Health Protection Agency

CDR WEEKLY

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MAIN STORIES THIS WEEK:

REPORTS BY INFECTION:

Enteric:

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News

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Next update due: **10 June 2004**

Tonsil study provides estimate of the number of people in the UK who could be incubating vCJD

A study has recently been published in the *Journal of Pathology* that aimed to provide an estimate of the number of individuals in the United Kingdom (UK) who may be incubating variant Creutzfeldt-Jakob disease (vCJD) (1). A distinctive feature of this disease is the distribution of abnormal prion protein in the peripheral lymphatic system, particularly tonsil tissue, which may be detected during the pre-clinical phase when there is a risk of iatrogenic transmission. Immunohistochemistry was used to demonstrate the presense of abnormal prion protein in 12,674 appendix and tonsil samples collected from histopathology departments across the UK and anonymised prior to testing. Three of the samples showed evidence of the abnormal prion protein associated with vCJD and, after extrapolation, this provided an estimate of approximately 3800 individuals within the UK population who could be incubating this disease.

The Department of Health and Medical Research Council steering group has recommended that a much larger study should be undertaken. The Health Protection Agency recently began this large-scale project to collect 100,000 samples of leftover tonsil tissue removed during routine operations. Once anonymised, these specimens will be tested for the presence of the abnormal prion that causes CJD, and the larger scale of the study should provide better estimates of the number of people who may be affected.

The National Anonymous Tonsil Archive (NATA) is collecting tonsils from people of all ages following routine tonsillectomies (2). Only tissue not required for patient care, that normally would be discarded, is to be included and patients are given an opportunity to object to their tissues being used in the archive. Improved estimates of the prevalence of abnormal prion protein should help plan interventions to limit the impact of infection and to plan care provision for those who may develop the disease. The scientific co-ordinator of NATA, Carol Kelly, is based at the Health Protection Agency Communicable Disease Surveillance Centre (tel: 020 327 6727 email: <carole.kelly@hpa.org.uk>.

References

1. Hilton DA, Ghani AC, Conyers L, Edwards P, McCardle L, Richie D. Prevalence of lymphoreticular prion protein accumulation in UK tissue samples. *J Pathol* 2004: **202** [online] May 2004 [cited 10 June 2004].
2. HPA. The National Anonymous Tonsil Archive: a resource for Creutzfeldt-Jakob disease studies. *Commun Dis Rep CDR Wkly* [serial online] 2003 [cited 9 June 2004]; **13**(44): News. Available at <http://www.hpa.org.uk/cdr/PDFfiles/2003/cdr4403.pdf>.

Study recommends use of antibiotics for chemoprophylaxis after a case of meningococcal disease

Results of a study which looked at the effectiveness of antibiotics in preventing meningococcal disease through chemoprophylaxis given to the index patient, household contacts, and children in day care settings after a single case has been published in the British Medical Journal (1).

The paper is a meta-analysis of studies that looked at no fewer than ten cases in which outcomes were compared between treated and untreated groups. The paper concludes that the risk of meningococcal disease in household contacts of a patient can be reduced by an estimated 89% if they take antibiotics known to eradicate meningococcal carriage, and that chemoprophylaxis should be recommended for the index patient and all household contacts.

References

1. Purcell B, Samuelsson S, Hahne SJM, Ehrhard I, Heuberger S, Camaroni I, *et al*. Effectiveness of antibiotics in preventing meningococcal disease after a case: systematic review. *BMJ* 2004; **328** (7452):1339-43. Available at <http://bmj.bmjjournals.com/cgi/content/full/328/7452/1339>.

Exercise East Civet

On 21 May 2004, a one-day table-top exercise (East Civet) was held in Cambridge, with the support of the Regional Director of Public Health, the Regional Director for Health Protection Agency's (HPA) East of England, and the HPA's Emergency Response Division. It was designed to evaluate, and subsequently inform, the SARS contingency plan for the East of England Region. This was the first SARS exercise to be held in the East of England and participants included public health specialists, infection control staff, emergency planners, general practitioners, primary care staff, and microbiologists.

Objectives included assessing how the region would manage an outbreak of SARS and the interaction and communication between multi-disciplinary groups. The exercise also examined how contact tracing would be carried out and managed. The management of Primary Care Trusts.

The syndicates were from Bedfordshire and Hertfordshire, Cambridgeshire, Norfolk, Suffolk, North Essex, South and West Essex, and East region as well as the exercise control syndicate. The syndicates looked in detail at the existing regional SARS plan to assess how well it would work in practice and made many constructive suggestions, particularly about the actions required at each level of escalation. They also explored how communications would be handled in the event of an outbreak and worked on clarifying roles and responsibilities across the board, as well as the general infection policy.

Key action points

- Revisit alert levels within the existing SARS plan
- Ensure appropriate personal protective equipment (PPE) is available
- Address staff capacity issues and devise a system of on-call microbiologists
- Look at contact tracing resources
- Devise robust regional communications strategies, both external and internal

Observations from this exercise are being used to develop both the national and regional SARS plans and lessons identified will be disseminated to the relevant agencies.

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Enteric

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General outbreaks of foodborne illness, England and Wales laboratory reports: weeks 18-22/04

Preliminary information has been received about the following outbreaks. Final information will be published in the quarterly report.

Health Protection Unit	Organism	Location of food prepared or served	Month of outbreak	Number ill	Cases positive	Suspect vehicle	Evidence
Shropshire and Stafford	*Salmonella* Enteritidis PT4	Restaurant	April	18	18	None	–
Wales	*S.*Enteritidis PT4	Residential Institution	May	3	3	Eggs	–

Salmonella infections (faecal specimens), England and Wales reports to the HPA (*salmonella* data set*): April 2004

Details of serotypes of the 667 salmonella infections recorded in April 2004 are given in the table below. In May 2004, 477 salmonella infections were recorded and preliminary information was received about two outbreaks (see table above).

	April 2004
Total *Salmonella* *	**667**
*S.*Enteritidis (PT4)	100
*S.*Enteritidis (other PTs)	279
*S.*Typhimurium	75
*S.*Virchow	21
Others (typed)	192

* Data provisional.

Common gastrointestinal infections, England and Wales laboratory reports: weeks 18-22/04

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Laboratory reports	Number of reports received					Total reports	Cumulative total to	
	18/04	19/04	20/04	21/04	22/04	18-22/04	22/04	22/03
Campylobacter	613	578	820	830	452	**3293**	**13,240**	**14,494**
Escherichia coli* O157	6	8	6	17	16	**53**	**129**	**91**
Salmonella†	183	148	157	101	36	**625**	**2708**	**3270**
Shigella sonnei	13	5	12	9	4	**43**	**203**	**261**
Rotavirus	478	360	334	265	122	**1559**	**10,745**	**13,587**
Norovirus	68	49	28	17	6	**168**	**1032**	**1625**
Cryptosporidium	78	53	65	43	18	**257**	**1005**	**986**
Giardia	44	31	40	36	20	**171**	**1016**	**1195**

* 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.

General outbreaks of foodborne illness in humans, England and Wales: October to December 2003

Health Protection Unit	Organism	Location of food prepared or served	Number ill	Cases positive	Suspect vehicle	Evidence
Kent	*Campylobacter*	Golf Club	16	4	Calves liver	D
Leeds	*Campylobacter*	Nursing home	4	2	–	–
Leeds	*Escherichia coli* O157	Restaurant	37	24	Salad	D
Essex	Norovirus	Hotel	20	2	–	–
County Durham & Tees Valley	*S.* Enteritidis PT 1	Restaurant	32	22	Egg tortilla	D
County Durham & Tees Valley	*S.* Enteritidis PT 1	Canteen	10	10	Sunday roast	–
Leeds	*S.* Enteritidis PT 1	Restaurant	3	3	–	–
Wales	*S.* Enteritidis PT 1C	Restaurant	5	5	–	–
North East London	*S.* Enteritidis PT2	Restaurant	14	14	–	–
North West London	*S.* Enteritidis PT 6D	Restaurant	11	5	Eggs	M
Northumberland, Tyne and Wear	*S.* Enteritidis PT 8	Function	15	10	Cheese and onion quiche	S
Wales	*S.* Enteritidis PT 8	Restaurant	4	4	Egg	–
East & North Hertfordshire	*S.* Enteritidis PT 14B	Restaurant	5	5	Egg fried rice	D
Barnet, Enfield & Haringey	*S.* Enteritidis PT 14B	Restaurant	35	35	Raw eggs, tiramisu	M, S
Kent	*S.* Enteritidis PT 14B	Restaurant	5	4	–	–
Essex	*S.* Typhimurium DT 49	Luncheon	21	16	Chocolate roulade	M, S
Bradford	*S.* Enteritidis PT 56	Restaurant	340	171	various foods	D
Barnet, Enfield & Haringey	*S.* Enteritidis PT 56	Restaurant	10	6	Meal	M

* **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 serotypes recorded in the HPA *salmonella* data set: January to March 2004

All serotypes recorded in the Health Protection agency (HPA) salmonella data set in the first quarter of 2004 are listed below. There were more than ten reports of 16 serotypes, between two and ten reports of 45 serotypes, and one report of 50 serotypes.

More than ten reports of the following serotypes were received:

	January to March 2004 (provisional)		January to March 2004 (provisional)
S. Agona	22	*S.* Bareilly	10
S. Braenderup	23	*S.* Corvallis	12
S. Enteritidis	813	*S.* Give	14
S. Hadar	15	*S.* Infantis	12
S. Java	14	*S.* Montevideo	13
S. Newport	16	*S.* Saint-Paul	20
S. Stanley	27	*S.* Typhimurium	224
S. Virchow	46	*S.* Weltevreden	13

Between two and ten reports of the following serotypes were received:

	January to March 2004 (provisional)		January to March 2004 (provisional)
S. Abony	2	*S.* Adelaide	2
S. Agama	2	*S.* Anatum	6
S. Apapa	3	*S.* Binza	2
S. Blockley	5	*S.* Bovis-Morbificans	5
S. Bron	2	*S.* Chester	6
S. Colindale	2	*S.* Cubana	2
S. Derby	5	*S.* Haifa	3
S. Heidelberg	3	*S.* Hull	3
S. Ibadan	4	*S.* Javiana	8
S. Johannesburg	2	*S.* Kedougou	3
S. Kentucky	9	*S.* Kiambu	2
S. Kisangani	3	*S.* Kottbus	3

S. Leoben	2	*S.* Livingstone	5
S. Mbandaka	6	*S.* Mississippi	6
S. Muenchen	3	*S.* New Brunswick	3
S. Ohio	2	*S.* Oranienburg	8
S. Oslo	3	*S.* Panama	2
S. Poona	2	*S.* Reading	2
S. Richmond	4	*S.* Rissen	4
S. Schwarzengrund	3	*S.* Senftenberg	2
S. Shangani	4	*S.* Stanleyville	2
S. Tel-El-Kebir	2	*S.* Tennessee	3
S. Uganda	2		

One report each of the following serotypes were received:

S. Alachua	*S.* Altona
S. Amager	*S.* Ardwick
S. Arechavaleta	*S.* Arizonae
S. Augustenborg	*S.* Barranquilla
S. Bispebjerg	*S.* Bonariensis
S. Brandenburg	*S.* Bredeney
S. Bukavu	*S.* Butantan
S. Coeln	*S.* Concord
S. Cotham	*S.* Curacao
S. Denver	*S.* Durban
S. Durham	*S.* Eastbourne
S. Emek	*S.* Fann
S. Fresno	*S.* Garoli
S. Gege	*S.* Havana
S. Hvittingfoss	*S.* Idikan
S. Isangi	*S.* Kingabwa
S. Kintambo	*S.* Kua
S. Larochelle	*S.* Lattenkamp
S. Limbe	*S.* London
S. Manhattan	*S.* Muenster
S. Newington	*S.* Oakland
S. Othmarschen	*S.* Potsdam
S. Putten	*S.* Rubislaw
S. San-Diego	*S.* Sapele
S. Urbana	*S.* Wangata

Vero cytotoxin-producing *Escherichia coli* O157: 2003

In 2003, 675 isolations of Vero cytotoxin (VT)-producing *Escherichia coli* O157 (VTEC O157) were confirmed by the Health Protection Agency's Laboratory of Enteric Pathogens (LEP) from human infections in England and Wales. This was a 13% increase compared with the 595 isolates in 2002 and contrasts with the 22% fall in VTEC O157 observed between 2001 and

2002 (1). Approximately 71% of strains had VT2 genes and 28% had both VT1 and VT2; one isolate was VT1 only. The strains belonged to 21 designated phage types (PTs), but 77% belonged to PTs 21/28, PT8, and PT2. The table compares the data with those from 2002 (1), for the six most frequently isolated phage types.

Table Predominant phage types of VTEC O157 from human infections in England and Wales: 2003 and 2002

Rank	Phage type	2003: %of total	2002: % of total (rank)
1	21/28	35	33 (1)
2	8	26	21 (2)
3	2	16	16 (3)
4	32	5	6 (5)
5	4	4	8 (4)
6	14	3	3 (6)
	Other	11	13

Phage types 21/28 continued to be most common, as seen since 1999 (2), and all the other most prevalent types were the same as in 2002. Approximately 5% of strains reacted with the typing phages, but did not conform to a designated type (RDNC*). There were eight general outbreaks of infection in 2003, of which four were caused by PT21/28; the rest were associated with strains of PT8 (2 outbreaks), PT2 (1), and PT50 (1).

Isolations of VTEC O157 in Scotland reported to the Scottish Centre for Infection and Environmental Health (SCIEH) (3) fell from 229 in 2002 to 148 in 2003. Strains of PT21/28 accounted for 65% of Scottish isolates with PT2 (9%), and PTs 4 and 8 (6% each) the next most common types. Six of the eight general outbreaks in Scotland were caused by PT21/28.

*RDNC = reacts but did not conform

References

1. Vero cytotoxin-producing *Escherichia coli* O157: 2002. *Commun Dis Rep CDR Wkly* [serial online] 2003 [cited 10 June 2003]; **12**(24): Enteric. Available at <http://www.hpa.org.uk/dcr/PDFfiles/2003/cdr2403.pdf>.
2. Smith HR, Cheasty T, Wilshaw GA, Caprioli A, Tozzi AE, Coia J, *et al*. Changing patterns of VTEC infection in Britain and Continental Europe. IVC News 16. *Not Ist Super Sanita* 2002; **15**(12) Suppl 1.
3. SCIEH. 2003. Personal communication. (Reilly W and Locking M, 28 May 2004).

General outbreaks of infectious intestinal disease in England and Wales: 2003

Five hundred and fifty-two general outbreaks of infectious intestinal disease in England and Wales were reported to the Health Protection Agency's Gastrointestinal Diseases Department during 2003. A minimum dataset was captured for 467 (85%) of the 552 outbreaks.

The pathogens most frequently reported were norovirus (45%) and salmonellas (10%) (table 1). In total 10,274 people were affected; 170 were admitted to hospital and seven people died. Most outbreaks were linked to residential institutions (45%) and hospitals (16%) (table 2). Person- to-person spread was the predominant mode of transmission (73%).

Table 1 Outbreaks of infectious intestinal disease by pathogen, England and Wales: 2003

Norovirus	211
Unknown	164
Salmonella	46
Rotavirus	14
Cryptosporidium	12
VTEC O157	5
Astrovirus	4
Campylobacter	4
Clostridium difficile	3
Shigella sonnei	2
Other	2
Total	**467**

Table 2 Outbreaks of infectious intestinal disease by venue, England and Wales: 2003

Residential institution	211
Hospital	73
School	67
Commercial catering premises	65
Other	35
Community	5
Farm	3
Shop/retailer	3
Swimming pool	3
Private house	2
Total	**467**

Source: GSURV, Health Protection Agency outbreak database.

Note: The outbreak database is now dynamic and therefore the numbers may change over time. Those quoted are, however, accurate as of 1 June 2004.