COMMUNICABLE DISEASES
Monthly Report

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Enhanced Surveillance of Meningococcal Disease

A. 1 January 2004 to 30 June 2004

Between 1 January 2004 and 30 June 2004, CDSC (NI) received 48 notifications of invasive meningococcal disease through the enhanced surveillance of meningococcal disease (ESMD) scheme. Of these, 31 (65%) were laboratory confirmed; 27 (87%) were identified as serogroup B and 1 (3%) as serogroup C. The remaining 3 cases (10%) were ungrouped or belonged to other serogroups. Death occurred in 2 cases during the first six months of 2004. Both were children under 2 years of age. One child, who presented with septicaemia had laboratory confirmed serogroup B infection. The second child presented with both meningitis and septicaemia, but the infection has not been laboratory confirmed.

The number of notifications received during the first six months of 2004 is considerably lower than that for the same period of 2003, when 61 cases were notified. The rate of incidence of disease (2.8 per 100,000 population) has also fallen compared to the same period last year (3.6 per 100,000 population). The proportion of notified cases which have been laboratory confirmed in 2004 (65%) is only slightly lower than that recorded during the same period of 2003 (69%) and serogroup B infection continues to account for the large majority of these cases. During the first six months of 2002, 2003 and 2004, the proportion of laboratory confirmed cases attributable to serogroup B infection were 85%, 90.5% and 87% respectively.

The marked reduction in the incidence of group C infection, since the commencement of the MenC immunisation campaign in late 1999, continues to date. During the first 6 months of 2000, immediately following the first phase of the immunisation campaign, there were 32 laboratory confirmed cases of serogroup C infection. The corresponding number of cases during the first six months of 2001, 2002 and 2003 were 4, 5 and 3 respectively. During the same period of 2004 there was only 1 confirmed serogroup C infection. This occurred in a child aged 3 years who had already received a full course of MenC vaccine.

Table 1: Meningococcal disease by Health and Social Services Board, Northern Ireland, January to June 2004

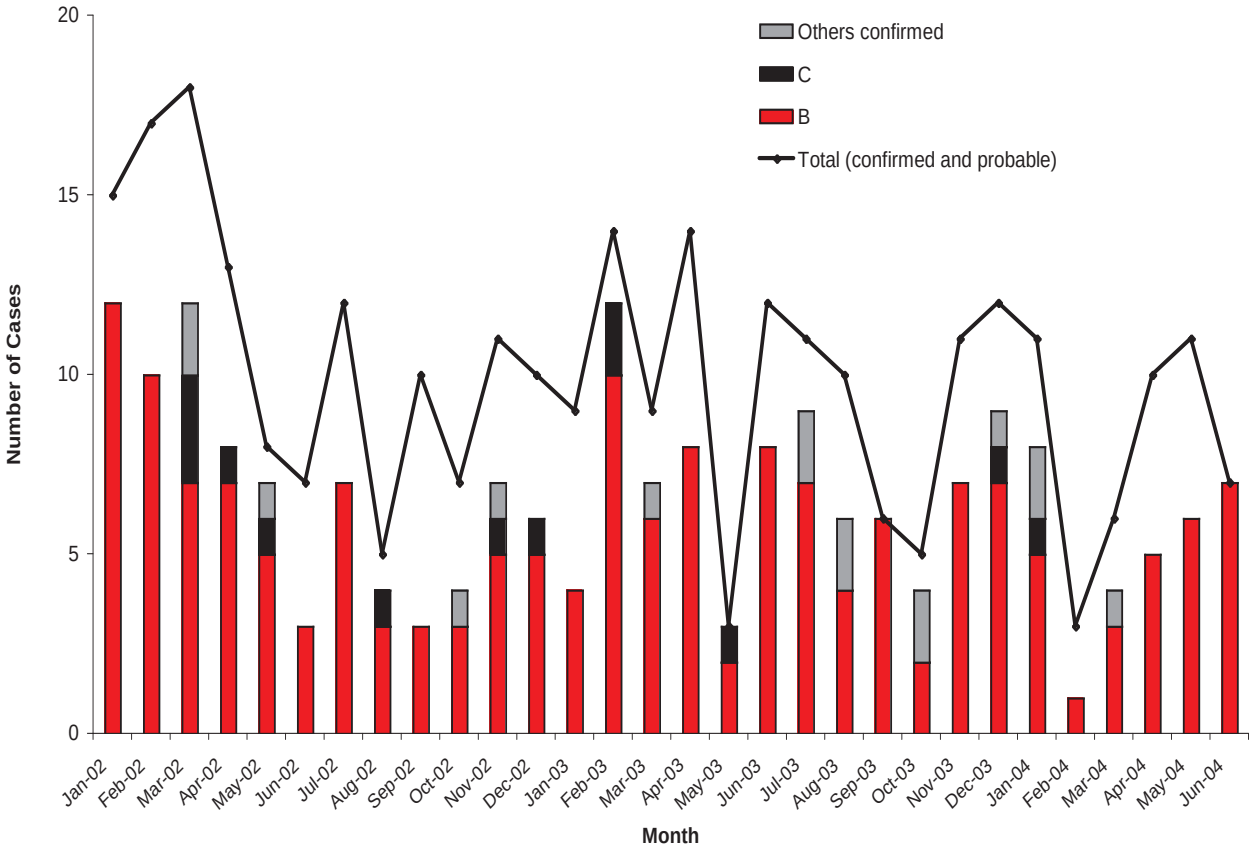
HSSB	B	C	Other and ungrouped	Not confirmed	Total
E	9	1	1	9	20
N	8	0	1	1	10
S	5	0	1	3	9
W	5	0	0	4	9
TOTAL	27	1	3	17	48

Table 2: Meningococcal disease: case and death by age, Northern Ireland, January to June 2004

	Confirmed					
Age group	**B**	**C**	**Other and ungrouped**	**Not Confirmed**	**Incidence per 100,000 population***	**Death**
0-2	12	0	1	7	30.5	2
3-4	5	1	1	1	17.0	0
5-14	4	0	1	7	4.7	0
15-17	2	0	0	0	2.5	0
18-24	1	0	0	1	1.2	0
>24	3	0	0	1	0.4	0
Total	27	1	3	17	2.8	2

* age specific incidence rate

Figure 1: Monthly cases of meningococcal disease from January 2002 to June 2004, Northern Ireland



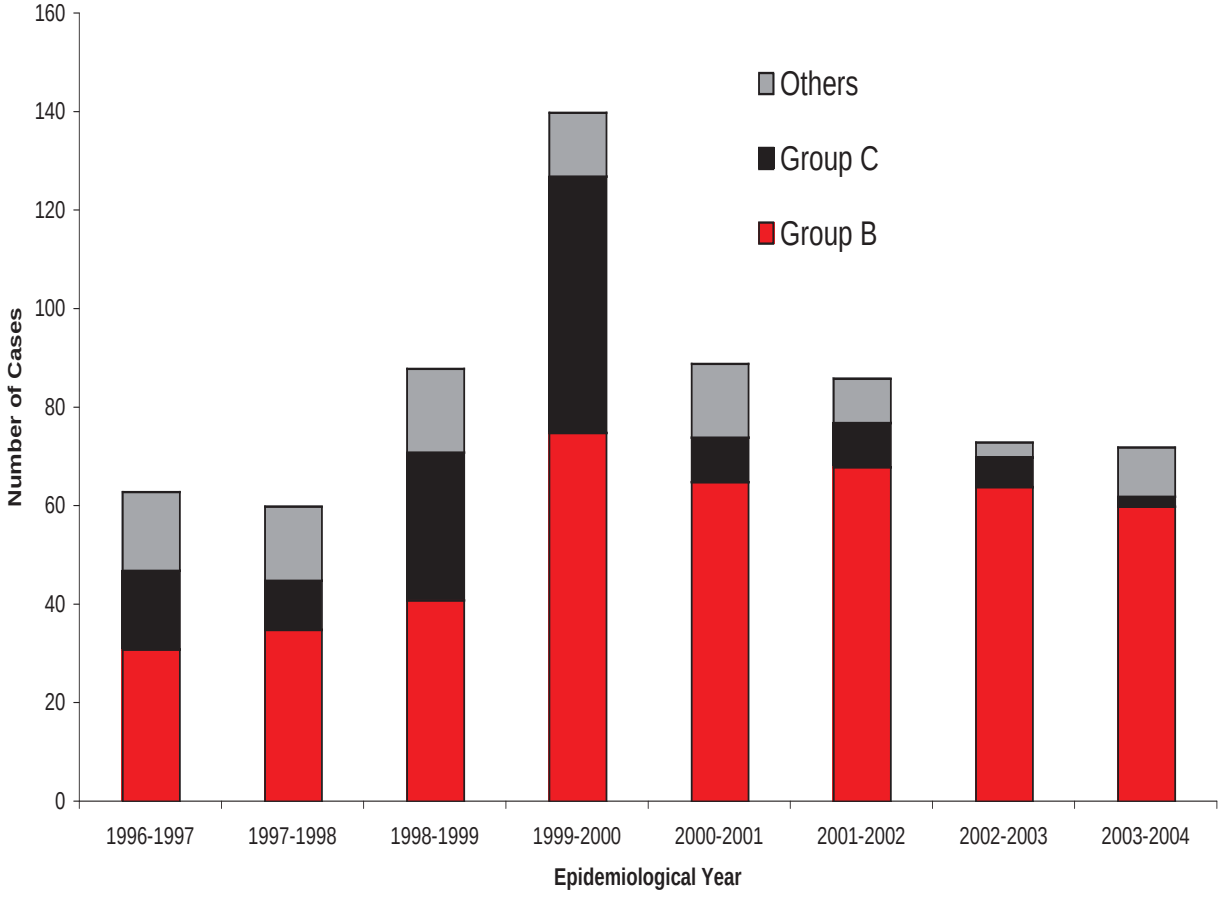
B. The Epidemiological Year: 1 July 2003 to 30 June 2004

Between 1 July 2003 and 30 June 2004, 103 notifications of invasive meningococcal disease were received through the ESMD programme. Seventy-two (69%) of these have been laboratory confirmed to date. Sixty (83%) have been identified as serogroup B, 2 (3%) as serogroup C and 10 (14%) are ungrouped or belong to other serogroups. This represents a continued reduction in the number of cases for the past two epidemiological years. In 2001-2002, there were a total of 137 notifications and, in 2002-2003, the corresponding figure was 116 notifications. In both 2001-2002 and 2002-2003, 63% of all cases notified were laboratory confirmed (see Figure 2). The number of notifications for the 2003-2004 epidemiological year, at 103, is the lowest recorded since enhanced surveillance was introduced in Northern Ireland.

There were 2 laboratory confirmed serogroup C infections during the 2003-2004 epidemiological year. Both were children under 5 years of age who had been vaccinated at least 2 years prior to the onset of disease. This brings to 6 the total number of apparent MenC vaccine failures in Northern Ireland since the introduction of MenC vaccination in November 1999.

There are some concerns that the introduction of the MenC vaccine could, potentially, induce capsule-switching within the *N. meningitidis* organism. Should this phenomenon occur, it could lead to a rise in the incidence and severity of serogroup B infections. Of particular interest at present are laboratory confirmed cases of serogroup B subgroup 2a:P.1.2, 2a:P1.5 or 2a:P.1.10 infection. During the 2002-2003 epidemiological year, there was one laboratory confirmed case of serogroup B subtype 2a:P1.5 infection in Northern Ireland. This occurred in a young adult who had received the MenC vaccine previously. The details of the case were investigated further by the HPA at Colindale. There were no such cases in Northern Ireland during the 2003-2004 epidemiological year.

Figure 2: Confirmed cases of meningococcal disease by epidemiological year, 1996-2004, Northern Ireland



Four deaths occurred during the 2003-2004 epidemiological year, resulting in a case fatality rate of 3.9%. All were in children aged less than 5 years. The number of deaths is unchanged in comparison to the period July 2002 to June 2003 (case fatality rate of 3.4%). Three of the 4 deaths in 2003-2004 were due to laboratory confirmed serogroup B infection and, upon admission to hospital, all 3 of these patients were diagnosed with septicaemia. The fourth death (not laboratory confirmed) occurred in a child who presented with both meningitis and septicaemia and who had received antibiotics prior to hospital admission. This continues the trend observed during the 2002-2003 epidemiological year, when 3 of the 4 deaths recorded were in young children with laboratory confirmed serogroup B infection and an initial diagnosis of septicaemia. As expected, analysis of details from fatal cases, recorded by the ESMD programme since 1999, indicates that septicaemic infections are more likely to result in death.

Although rates of invasive meningococcal disease in Northern Ireland continue to fall with each new epidemiological year, they still remain higher than those recorded for England & Wales (Figure 3). In 2001-2002, the overall notification rate in Northern Ireland was 8.1 cases per 100,000 population and, in 2002-2003, fell to 6.8 cases per 100,000 population. In 2003-2004, it fell further, to 6.1 cases per 100,000 population. However, both the overall age-specific rate of notification (Figure 4) and of laboratory confirmed infection continue to be highest in young children; in particular, the age-specific rates of serogroup B infection in those aged 0-2 years and in those aged 3-4 years (Figure 5). The age-specific rate of serogroup C infection remains stable in the 3-4 age group - the only group affected during 2003-2004 (Figure 6).

This twelve-month report illustrates the continuing impact of the MenC vaccination campaign that commenced in Northern Ireland during November 1999. The vaccine is offered to all those aged under 25 years of age and, for the fourth year running, there have been no cases of serogroup C infection in children under two years of age. As the meningococcal season approaches, monthly statistics of meningococcal infection will recommence in the monthly report, and will continue throughout the winter.

The continued provision of meningococcal surveillance data to CDSC (NI), through the co-operation of Consultants in Communicable Disease Control, Microbiologists and Public Health staff in each Board area, is greatly appreciated.

Figure 3: Notification Rates of Invasive Meningococcal Disease 1999-2004

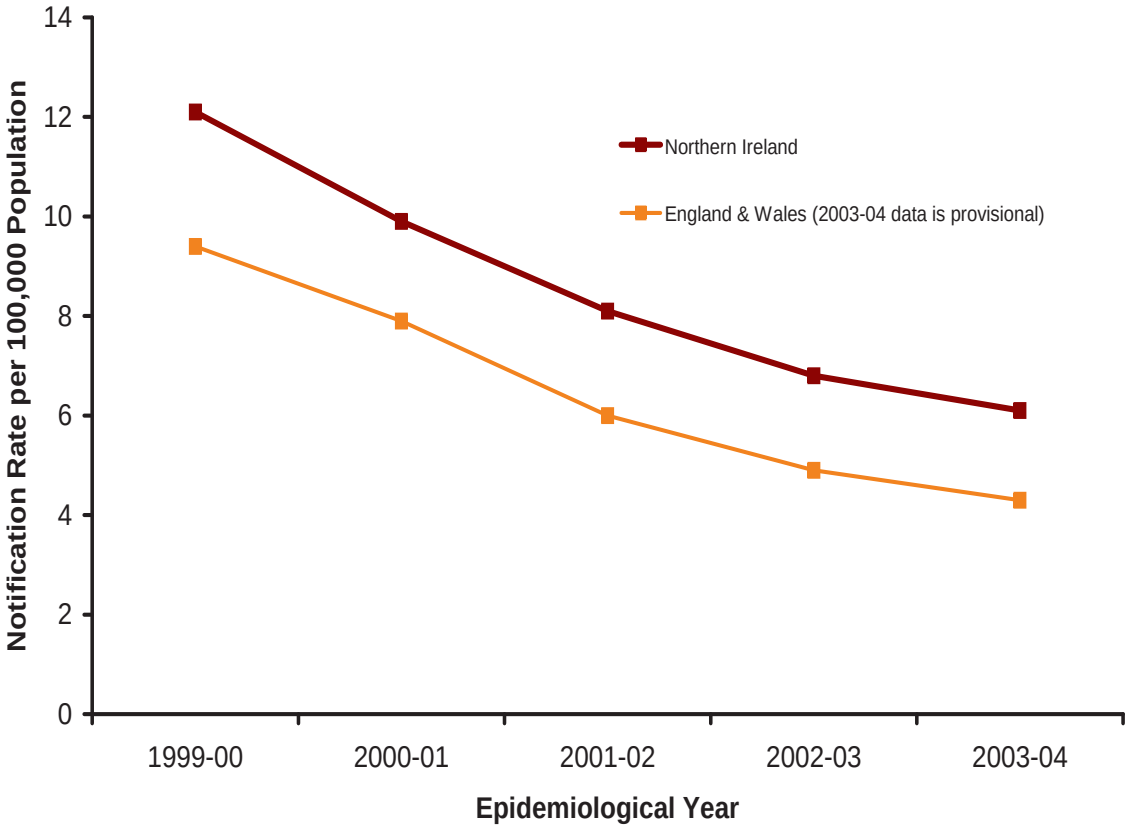


Figure 4: Age-specific rates of notified cases of meningococcal infection by epidemiological year

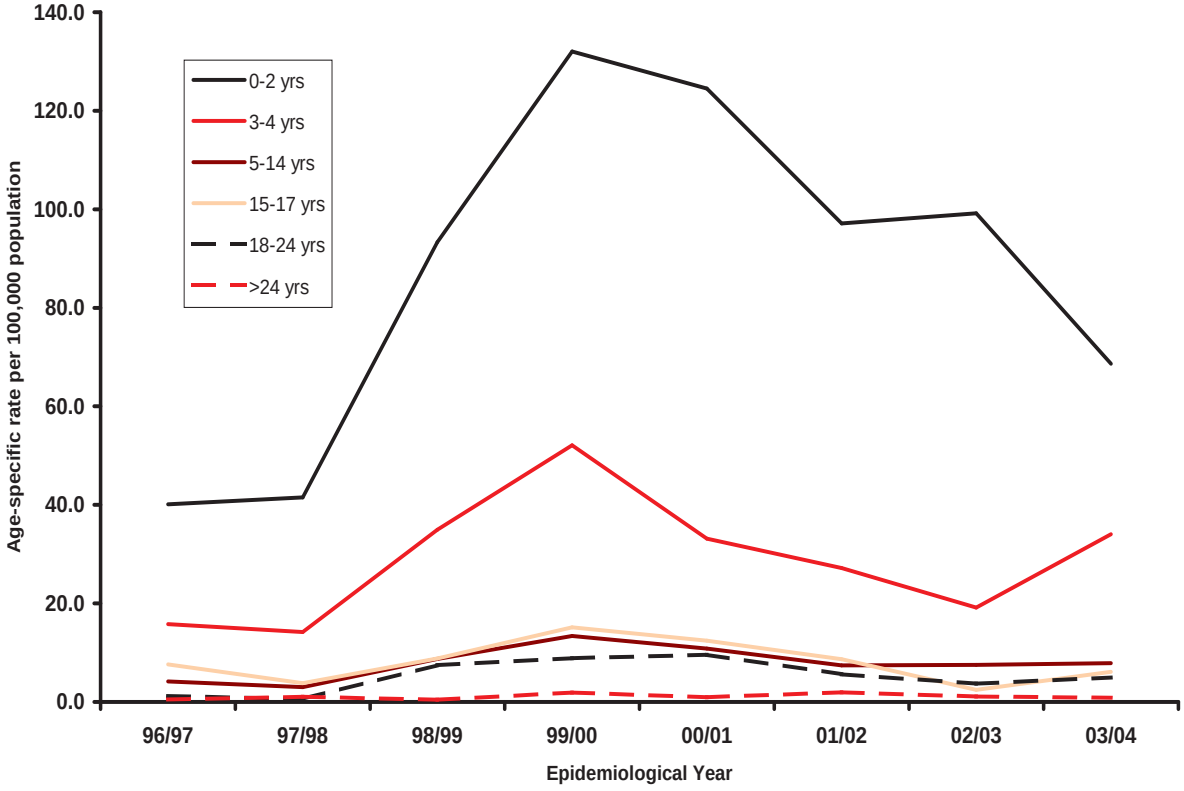


Figure 5: Age-specific rates of group B meningococcal infection by epidemiological year

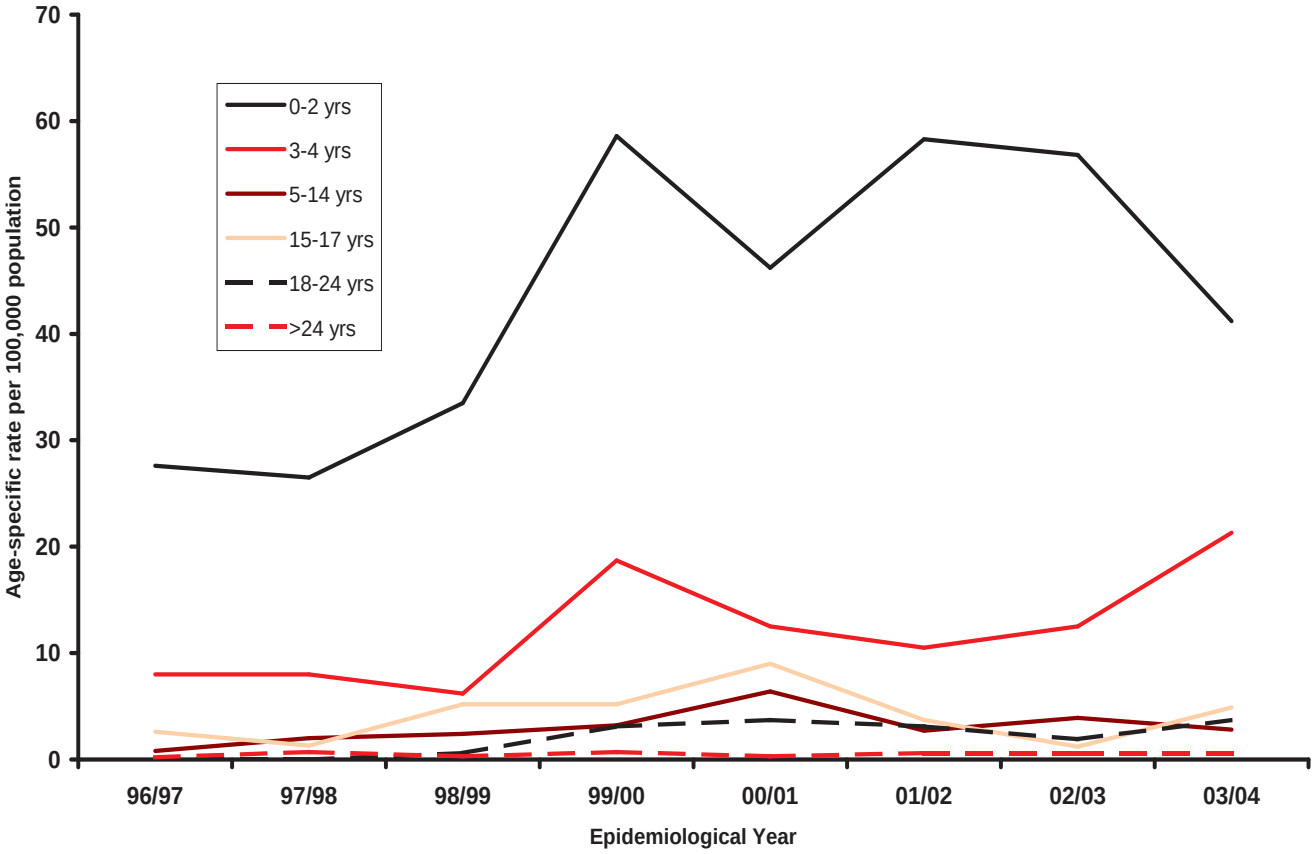
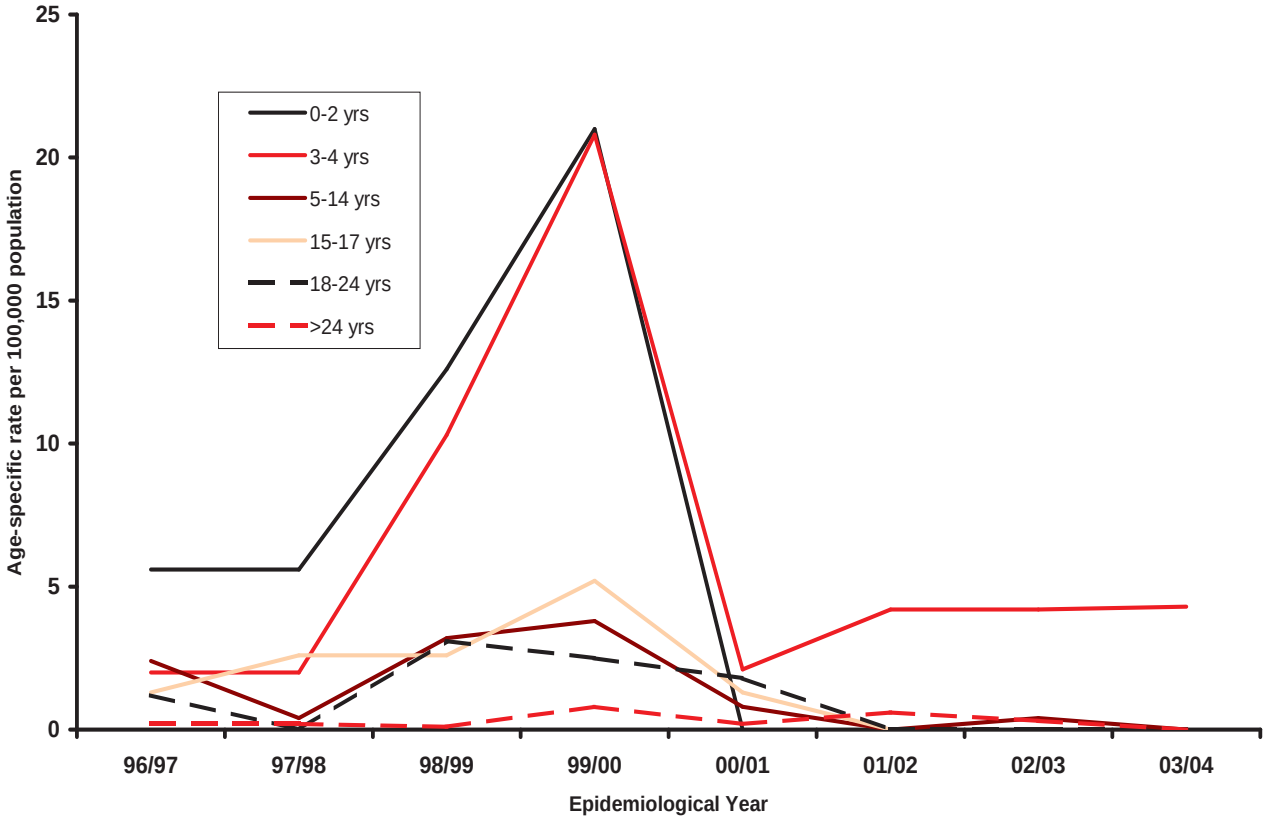


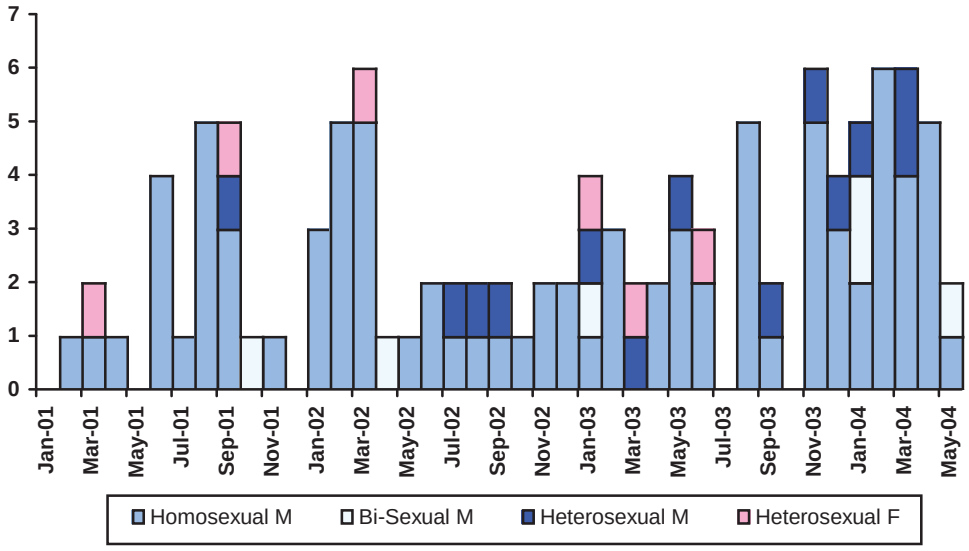
Figure 6: Age-specific rates of group C meningococcal infection by epidemiological year



Syphilis update

The syphilis outbreak which commenced in the first quarter of 2001 continues with seven new cases reported during April/June 2004 and two additional reports for the January/March quarter. A total of 110 cases of primary, secondary and early latent syphilis have therefore been diagnosed at GUM clinics in Northern Ireland since 1 July 2000. This compares with 2-3 cases per year reported during the 1990s.

Figure 7: Month of presentation at GUM clinic and sexual orientation (n=109).

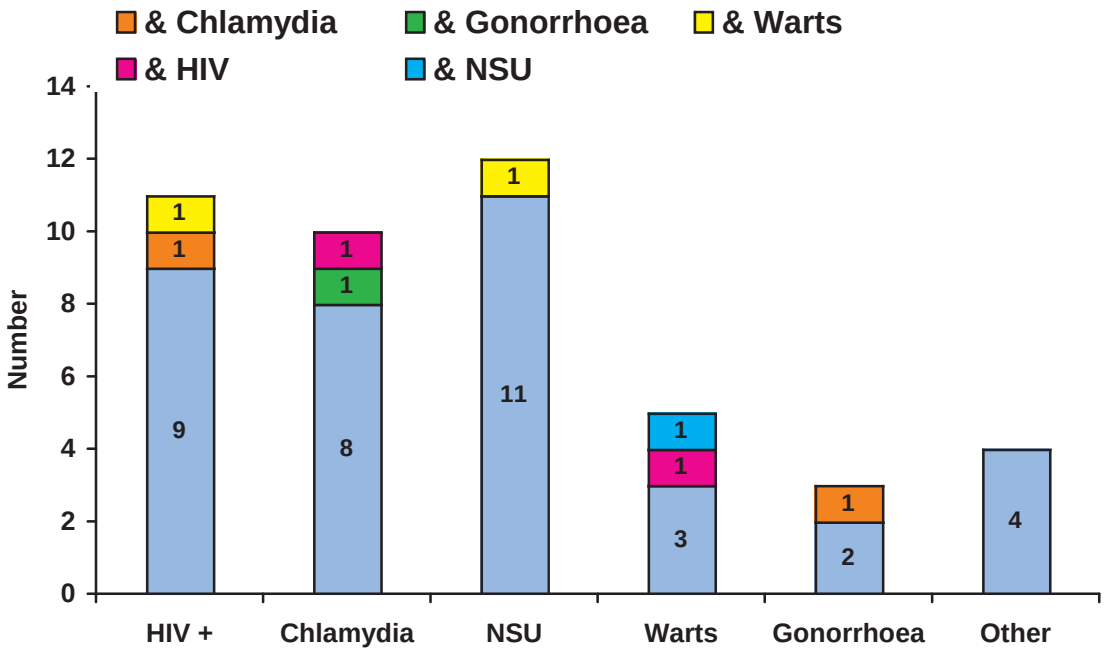


The most recent cases were all male aged between 20 and 48 years living throughout Northern Ireland. One was heterosexual, one bisexual and the remaining seven were men who have sex with men (MSM). Four considered they acquired infection in Northern Ireland and three others thought they acquired syphilis either in GB or abroad and the other two could not specify where they had acquired their infection.

The 110 reports of syphilis represent 104 individuals as four individuals have been reinfected following treatment for their initial infection. Three had two episodes of infection and the fourth individual had four episodes of infection. All were MSM. Three considered their most recent infection was acquired through oral intercourse and all reported never or rarely using a condom for oral intercourse.

Forty-one cases of syphilis were associated with other sexually transmitted infections (STIs). This includes 11 with HIV infection some of whom were diagnosed when being investigated for syphilis.

Figure 8: Concomitant STIs during this episode (n=41)



The outbreak shows little sign of decreasing despite a range of public awareness initiatives involving statutory and voluntary agencies. The majority of those with syphilis acquired their infection in Northern Ireland unlike the initial phase of the outbreak when infection was associated with outbreaks in Dublin and elsewhere. Contact tracing undertaken by the GUM clinics continues to have an important role as 22 individuals with syphilis were diagnosed following contact tracing.

Outbreak summary characteristics

- 98 males, 6 females
- age range 17-64 years (median 35)
- Health Board of residence

Eastern	62 (56%)
Northern	18 (16%)
Southern	14 (13%)
Western	8 (7%)
Other/unknown	8 (7%)

- Sexual orientation
  19 heterosexual (13 male, 6 female), 85 MSM and 6 bisexual
- 41 (39%) had concomitant sexually transmitted infections including HIV
- 77 were symptomatic at presentation
- 70 had one or two sexual partners in the three months prior to diagnosis. Five individuals reported more than 12 anonymous partners in this period with one individual having 65 partners.

A more detailed summary of the descriptive epidemiology to 31 March 2004 is available from the CDSC (NI) website at
http://www.cdscni.org.uk/surveillance/std/Update%20on%20ongoing%20Syphilis%20Outbreak%20in%20NI.pdf

Cryptosporidiosis

Cryptosporidium is an important parasitic infection of man, cattle and other domestic animals. In man it can cause profuse and often prolonged watery diarrhoea associated with abdominal cramps. It is acquired through the faecal oral route including person-to-person transmission, animal to person, waterborne and through food.

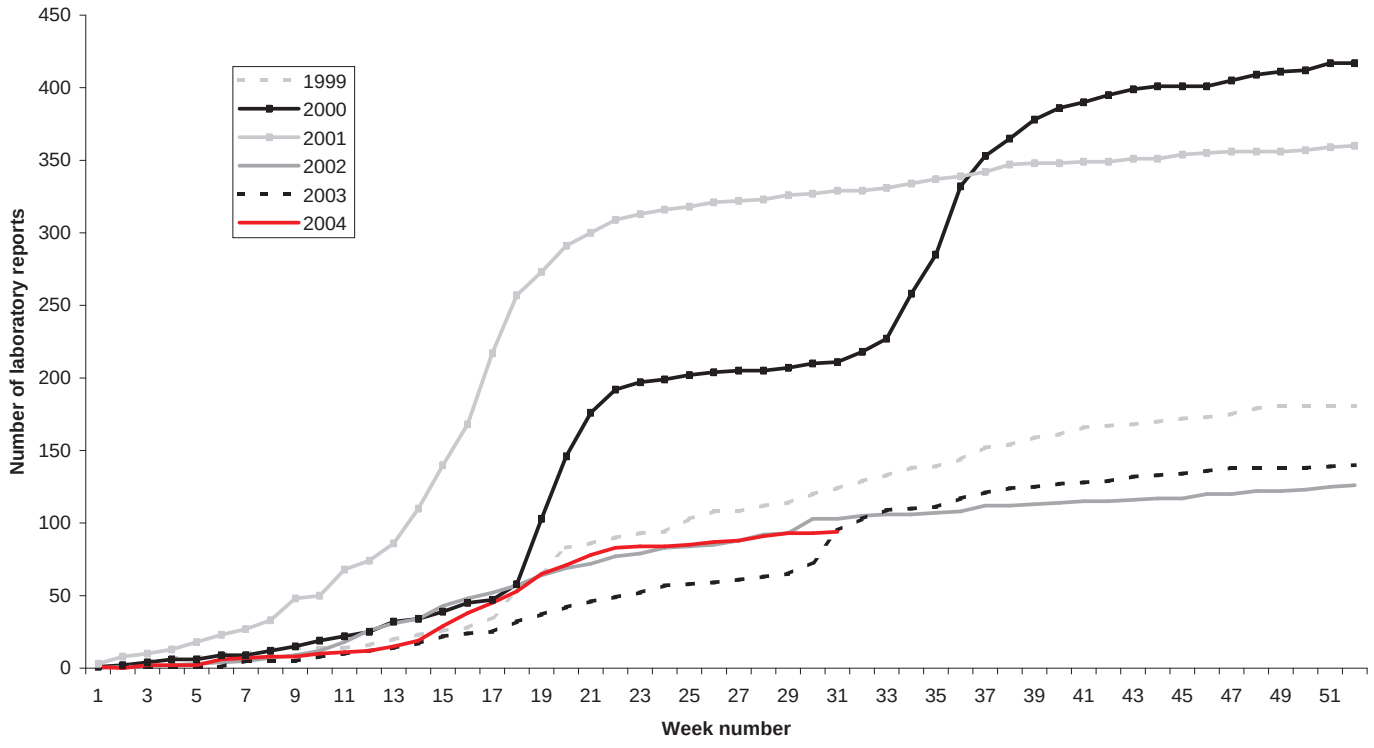
Its public health significance is that it can enter the drinking water supply and cause considerable population gastrointestinal morbidity as it is resistant to the normal chlorine concentrations used in potable water. There have been a number of waterborne outbreaks of cryptosporidiosis internationally, in GB and in Northern Ireland.

Fig 9 describes the cumulative number of laboratory reports of cryptosporidiosis by week in Northern Ireland reported to CDSC (NI) by hospital laboratories. The three waterborne outbreaks; April/May 2000; August/September 2000; and March/April 2001 are particularly noticeable.

In 2000 as a result of two waterborne outbreaks there were 417 laboratory reports of cryptosporidiosis and this was the highest annual total recorded to date. In 2001 there were 360 reports with 126 reports in 2002. In 2003 reports of cryptosporidiosis rose to 140 but this was partly due to an outbreak in Majorca in July associated with a hotel swimming pool in which 27 Northern Ireland holidaymakers developed confirmed cryptosporidiosis. To date this year (week 31) 94 reports have been received which is similar for the same period in 2003 – the table of foodborne and gastrointestinal infections in this *Monthly Report* contains data to week 28 for 2004 and 2003 and thus excludes the Majorca outbreak.

As surveillance of cryptosporidiosis is based on collation of laboratory reports, changes in laboratory practice and reporting will influence surveillance trends. A major laboratory changed its practice earlier this year and is now screening all faecal specimens for cryptosporidiosis and as a result is reporting more cryptosporidium than last year.

Figure 9: Cumulative reports of *Cryptosporidium* sp by week number, 1999 - 2004, Northern Ireland



Positive Blood Cultures: Laboratory Reports, Weeks 1-28

	2004/01-28	2003/01-28
Gram negative bacteria		
Acinetobacter sp	18	21
Aeromonas sp	2	2
Brucella sp	0	1
Campylobacter sp	0	0
Citrobacter sp	10	17
Enterobacter sp	39	35
Escherichia coli	354	326
Haemophilus influenzae	6	10
Haemophilus sp	0	2
Klebsiella sp	76	92
Legionella sp	0	0
Leptospira	0	0
Neisseria meningitidis	24	12
Neisseria sp	0	1
Proteus sp	38	52
Providencia sp	3	4
Pseudomonas aeruginosa	31	41
Pseudomonas sp	27	27
Salmonella sp	4	3
Serratia sp	30	43
Other gram negative bacteria	20	19
Total	**682**	**708**
Gram positive bacteria		
Corynebacterium sp & Diphtheroids	6	3
Staphylococci:		
S. aureus	322	303
coagulase negative	204	178
Streptococci and enterococci:		
group A	25	20
group B	25	28
group C	8	1
group G	7	6
Enterococcus sp	111	105
α- and non-haemolytic	30	39
S. pneumoniae	83	108
Other gram positive bacteria	13	13
Total	**834**	**804**
Anaerobic bacteria		
Anaerobic cocci	1	3
Bacteroides sp	35	26
Clostridium sp	15	15
Other anaerobic bacteria	1	0
Total	**52**	**44**
Grand Total	**1568**	**1556**

Foodborne and Gastrointestinal Tract Infections: Laboratory Reports, Weeks 25 - 28

	Number of Reports received		Cumulative total	
	04/25-28	03/25-28	04/01-28	03/01-28
Campylobacter	51	88	401	406
C. difficile Toxin	72	68	722	537
C. perfringens	0	0	6	11
E. coli O 157	1	2	7	6
Salmonella total	92	25	123	74
S. enteritidis (PT 4)	3	10 (2)	19 (3)	23 (4)
S. typhimurium (DT 104)	86	2	90	24 (4)
Salmonella other	3	13	14	27
Shigella	0	2	3	8
Cryptosporidium	7	6	91	63
Giardia	1	4	9	10
Adenovirus (faeces)	8	10	82	63
Enterovirus (faeces)	3	4	8	12
Rotavirus	50	12	395	531
SRSV	13	0	69	95

Comment:

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

S. idikan	1
S. virchow	1
S. sp	1

The following was associated with foreign travel:

Female, age 18 years, *E. coli* O 157, Turkey; Male, age 60 years, *S. virchow*, Belgium; Male, 50 years, *S. enteritidis*, Italy; Female, age 24 years, *S. typhimurium*, Egypt.

Cumulative reports of *C. perfringens*, *Shigella*, Enterovirus, Rotavirus and SRSV have exhibited a reduction of 45%, 62%, 33%, 26% and 27% respectively.

Reports of *Campylobacter*, *E. Coli* O 157 and *Giardia* are more or less unchanged compared to the same period last year.

The massive increase in *Salmonella*, in particular *S. typhimurium* is due to an outbreak in Downpatrick as described in Monthly Report Vol 13, No 5 & 6.

Laboratory reports of *C. difficile* Toxin, *Cryptosporidium* and Adenovirus have increased by 34%, 44% and 30% respectively.

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Causeway
Craigavon
Daisyhill
Erne
Mater
Musgrave Park
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