



Outbreak of Cryptosporidiosis

Twelve cases of cryptosporidiosis were reported to the Eastern Health and Social Services Board in the week commencing 1 April with 21 being reported the following week. These weekly totals were considerably greater than what would normally be expected in April. Most of those affected lived within an urban area and few had been abroad or had animal contact. When the postcodes of laboratory confirmed cases were mapped against water supply zone it was noted that the attack rate among those receiving exclusively water from the Dunore water treatment works was 2.8/10,000 population compared to 0.14/10,000 in those receiving water from other sources. Similar investigations in the adjacent Northern Board into a rise in reported cases of cryptosporidium over the same time noted similar attack rates in those receiving water from this water treatment works. By 25 April there were a total of 110 confirmed cases within the Dunore supply area.

The Dunore water treatment works involves slow sand filtration and supplies approximately 100,000 properties in the greater Belfast and south Antrim areas. This supplies part of the population of the Eastern and Northern Boards. There had been no previous history of cryptosporidiosis associated with this water treatment works. Daily monitoring of continuous water samples in part of this supply area had commenced on 24 February with oocysts counts ranging from 0-0.62/10 litre up to 21 April. Small peaks were noted over a four day period at the end of February (max 0.22 oocysts/10 litre), over a 7 day

period in mid March (max 0.41 oocysts/10 litre) and 29 March (0.62 oocysts/10 litre). Allowing for an average seven day incubation period these would approximately correspond to the peaks noted in the epidemic curve.

Positive faecal samples have been sent to the PHLS Cryptosporidium Reference Unit in Swansea. Of the specimens examined to date 25 were *C. parvum* genotype 1 and 4 *C. parvum* genotype 2. All the genotype 1 specimens have been identified from patients living in the affected supply area of both Health Boards.

Detailed investigation identified that a blocked drain at the water treatment works may have allowed

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the entry of a small quantity of untreated water into the filtration system. Remedial action at the water treatment works was completed on Sunday 22 April.

An inter Board Outbreak Control Team including CDSC (Northern Ireland) is managing the incident. The public, hospitals and general practitioners were reminded of previous expert advice that all water, from what ever source, that might be consumed by immunocompromised persons should be brought to the boil and allowed to cool before use.

Foodborne and gastrointestinal outbreaks: 2000

Outbreak surveillance is primarily based on reports received from Consultants in Communicable Disease Control. During 2000 CDSC (NI) was made aware of five foodborne outbreaks affecting 140 people and 15 other gastrointestinal outbreaks affecting at least 458 people (Table 1). This compares with nine foodborne outbreaks and 6 gastrointestinal outbreaks in 1999.

There was only one salmonella outbreak reported last year in contrast to six in 1999. The reduction in salmonella outbreaks therefore mirrors the marked decrease in reported cases of salmonella, particularly *Salmonella enteritidis* PT4, noted over the past twelve months.

During 2000 there were two major waterborne outbreaks of cryptosporidiosis within the Eastern Board area. These outbreaks, involving different water supplies, were associated with 246 confirmed

cases of cryptosporidiosis. These outbreaks accounted for 59% of all cases of cryptosporidiosis reported in 2000.

In three foodborne outbreaks a bacterial cause was not identified and the pattern of illness was suggestive of a viral infection though this could not be laboratory confirmed. Oysters were considered to be the cause of two separate outbreaks involving 24 people with gastroenteritis. Thirty people were ill in 1999 secondary to oysters.

Unlike other shellfish such as mussels, oysters are usually eaten raw without cooking which would kill viruses causing gastroenteritis.

Viral or suspect viral infections were thought to be the cause of eleven outbreaks of gastroenteritis. These infections can spread rapidly in facilities such as hospitals and residential/nursing care facilities. There were four hospital outbreaks and three in residential homes reported during 2000. Of the confirmed viral outbreaks, five were secondary to Small Round Structured Viruses and one outbreak in a child care facility was caused by rotavirus. These viral outbreaks were thought to be caused by person to person spread.

Three outbreaks involved schools with the causative organisms being *S.sonnei*, *E.coli* O157 and SRSV.

Table 1: General Outbreaks¹ of foodborne illness reported to CDSC (NI) during 2000

Foodborne outbreaks							
Month	Board	Location	Organism	Suspect vehicle ²	No. ill ³	Cases +ve	Evidence
Jan	W	Institution	C. perfringens	Chicken curry	61	9	Cohort Study
Feb	N	Ethnic take away	S. enteritidis PT4	Unknown food	18	12	Descriptive
Mar	E	Restaurant	? Viral	Infected food handler	37	0	Descriptive
Mar	N	Wine bar	? Viral	Oysters	13	0	Cohort Study
Dec	N	Ethnic restaurant	? Viral	Oysters	11	0	Cohort Study
Other gastrointestinal outbreaks							
Month	Board	Location	Organism	Suspect vehicle ²	No. ill ³	Cases +ve	Evidence
Mar	W	Primary school	Shigella	Person/person	14	14	Descriptive
Mar	E	Hospital	SRSV	n/a	5	n/a	
Mar	E	Hospital	? Viral	Person/person	10	n/a	
Mar	S	Residential home	? Viral	Person/person	24	0	Descriptive
Mar	N	Nursery school	E coli O157	Person/person	8	8	Descriptive
Mar/Apr	E	Hospital	SRSV	Unknown	n/a	n/a	
Apr	N	Hotel	? Viral	Unknown	20	n/a	
Apr	E	Nursing home	? Viral	Person/person	43	0	
Apr	E	Residential Home	SRSV	Person/person	27	1	
Apr	E	Hospital	SRSV	Person/person	30	4	
May	E	County Down	Cryptosporidium	Water	n/a	129	Descriptive
May	S	Child Day Care	Rotavirus	Person/person	13	3	Descriptive
Jun	E	Nursery school	SRSV	Person/person	n/a	2	
Aug	E	Lisburn/Poleglass	Cryptosporidium	Water	n/a	117	Descriptive
Sep	N	Residential home	? Viral	Unknown	16	0	

1. General outbreaks involve members of more than one household;
 2. Local investigations may not provide conclusive evidence of vehicles of infection. Vehicles are therefore designated as 'suspect';
 3. The number known to be ill.

Enhanced Surveillance of meningococcal disease

From 1 January 2001 to 31 March 2001, a total of 31 cases of meningococcal disease have been reported to CDSC through the program of enhanced surveillance of meningococcal disease (see Tables 2 & 3).

Nineteen (61.3 %) of these cases have been laboratory confirmed to date. Two (10.5 %) of the laboratory confirmed cases were due to serogroup C infections in a 22-year old female and a four year old female, and 14 (73.7 %) were due to serogroup B infections. The 22 year-old female had not received

the MenC vaccine and the vaccine status of the other confirmed Group C case is not known. These figures, although provisional, compare favourably with those recorded in the same period last year. For the period January to March 2000, a total of 47 confirmed cases had been notified, including 22 (46.8

%) serogroup B and 20 (42.6 %) serogroup C infections.

During the month of March 2001, thirteen cases of meningococcal disease were notified through the program of enhanced surveillance of meningococcal disease (see Table 4). Six (46.2%) of the cases have been laboratory confirmed to date. Five of the laboratory confirmed cases were due to serogroup B infections.

Enhanced surveillance of meningococcal disease will be reviewed in this report in three months' time, except in the event of an unexpected increase in cases.

Table 2: Meningococcal disease by Health and Social Services Board, Northern Ireland, January to March 2001

HSSB	Confirmed			Not confirmed	Total
	B	C	Other and ungrouped		
E	3	0	1	4	8
N	6	1	0	4	11
S	2	0	1	2	5
W	3	1	1	2	7
Total	14	2	3	12	31

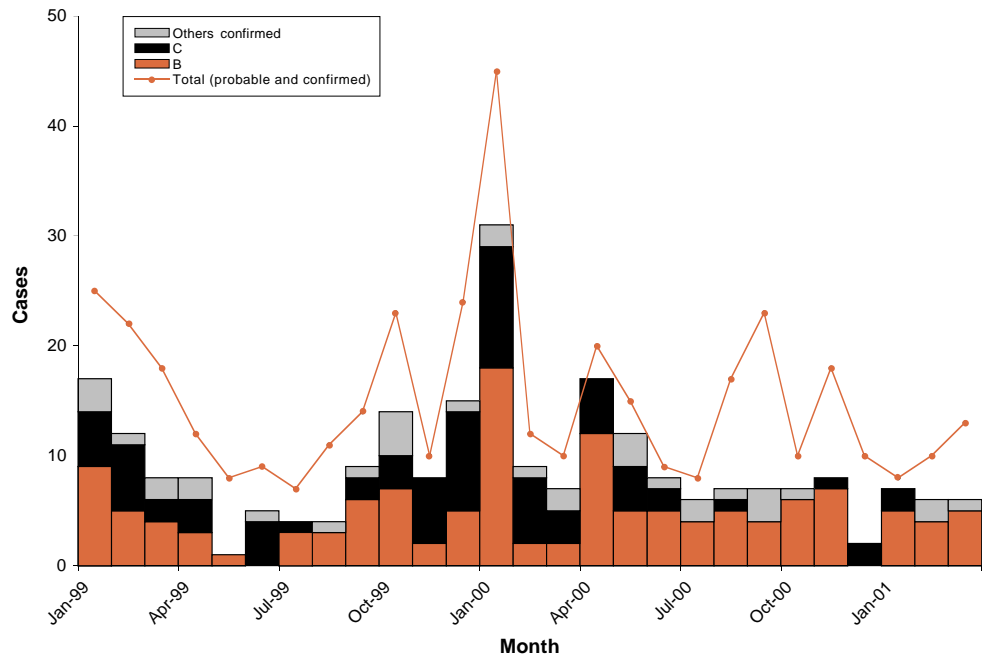
Table 3: Meningococcal disease: case and death by age, Northern Ireland, January to March 2001

Age group	Confirmed			Not confirmed	Incidence per 100,000 population	Death
	B	C	Other and ungrouped			
0-2	5	0	2	5	16.7	1
3-4	3	1	0	0	8.3	0
5-14	3	0	0	4	2.6	0
15-17	1	0	0	1	2.6	0
18-24	0	1	0	1	1.2	0
24	1	0	1	1	0.3	0
?	1	0	0	0		0
Total	14	2	3	12	0.8	1

Table 4: Meningococcal disease: case and death by age, Northern Ireland, for March 2001

Age group	Confirmed			Not confirmed	Total	Death
	B	C	Other and ungrouped			
0-2	1	0	0	3	4	0
3-4	2	0	0	0	2	0
5-14	0	0	0	1	1	0
15-17	0	0	0	1	1	0
18-24	0	0	0	1	1	0
>24	1	0	1	1	3	0
?	1	0	0	0	1	0
Total	5	0	1	7	13	0

Figure 1: Monthly cases of meningococcal disease from January 1999 to March 2001



Childhood Vaccination Programme

This report contains the latest set of COVER vaccination statistics. Fig 2 notes that MMR vaccination uptake among children by their second birthday has fallen for the past two quarters from 92.7% to 91.6%. The UK MMR vaccination uptake rate has also decreased although the Northern Ireland uptake rate is considerably higher.

Children reaching their second birthday during October-December 2000 would have been scheduled to receive MMR vaccine 9 months earlier i.e. during January-March 2000. Thus the full impact of the misleading publicity earlier this year surrounding MMR vaccine and the availability of single antigen vaccines has yet to be reflected in the COVER statistics. The decline in MMR vaccination uptake over the past 6 months is therefore of concern. In addition to monitoring uptake at 24 months, Consultants in Communicable Disease Control (CCDCs) are monitoring uptake rates at 15, 16 and 17 months and comparing them to a similar cohort 12 months earlier.

In response to concern about the publicity associated with MMR vaccine, CCDCs have undertaken a series of seminars for general practitioners, other primary care

mailed by the Child Health System who are responsible for issuing invitations to patients as their child's vaccination date approaches. Included in the pack for health professionals is a resource produced by North Wales Health Authority *The MMR Story, Mythbuster*. This material is designed to be used across the table during a consultation with a parent asking searching questions about MMR.

staff and community nurses. The Health Promotion Agency for Northern Ireland has revised and updated existing information for parents and health professionals. This includes a leaflet which can be

Figure 2: MMR Vaccination Uptake Rate at 24 months, NI and UK, 1996-2000



Vaccination Coverage Statistics for Children in Northern Ireland

The vaccination coverage statistics for Northern Ireland (COVER/Körner Programme) are now available for the last quarter of 2000. The statistics give detailed coverage data and numbers of children in the four Boards in Northern Ireland. The tables below show the coverage data for Northern Ireland and the United Kingdom as a whole by the first and second birthday.

Completed Primary Immunisations by 12 months and 24 months COVER/Körner: Data Northern Ireland (Oct – Dec 2000)

Board	% Coverage at 12 months							% Coverage at 24 months						
	No of children in cohort	Dip3	Tet3	Pol3	Pert3	Hib3	MMR	No of children in cohort	Dip3	Tet3	Pol3	Pert3	Hib3	MMR
Eastern	1968	91.9	91.9	91.4	91.3	92.3	0.3	2037	94.9	94.9	94.7	94.1	95.3	89.4
Northern	1358	96.4	96.4	96.5	96.0	96.4	0.0	1393	97.8	97.8	97.9	97.4	98.0	94.2
Southern	1026	94.8	94.8	94.8	93.8	94.8	0.1	1087	96.7	96.7	96.6	95.8	97.1	93.1
Western	1013	94.3	94.3	94.3	93.4	94.2	0.1	1050	96.3	96.3	96.2	95.7	96.0	90.7
NI Total	5365	94.0	94.0	93.9	93.3	94.2	0.1	5567	96.3	96.3	96.2	95.6	96.5	91.6

It is disappointing to note that, compared to the previous quarter, uptake rates for all vaccines at 12 and 24 months have decreased by between 0.2 to 0.5 percentage points. MMR uptake rate at 24 months has dropped 0.4 percentage points to 91.6%.

Country	% Coverage at 12 months			% Coverage at 24 months			
	Dip3	Pert3	Hib3	Dip3	Pert3	Hib3	MMR
England	90.8	90.1	90.5	94.5	93.7	94.2	87.4
Wales	94.7	93.5	94.4	96.6	94.8	96.4	89.0
Scotland	95.3	94.6	95.1	97.3	96.7	97.2	92.5
UK	91.5	90.8	91.2	94.9	94.1	94.6	88.0

Vaccine Coverage at 5 years (Oct - Dec 2000)

Board	Dip3	Pert3	Hib3	Dip4	MMR1	MMR2
Eastern	97.5	95.0	96.5	87.4	96.4	82.6
Northern	98.1	96.4	97.6	92.9	97.6	91.7
Southern	97.9	96.2	97.3	87.5	97.9	89.3
Western	97.4	93.9	96.6	89.2	97.3	84.8

NI	97.7	95.4	97.0	89.1	97.2	86.6
England	94.3	92.6	93.3	80.0	92.2	74.7
Wales	96.4	93.1	95.8	80.5	93.2	74.0
Scotland	Not available					
England, Wales & NI	94.5	92.8	93.6	80.4	92.4	75.1

Monitoring of vaccine coverage at 5 years of age includes the pre-school booster DT, polio and MMR2. Dip3, Pert3, Hib3 and MMR1 uptake rates have decreased by between 0.1 and 0.5 percentage points in comparison with the previous quarter. Uptake rate of Dip4 has increased by 2.2 percentage points, whilst MMR2 uptake rate has increased by 1.3 percentage points.

Vaccination uptake rates in Northern Ireland compare favourably with the rest of the United Kingdom.

Salivary antibody testing

Salivary antibody testing of notified cases of measles, mumps and rubella infection offers a convenient, non-invasive and sensitive method of confirming the initial diagnosis in children. With continued misleading information concerning MMR vaccine and evidence, particularly from other parts of the UK, of falling vaccination uptake levels it is particularly important to be able to detect an increase in these infections. Consultants in Communicable Disease Control (CCDCs) routinely forward a salivary testing kit to each general practitioner notifying an individual with measles, mumps or rubella infection. The salivary samples are then posted to the Central Virus Laboratory in London for analysis.

Table 5 outlines the outcome of the salivary antibody testing programme in Northern Ireland during 2000. There were 1160 notifications of measles, mumps

and rubella which resulted in 1143 (98.5%) kits being sent to general practitioners. Salivary testing was successfully completed on 597 (51%) individuals compared to 35% in 1999.

Only one of the 60 measles notifications tested had serological evidence compatible with recent infection. Salivary testing of 495 individuals with mumps detected 360 (73%) with recent infection and this reflects the large mumps outbreak during 2000. This is in contrast to rubella where salivary testing of notified cases failed to demonstrate evidence of recent infection.

There has been a marked increase during 2000 in the proportion of notified cases being serologically investigated. Thanks go to the CCDCs, general practitioners and community nurses for facilitating this programme.

Table 5: Salivary Antibody Testing Results, 2000

	Board	Notifications	Salivary kits sent to GPs	Salivary test completed	Evidence of recent infection
Measles	NHSSB	28	28	26	0
	SHSSB	22	22	8	0
	EHSSB	22	21	14	0
	WHSSB	20	19	12	1
	Total	92	90	60	1
Mumps	NHSSB	435	455	290	204
	SHSSB	212	191	114	82
	EHSSB	27	21	13	4
	WHSSB	334	334	78	70
	Total	1008	1001	495	360
Rubella	NHSSB	14	8	15	0
	SHSSB	16	16	8	0
	EHSSB	22	20	14	0
	WHSSB	8	8	5	0
	Total	60	52	42	0

Laboratory Reports

Foodborne and Gastro-intestinal Tract Infections: Laboratory Reports, Weeks 09-12

	Number of Reports received		Cumulative total	
	01/09-12	00/09-12	01/01-12	00/01-12
<i>Campylobacter</i>	34	103	114	191
<i>C. difficile</i> Toxin	24	27	71	79
<i>E. coli</i> 0157	0	0	1	3
<i>Salmonella</i> total	23	15	46	51
<i>S. enteritidis</i> (PT 4)	14 (8)	3 (3)	23 (13)	25 (24)
<i>S. typhimurium</i> (DT 104)	2 (0)	8 (3)	7 (3)	19 (7)
<i>Salmonella</i> other serotypes	7	4	16	7
<i>Shigella</i>	0	2	0	5
<i>Cryptosporidium</i>	18	13	58	25
<i>Giardia</i>	1	0	1	2
Adenovirus (faeces)	9	12	28	28
Enterovirus (faeces)	1	5	2	12
Rotavirus	26	72	50	110
SRSV	10	3	43	22

Salmonella (other than *enteritidis* or *typhimurium*):

<i>S. hadar</i>	1
<i>Salmonella</i> sp	5
<i>S. weltevreden</i>	1

Comment:

Cumulative laboratory reports of cryptosporidium have more than doubled compared to the same period last year. This is due to the waterborne outbreak in Belfast referred to on the front page. Cumulative reports of *Campylobacter* are exhibiting a 40% decrease; however this total may rise as late laboratory reports are received.

Respiratory Tract Infections: Laboratory Reports Weeks 01-12

	Number of Reports received			Cumulative total	
	01/01-04	01/05-08	01/09-12	01/01-12	00/01-12
<i>Coxiella burnetii</i>	0	0	0	0	9
<i>Mycoplasma pneumoniae</i>	2	5	1	8	5
Respiratory <i>Chlamydia</i>	1	0	0	1	7
Adenovirus (excluding faeces)	8	1	1	10	33
RSV	177	61	13	251	253

Staphylococcus aureus bacteraemias: Laboratory Reports, Weeks 01-12

Total reports of <i>S. aureus</i>		Reports of MRSA (%)		Reports of MSSA (%)	
01/01-12	00/01-12	01/01-12	00/01-12	01/01-12	00/01-12
75	70*	28 (37%)	27* (37%)	47 (63%)	43 (63%)

*includes 1 isolate from CSF

Infectious Disease Notifications: 2001 Weeks 09-12

Disease	Board 01/09-12				Northern Ireland	
	E	N	S	W	Total 2001 01-12	Total 2000 01-12
Acute encephalitis/ Meningitis: bacterial	4	1	0	1	14	26
Acute encephalitis/ Meningitis: viral	0	0	0	0	5	6
Chickenpox	183	93	96	32	1161	1272
Dysentery	0	0	0	0	2	14
Food Poisoning	45	29	11	16	295	281
Gastroenteritis (Under 2 years)	69	11	7	10	243	203
Hepatitis A	0	0	0	1	2	8
Hepatitis B	0	0	0	0	4	4
Hepatitis Unspecified: Viral	1	0	0	0	3	3
Legionnaires' Disease	0	0	0	0	0	0
Leptospirosis	0	0	0	0	0	0
Malaria	4	0	0	0	6	2
Measles	2	1	0	3	25	26
Meningococcal Septicaemia	6	5	1	1	29	40
Mumps	5	2	1	64	325	165
Paratyphoid Fever	0	0	0	0	0	0
Rubella	0	0	1	0	14	18
Scarlet Fever	15	6	1	5	78	101
TB (Pulmonary)	3	0	1	0	8	9
TB (Non-Pulmonary)	0	0	0	0	3	7
Typhoid	0	0	0	0	0	0
Whooping Cough	2	0	0	0	7	10
TOTAL	339	148	119	133	2224	2195

Contributing Laboratories

Allnagelvin	Mater
Antrim	Musgrave Park
Belfast City	Regional Mycology
Belvoir Park	Regional Virus
Causeway	Royal Victoria
Craigavon	South Tyrone
Daisyhill	Tyrone County
Erne	Ulster

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