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Last updated: 26 February 2004

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[Ongoing national outbreak of tetanus in injecting drug users](#)

Ongoing national outbreak of tetanus in injecting drug users

The national outbreak of tetanus in injecting drug users (IDUs) previously reported in *CDR Weekly* is continuing (1-3). Ten further cases have been reported since the last update (3), giving a total of 20 cases since July 2003 (figure 1). The most recent onset date was 20 February 2004. Cases are spread across England, Scotland, and Wales, with some clustering in the north west and midlands of England (figure 2). Four of the cases reported that they obtained their heroin through a dealer from Liverpool. Twelve cases are in females, and eight in males; the median age is 33 years. All but two cases had severe tetanus (grade 3; table 1); one patient is known to have died.

Figure 1 Cases of tetanus in injecting drug users by week of onset, England, Wales, and Scotland: 1/7/2003-26/2/2004

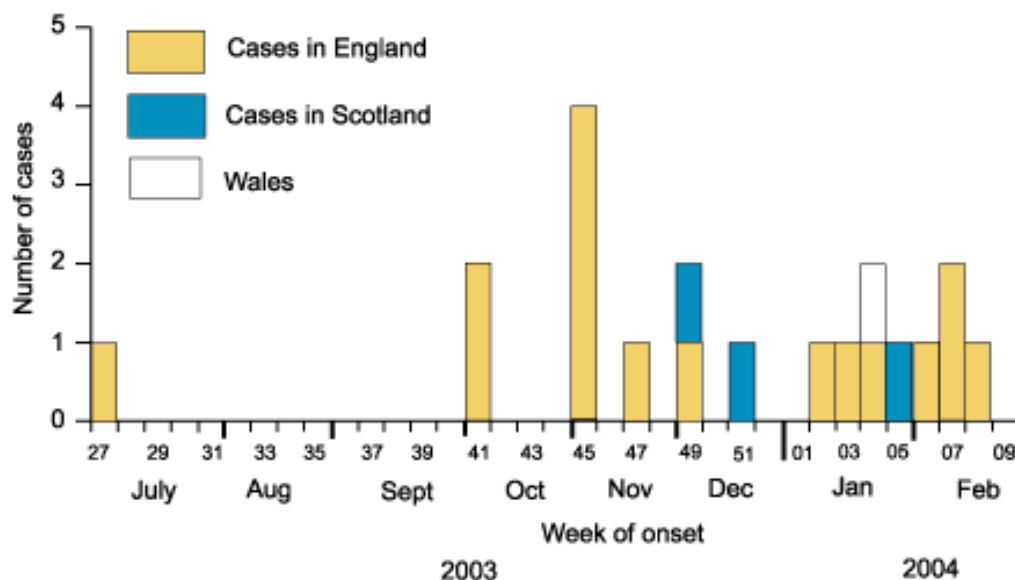


Figure 2 Cases of tetanus in injecting drug users, England, Wales, and Scotland: 1/7/2003-26/2/2004**Table 1 Severity grading of tetanus***

Grading of severity	
Grade 1 (mild):	Mild to moderate trismus and general spasticity, little or no dysphagia, no respiratory embarrassment
Grade 2 (moderate):	Moderate trismus and general spasticity, some dysphagia and respiratory embarrassment, and fleeting spasms occur.
Grade 3a (severe):	Severe trismus and general spasticity, severe dysphagia and respiratory difficulties, and severe and prolonged spasms (both spontaneous and on stimulation).
Grade 3b (very severe):	The same as for severe tetanus plus autonomic dysfunction, particularly sympathetic overdrive.

*Reference (7)

To date, information on the tetanus immunisation status is available for ten cases. Of these, three cases reported not to have been immunised at all, and five had had less than the recommended five doses. For two cases, both with severe disease, parental recall suggested that they had received five doses of tetanus in their lifetime. Levels of tetanus immunity are available for eight cases, of which seven had non-protective levels at the onset of their illness consistent with the diagnosis and with their reported immunisation status. The single case with tetanus who had protective antibody levels, had mild disease (severity 1; table 1). *Clostridium tetani* was isolated from one case and tetanus toxin detected in two others.

The current cluster of tetanus in IDUs could be explained by contamination of heroin with tetanus spores at any stage during the production, distribution, storage, cutting, or injecting. The observation that no cases have been reported from elsewhere in Europe is consistent with contamination occurring within the United Kingdom (UK). The widespread distribution of cases within the UK suggests that contamination is occurring relatively high up the heroin supply chain. Current descriptive information on the cases suggests that subcutaneous injection of heroin is a contributing factor, which is consistent with previous reports on clostridium infections in IDUs (4, 5). The predominance of women and older injectors among cases in the current outbreak was also found in the cluster of severe illness and death among IDUs that occurred in England in 2000. This pattern can be explained by such individuals being more likely to inject subcutaneously or intramuscularly, due to difficulties in accessing veins (4, 6). Information for injecting drug users on how to prevent clostridium infections is available on

<http://www.hpa.org.uk/infections/topics_az/tetanus/advice_to_idu_271103.pdf> and <<http://www.iduoutbreak.abelgratis.com/>>.

Prior to this incident, tetanus infection in IDUs was uncommon in the UK, with only two cases reported between 1984 and 2000 (7). It is too soon to conclude whether the current cluster is an isolated incident, or reflects a genuine change in the UK epidemiology of tetanus as occurred in the United States, where the proportion of IDUs among cases of tetanus increased from 2-5% between 1982 and 1994 to 15-18% between 1995 and 2000 (8).

Two of the cases in the current cluster were reported to have received five doses of vaccine, suggesting that despite this their antibody levels were insufficient to protect against the amount of toxin produced. Generally, those who are exposed to the risk of tetanus through injury are recommended to receive tetanus immunoglobulin (TIG) even if fully vaccinated (9). This recommendation is impracticable for IDUs who may be at recurrent risk through regular injection. The question remains unanswered whether IDUs might benefit from regular boosters to ensure protection from ongoing contamination of heroin and/or from exposure to other

sources. Despite this, it is of prime importance that IDUs who have not received five doses of tetanus-containing vaccine or are unsure about their vaccination status, should be offered additional tetanus-low dose diphtheria (Td) vaccination. Health professionals in regular health care settings and drug services should therefore ask IDUs about their tetanus immunisation status. Many IDUs will require at least one booster. Unvaccinated IDUs should be encouraged to complete a primary course of Td vaccination followed by two further boosters.

Information for health professionals (including testing of heroin and paraphernalia) is available at http://www.hpa.org.uk/infections/topics_az/tetanus/menu.htm. Complete documentation and diagnosis of all cases of tetanus is necessary to inform future prevention strategies. The Health Protection Agency's Communicable Disease Surveillance Centre (HPA-CDSC) has alerted accident and emergency (A&E) departments, infectious disease units, microbiologists and intensive therapy units (ITUs), and would welcome reports of any person with clinical evidence of tetanus. (Clinical evidence of tetanus infection is defined as mild to moderate trismus and one or more of the following: spasticity, dysphagia, respiratory embarrassment, spasms, autonomic dysfunction.)

Please report cases using the surveillance form that can be downloaded from the HPA website at http://www.hpa.org.uk/infections/topics_az/tetanus/tetanus_idu_quest.pdf to Joanne White, CDSC, email: joanne.white@hpa.org.uk, tel: 020 8200 6868 ext 4446, fax: 020 8200 7868). Please note that in addition to national reporting, clinicians are required by law to notify the case to the proper officer of the local authority (usually the consultant in communicable disease control [CCDC]) if they suspect tetanus.

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Immunisation

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Enhanced surveillance of meningococcal disease: October to December 2003

In the fourth quarter of 2003, enhanced surveillance of meningococcal disease (ESMD) identified 732 cases of invasive meningococcal disease in the nine English regions, Wales, and Northern Ireland. This is an increase of 32% on the total of 497 in the previous quarter, and an increase of 13% on the total of 634 in the equivalent quarter of 2002. North West region reported the highest number of cases this quarter (122), although the highest rate was reported in North East (table 1).

Table 1 Meningococcal disease by region: October to December 2003

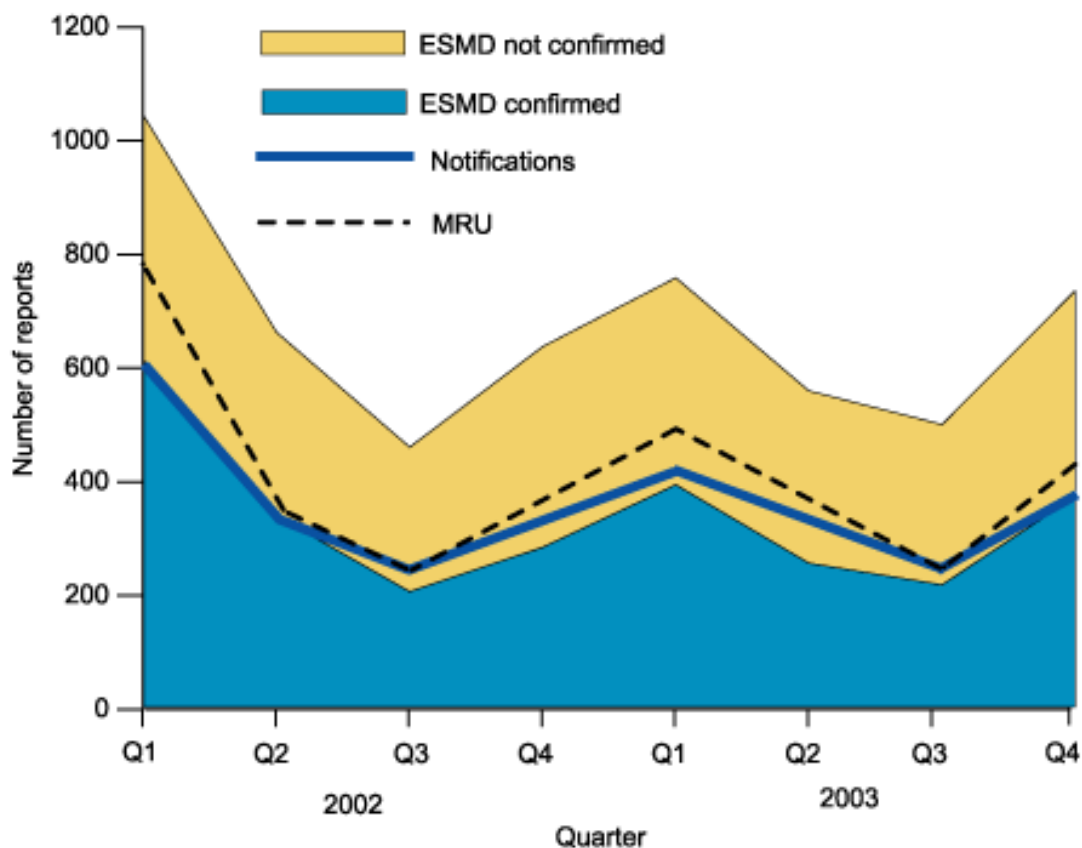
Region	B	C	Other	Infection not confirmed	Rate per 100,000	Total
North East	23	1	5	19	1.91	48
Yorkshire & Humberside	45	1	7	40	1.87	93
East Midlands	20	2	2	37	1.45	61
East of England	25	–	1	17	0.79	43
London	19	–	1	39	0.80	59
South East	26	2	1	42	0.88	71
South West	51	–	3	36	1.81	90
West Midlands	37	2	1	30	1.32	70
North West	73	1	3	45	1.81	122
Wales	3	–	1	49	1.82	53
Northern Ireland	12	–	2	8	1.30	22
Total	334	9	27	362		732

In England and Wales, a clinical diagnosis of invasive meningococcal disease was reported for 664 cases compared to 376 cases of meningitis and septicaemia officially notified to the Health Protection Agency's Communicable Disease Surveillance Centre (CDSC) during the same period. This implies that about 57% of clinically diagnosed meningococcal disease is formally notified, although cross-checking to compare the identity of those notified to those reported in ESMD has not been carried out. The case fatality ratio in cases identified in ESMD with a clinical diagnosis (in England, Wales, and Northern Ireland) was 4 per 100 cases, whereas the case fatality ratio for cases with septicaemia alone was 7/100 cases (table 2).

Table 2 Clinically diagnosed cases (deaths) of meningococcal disease, England, Wales, and Northern Ireland: weeks 40-52/03

Region	Meningitis	Septicaemia	Meningitis and Septicaemia	Not meningitis or septicaemia	Total
North East	12	29 (2)	7	–	48 (2)
Yorkshire & Humberside	23	35 (1)	22 (1)	4	84 (2)
East Midlands	29 (1)	14 (1)	17 (1)	1	61 (3)
East of England	22	17 (1)	3	–	42 (1)
London	17	26 (1)	10	2	55 (1)
South East	24 (2)	31 (2)	13	2	70 (4)
South West	28	44 (2)	16	–	88 (2)
West Midlands	17	40 (3)	9	1	67 (3)
North West	35 (1)	49 (8)	26	3	113 (9)
Wales	3	32 (2)	1	–	36 (2)
Northern Ireland	6	10 (1)	3	1	20 (1)
Total	216 (4)	327 (24)	127 (2)	14	684 (30)

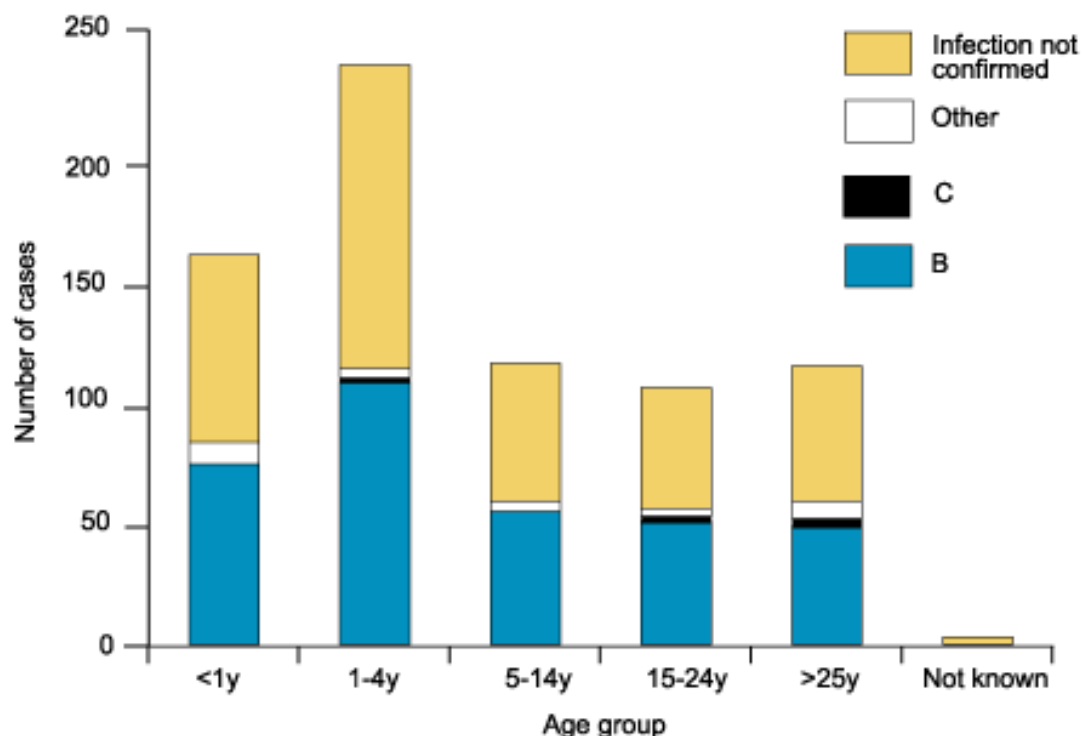
Three hundred and seventy of the 732 cases (50%) identified in ESMD were confirmed as *Neisseria meningitidis* infection, compared to 481 reports of laboratory confirmed meningococcal disease made to the Health Protection Agency's Meningococcal Reference Unit (MRU) in the same period (figure 1).

Figure 1 Number of confirmed and unconfirmed reports made to ESMD compared to notifications and reports to MRU: Jan 2002 to Dec 2003

Serogroup B *N. meningitidis* was detected in 90% (334/370) of confirmed cases identified in ESMD, serogroup C in 2% (9/370), and the remaining 7% included other serogroups (27/370). The latter consisted predominantly of serogroup W135 (9/27) followed by serogroup Y (6/27), and ungrouped (6/27).

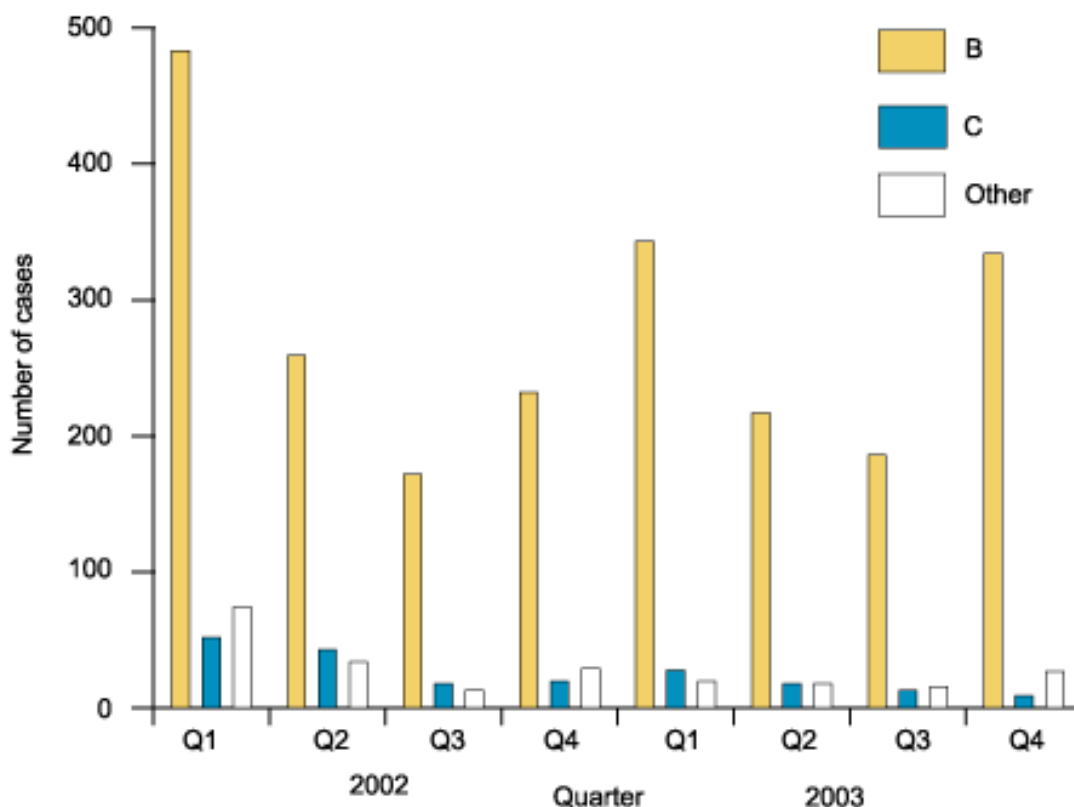
Over half (53%) of all confirmed cases were in children aged under 5 years. Serogroup B accounted for 92% of these infections, serogroup C accounted for 1%, and other serogroups for 7%. Two serogroup C infections occurred in this age group of children (figure 2). Both children had received the MenC vaccination and were documented vaccine failures.

Figure 2 Serogroups of *N. meningitidis* identified in cases in England, Wales, and Northern Ireland by age: weeks 40-52, 2003



Meningococcal disease attributed to serogroup B, and unconfirmed cases, have increased this quarter compared to the equivalent period in the previous year (figure 3). Serogroup B increased by 30% (334 cases compared to 232 in 2002) and unconfirmed cases increased by 2% (362 cases compared to 353 in 2002). In contrast to last quarter, other serogroups decreased by 7% (27 cases compared to 29 in 2002). Additionally, there has continued to be a reduction in the observed number of cases of meningococcal disease due to serogroup C. The latter serogroup decreased from 20 to nine compared to the equivalent period in 2002, suggesting the positive impact of the MenC vaccination programme in reducing meningococcal disease caused by serogroup C.

Figure 3 Number of cases of meningococcal disease due to serogroups B, C, and other serogroups: January 2002 to December 2003



Routine surveillance data have shown increases this quarter compared to the equivalent quarter last year. Clinical notifications increased by 12% (376 compared to 329 in 2002), and laboratory reports by 21% (481 compared to 382 in 2002).

The last two quarters are the first, in recent years, to note an increase in serogroup B meningococcal disease when compared to the same time period in the previous year. The increase this quarter is validated by an observed increase in routine surveillance data, however, it is still too early to tell if this is the start of a new trend.

* Regional enhanced surveillance of meningococcal disease (ESMD) began on 1 January 1998 in five regions of England and was extended to include all English regions, Wales, and Northern Ireland from 1 January 1999. The national enhanced surveillance system relies upon consultants in communicable disease control (CCDC) reporting confirmed and probable cases of meningococcal disease occurring in their district each week. Data are collated at regional level and sent on to the Health Protection Agency Immunisation Department at the national Communicable Disease Surveillance Centre (CDSC) each month. These data are subsequently published quarterly in *CDR Weekly*. Additionally, CCDCs are asked to report details of any clusters of meningococcal disease occurring in educational establishments.

Invasive meningococcal infections, England and Wales, laboratory reports weeks: 39-44/03

	Method of diagnosis			Total reports	Cumulative*
	CSF and blood Culture	Non-culture	Other sites	39-44/03	Total to week 44/2003
Group A	–	–	–	–	1
B	70	60	13	143	1047
C	5	–	–	5	88
W135	3	–	1	4	28
X	–	–	1	1	3
Y	2	1	–	3	14
Z	–	–	–	–	–
29E	–	–	–	–	1
Ungroupable	1	–	–	1	3
Ungrouped	–	6	–	6	62
Total	81	67	15	163	1247

* combined CDSC data and Meningococcal Reference Unit data latex antigen, microscopy, polymerase chain reaction

Laboratory reports of *Haemophilus influenzae* by age group and serotype, England and Wales: October to December 2003

Serotype	Age					Total
	<1 year	1-4 years	5-14 years	≥15 years	Not known	
b	6(7)	18(56)	6(16)	44(41)	–(–)	74(120)
nc	11(6)	5(9)	4(1)	32(42)	–(5)	52(63)
a,e,f	1(–)	1(1)	1(–)	6(12)	–(1)	9(14)
not typed	5(8)	4(5)	4(4)	60(44)	2(4)	75(65)
Total	23(21)	28(71)	15(21)	142(139)	2(10)	210(262)

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Diary

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[Medical and Life Science Filtration 2004 Nosocomial Waterborne Diseases](#)



Medical and Life Science Filtration 2004 Nosocomial Waterborne Diseases

Hammersmith Hospital Campus of Imperial College London are hosting a meeting on the **10 July 2004** as part of our **Medical and Life Science Filtration** series of meetings. The precise venue is in the Wolfson II Lecture Theatre, Wolfson Conference Centre, Hammersmith Hospital, Saturday 10 July 2004 10:00a.m – 4:00p.m.

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- Systemic Water Filtration

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