



NEWS

ENTERIC

RESPIRATORY

IMMUNISATION

HIV/STIs

BACTERAEMIA

ZOONOSES

TRAVEL HEALTH New

DIARY

BACK ISSUES

SEARCH

Main stories this week:

Toxigenic *Corynebacterium diphtheriae* var *gravis* isolated from a child from north London

Trends in selected gastrointestinal infections – 2001

MMR vaccine safety

Updated this week:

General outbreaks of foodborne illness, England and Wales: laboratory reports, weeks 02-05/02

Salmonella infections (faecal specimens), England and Wales: reports to the PHLS

Common gastrointestinal infections, England and Wales: laboratory reports, weeks 02-05/02

Laboratory reports of typhoid and paratyphoid, England and Wales: 1980 to 2001*

Typhoid and paratyphoid, England and Wales: laboratory reports, October to December 2001

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HIV/STIs

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ZOOSES

TRAVEL HEALTH New

DIARY

BACK ISSUES

SEARCH

News

Last updated: 14 February 2002

Next update due: 21 February 2002

Contents

[Toxigenic *Corynebacterium diphtheriae* var *gravis* isolated from a child from north London](#)[Trends in selected gastrointestinal infections – 2001](#)[MMR vaccine safety](#)[Next | Top |](#)

Toxigenic *Corynebacterium diphtheriae* var *gravis* isolated from a child from north London

A toxigenic strain of *Corynebacterium diphtheriae* var *gravis* was isolated on 10 February 2002 from a throat swab from an immunised two-year-old Bangladeshi boy from north London who was born in the United Kingdom (UK). The organism was confirmed as a toxigenic strain by the PHLS Streptococcus and Diphtheria Reference Unit (SDRU) at the Respiratory and Systemic Infection Laboratory (RSIL).

The child had been admitted to hospital on 6 February with febrile convulsions but was discharged the following day with a diagnosis of upper respiratory tract infection. The organism was detected because throat swabs are routinely screened for corynebacteria by the treating hospital's microbiology laboratory (1). The child remained well and did not develop any signs or symptoms of full-blown clinical diphtheria. A 14-day course of antibiotic treatment with clarithromycin was started on 8 February.

Close contacts of the child were identified as 12 household members, and three children and a staff member from the paediatric ward. There is no history of recent travel or contact with travellers returning to the UK in either the index case or any of his family. Throat swabs were taken from all family members and the hospital contacts, erythromycin was prescribed and a booster dose of vaccine offered. The family contacts comprise nine adults and three children, aged 3, 10, and 12 years. All the children had been fully vaccinated in the past. All child contacts were excluded from school for three days until antibiotic treatment was completed (2).

Genotyping (ribotyping) is currently being undertaken by SDRU. Genotyping provides molecular epidemiological information about the likely origin of *C. diphtheriae* strains. The last toxigenic *C. diphtheriae* var *gravis* isolate within the UK was in 1997 and came from a woman who had been on a Baltic cruise (3). Ribotyping showed the isolate to be indistinguishable from the predominant strain circulating in the Newly Independent States of the former USSR and the Baltic at that time (4,5).

1. Efstratiou A, George R. Laboratory guidelines for the diagnosis of infections caused by *Corynebacterium diphtheriae* and *C. ulcerans*. *Commun Dis Public Health* 1999; **2**: 250-7. Available from <<http://www.phls.org.uk/publications/CDPHvol2/no4/guidelines.pdf>>.

2. Bonnet JM, Begg NT. Control of diphtheria: guidance for consultants in communicable disease control. *Commun Dis Public Health* 1999; **2**: 242-9. Available from <<http://www.phls.org.uk/publications/CDPHvol2/no4/guidelines.pdf>>.

3. CDSC. Diphtheria acquired during a cruise in the Baltic Sea. *Commun Dis Rep CDR Wkly* 1997; **7** (24): 207. Available from <<http://www.phls.org.uk/publications/CDR97/cdr2497.pdf>>.

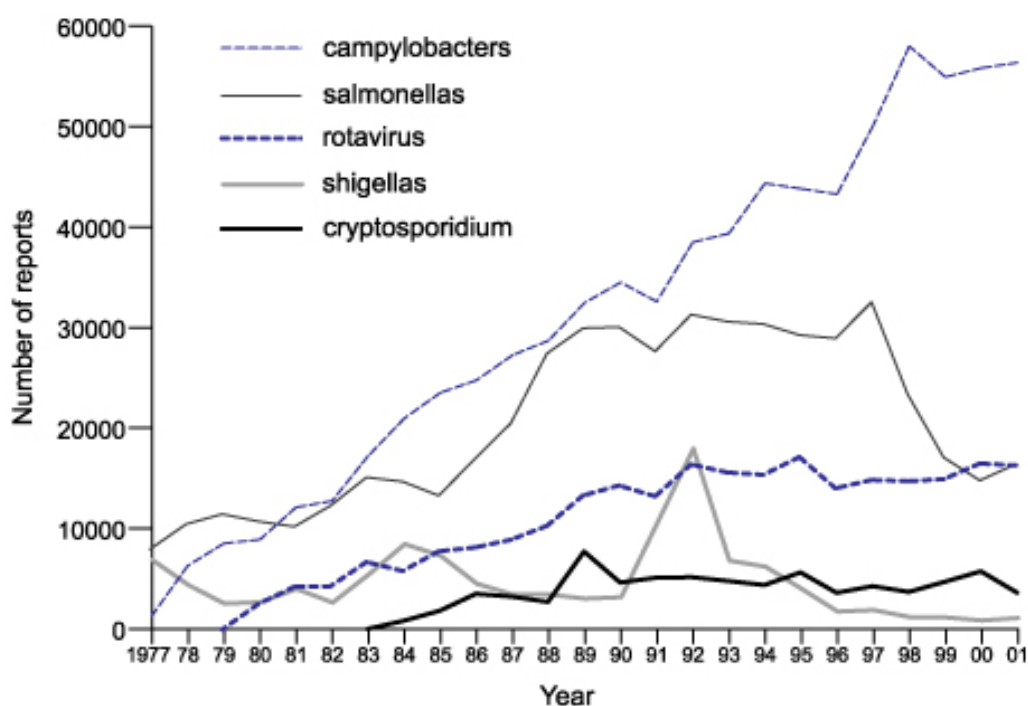
4. Galazka A. The changing epidemiology of diphtheria in the vaccine era. *J Infect Dis* 2000; **181** (Suppl): S2-9.

5. CDSC. Diphtheria acquired during a cruise in the Baltic Sea: update. *Commun Dis Rep CDR Wkly* 1997; **7** (25): 217. Available from <<http://www.phls.org.uk/publications/CDR97/cdr2597.pdf>>.

Trends in selected gastrointestinal infections – 2001

Trends in laboratory reporting of some of the major gastrointestinal pathogens in England and Wales during 2001 are shown in the figure. The incidence of salmonellosis rose by around 11% during 2001, and the provisional total for the year was 16,465. The provisional total of *Salmonella* Enteritidis phage type (PT) 4 was at 4908, a small increase on the previous year. 2001 is, however, the first year since 1983 in which PT4 accounted for less than 50% of all cases of *S. Enteritidis* in England and Wales. There were much greater increases in established phage types including *S. Enteritidis* PTs 1, 6, and 21, and new strains such as *S. Enteritidis* PT5c. This latter phage type is linked with travel to Tenerife, but has also been implicated in egg associated outbreaks in England and Wales. The provisional total for cases of *S. Typhimurium* was 2085 (the lowest for over 30 years), of which 810 cases were *S. Typhimurium* DT104.

Figure Trends in selected gastrointestinal infections, England and Wales: 1997 to 2001*



*2001 data are provisional

Campylobacter continues to be the most commonly identified bacterial cause of gastrointestinal infection, and during 2001 over 56,000 cases were reported to CDSC, a rise of 1% since 2000.

The provisional total for cryptosporidiosis in 2001 was 3681, the lowest annual total since 1996, and a fall of 46% from the figure for 2000. The decline in reporting was particularly sharp in the North West region where a reduction of 68% in laboratory confirmed illness was recorded. No major outbreaks of cryptosporidiosis were reported during the year.

Rotavirus continues to be a major cause of diarrhoeal disease in infants. In 2000 the reporting of *Shigella sonnei* infection had fallen to a 53-year low, although reporting rose by 20% during 2001 with 897 laboratory confirmed cases.

A provisional total of 768 isolates of Verotoxin-producing *Escherichia coli* O157 (VTEC O157) were confirmed by the PHLS Laboratory of Enteric Pathogens in 2001. The incidence of VTEC O157 in England and Wales has ranged from 768 to 1087 laboratory confirmed infections over the last five years. In each of the years when there were more than 1000 cases (1997 and 1999) large outbreaks contributed to these totals.

MMR vaccine safety

An article published in the electronic *British Medical Journal* last week [<bmj.com/cgi/content/full/324/7333/DC3>](http://bmj.com/cgi/content/full/324/7333/DC3) (1) added further weight to the evidence rejecting the hypothesis that there is any link between children receiving measles, mumps, and rubella (MMR) vaccine and later developing autism at any age. This population-based study in North London followed earlier work in the same locale (2). Case notes of 278 children with core autism and 195 with atypical autism, born between 1979 and 1998, were linked to independently recorded vaccine data. Particular attention was paid to any history of bowel problems lasting at least three months, the age of reported regression of the child's development where this occurred (it is not universal in autism), and relation of these to MMR vaccination. The data showed that the proportion of children with developmental regression (25%) or bowel symptoms (17%) did not change significantly between 1979 and 1998 – MMR vaccination was introduced in the UK in 1988. No significant difference was found in rates of bowel problems or regression in children who received the MMR vaccine before their parents became concerned about their development (where MMR might have caused or triggered the autism with regression or bowel problem), compared with those who received it only after such concern and those who had not received the MMR vaccine. The authors conclude that the data provide no support for there being an MMR associated 'new variant' form of autism with developmental regression and bowel problems. The data also showed that in 13 children the history reported by the parents changed after the concern in the media over a possible connection between MMR vaccine and autism. Before the publicity the case notes reported the parents expressing concerns early in their child's life, usually before their first birthday (MMR vaccine is given at about 15 months of age); more latterly, however, for the same children the parents reported symptoms as developing only after MMR vaccination.

These findings add to the extensive reviews published in 2001 by the Medical Research Council [<www.mrc.ac.uk/pdf-autism-report.pdf>](http://www.mrc.ac.uk/pdf-autism-report.pdf) (3) and the American Academy of Pediatrics [<www.pediatrics.org/cgi/content/full/107/5/e84>](http://www.pediatrics.org/cgi/content/full/107/5/e84) (4) that also concluded there was no evidence of a link between MMR vaccination and bowel disease or autism. Lack of association between MMR and regression and bowel problems in autistic children was also reported in *Paediatrics* in October 2001.

1. Taylor B, Miller E, Lingam R, Andrews N, Simmons A, Stowe J. Measles, mumps, and rubella vaccination and bowel problems or developmental regression in children with autism: population study. *BMJ* 2002; 324: website extra. Available online at [<www.bmj.com/cgi/content/full/324/7333/DC3>](http://www.bmj.com/cgi/content/full/324/7333/DC3).
2. Taylor B, Miller E, Farrington CP, Petropoulos M-C, Favot-Mayaud I, Li J, *et al.* Autism and measles, mumps and rubella vaccine: no epidemiological evidence for a causal association. *Lancet* 1999; **353**: 2026-9.
3. Medical Research Council Review Group on Autism Research. *MRC review of autism research*. London: Medical Research Council, December 2001.
4. Halsey NA, Hyman SL, and the conference writing panel. Measles-mumps-rubella vaccine and autistic spectrum disorder: report from the New Challenges in Childhood Immunizations Conference convened in Oak Brook, Illinois, June 12-13, 2000. *Paediatrics* 2001; **107** (5): e84. Available at [<www.pediatrics.org/cgi/content/full/107/5/e84>](http://www.pediatrics.org/cgi/content/full/107/5/e84).
5. Fombonne E, Chakrabarti S. No evidence for a new variant of measles-mumps-rubella-induced autism. *Paediatrics* 2001; **108** (5): e58. Available at [<www.pediatrics.org/cgi/content/full/108/4/e58>](http://www.pediatrics.org/cgi/content/full/108/4/e58).

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NEWS

ENTERIC

RESPIRATORY

IMMUNISATION

HIV/STIs

BACTERAEamia

ZOONOSES

TRAVEL HEALTH New

DIARY

BACK ISSUES

SEARCH

Enteric

Last updated: 14 February 2002

Next update due: 14 March 2002

Contents

[General outbreaks of foodborne illness, England and Wales: laboratory reports, weeks 02-05/02](#)

[Salmonella infections \(faecal specimens\), England and Wales: reports to the PHLS](#)

[Common gastrointestinal infections, England and Wales: laboratory reports, weeks 02-05/02](#)

[Laboratory reports of typhoid and paratyphoid, England and Wales: 1980 to 2001*](#)

[Typhoid and paratyphoid, England and Wales: laboratory reports, October to December 2001](#)

[Next](#) | [Top](#) | [PDF](#) | [Archive](#)

General outbreaks of foodborne illness, England and Wales: laboratory reports, weeks 02-05/02*

Health authority	Organism	Place of outbreak	Month of outbreak	No. ill	Cases positive	Suspect vehicle	Evidence
Buckinghamshire	<i>S. Enteritidis</i> PT4	Nursery	December 2001	2	2	None	–
Southampton and SW Hampshire	<i>S. Heidelberg</i>	School	Not stated	3	3	None	–
Wigan and Bolton	<i>S. Typhimurium</i> DT104	Retailer	December 2001	103	62	Cooked chicken and turkey	M, D
Leeds	<i>Campylobacter jejuni</i> HS13, PT1	Restaurant	December 2001	8	6	Chicken liver pate	D

* Preliminary data. Final information will be published in the quarterly report.

M (microbiological): identification of an organism of the same type from cases and in the suspect vehicle, or vehicle ingredient(s), or detection of toxin in faeces or food; S (statistical): a significant statistical association between consumption of the suspect vehicle(s) and being a case; D (descriptive): other evidence, usually descriptive, reported by local investigators as indicating the suspect vehicle.

Salmonella infections (faecal specimens), England and Wales: reports to the PHLS (salmonella data set*)

Details of serotypes of the 736 salmonella infections recorded in December 2001 are given in the table below. In January 2002, 702 salmonella infections were recorded and preliminary information was received about three outbreaks.

* figures quoted from the PHLS salmonella data set are for isolates confirmed and typed by PHLS Laboratory of Enteric Pathogens (LEP)

	December 2001
Salmonella (provisional total)	736
S. Enteritidis (PT4)	191
S. Enteritidis (other PTs)	227
S. Typhimurium	158
S. Virchow	19
Other (typed)	141

Common gastrointestinal infections, England and Wales: laboratory reports, weeks 02-05/02

Laboratory reports	Number of reports received				Total reports	Cumulative total to	
	02/02	03/02	04/02	05/02	02-05/02	05/02	05/01
Campylobacter	637	1000	561	985	3183	3743	4842
Escherichia coli O157*	1	4	3	4	12	14	32
Salmonella	156	181	176	143	656	832	743
Shigella sonnei	8	24	14	7	53	60	90
Rotavirus	120	620	170	459	1369	1469	759
SRSV	21	151	39	92	303	332	193
Cryptosporidium	54	72	28	140	294	339	385
Giardia	41	102	36	112	291	339	385

* Vero cytotoxin producing isolates (data from LEP)

Laboratory reports of typhoid and paratyphoid, England and Wales: 1980 to 2001*

The annual totals for typhoid and paratyphoid are given in the following table. In 2001 there was a slight increase in *Salmonella* Typhi cases and an increase of 37% of *S. Paratyphi* A cases. The predominant phage types were 13 and 1, with 78 and 66 cases respectively, and most of the cases returning from India or Pakistan. The number of *S. Paratyphi* B cases remained the same last year.

Year	S. Typhi	S. Paratyphi A	S. Paratyphi B
1980	232 (192)	40 (37)	64 (42)
1981	197 (173)	43 (40)	57 (45)
1982	168 (147)	41 (40)	49 (36)
1983	216 (195)	59 (54)	41 (30)
1984	169 (137)	80 (79)	31 (22)
1985	172 (154)	80 (79)	33 (27)
1986	148 (128)	64 (61)	21 (13)
1987	142 (132)	63 (62)	82 (25)
1988	146 (132)	63 (62)	82 (25)
1989	145 (133)	88 (84)	25 (22)
1990	184 (166)	75 (73)	32 (14)
1991	132 (118)	79 (77)	12 (8)
1992	198 (177)	104 (100)	21 (15)
1993#	173 (144)	118 (108)	15 (11)
1994	227 (201)	180 (168)	37 (27)
1995	265 (196)	153 (113)	17 (12)
1996	179 (116)	116 (88)	35 (19)
1997	134 (96)	130 (91)	37 (14)
1998	134 (85)	156 (109)	28 (6)
1999	153 (94)	149 (106)	44 (30)
2000	165 (105)	137 (92)	17 (9)
2001**	170 (96)	219 (148)	17 (10)

* infections acquired abroad are shown in brackets and are included in the total; ** provisional; # active ascertainment of travel details ceased in 1993. One case of *S. Paratyphi* C was reported in 1989 (acquired abroad) and one in 2000 (travel not stated). All isolates were confirmed and phage typed by the PHLS Laboratory of Enteric Pathogens.

Typhoid and paratyphoid, England and Wales: laboratory reports, October to December 2001

Organism and phage type	Number of cases	Infection acquired abroad			Excretors and carriers
		Yes	No	Not reported	
S. Typhi					
A	1	–	–	1	–
B2	2	–	–	2	–
C1	1	1	–	–	–
D1	2	1	–	1	–
D2	5	3	–	2	–
E1	14	5	–	9	–
E14	1	–	–	1	–
Degraded	5	3	–	2	–
Degraded Vi-2	1	1	–	–	–
Untypable Vi	5	3	–	2	–
Untypable Vi-1	2	1	–	1	–
Untypable Vi-3	1	1	–	–	–
28	1	1	–	–	–
Total	41	20	–	21	–
S. Paratyphi A					
1	14	10	–	4	–
1A	5*	4	–	1	–
2	1	1	–	–	–
3	2	2	–	–	–
4	4	3	–	1	–
6A	1	1	–	–	–
13	35*	20	–	15	–
RDNC	1	–	–	1	–
Total	63	41	–	22	–
S. Paratyphi B					
3a var 2	1	–	–	1	–
3a1 var 1	1	1	–	–	–
Battersea	1	–	1	–	–
Dundee	1	1	–	–	–
Dundee var 2	1	1	–	–	–
Taunton var 1	1	1	–	–	–
Total	6	4	1	1	–

Forty-one cases of *Salmonella* Typhi infection were reported in the fourth quarter of 2001. Twenty cases were infected abroad (South Asia 12, Ghana 2, Nigeria 3, Morocco 1, Far East 1, Abroad 1). In 21 cases the country of infection was not stated.

Sixty-two cases of *S. Paratyphi A* infection were reported. Forty cases were infected abroad (South Asia 38, Far East 1, Zimbabwe 1). *One patient had two phage types (1A/13) isolated from stool. In 22 cases the country of infection was not stated.

Six cases of *S. Paratyphi B* were reported. Four were infected abroad (Morocco 3, Far East 1). One case was infected in the Channel Islands and in one case the country of infection was not stated.