



Health Protection Report

weekly report

Current Issue: Volume 1 Number 32 **Published on:** 10 August 2007

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News

▶ Healthcare Commission report on healthcare-associated infection

Healthcare Commission report on healthcare-associated infection

The Healthcare Commission has recently published the results of a national study into healthcare-associated infection that outlines practical advice for Trusts to help in their attempts to reduce rates of infection. The report emphasises that while the boards of Trusts have to balance a range of priorities, the safety of patients is foremost among them.

The report was prepared in response to a request from the Chief Medical Officer for England, asking the Commission to examine the factors associated with reducing rates of infection. The Commission undertook a voluntary survey of acute NHS trusts to bring together information on how trusts were dealing with prevention and control of infection in May 2006, before the introduction of the Government's Hygiene Code in October 2006. The survey was completed at 155 out of 173 acute trusts in England. Analysis to identify any significant relationships between information from the survey and data on rates of infection was carried out. Findings from inspections to check on compliance with the Hygiene Code, including the early emerging results from the programme of 120 inspections of Trusts were also considered.

Trusts were likely to have lower rates of *Clostridium difficile*-associated disease if they had designated members of staff, working in a number of clinical areas to link management with staff at the frontline and to ensure policies are put into practice on the wards. At the time of the survey, 86% of trusts had 'link practitioners' in at least half of their clinical areas and 23% had them in all areas. However, 45% of trusts said that they had difficulties in reconciling the management of healthcare-associated infection with the target for treating patients in accident and emergency departments. Twenty-nine per cent of trusts cited difficulties in reconciling control of infection and targets for waiting lists.

The Healthcare Commission is the health watchdog in England. It keeps check on health services to ensure that they are meeting standards in a range of areas. The Commission also promotes improvements in the quality of healthcare and public health in England through independent, authoritative, patient-centred assessments of those who provide services.

The report is part of the Commission's focus on healthcare-associated infection. In June 2007 it began a programme of unannounced visits to 120 NHS Trusts. Reports on each visit will be published on the Commission's website < <http://www.healthcarecommission.org.uk>>.

The full report, *Healthcare associated infection: what else can the NHS do?* can be found on the healthcare commission website at
<http://www.healthcarecommission.org.uk/newsandevents/pressreleases.cfm/cit_id/5580/FAA
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/customWidgets.content_view_1/usecache/false>.

Enteric

Enteric Routine Data Reports

General outbreaks of foodborne illness in humans, England and Wales: weeks 28-31/07

- ▶ Salmonella infections, (faecal specimens) England and Wales, reports to the HPA (Salmonella data set): June 2007
- ▶ Common gastrointestinal infections, England and Wales: laboratory reports: weeks 28-31/07
- ▶ Typhoid and paratyphoid, England and Wales: laboratory reports, April to June 2007
- ▶ Vero cytotoxin-producing *Escherichia coli* O157: 2006

General outbreaks of foodborne illness in humans, England and Wales: weeks 28-31/07

Health Protection Unit	Organism	Location of food prepared or served	Month of outbreak	Number ill	Cases positive	Suspect vehicle	Evidence
Gloucestershire	<i>Salmonella</i> Enteritidis PT8	Restaurant	July	8	8	Home-made mayonnaise	–
West Midlands	<i>Salmonella</i> Enteritidis PT8	Restaurant	July	12	12	–	–

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): June 2007

Details of 993 serotypes of Salmonella infections recorded in May are given in the table below. In July 2007, 1014 Salmonella infections were recorded and preliminary information was received about two outbreaks (see table above).

	June 2007
S. Enteritidis (PT4)	158
S. Enteritidis (other PTs)	374
S. Typhimurium	151
S. Virchow	27
Others (typed)	283
Total Salmonella (provisional data)*	993

*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 28-31/07

Laboratory reports	Number of reports received				Total reports 28-31/07	Cumulative total to	
	28/07	29/07	30/07	31/07		31/07	31/06
<i>Campylobacter</i>	1269	1005	711	114	3099	26271	27406
<i>Escherichia coli</i> O157*	35	42	28	15	120	323	286
<i>Salmonella</i> †	271	221	151	177	820	5788	5461
<i>Shigella sonnei</i>	22	16	3	–	41	527	341
Rotavirus	44	31	23	3	101	11809	12647
Norovirus	12	19	6	2	39	3286	3432
<i>Cryptosporidium</i>	38	39	29	4	110	1192	1358
<i>Giardia</i>	53	50	26	7	136	1443	1551

*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, April to June 2007

Organism and phage type	Infection acquired abroad				Excretors and carriers
	Number of cases	Yes	No	Not reported	
S. Typhi					
C1	2	1	–	1	
D2	2	1	–	1	
E1	41	15	–	26	
E9 variant	8	4	–	4	
E14	2	2	–	–	
J1	1	1	–	–	
O	1	1	–	–	
Degraded Vi strain	2	–	–	2	
Vi-Negative	1	–	–	1	
Untypable Vi-1	3	3	–	–	
Untypable Vi-2	3	1	–	2	
Untypable VI-7	7	3	–	4	
Total	73	32	–	41	
S. Paratyphi A					
1	9	5	–	4	
1A	13	6	–	7	
2	15	5	–	10	
3	3	2	–	1	
4	6	3	–	3	
6A	4	1	–	3	
13	14	9	–	5	
Untypable	1	–	–	1	
Total	65	31	–	34	
S. Paratyphi B					
Battersea	1	–	–	1	
Dundee	2	–	–	2	
Dundee Var 1	1	–	–	1	
Taunton	2	1	–	1	
3a1 var 1	2	1	–	1	
Total	8	2	–	6	

Seventy-three cases of *Salmonella* Typhi infection were reported in the second quarter of 2007. Thirty-two cases were infected abroad (Indian subcontinent 28, Nigeria 1, abroad country not specified 3). In 41 cases the country of infection was not stated.

Sixty-five cases of *S. Paratyphi A* infection were reported. Thirty-one cases were infected abroad (Indian subcontinent 26, abroad country unspecified 5). In 34 cases the country of infection was not stated.

Eight cases of *S. Paratyphi B* infection were reported. Two cases were infected abroad (Indian subcontinent 1, South America 1). In six cases the country of infection was not stated.

Vero cytotoxin-producing *Escherichia coli* O157: 2006

In 2006, 1002 isolations of Vero cytotoxin (VT)-producing *Escherichia coli* O157 (VTEC O157) were confirmed by the Laboratory of Enteric Pathogens (LEP) from human infections in England and Wales. This was a 5% increase overall compared with the 950 isolates in 2005 [1] and was the third highest total recorded since 1997 (1097).

The distribution of VTEC O157 according to the sender's health region is shown in table 1, where the data are compared to 2005. Isolations from Wales in 2005 were inflated by a large general outbreak [2] and fell back in 2006. Strains confirmed in England rose by 23% with the largest percentage increases in London and South East regions. These areas experienced school and nursery outbreaks in 2006 [3].

Table 1 VTEC O157 isolations in different health regions: 2006 data compared with 2005

Region/Country	Total 2006 (Rate/100,000)	% total England and Wales 2006	Total 2005 (Rate/100,000)	% total England and Wales 2005
North East	59 (2.31)	5.9	60 (2.35)	6.3
North West	171 (2.5)	17.1	134 (1.96)	14.1
Yorkshire and the Humber	182 (3.59)	18.2	145 (2.86)	15.3
East Midlands	56 (1.3)	5.6	45 (1.04)	4.7
West Midlands	49 (0.91)	4.9	54 (1.01)	5.7
East of England	59 (1.06)	5.9	71 (1.28)	7.5
London	126 (1.68)	12.6	77 (1.02)	8.1
South East	126 (1.54)	12.6	83 (1.02)	8.7
South West	117 (2.31)	11.7	101 (1.99)	10.6
England (Total)	945 (1.87)		770 (1.53)	
Wales	57 (1.93)	5.7	180 (6.08)	18.9
England and Wales (Total)	1002 (1.88)		950 (1.78)	

Approximately 72% of strains in 2006 had VT2 genes only and 27% had both VT1 and VT2; eight isolates were VT1 only. The strains belonged to 16 designated phage types (PTs), but 73% belonged to PTs 21/28, 8 and 2. Table 2 compares the data with those from 2005 [1] for the most frequently isolated types.

Table 2. Predominant phage types of VTEC O157 from human infections in England and Wales: 2006 data compared with 2005

Rank	Phage type 2006	2006 (%)	2005: % of total (rank)
1	21/28	40	44 (1)
2	8	22	22 (2)
3	2	11	11 (3)
4	14	6	3 (6)
5	32	5	5 (4)
6	4	5	4 (5)
	Other	11	11

The most prevalent PTs were the same as in 2005 and the proportions of PT21/28, PT8, and PT2 remained stable. Four strains of sorbitol-fermenting VTEC O157 were isolated from a cluster of cases of haemolytic uraemic syndrome in Yorkshire in May [4]. Strains were VT2 and reacted with the typing phages but did not belong to a recognised type (RDNC). Their atypical phenotype compared with the usual sorbitol non-fermenting strains presents a challenge for diagnostic laboratories and revised guidance was issued by the HPA Gastrointestinal Programme Board [4]. Infections caused by strains with these properties were also reported in Scotland at approximately the same time [5].

Provisionally, there were 12 general outbreaks of infection in 2006 of which six were caused by PT21/28, four by PT8 and one by PT2. An outbreak of over 30 infections linked to a Yorkshire butcher's premises was unusual in that cases were infected with either PT21/28 or PT4 strains [6].

A provisional total of 243 culture positive cases of *E.coli* O157 were reported to Health Protection Scotland in 2006, which is an increase of 71 on reports for 2005 [7]). PT 21/28 accounted for substantially more cases (51%) than the next most common types, which were PT8 and RDNC with 15% each. Twenty isolates designated as RDNC were identified as atypical sorbitol-fermenting strains of VTEC O157 [5].

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Emerging Infections/CJD

Emerging Infections Update: January to June 2007

Monthly summaries of notable events and developments of potential public health importance are produced by the Emerging Infections and Zoonoses Department, for circulation to recipients including the Chair and members of the National Expert Panel on New and Emerging Infections (<http://www.advisorybodies.doh.gov.uk/nationalexpertpanel/index.htm>). Incidents reported over recent months are shown in the table below. Events are identified through horizon scanning activities and then logged and systematically followed up. Multiple sources are scanned including: ProMED online <<http://www.promedmail.org>>; World Health Organization sources (Disease Outbreak News <http://www.who.int/csr/don/en/>), Weekly Epidemiological Record <<http://www.who.int/wer/en/>>, Outbreak Verification List); *Eurosurveillance* (<http://www.eurosurveillance.org/index-02.asp>); the Global Public Health Intelligence Network (GPHIN) early warning system; CIDRAP online <<http://www.cidrap.umn.edu/index.html>>; CDC *Morbidity and Mortality Weekly Report* <<http://www.cdc.gov/ncidod/EID/index.htm>> and the wider scientific literature.

Table 1 Summary of notable events/incidents of potential public health significance

Month reported	Incident	Location/ Description
January	Avian influenza H5N1	China, Egypt, Indonesia, Nigeria (human)
		South Korea (asymptomatic human case, poultry worker)
		Hungary, Russia (avian)
		H5N1 phylogenetic data on introduction to Europe and Africa [1]
		Indonesia (H5N1 antibodies in cats in poultry markets [2])
	Coccidioidomycosis	USA (Arizona)
	<i>Cryptococcus gattii</i>	Canada (British Columbia)
	Extensively drug-resistant tuberculosis	Canada
		WHO guidance on management of non-compliant patients
		Global emergence of XDR-TB study [3]
	Fungal infection (<i>Mucor amphiborum</i>) in platypuses	Australia (Tasmania)
	Malaria	Europe ex Goa
		Jamaica
	New variant CJD, fourth transfusion associated case	UK
Rift Valley fever	Kenya, Somalia	
February	Anthrax	Australia, Zimbabwe
	Avian influenza H5N1	China, Egypt, Lao People's Democratic Republic (human)
		England (avian)
		FAO recommendations
	Cysticercosis	USA [4]
	Hepatitis E	Nepal
Vaccine trial [5]		

	Extensively drug resistant tuberculosis	South Africa
	<i>Clostridium difficile</i>	England and Wales
	Rabies	Belarus, China, Philippines, South Africa
	Rift Valley fever	Kenya , Somalia, Tanzania
March	Avian influenza H5N1	China, Egypt, Lao People's Democratic Republic (human)
	Extensively drug resistant tuberculosis	South Africa, USA, Italy, Germany [6]
		Spain (historical data) [7]
	Plague	Tanzania, Uganda
	Rabies	Canada, China, Peru
	Rift Valley Fever	Kenya, Tanzania
	Trichinellosis	Spain, Sweden
	Tularemia	Norway
	West Nile virus	Venezuela
April	Avian influenza H5N1	Cambodia , Egypt (human)
		FDA approval of new vaccine for humans
		Influenza A transmission review [8]
	new Arenavirus, organ recipients	Australia
	<i>Clostridium difficile</i> , ribotype 027	UK
	Cowpox	Germany (human) [9]
		UK (feline) [10]
	Lassa Fever	Liberia
	Nipah virus	Bangladesh
	Poliomyelitis	Angola, Democratic Republic of the Congo, India
		Monovalent vaccine efficacy [11]
	Modelling study [12]	
	Undiagnosed deaths	Iran
May	Avian influenza	UK (H7N3 – poultry and human)
		China, Ghana, Indonesia (H5N1 – human)
	Chikungunya virus	Gabon, India, Indonesia
	Hantavirus	Belgium, Germany
	<i>Listeria monocytogenes</i>	England and Wales
	Poliomyelitis	Democratic Republic of the Congo, Myanmar, Somalia
		Update on eradication efforts and progress
	XDR-TB alert	US and Europe
June	Avian influenza H5N1	Egypt, Indonesia, Vietnam (human)
		Clustering study [13]
	Bat reovirus	Malaysia [14]
	Crimean-Congo haemorrhagic fever	Russia, Turkey
	Extensively drug resistant tuberculosis	India, South Africa

		WHO 'Global MDR-TB and XDR-TB Response Plan'
	Hepatitis E	France [15]
	Revised International Health Regulations	Global
	Lyme borreliosis	UK, USA
	MRSA in farm animals	Netherlands
	Nipah virus	New findings, Bangladesh outbreak 2004 [16]
	Zika virus	Micronesia

Bat reovirus, Malaysia

A previously unknown orthoreovirus, provisionally named 'Melaka virus', has been identified in a 39 year old man in Malaysia, who was suffering from a high fever and acute respiratory disease at the time of virus isolation in 2006. The man reported exposure to a bat which flew into the house about one week before the onset of his clinical symptoms. Two of his children developed similar symptoms a week later and had serological evidence of infection with the same virus, and the authors suggest that person to person transmission occurred within the family. His wife also had serological evidence of infection but did not develop symptoms. Sequence analysis indicated a close genetic relationship between Melaka virus and Pulau virus, a reovirus isolated in 1999 from fruit bats in Tioman Island, Malaysia. Screening of sera taken from 109 human volunteers on the island in 2001-2002 found that 14 (13%) were positive for antibodies against both Pulau and Melaka viruses [14].

Hepatitis E, France

A recent study reports a case of suspected direct zoonotic transmission of HEV from a pig to its owner in an urban area of France in 2005. The patient lived alone, had not travelled abroad for at least a year, drank alcohol only occasionally, did not eat pork, and had not recently received any intravenous injections or taken any drugs. Eight weeks before the onset of symptoms, he had been given a 3 month old Vietnamese pig that had been born in France. The pig urinated and defecated outside, and the patient regularly changed its litter. The animal often entered the house and was frequently handled by its owner. A genotype 3 hepatitis E virus was isolated from the pig, with a high degree of similarity to that from the man [15].

Poliomyelitis update

So far during 2007, 337 cases of polio have been reported globally, of which 278 were in the endemic countries of Nigeria, India, Pakistan and Afghanistan, and 59 were in non-endemic countries. During the same period in 2006 there were 815 cases of polio reported globally. This is a reduction of 478 over the same period in 2006, when 815 cases were reported globally. Much of this decline can be attributed to the decreasing incidence of polio in Nigeria, where 138 cases have been reported as of 31 July 2006, compared with 566 during the same period in 2006. Nevertheless Nigeria remains the global epicentre of polio, with 41% of the global case count so far in 2007.

The second highest number of cases is reported from India, where 124 cases had been reported as of 31 July 2007, 37% of the global count. This represents a slight decrease over the same period in 2006, when 136 cases were reported [17].

Australia: A case of WPV-1 was confirmed in July 2007, in a 22 year old Pakistani student living in Melbourne. The man developed symptoms while on holiday in Pakistan on 22 June, and arrived in Melbourne on 1 July. Genetic sequencing of the virus indicates that it is related to virus circulating in North West Frontier Province, one of the last remaining polio infected areas in Pakistan. This is the first case of polio confirmed in Australia since the mid-1980s, and the risk of onward transmission within Australia is considered to be low, however this

case highlights the continuing risk of wild poliovirus to all countries until it is eradicated globally [18].

Chad: Two new cases of polio were reported in July 2007, one of which is in the east of the country, close to the border with Darfur, Sudan. In May 2004, a wild poliovirus originating in northern Nigeria spread from this area of Chad into Darfur, leading to a major outbreak across Sudan and the subsequent reinfection of further countries including Yemen and Indonesia. An extensive, cross border emergency outbreak response is planned to minimise the risk of further spread from Chad following this case [18].

Zika virus, Micronesia

An outbreak of Zika virus was reported on the island of Yap in Micronesia in June 2007. Zika is a dengue-like flavivirus first isolated from a sentinel monkey in a Ugandan forest in 1947. Symptoms are generally relatively mild, with a maculopapular rash, conjunctivitis and joint pain. As of 5 August a total of 99 cases had been confirmed, with a further 54 probable cases, and no reported deaths. The outbreak is now in decline and the most recent case presented on 17 July. It is expected that many more cases have occurred on Yap but have not sought treatment. Probable cases were also reported in the neighbouring islands of Guam, Ulithi, Fais, Earpik, Woleai, and Ifalik. Outbreaks of Zika virus are extremely rare, and less than 40 documented human cases existed previously in the medical literature. There is no specific treatment for Zika virus infection and residents have been advised on mosquito control measures. Community environmental, entomological and serological surveys have been completed and data analysis is underway [19].

West Nile virus: United States cases in 2007 and an update on UK surveillance

United States: Following the sharp decrease in the number of human cases of WNV reported in 2004, the past two years have seen an increase in the number of human cases with more than 4000 cases in 2006 (see table 2). This increasing trend has continued with CDC reporting a dramatic increase in WNV infection reports so far in the 2007 season compared with the same period in 2006. As of 31 July, 185 cases had been reported to CDC, compared with only 15 by mid-July 2006.

Of the 185 human cases, 32% (60) were West Nile neuroinvasive disease, 63% (117) were West Nile fever, and 4% (8) were unspecified. Five deaths were reported. The majority of cases were reported in California, North and South Dakota. The peak of WNV cases usually occurs between August and September in the US, and it is not known if the trend will continue.

Since 2002 the annual totals of infected non-human species have changed as shown below. Between 2002 and 2006 the bird and horse infections appear to have declined, however, the number of positive mosquito pools remained high. It is too early in the season to know if these trends will continue in 2007.

Table 2 West Nile virus reports in the US 2002 to 2007

	2002	2003	2004	2005	2006	2007*
Avians	~14,000	11,350	7074	5266	4106	491
Equines	>15,000	5181	1341	1143	1121	35
Mosquito pools	4943	7725	8263	11386	11898	1025
Human cases	4156	9862	2539	3000	4269	185
Fatal human cases	284	264	100	119	177	5

* reported as of 31/07/2007

Data sources:

CDC West Nile virus website <http://www.cdc.gov/ncidod/dvbid/westnile/surv&control.htm> and USGS WNV surveillance maps http://diseasemaps.usgs.gov/wnv_us_human.html

UK : The UK surveillance is specifically for UK-acquired cases of human WNV infection. Further details of the scheme can be found at http://www.hpa.org.uk/infections/topics_az/west_nile/surveillance.htm.

A case is defined as an adult (particularly those aged 50 years and over) with symptoms of encephalitis, meningo-encephalitis, aseptic meningitis or acute flaccid paralysis, who presents with no travel history outside the UK . Since 2002 when the surveillance first started, no UK-acquired human cases have been identified. No cases of WNV infection have been identified in the UK in 2007.

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