



Health Protection Report

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Current News

- ▶ Two outbreaks of salmonellosis in the United Kingdom and Channel Islands putatively linked to imported pasteurised egg products
- ▶ Infant botulism: report of the first treatment by Baby BIG in the UK
- ▶ Tuberculosis in the UK
- ▶ Asbestos exposures from large scale fires
- ▶ Zoonoses report for 2006 published

Infection reports

Enteric

- ▶ General outbreaks of foodborne illness in humans, England and Wales: weeks 41-44/07
- ▶ Salmonella infections, (faecal specimens) England and Wales, reports to the HPA (Salmonella data set): September 2007
- ▶ Common gastrointestinal infections, England and Wales: laboratory reports: weeks 41-44/07
- ▶ Typhoid and paratyphoid, England and Wales: laboratory reports, July to September 2007

Diary

- ▶ Water contamination emergencies: collective responsibility

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News

- ▶ Two outbreaks of salmonellosis in the United Kingdom and Channel Islands putatively linked to imported pasteurised egg products
 - ▶ Infant botulism: report of the first treatment by Baby BIG in the UK
 - ▶ Tuberculosis in the UK
 - ▶ Asbestos exposures from large scale fires
 - ▶ Zoonoses report for 2006 published
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Two outbreaks of salmonellosis in the United Kingdom and Channel Islands putatively linked to imported pasteurised egg products

The Health Protection Agency Centre for Infections has been notified of two outbreaks of salmonellosis in the United Kingdom and Channel Islands associated with imported pasteurised egg yolk and egg white products.

An outbreak of salmonellosis occurred following a formal dinner in the East of England on 11 October 2007. Seven of 59 guests were ill (attack rate 12%) and four have been confirmed as infected with *Salmonella* Enteritidis phage type (PT) 1e resistant to nalidixic acid with reduced susceptibility to ciprofloxacin (Nx_{Cp_L}). Chocolate mousse was implicated in the outbreak and although none was available for testing, subsequent testing of pasteurised liquid egg yolk (leaking) and pasteurised liquid egg white (intact), believed to have been from the same batch as was used to make the mousse, yielded *S. Enteritidis* PT1e Nx_{Cp_L}. Both products were produced in France.

A second outbreak occurred in the Channel Islands following a function on 21 October. Ten out of 83 people were ill (attack rate 12%) and eight have a confirmed *S. Enteritidis* PT1e Nx_{Cp_L} infection. Baked Alaska was implicated in the outbreak and pasteurised egg white used as an ingredient had the same country of origin, batch number and best before date as in the above outbreak. *Salmonella* Enteritidis PT1e Nx_{Cp_L} has been isolated from the implicated egg white. Further characterisation of human and food isolates from both outbreaks is currently underway.

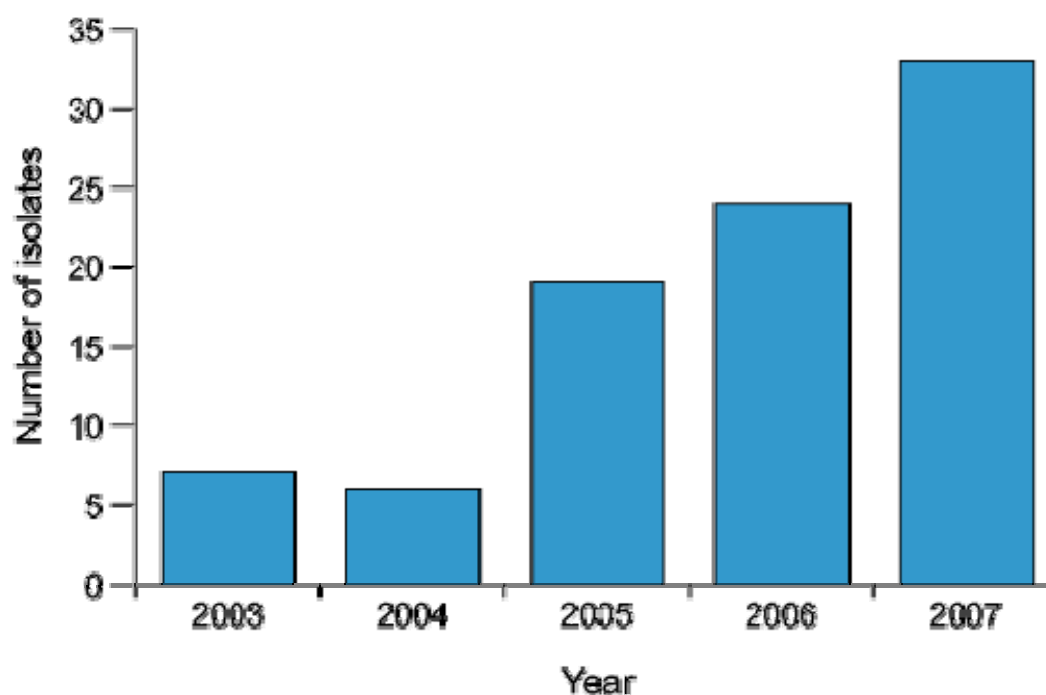
A cluster of cases of *S. Enteritidis* PT1e Nx_{Cp_L} infection reported in the East Midlands is currently under investigation.

Initial reports suggest that the contaminated batches of this product were sourced by a single company in the UK and were supplied exclusively to caterers in all regions of England except for the North East, North West, and Yorkshire and Humber.

Health Protection Agency colleagues throughout England and Wales were made aware of the incident and requested to raise their index of suspicion with regard to the potential role of this product in cases or outbreaks of salmonellosis. European Union (EU) food safety authorities have been alerted through the Rapid Alert System for Food and Feed (RASFF) system. Public health colleagues were alerted via the EU Early Warning Response System (EWRS) and through the European Centre for Disease Prevention and Control. The World Health Organisation International Food Safety Authorities Network (INFOSAN) have also been informed, but as the product does not appear to have been distributed outside the EU, INFOSAN has not sent a global alert.

Salmonella Enteritidis PT1e Nx_{Cp_L} is a relatively rare salmonella, having been first described in 2003 with 33 human cases reported in England and Wales in 2007 to date (figure).

Figure Human isolates of *S. Enteritidis* PT1e Nx Cp L infection reported in England and Wales, weeks 1-44: 2003 to 2007



Local investigators are requested to inform Iain Gillespie (email Iain.Gillespie@hpa.org.uk; telephone 020 8327 7486) early in the stages of their investigations of any cases or outbreaks of salmonellosis which might be linked to this product. Laboratory directors are asked to refer putative *S. Enteritidis* isolates (O9:g) to the Health Protection Agency Laboratory of Enteric Pathogens.

Infant botulism: report of the first treatment by Baby BIG in the UK

Infant botulism is a rare disease in the United Kingdom (UK) and only six cases have been previously reported since 1978 [1]. Until recently there has been no specific treatment suitable for use in infants, with supportive care being the mainstay of treatment. For wound and food botulism ovine antitoxin is available for treatment at specific UK centres but it is not recommended for use in infants because of the high risk of severe adverse reactions including serum sickness and anaphylactic shock. Infant botulism is more common in the United States where a human-derived botulinum antitoxin (Baby BIG) has been available for the treatment of infant botulism since October 2003. The efficacy and safety was demonstrated in a five year randomised, double-blinded placebo-controlled trial in 122 subjects [2].

On the 30 September 2007, a previously healthy, breast fed infant aged 8 months was admitted to a hospital in London with a two day history of poor feeding and lethargy, becoming increasingly floppy with poor urine output. On examination the child was apyrexial, with a clear chest and normal perfusion, and had globally reduced power and tone. A chest radiograph revealed a large cardiothoracic ratio and metabolic acidosis detected by blood-gas analysis. Presumptive sepsis was empirically treated with broad-spectrum antibiotics and acyclovir. The child was transferred to a second hospital for cardiac assessment. An echocardiogram on arrival showed a structurally normal heart with good function. Respiratory failure secondary to progressive weakness, requiring intubation and ventilation developed on 1 October. The main differential diagnosis was distal Guillain Barré Syndrome, which was

supported by electromyography studies on 3 and 7 October and was treated with high dose immunoglobulin on 3 October.

Cerebrospinal fluid (CSF) analysis was inconsistent with a diagnosis of Guillian Barré Syndrome and infant botulism was suspected. Samples of serum, faeces and faeces inoculated into cooked meat broth were sent to the HPA Food Safety Microbiology Laboratory (Centre for Infections) on the 11 October for testing. On the 12 October, botulinum neurotoxin was detected in serum and Type A neurotoxin gene was detected by PCR in the inoculated CMB after one day enrichment. *C. botulinum* type A was subsequently isolated by enrichment from the original CMB inoculated with faeces which together with the detection of BoNT in the patient's serum confirmed the diagnosis of infant botulism.

BabyBIG was obtained from the California Department of Health Services Infant Botulism Treatment and Prevention Program and was administered to the infant on 14 October . He completed a course of enteral metronidazole.

There was no history of recent travel and no record of eating previously identified possible risk factors including honey, corn syrup or infant formula feed. Food items collected from the infant's home were negative for *C. botulinum* culture and environmental sampling of the home is currently on-going.

Infant botulism is a recently recognised disease with the first report of frank botulism in infancy in 1976 [3]. Colonisation of the infant gut by *C. botulinum* is thought to arise due to perturbation of the infants normal gut flora, allowing the organism to proliferate and produce neurotoxin. Infant botulism should be suspected in infants less than one year of age who present with constipation, poor feeding, lethargy, ptosis, bulbar palsies, hypotonia, weakness, and loss of head control. This is the seventh confirmed case of infant botulism in the UK and only the second case of type A: the remaining five cases were due to type B. Diagnosis of infant botulism is based on a clinical observation and should not rely on laboratory confirmation as this may take several days. As with all antitoxin treatment for botulism, BabyBIG treatment should be started as early in the illness as possible in order to neutralise circulating neurotoxin and prevent further progression of the illness. Laboratory examination for detection of botulinum toxin in serum or faeces or isolation of *C. botulinum* from faeces confirms the clinical diagnosis of botulism. Prompt laboratory diagnosis is helpful for patient management and for ruling out the possibility of fatal degenerative neuromuscular diseases.

References

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2. Brett MM, McLauchlin J, Harris A, O'Brien S, Black N, Roberts D, Bolton FJ. A case of infant botulism with a possible link to infant formula milk powder: evidence for the presence of more than one strain of *Clostridium botulinum* in clinical specimens and food. *J Med Microbiol* 2005; **54**: 769-76.
3. Clay SA, Ramseyer JC, Fishman LS, Sedgwick RP, et al., Acute infantile motor unit disorder: infantile botulism? *Arch Neurol* 1977; **34**: 236-43.

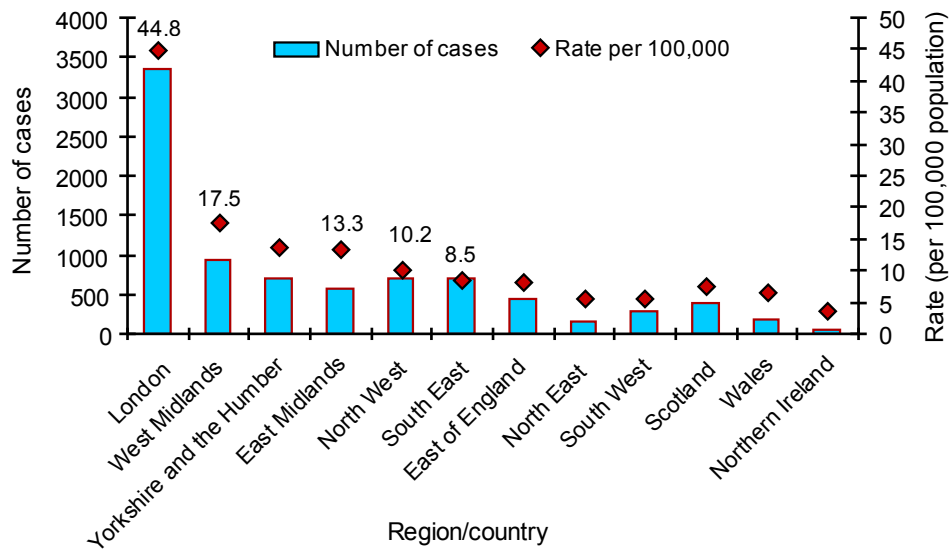
Tuberculosis in the UK

The first UK-wide annual report on tuberculosis *Tuberculosis in the UK* has just been published by the Health Protection Agency (HPA) in collaboration with our partners in Wales, Northern Ireland, and Scotland [1]. The report presents the latest surveillance information on the occurrence of tuberculosis and anti-tuberculosis drug resistance in 2006, and treatment outcome results for cases reported in 2005. The report also provides examples of

tuberculosis control activities at the frontline and the latest initiatives in research and development.

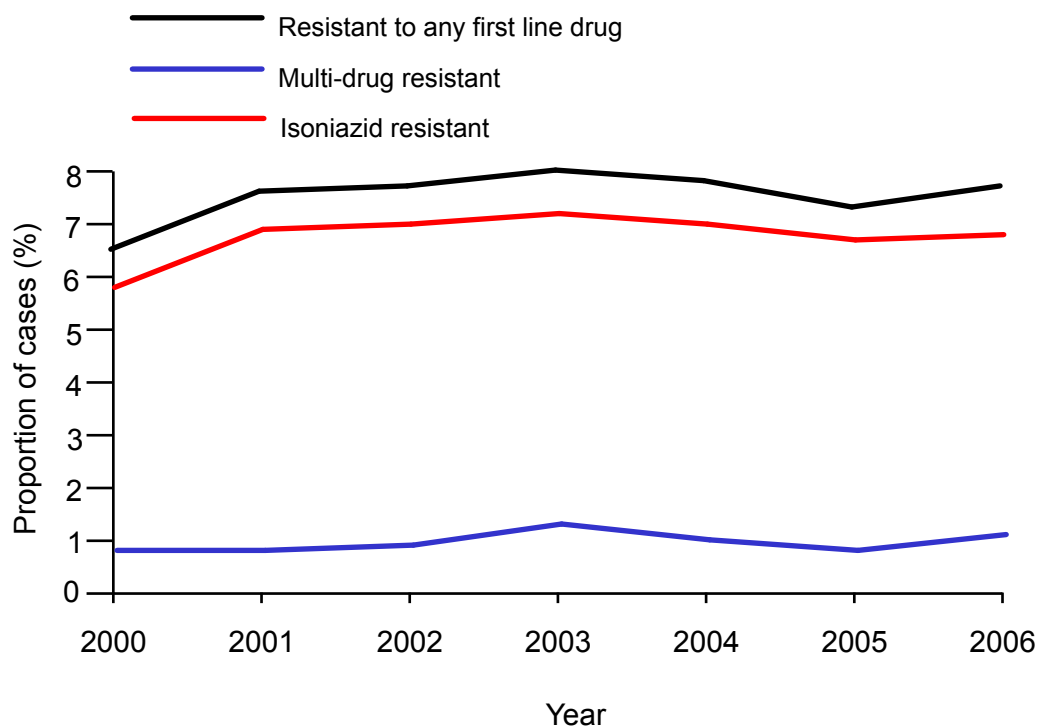
A total of 8497 tuberculosis cases were reported in 2006 in the UK, a rate of 14.0 per 100,000 population. Both the number of cases and the rate in 2006 were very similar to those for 2005. The majority of cases occurred in young adults aged from 15 to 44 years (61%) and 72% of cases occurred in the non-UK born population. The London region accounted for the largest proportion of cases (40%) and had the highest rate (44.8 per 100,000) (figure 1). Among tuberculosis cases with drug susceptibility testing results 7.7% were resistant to at least one first line drug, 6.9% were resistant to isoniazid and 1.1% were multi-drug resistant (resistant to at least isoniazid and rifampicin).

Figure 1 Tuberculosis case reports and rates by region/country, UK: 2006



Due to year-to-year fluctuations in the number of cases reported, further years of data are required to assess whether these results indicate a slowing in the overall trend of increasing numbers of cases. Tuberculosis rates in the UK remain higher than at any other time since 1987. Levels of tuberculosis among the general population, however, remain low and the disease is primarily focused among certain high risk populations. National levels of drug resistance have remained stable over the last few years (figure 2) and are low for multi-drug resistance when compared with the other countries in western Europe.

Figure 2 Proportion of tuberculosis cases with first line drug resistance, UK, 2000-2006



Treatment outcomes were returned for 88% of cases reported in 2005, but this varied considerably by country and region within the UK. The proportion of cases completing treatment was 79% and has remained stable since monitoring began in 2002. Treatment completion was lower among males, older individuals and UK born cases. The most common reasons reported for not completing treatment were death (7%), loss to follow up (6%) and still being on treatment (4%).

The proportion of patients completing treatment is still below the 85% recommended in the Chief Medical Officer's Action Plan [2]. This is in part due to a significant proportion of cases occurring among the elderly who die with, rather than of, tuberculosis. In addition some of the high risk populations for tuberculosis are hard-to-reach and hard-to-treat such as the homeless and problem drug users.

Apart from the surveillance and monitoring of tuberculosis disease the Agency plays a key role in responding to public health incidents. A number of recent outbreaks which were managed by the Agency are described including the role of microbiological tools such as strain typing and gamma interferon tests. The report also highlights some of Agency's leading edge research on vaccines and a new rapid diagnostic test as well as the development of a new web based surveillance system for reporting cases.

The HPA tuberculosis web pages which contain surveillance data for England, Wales, and Northern Ireland have also been updated and can be assessed at:

http://www.hpa.org.uk/infections/topics_az/tb/data_menu.htm

References

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 2. Department of Health. *Stopping Tuberculosis in England : An Action Plan from the Chief Medical Officer*. London: Department of Health, 2004.
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Asbestos exposures from large scale fires

The Health Protection Agency has published a report on the potential health impact and levels of asbestos exposures from large scale fires. Literature reviews were undertaken to identify information on both the level of asbestos exposures that might result from fires, and the potential health impact of such exposures. The report concludes that the levels of exposure to asbestos experienced by members of the public, following fires involving materials containing asbestos, would be very small. There was no direct evidence of long-term health risks, such as development of mesothelioma and lung cancer, from fires involving materials containing asbestos, and this risk is thought to be minimal provided that appropriate clean-up operations are undertaken.

A number of factors help to reduce exposure of the general public to asbestos following a fire involving materials containing asbestos. For example, not all the materials containing asbestos in a building may be involved in a fire; fibres may become trapped in larger pieces of material stopping them from being released into the environment; asbestos fibres which can be breathed in only make-up a part of the total released; some fibres may disintegrate due to the high temperatures in the fire; the weather, such as wind and rain, will affect local air concentrations; and the duration of exposure to asbestos during a fire will usually be short.

Large-scale fires involving materials containing asbestos are a relatively common occurrence in the United Kingdom , due to widespread use of asbestos in the building industry in the past. These fires can cause considerable public concern due to the risks associated with exposure to asbestos. The HPA is responsible for ensuring that public health responses to incidents such as fires are appropriate and consistent. Asbestos causes a number of diseases and, in particular, is linked to the development of mesothelioma and lung cancer. The import, supply and use of asbestos was banned in 1999, but due to its extensive use in the building industry it is still found in many locations.

References

1. Smith KR, Saunders PJ. *The public health significance of asbestos exposures from large scale fires*. Chilton: HPA, 2007. Available at <http://www.hpa.org.uk/chemicals/publications/chapd_reports/index.htm>.
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Zoonoses report for 2006 published

The *Zoonoses report: United Kingdom 2006* has recently been published by the Department for Environment, Food, and Rural Affairs (DEFRA). The report brings together data and information published from various sources throughout 2006 and draws on information from humans, food and animals and provides comparable data from previous years.

The major food and water-borne zoonoses (campylobacter, salmonella, Verotoxin producing *E. coli* O157 (VTEC O157) and cryptosporidium), and the main notifiable zoonotic diseases of animals including bovine tuberculosis, brucellosis, anthrax, rabies, and BSE are all covered.

The report can be found at <www.defra.gov.uk/animalh/diseases/zoonoses/reports.htm>.

Enteric

Enteric Routine Data Reports

- ▶ General outbreaks of foodborne illness in humans, England and Wales: weeks 41-44/07
- ▶ Salmonella infections, (faecal specimens) England and Wales, reports to the HPA (Salmonella data set): September 2007
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General outbreaks of foodborne illness in humans, England and Wales: weeks 41-44/07

Health Protection Unit	Organism	Location of food prepared or served	Month of outbreak	Number ill	Cases positive	Suspect vehicle	Evidence
Greater Manchester	<i>Salmonella</i> Enteritidis PT8	Restaurant	October	6	2	–	–
East Midlands North	<i>S. Enteritidis</i> PT14B	Retailer	September	7	7	–	–
County Durham & Tees	<i>S. Typhimurium</i> U313	Retailer	October	20	7	–	–
South East London	<i>S. Enteritidis</i> PT8	Café	October	2	2	–	–
South East London	<i>S. Enteritidis</i>	Restaurant	September	6	6	–	–

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; D (descriptive): other evidence, usually descriptive, reported by local investigators as indicating the suspect vehicle or food; S (statistical): a significant statistical association between consumption of the suspect vehicle(s) and being a case.

Salmonella infections (faecal specimens), England and Wales, (reports to the HPA salmonella data set): September 2007

Details of 1422 serotypes of Salmonella infections recorded in September are given in the table below. In October 2007, 1087 Salmonella infections were recorded and preliminary information was received about five outbreaks (see table above).

	September 2007
S. Enteritidis (PT4)	232
S. Enteritidis (other PTs)	651
S. Typhimurium	175
S. Virchow	39
Others (typed)	325
Total Salmonella (provisional data)*	1422

*Figures quoted from the Health Protection Agency salmonella data set are for isolates confirmed and typed by Laboratory of Enteric Pathogens (LEP).

Common gastrointestinal infections, England and Wales, laboratory reports: weeks 41–44/07

Laboratory reports	Number of reports received				Total reports	Cumulative total to	
	41/07	42/07	43/07	44/07	41-44/07	44/07	44/06
<i>Campylobacter</i>	1050	1022	663	100	2835	42327	40781
<i>Escherichia coli</i> O157*	15	31	9	22	97	626	852
<i>Salmonella</i>†	286	227	199	170	882	10025	10537
<i>Shigella sonnei</i>	14	17	11	–	42	848	557
Rotavirus	16	27	23	4	70	12338	13032
Norovirus	61	49	53	8	171	3974	3830
<i>Cryptosporidium</i>	70	93	52	13	228	2460	3030
<i>Giardia</i>	78	78	44	19	219	2427	2495

*Vero cytotoxin-producing isolates (data from Health Protection Agency's Laboratory of Enteric Pathogens (LEP).

† Data from Health Protection Agency's Laboratory of Enteric Pathogens

Typhoid and paratyphoid, England and Wales: laboratory reports, July to September 2007

Organism and phage type	Infection acquired abroad				Excretors and carriers
	Number of cases	Yes	No	Not reported	
S. Typhi					
A	2	2	–	–	–
D1	5	2	–	3	–
D2	1	–	–	1	–
E1	28	12	–	16	–
E4	2	2	–	–	–
E9 variant	15	9	–	6	–
E14	3	1	–	2	–
J1	4	4	–	–	–
M1	1	1	–	–	–
Degraded	1	–	–	1	–
Vi-negative	1	–	–	1	–
Vi-negative variant	3	2	–	1	–
Untypable Vi	1	–	–	1	–
Untypable Vi-1	4	3	–	1	–
Untypable Vi-2	5	2	–	3	–
Untypable Vi-6	1	–	–	1	–
Untypable VI-7	8	5	–	3	–
Total	85	45	–	40	–
S. Paratyphi A					
1	8	4	–	4	–
1A	15	10	–	5	–
2	8	3	–	5	–
3	1	1	–	–	–
4	17	10	–	7	–
6A	3	2	–	1	–
13	6	3	–	3	–
Untypable	1	1	–	–	–
Total	59	34	–	25	–
S. Paratyphi B					
Dundee	1	1	–	–	–
3B var 2	1	1	–	–	–

Total	2	2	-	-	-
S. Paratyphi C	1	-	-	1	-

Eighty-five cases of *Salmonella* Typhi infection were reported in the third quarter of 2007. Forty-five cases were infected abroad (Indian subcontinent 32, Africa 1, Ecuador 1, Indonesia 1, Nigeria 3, Tanzania 2, abroad country unspecified 5). In 40 cases the country of infection was not stated.

Fifty-nine cases of *S. Paratyphi* A infection were reported. Thirty-four cases were infected abroad (Indian subcontinent 32, Afghanistan 1, abroad country unspecified 1). In 25 cases the country of infection was not stated.

Two cases of *S. Paratyphi* B infection was reported both infected abroad (Turkey 1, abroad country unspecified 1).

One case of *S. Paratyphi* C was reported, the country of infection was not stated.

Diary

Water contamination emergencies: collective responsibility

A two day conference on 1 to 8 April 2008.

Cost: £350 to 300 + VAT according to status

Venue: Royal Society of Medicine, London

The conference will deal with preparedness and possible CBRN (chemical, biological, radiological and nuclear) incidents. Objectives and themes include: sharing best practice in terms of operational procedures and security; promoting networking amongst experts; identifying collaborative and focussed research opportunities; enhancing cohesive plan development and inter-agency working; gaining common understanding of risk assessment and communication; learning from real emergencies and planned exercises and highlight training needs.

Contact the conference secretariat on website at 01359 221004; email:

maggi@maggichurchosevents.co.uk; website:

<http://www.soci.org/SCI/events/details.jsp?eventID=EV1035>.