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## MAIN STORIES THIS WEEK:







-  [Recall of rabies vaccine](#)
-  [Guidelines for unusual illness](#)



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## REPORTS BY INFECTION:

### Enteric:

-  [General outbreaks of foodborne illness, England and Wales laboratory reports: weeks 10-13/04](#)
-  [Salmonella infections, England and Wales, reports to the HPA \(salmonella data set\): February 2004](#)
-  [Common gastrointestinal infections, England and Wales laboratory reports: weeks 10-13/04](#)
-  [Less gastrointestinal infections, England and Wales laboratory reports: weeks 1-13/04](#)
-  [Salmonella Typhimurium DT 104 infections in humans: monthly totals for 1999 to 2003](#)
-  [Surveillance of waterborne disease and water quality: July to December 2003](#)



### Diary:

-  [Sexually Transmitted Diseases: Changing Perspective. British Society for Microbial Technology 19th annual scientific meeting – Colindale, 14 May 2004](#)



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## PRIMARY CARE *(updated weekly)*:

-  [NHS Direct Symptom Surveillance Bulletin – \*Bulletin 125: 1 April 2004\*](#)
-  [Birmingham Research Unit Summary Data on Clinical Incidence – \*RCGP Bulletin: 7 April 2004\*](#)



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## CDR SUBSCRIPTION:

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## News

Last updated: **8 April 2004**  
Next update due: **16 April 2004**

 [Recall of rabies vaccine](#)

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### Recall of rabies vaccine

The Medicines and Health Care Products Regulatory Agency (MHRA) sent an alert about the recall of Rabies Vaccine BP (Aventis Pasteur MSD: Batch Number X0071-6) on 5 April 2004 to contacts including Chief Pharmacists in England, Scotland, Wales and Northern Ireland, Prison Health Policy Unit, Medical Supplies Agency, Primary Care Trusts, and the National Care Standards Commission. A recent quality-assurance test had identified the presence of non-inactivated Pitman-Moore virus (an attenuated vaccine strain of rabies virus) in a single product lot. That product was *not* distributed.

Finding non-inactivated (*ie* live) virus in a lot after it was manufactured indicates a failure in the manufacturing process, and the vaccine may not be safe to give to humans. The manufacturing failure could have affected other lots produced in the same period, although all passed quality-assurance tests. Of such lots, only batch number X0071-6 was distributed in the United Kingdom (UK), and although this batch had passed all of the quality assurance tests required in Europe and the United States, which included a test to confirm that the virus has been inactivated, Aventis Pasteur MSD has initiated a voluntary recall of vaccine batches that were manufactured during the same period as the lot that contained non-inactivated Pitman-Moore virus as a precautionary measure. Aventis Pasteur MSD has contacted UK customers who have been supplied with the specified batch.

Batch number X0071-6 was first distributed in the UK on 26 February 2004. Approximately 6000 doses of this batch of vaccine have been distributed to general practitioners, hospitals, health centres and travel clinics in the UK. Only people who have received rabies vaccine from that particular batch since that date are affected. Anyone who received other Aventis Pasteur MSD Rabies Vaccine BP batches or Rabipur® (the Rabies Vaccine manufactured by Chiron) is not affected. Aventis Pasteur MSD is working to source additional supplies of Rabies Vaccine BP and will contact customers as soon as these doses become available. Aventis Pasteur MSD will also re-imburse the costs of vaccinating patients affected by this recall if immediately available vaccine has already been used for this purpose. Aventis Pasteur MSD will be contacting customers with further information about this.

Clinicians need to identify all patients who may have received the recalled rabies vaccine since 26 February 2004 and must check which vaccine and which batch they received. Although it is highly unlikely that people who received a dose of rabies vaccine from batch X0071-6 were exposed to the non-inactivated Pitman-Moore vaccine strain of rabies virus a theoretical possibility exists. The risk to patients is described by Aventis Pasteur as “negligible if any”. The timely administration of treatment, as described in the detailed HPA guidance <[http://www.hpa.org.uk/infections/topics\\_az/rabies/menu.htm#recall](http://www.hpa.org.uk/infections/topics_az/rabies/menu.htm#recall)>, will help to ensure that the risk to people who have received rabies vaccine from the affected batch is negligible.

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### Guidelines for unusual illness

The latest version of the Unusual Illness document (v3 April 2004) - *Initial investigation and management of outbreaks and incidents of unusual illnesses, with particular reference to events that may be due to chemical, biological or radiological causes, including deliberate releases* has been published on the Health Protection Agency website.

The document has been substantially reorganised and revised, and now includes advice on radiation from the National Radiological Protection Board. The sub-documents are available for the specialist professions: ambulance services, hospital clinicians, local laboratories, histopathologists, general practitioners, and other public health professionals

Appendix 1 contains new contact number lists, which now include single numbers for Chemical Hazards and Poisons, Radiation, and Emergency Response, details of reference laboratories, and contact details for the HPA Pathology Advisor.

The [documents](#) can be found on the Unknown Agent page of the Deliberate Release pages of the HPA website, with access via the menu page at [http://www.hpa.org.uk/infections/topics\\_az/deliberate\\_release/menu.htm](http://www.hpa.org.uk/infections/topics_az/deliberate_release/menu.htm). The complete document may be accessed directly at [http://www.hpa.org.uk/infections/topics\\_az/deliberate\\_release/Unknown/Unusual\\_Illness.pdf](http://www.hpa.org.uk/infections/topics_az/deliberate_release/Unknown/Unusual_Illness.pdf)

**Enteric**Last updated: 8 April 2004  
Next update due: 13 May 2004

- ▾ [General outbreaks of foodborne illness, England and Wales laboratory reports: weeks 10-13/04](#)
- ▾ [Salmonella infections, England and Wales, reports to the HPA \(salmonella data set\): February 2004](#)
- ▾ [Common gastrointestinal infections, England and Wales laboratory reports: weeks 10-13/04](#)
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- ▾ [Salmonella Typhimurium DT 104 infections in humans: monthly totals for 1999 to 2003](#)
- ▾ [Surveillance of waterborne disease and water quality: July to December 2003](#)

**General outbreaks of foodborne illness, England and Wales laboratory reports: weeks 10-13/04**

Health Protection Unit	Organism	Location of food prepared or served	Month of outbreak	Number ill	Cases positive	Suspect vehicle	Evidence
South East London	<i>Salmonella</i> Give, S. Ibadan, S. Shangani	n/k	March	n/k	S. Give, 18 S. Ibadan, 3 S. Shangani, 4	n/k	–
Cambridgeshire and Peterborough	S. Enteritidis PT14b	n/k	n/k	n/k	2	n/k	–
South and West Devon	S. Enteritidis PT14b	n/k	n/k	n/k	3	n/k	–

\* 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

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

Details of the serotypes of the 349 salmonella infections recorded in February 2004 are given in the table below .

Total <i>Salmonella</i> (provisional data)	Feb 04
S. Enteritidis (PT4)	52
S. Enteritidis (other PTs)	133
S. Typhimurium	50
S. Virchow	10
Others (typed)	104

\* Data provisional



## Common gastrointestinal infections, England and Wales laboratory reports: weeks 10-13/04

Laboratory reports	Number of reports received				Total reports 06-09/04	Cumulative total to	
	10/04	11/04	12/04	13/04		13/04	13/03
<i>Campylobacter</i>	601	522	488	341	1952	7287	8095
<i>Escherichia coli</i> O157*	3	2	7	11	23	43	26
<i>Salmonella</i> †	95	226	100	39	460	1335	1728
<i>Shigella sonnei</i>	10	9	8	–	27	110	141
Rotavirus	815	977	978	645	3415	5475	8622
Norovirus	74	53	84	17	228	482	1172
<i>Cryptosporidium</i>	48	51	37	26	162	515	542
<i>Giardia</i>	46	30	36	33	145	611	710

\* 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



## Less common gastrointestinal infections, England and Wales laboratory reports: weeks 01-13/04

Laboratory reports	Total reports	Cumulative total to	
	01-13/04	13/04	13/03
Adenovirus	5	5	15
Astrovirus	81	81	51
Calicivirus	14	14	3
<i>Shigella flexneri</i>	49	49	85
<i>Aeromonas</i>	26	26	25
<i>Plesiomonas</i>	9	9	4
Vibrio	3	3	5
Yersinia	5	5	8
<i>Entamoeba histolytica</i>	19	19	31
<i>Blastocystis hominis</i>	69	69	68
<i>Dientamoeba fragilis</i>	53	53	51
<i>Taenia</i> spp	21	21	15
<i>Trichostrongylus</i> spp	–	–	–
<i>Trichuris trichiura</i>	8	8	12

***Taenia saginata***

Three females, aged from 17 to 55 years; six males aged from 25 to 84 years; two sex not stated 23y, 31y; all with no clinical details/exposure history

***Taenia* spp.**

M 20y, recently returned from Africa; four males aged from 18 to 42 years; five females aged from 21 to 29 years; all with no clinical details/exposure history

***Trichuris trichiura***

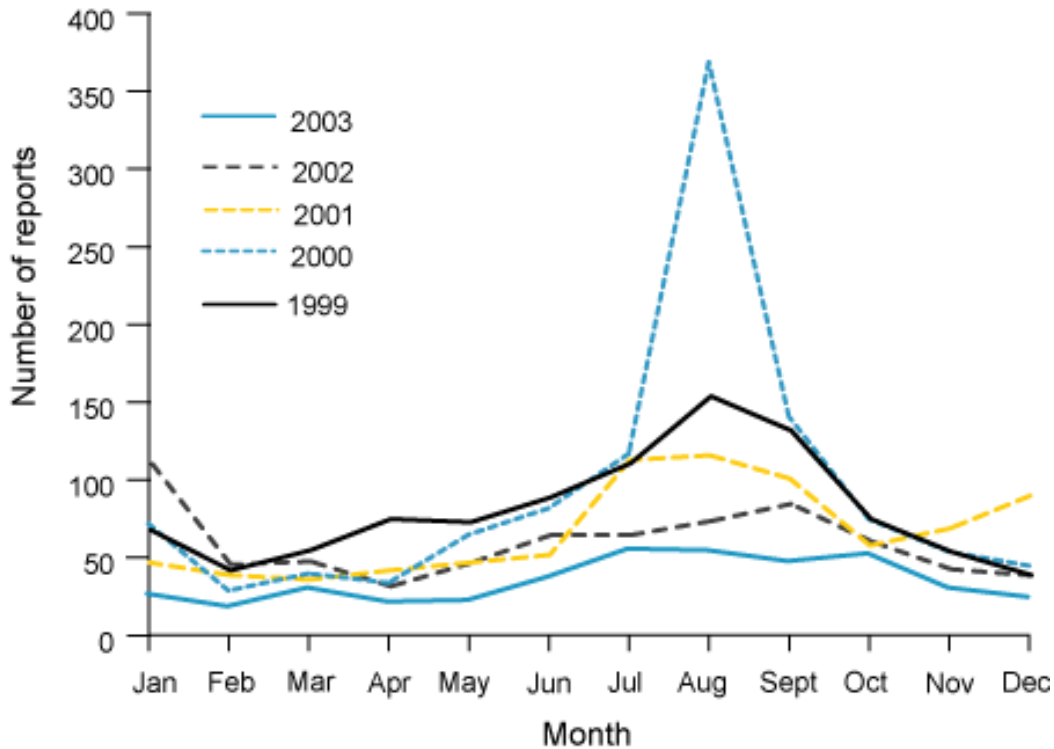
M 34y recently arrived from the Congo; five males aged from 10 to 74 years; one female, 39y; one sex not stated, all with no clinical details/exposure history



## **Salmonella Typhimurium DT 104 infections in humans: monthly totals for 1999 to 2003**

The Laboratory of Enteric Pathogens confirmed 416 cases of *Salmonella* Typhimurium DT 104 in humans in 2003 which represents a decrease of 40% over the annual total for 2002. Reports of this strain have been declining since 2000 when there were 1111 cases confirmed by the Laboratory of Enteric Pathogens.

**Figure Laboratory reports of *Salmonella* Typhimurium DT104, England and Wales: 1999 to 2003**



**Surveillance of waterborne disease and water quality: July to December 2003**

This is the first of the twice-yearly reports on the surveillance of waterborne disease and water quality. The strength of association between human illness and water exposure in outbreak investigations is assessed according to the microbiology results from cases, microbiological examination of water samples, and descriptive and analytical epidemiology (1). The data on the microbiological quality of private water supplies and bathing pools were reported to the Health Protection Agency's (HPA) Communicable Disease Surveillance Centre (CDSC) from laboratories in England and Wales; Birmingham, Bristol, Chelmsford, Chester, Coventry, Norwich, Nottingham, Preston, Reading, Shrewsbury and Stoke, and the Wessex Environmental Microbiological Services (WEMS).

This report also contains an update on enteroviruses in water with data on the virological contamination of wastewaters provided by the Environmental Virology Unit at Reading.

**Water-related outbreaks of infection**

Five waterborne outbreaks were reported between 1 July and 31 December 2003 to CDSC (table 1). All five outbreaks occurred in recreational waters (pools or fountains) and were associated with *Cryptosporidium* spp. Four of the five outbreaks occurred in South West England. The yearly summary of water-related outbreaks for 2003 will be published in *CDR weekly* in the latter half of 2004.

**Table 1 Outbreaks and incidents of association between human disease and water in England and Wales: 1 July to 31 December 2003**

Outbreak reference number	Organism	Regional Government Office	Month	Total affected*	Positive	Comments	Association (1)
03/400	<i>Giardia</i> and <i>Cryptosporidium</i>	South West	August	22	1 <i>Giardia</i> 1 <i>Giardia</i> and <i>Cryptosporidium</i>	Outbreak associated with a public swimming pool.	Possible
03/401	<i>Cryptosporidium</i>	South West	August	21	21	Outbreak affecting children associated with a leisure facility 'water splash zone'. Water heavily contaminated with coliforms.	Probable
03/409	<i>Cryptosporidium</i>	South West	August-September	17	17	Outbreak associated with a swimming pool. Pathogen identified from cases and water. Pool hyperchlorinated and filters backwashed.	Strong
03/410	<i>Cryptosporidium</i>	South West	August	4	4	Outbreak linked to an ornamental fountain. Inappropriate use of fountain and failure of water treatment systems on the premises.	Strong
03/411	<i>Cryptosporidium</i>	West Midlands	August	122	35	Outbreak linked to a water feature in a public park.	Probable

\*Total affected includes all symptomatic cases and asymptomatic carriers who are potential reservoirs of infection.

A mixed outbreak of *Giardia* and *Cryptosporidium* involving twenty-two people occurred at a public swimming pool in the South West region. Only two cases were confirmed positive; one for *Giardia*, and one for both *Giardia* and *Cryptosporidium*. Pool water samples were negative and the strength of association was possible.

The second reported outbreak involved twenty-one children who had visited a 'water splash zone' in a leisure facility during August. All 21 cases were confirmed positive for *Cryptosporidium* oocysts. The water samples tested were heavily contaminated with coliforms and the water feature was closed. The strength of association was probable.

The third outbreak from the South West region was associated with a swimming pool at a sports centre. Seventeen cryptosporidiosis cases, mostly in children, were reported between August and September. All cases were positive for *Cryptosporidium* oocysts. Although the main pool tested negative, water samples taken from the learner pool were positive for *Cryptosporidium* oocysts and the strength of association was strong. The pool was closed, emptied, cleaned, and hyperchlorinated. Filters were checked and backwashed. The pool was re-opened following refill and testing negative for *Cryptosporidium*.

In the fourth outbreak, four cases of cryptosporidiosis were reported in children visiting a water fountain complex in the South West region in August. The water feature comprised two separate water bodies with separate holding tanks and water treatment systems using bromine and sand filtration. A large pool containing water to a depth of 20cm was used as a paddling pool. *Cryptosporidium* oocysts were isolated from all four cases and detected in water samples taken from the water fountain. The strength of association was strong. Investigations found that there had been water treatment systems failure and inappropriate use of the water feature by the public. Control measures included backwashing the filters and testing for oocysts and a review of the water fountain operation.

The largest reported outbreak occurred in the West Midlands and involved 122 people of which two required hospital treatment. One hundred and two (84%) of those infected were aged under 15 years. Thirty-five (85%) of 41 cases tested for *Cryptosporidium* were positive. The outbreak was linked to a fountain in a public park, described as an 'interactive water feature'. Indicator organisms of faecal contamination were identified but no *Cryptosporidium* oocysts were recovered. Records showed failure of the water treatment systems and that these systems were inadequate for the purpose for which the feature was being used. The strength of association was probable. The water activity feature has been closed.

## Surveillance of water quality

### Private water supplies

A private water supply is any water supply that is not provided by a statutorily appointed water company. Private water supplies are regularly used by more than a third of a million people in England and Wales. These supplies provide water that is cheap and palatable, however, such supplies can become contaminated with faecal material of human or animal origin. Domestic users may be directly exposed to the risk of gastrointestinal illness through contaminated water and the commercial use of private supplies potentially exposes larger numbers of people. Reported outbreaks of infection associated with drinking water suggest there is an increased risk of infection for those exposed to private water supplies (2).

The current legislation outlines criteria for the classification and sampling frequency of private water supplies. Category 1 supplies are used, on the whole, for domestic purposes and category 2 supplies include supplies to premises such as; hospitals, residential homes, holiday sites, and food preparation premises (3). These categories are further sub-divided into classes depending on the volume of water or number of people supplied. The specified sampling frequency varies between two samples per month to one sample every five years, depending on the class of supply. New regulations on private water supplies are required to implement the *EC Drinking Water Directive (98/83/EC)* and the legislation is under review.

Results of microbiological analysis of samples from various classes of private water supply for July to December 2003 are presented (table 2). The presence of *Escherichia coli* indicates that human or animal faecal contamination has occurred and that urgent action should be taken to eradicate the contamination. *E. coli* was isolated from 29% (373/1289) of supplies examined. A total of 2285 samples were taken from the 1289 supplies, 42% (540) of which were positive for *E. coli*. Compared to the same period last year when an apparent improvement in water quality was noted (4), the 2003 figures show a return to the levels of contamination observed in previous years (table 3). The microbiological quality of private water supplies continues to be better in the period January to June compared with the period July to December (table 3).

**Table 2 Routine, including regulatory, tests of private water supplies: July to December 2003**

	Number of supplies (samples)						
	Total supplies (samples)	Category 1: domestic			Category 2: others*		Category unknown
		Class F [single dwelling]	Class D and E [ $\leq 100$ people]	Class A to C [ $> 100$ people]	Class 3 to 5 [daily volume $\leq 100\text{m}^3$ ]	Class 1 and 2 [daily volume $> 100\text{m}^3$ ]	
Number tested	1289 (2285)	227 (341)	75 (107)	7 (12)	79 (136)	5 (150)	896 (1539)
Number positive for <i>E. coli</i>	373 (540)	112 (127)	29 (47)	2 (3)	26 (40)	1 (1)	203 (322)
Total coliforms (including <i>E. coli</i> )	568 (795)	149 (164)	37 (56)	4 (5)	35 (55)	2 (4)	341 (511)

\*Supplies to premises such as hospitals, residential homes, holiday sites and food preparation premises.

**Table 3 Percentage of private water supplies positive for Escherichia coli: January 1998 to December 2003**

Year	Percentage of private water supplies positive for <i>E. coli</i>	
	January to June	July to December
1998	23	37
1999	20	29
2000	17	28
2001	13	20
2002	16	27
2003	13	29

The presence of coliforms other than *E. coli* in water does not specifically indicate faecal contamination, as they are natural inhabitants of many aquatic environments. They are, however, indicators of the efficiency of water treatment and current legislation states that they should not be present in drinking water. Coliforms (including *E. coli*) were isolated from nearly 44% (568/1289) of supplies, from which 795 samples out of a total of 2285 (35%) were positive. The percentage of samples positive for *E. coli* from category 1 supplies (46%) was greater than the samples from category 2 supplies (32%).

The results of statutory testing of public water supplies provided by 26 water companies in England and Wales are compiled and published annually by the Drinking Water Inspectorate. These reports show a continued improvement in the microbiological quality of public water. In 2002, 0.04% and 0.53% of the total samples from water supply zones were positive for *E. coli* and coliforms, respectively (5). In comparison, private water supplies are generally of a poor microbiological quality. With new legislation on the way for private water supplies any real improvements in water quality will probably depend on the implementation of a robust evidence-based risk assessment, which will correlate environmental survey data and water quality information together with improved enforcement powers.

### Pool waters

Guidelines for pool water quality state that *E. coli* should be absent from 100mL samples from all pools and that *Pseudomonas aeruginosa* should be absent from 100mL samples from spa and hydrotherapy pools (6,7). Coliforms should also be absent from 100mL. A count of  $< 10/100\text{mL}$  coliforms, however, is acceptable, provided that they are not in consecutive samples, Aerobic Colony Count (ACC) after 24 hours incubation at 37°C is less than 10 colony forming units per mL (CFU/mL) and the residual disinfection and pH are within the recommended range. A raised ACC may result from heavy pool use and microbial proliferation in the pool water and indicates possible discrepancies in disinfection.

Results from the microbiological analysis of 5268 pool water samples from 1584 pools (111 hydrotherapy, 300 spa, and 1173 swimming pools) are shown in table 4. The swimming pools were in municipal, leisure and sports centres, and hotels. Pools on a single site, such as learner, diving, and main pools, were counted separately. As for previous years, there was a low rate of isolation of *E. coli*, with around 2% (38/1584) of pools positive. The 38 positive pools yielded 46 positive samples. Coliforms (including *E. coli*) were isolated from 194 pools, which yielded 276 positive samples.

Table 4 Routine (including regulatory) tests of pool waters: July to December 2003

Organisms	Total pools (samples)	Hydrotherapy pools (samples)	Swimming pools (samples)	Swimming pools (samples)
<b>Coliform organisms</b>				
Number tested	1584 (5268)	111 (686)	300 (770)	1173 (3812)
Number positive for <i>E. coli</i>	38 (46)	2 (2)	9 (10)	27 (34)
<b>Total coliforms (including <i>E. Coli</i>)</b>	194 (276)	15 (21)	27 (40)	152 (215)
<b><i>Pseudomonas aeruginosa</i>*</b>				
Number tested	1379(4742)	112 (686)	298 (766)	969 (3290)
Number positive	259 (386)	15 (22)	82 (129)	162 (235)

\*Not always tested for routinely.

The presence of *Ps. aeruginosa* in hydrotherapy and spa pools is a potential health risk, as outbreaks of disease caused by *Ps. aeruginosa* have been associated with them. In conventional pools, *Ps. aeruginosa* is an optional quality parameter and is not always looked for. *Ps. aeruginosa* was isolated from 17% (162/ 969) of swimming pools in which it was looked for, 13% (15/ 112) hydrotherapy pools and 28% (82/ 298) spa pools (table 4). ACC of greater than 100 colony-forming units per mL were found in 14% (221/ 1584) of pools and 22% (1147/ 5268) of samples obtained from these pools (table 5).

Table 5 Highest Aerobic Colony Counts (ACC) in all pool waters

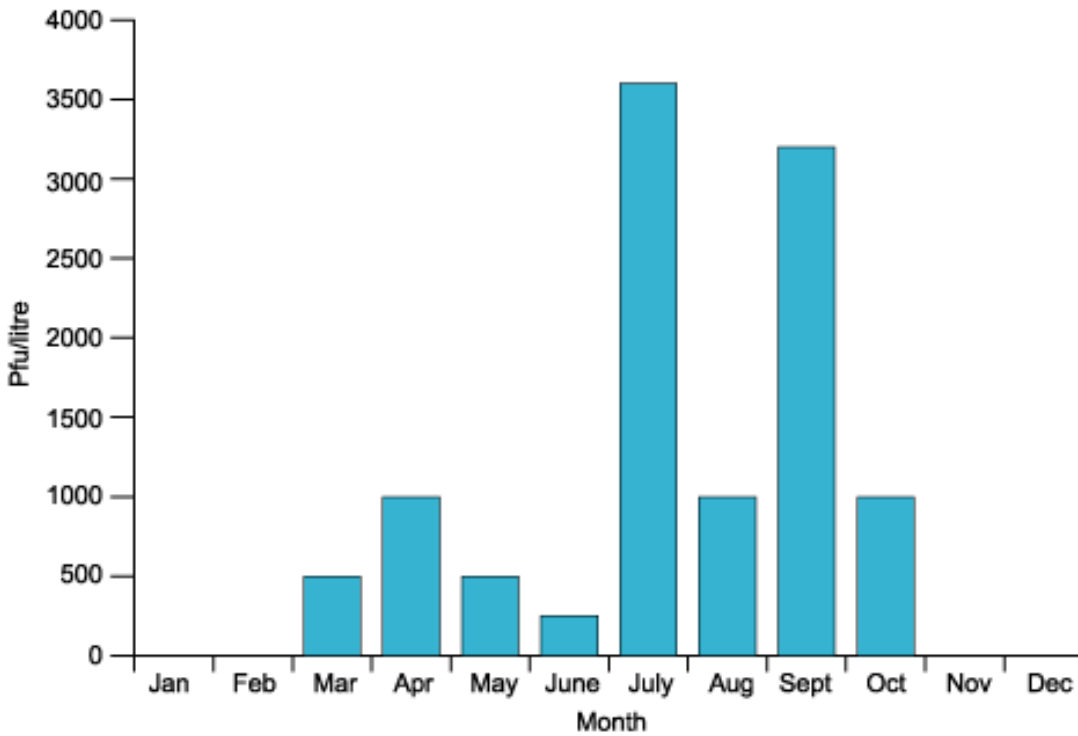
ACC (CFU/mL)	Pool waters	
	Pools	Samples
0 to 10	1036	2542
11 to 100	327	1579
>100	221	1147
<b>Total</b>	1584	5268

### Enteroviruses In Water

Enteroviruses are common infections in humans, and they are present in sewage. The infection is usually asymptomatic but may cause a flu-like illness or occasionally meningitis. All ages may be infected and, as the viruses replicate in the gastro-intestinal tract. Clinical reports are associated with the illness peak during the summer, but the viruses can be detected in sewage throughout the year. This combined with the relative ease with which enteroviruses may be cultured in the laboratory has made this virus group the most practical and widely used marker of human faecal viruses in the environment. Currently, the *EU Bathing Water Directive* includes a provision for enterovirus testing if deterioration in the quality of bathing water is suspected. Most bathing waters in the United Kingdom (UK) are marine, but there are nine freshwater inland sites. For monitoring purposes a 10L sample of recreational water is processed, usually by filtration and protein precipitation to a final volume of 5-10mL. In the UK, enteroviruses are detected and enumerated using BGM cells in a suspended cell plaque assay. Other countries use the less sensitive monolayer plaque assay.

The total number of enteroviruses detected from sewage during monthly sampling in 2003 is shown in figure 1. Each isolate originated as a single plaque and is equivalent to a single infectious virus unit. Enteroviruses were present all year although the number of isolates was low during the winter and was high in the summer months – following the usual pattern of clinical reports.

Figure 1 Reading sewage treatment works 2003 infectious enterovirus in unprocessed inlet sewage



Each plaque was passaged to fresh BGM cells to confirm the presence of enterovirus and subsequently the virus serotype was identified by immunofluorescence assay. This plaque assay detects poliovirus and Coxsackieviruses B serotypes more efficiently than Coxsackieviruses A or echoviruses. The enterovirus serotypes identified are shown in figure 2. Coxsackievirus B1 was the most numerous isolate from the early summer onwards and most common during the whole year (figure 3). The presence of Coxsackievirus B4 waned after the early summer. Coxsackievirus B2 and B5 were also common in the summer and autumn. Coxsackievirus B3 was uncommon except in June's sample.

Figure 2 IF typing of enterovirus isolates by month: 2003

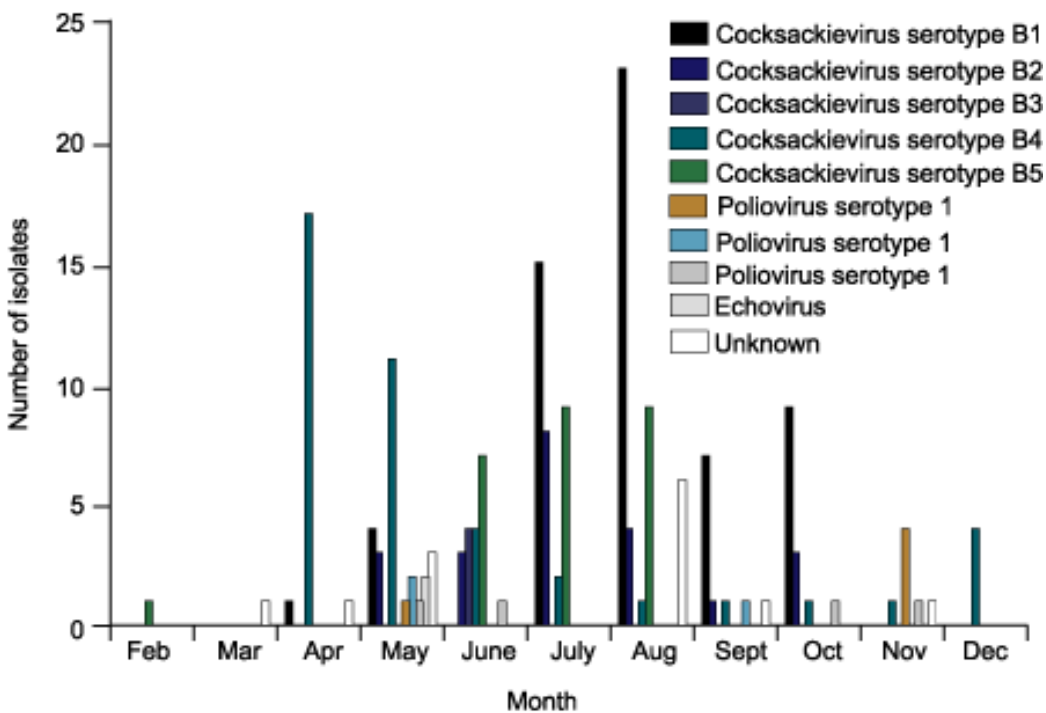
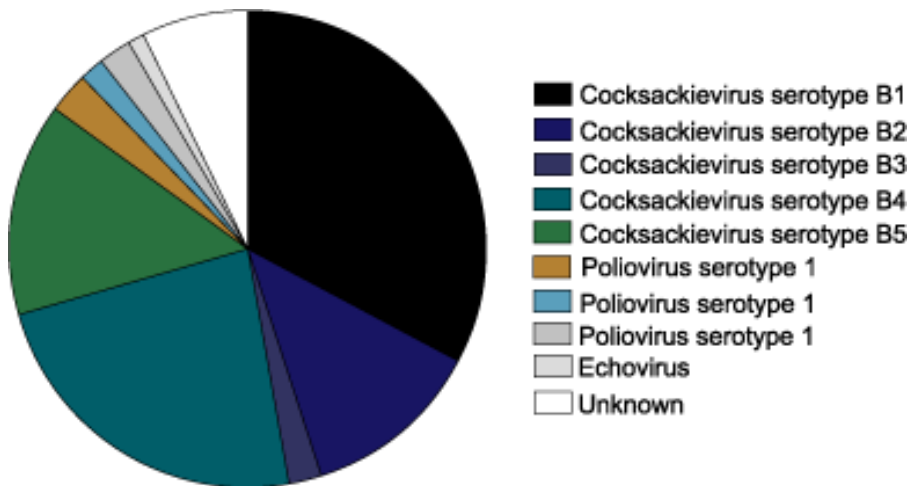


Figure 3 IF typing of enterovirus isolates: 2003



Poliovirus serotypes 1, 2, and 3 were detected in small numbers from sewage. All isolates are tested to confirm vaccine characteristics and this information is used to support the UK surveillance for the World Health Organization (WHO) Poliomyelitis Eradication Programme. Echovirus was detected very occasionally.

#### References

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## Diary



[Sexually Transmitted Diseases: Changing Perspective. British Society for Microbial Technology 19th annual scientific meeting – Colindale, 14 May 2004](#)



### **Sexually Transmitted Diseases: Changing Perspective. British Society for Microbial Technology 19th annual scientific meeting – Colindale, 14 May 2004**

Scientific Programme:

- National Sexual Health Strategies – Dr Kevin Fenton
- Chlamydia NAATs: update in the clinical and laboratory setting – Dr Gill Underhill
- Social Aspects of Chain of Evidence – Dr Jan Welch
- Laboratory Aspects of Chain of Evidence – Dr Karen Rogstad
- GRASP – Prof Cathy Ison
- Choosing Best Laboratory Practice – Valerie Bevan
- A Day in the Life of a GUM Consultant – Dr John Sweeney

Registration from 9.30

Meeting 10.30 – 16.00

Trade show: 9.30 – 10.30 & 13.00 – 13.30

For further details of the programme and an application form please contact: Janet Norcup, Evaluations & Standards Lab, SRMD, Health Protection Agency, 61 Colindale Avenue, London NW9 5DF; Tel: 020 8200 1295 ext 4920; email: [Janet.Norcup@HPA.org.uk](mailto:Janet.Norcup@HPA.org.uk) or visit the website: <http://www.bsmt.org.uk>