119)	94.0	93.2	93.6	82.7	84.2

* Health authority

The country specific 12 month coverage for MenC vaccine was 88.8% in England, 91.6% in Wales, 93.9% in Northern Ireland, and 93.3% in Scotland. Coverage for the 24 month cohort was 81.1% in England, 90.6% in Wales, 84.1% in Northern Ireland and 94.3% in Scotland.

Coverage at 5 years

Data were received from all health authorities/health boards in England, Wales and Northern Ireland. Coverage at age 5 years for D3, P3, Hib3 remained similar to those in the previous quarter and MMR1, MMR2 and D4 were down 0.5%, 0.7%, and 0.9% respectively (table 3) (3). MenC catch up coverage at 5 years was 81.8% in England, 86.1% in Wales, and 90.7% in Northern Ireland (table 3). Data for children reaching their sixth birthday in all Scottish health boards were also received for D4 and MMR2. Coverage was 95.1% and 90.5% respectively.

Table 3 Completed primary immunisations (all antigens) by 5 years: July to September 2001

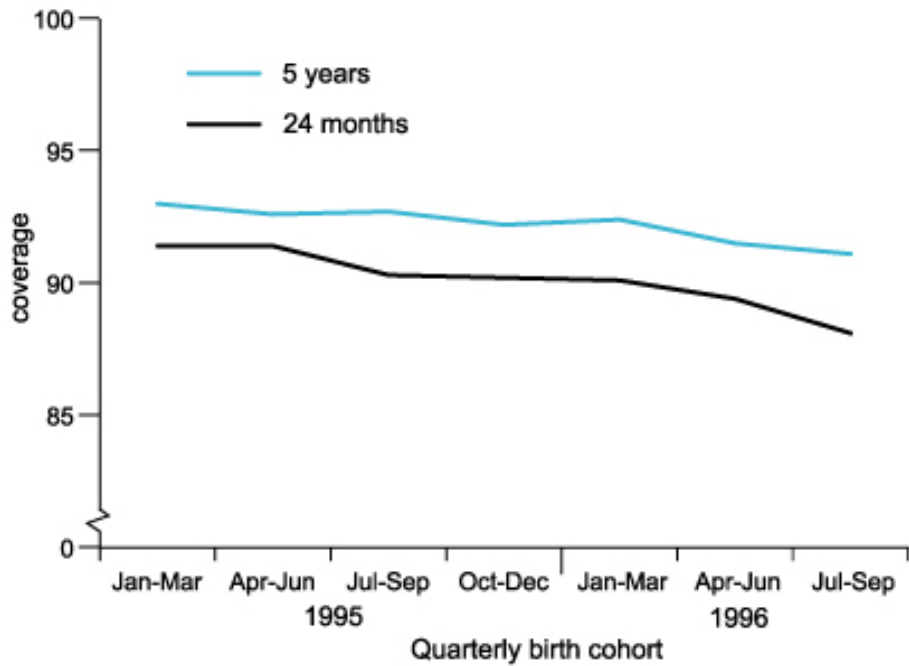
Region/country	HA* (total)	D3	P3	Hib	MenC	MMR1	MMR2	D4
Northern & Yorkshire	13 (13)	95.0	93.8	94.3	83.8	93.1	77.0	82.5
Trent	11 (11)	95.4	94.7	95.1	86.4	93.2	78.3	83.2
Eastern	7 (7)	94.3	93	93.6	83.8	90.2	75.6	80.3
London	14(14)	89.1	87.8	88	65.9	84.4	56.8	67.2
South East	13 (13)	93.9	93.0	93.0	83.4	90.9	72.9	80.6
South West	8 (8)	96.6	95.4	96.0	86.2	93.6	79.2	85.9
West Midlands	13 (13)	96.0	94.6	95.2	83.2	94	77.8	82.9
North West	16 (16)	95.4	93.7	94.6	84.2	91.7	73.3	80.5
England (total)	95 (95)	94.2	93.0	93.5	81.8	91.1	73.0	79.8
Wales	5 (5)	95.6	92.4	94.9	86.1	91.0	71.0	83.2
Northern Ireland	4 (4)	97.8	96.3	97.1	90.7	96.5	84.9	88.3
Scotland 6 years	15 (15)	-	-	-	-	-	90.5	95.1
England, Wales & Northern Ireland	104 (104)	94.5	93.1	93.7	82.3	91.3	73.4	80.3

* Health authority

Comments

UK coverage of MMR at 24 months has remained at 84.2% this quarter (3). The sentinel surveillance data for vaccination coverage of MMR at 16 months in England, used to predict trends in MMR coverage, suggests there could be a small increase in the latter half of this year in UK MMR coverage data at 24 months (4). Coverage of one dose of MMR at five years of age remains above 90% and is 3% higher than coverage for the same cohort at two years of age (figure) (5), suggesting that some parents with concerns may delay the primary MMR vaccination but do subsequently have their children immunised. Only 73.4% of these five year olds, however, go on to receive a second dose at school entry.

Figure MMR coverage at 24 months and 5 years by quarter of birth: England



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