

COMMUNICABLE DISEASES

Monthly Report

ISSN 1361-1887

WEEKS 05-08/08

VOL 17 NO 2

NORTHERN IRELAND EDITION

www.cdscni.org.uk

March 2008

This edition of Monthly Report features summaries of two enhanced surveillance systems.

In a review of reports of Legionnaires' Disease made since 1980, cases in Northern Ireland clearly reflect known epidemiological patterns with the majority occurring in people aged over 30 years and in males. While Great Britain has seen an increase in cases acquired within Great Britain in recent years, this has not been observed within Northern Ireland. The majority of cases reported here have been associated with travel outside the UK.

Summary data from the Enhanced Surveillance of Meningococcal Disease arrangements for 2007 reflects the continued success of the Men C vaccine, with no cases of serogroup C disease reported during the 2007 calendar year. This is in marked contrast to the peak of 40 cases of serogroup C disease seen in 2000, just as the vaccine was being introduced, and emphasises the need for continued high coverage.

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Enhanced surveillance of Meningococcal Disease, Northern Ireland

Quarter 4, Oct-Dec 2007 (provisional data)

Cases

14 cases were reported during Q4. 11 (79%) were laboratory confirmed, all of which were Serogroup B (Table 1).

Deaths

There was 1 death during Q4. This was in a child in the 1-4 year old age group and confirmed as Serogroup B disease.

Table 1: Invasive Meningococcal disease, by serogroup, by HSSB area of residence, Northern Ireland Oct – Dec 2007

| | B | C | Others & ungrouped | Not confirmed | Total |
|--------------|----|---|--------------------|---------------|-------|
| EHSSB | 4 | | | 2 | 6 |
| NHSSB | 4 | | | 1 | 5 |
| SHSSB | 2 | | | | 2 |
| WHSSB | 1 | | | | 1 |
| Total | 11 | | | 3 | 14 |

CALENDAR YEAR SUMMARY 2007 (provisional data)

During 2007:

- 90 notifications of invasive meningococcal disease were received
- 78% (70/90) were laboratory confirmed
- 87% (61/70) of confirmed cases were due to Serogroup B
- 5 deaths occurred

Cases

90 cases of invasive meningococcal disease were notified during 2007, a decrease of 13% on 2006 (103). The crude incidence rate was similar in all four Health Board areas, with no statistically significant variation between Boards or from the overall Northern Ireland incidence, as estimated by 95% confidence intervals (Table 2).

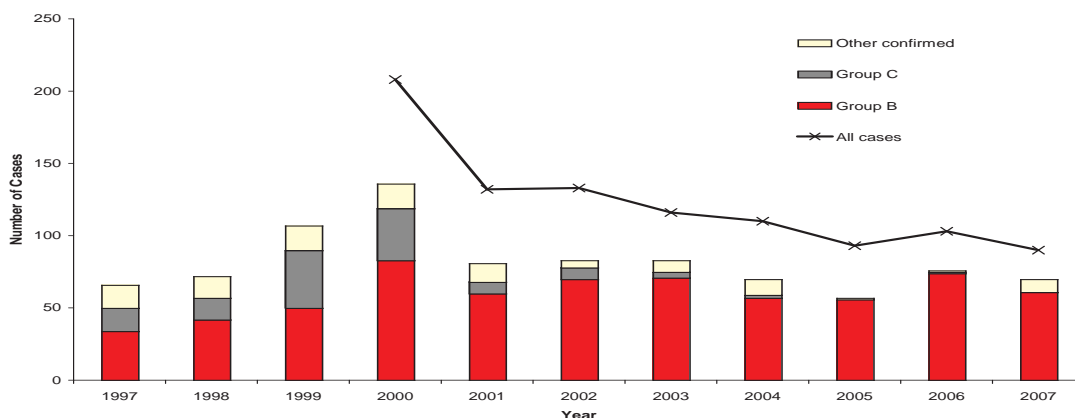
Table 2: Invasive Meningococcal disease, by serogroup, by HSSB area of residence, Northern Ireland Jan-Dec 2007

| | B | C | Others & ungrouped | Not confirmed | Total | Crude incidence rate/ 100,000 population (95% CI) |
|--------------|----|---|--------------------|---------------|-------|---|
| EHSSB | 27 | | 2 | 7 | 36 | 5.4 (3.8-7.4) |
| NHSSB | 15 | | 3 | 9 | 27 | 6.1 (4.1-8.7) |
| SHSSB | 11 | | 2 | 2 | 15 | 4.5 (2.6-7.2) |
| WHSSB | 8 | | 2 | 2 | 12 | 4.1 (2.2-6.9) |
| Total | 61 | | 9 | 20 | 90 | 5.2 (4.2-6.3) |

Continuing the trend seen since the introduction of the Men C vaccine in late 1999, Group B disease accounts for the majority of laboratory confirmed cases notified during 2007 (Figure 1).

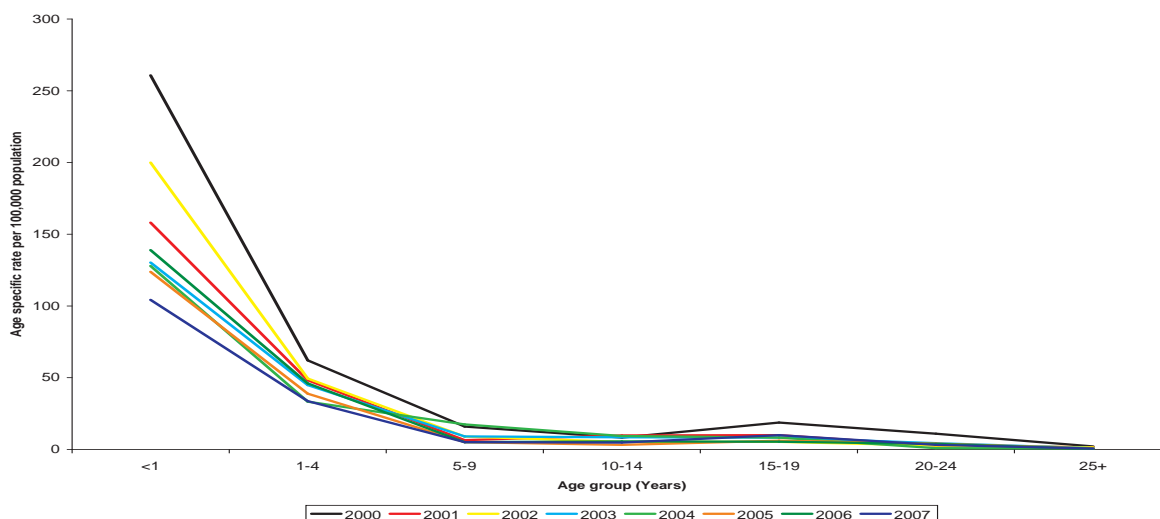
Reflecting the success of the Men C vaccine, serogroup C disease has declined from a peak of 40 cases in 1999 (accounting for 37% (40/107) of confirmed cases) to 0 cases in 2007. Cases due to other serogroups continue to be reported at low levels.

Figure 1: Invasive Meningococcal disease, by calendar year, Northern Ireland 1997-2007



Also consistent with previous years, age-specific incidence during 2007 was highest in the <1 age group (104/100,000) followed by the 1-4 age group (34/100,000). A further much smaller peak is seen in the 15-19 age group (10/100,000) (Figure 2).

Figure 2: Invasive Meningococcal disease, age-specific incidence/100,000 population, Northern Ireland 2000-2007



Deaths

A total of 5 deaths were reported during 2007. One was in the <1 age group, three in the 1-4 age group and one in the 15-19 age group. Three were confirmed serogroup B disease and two were not laboratory confirmed.

The Case Fatality Rate (CFR) for 2007 was 5.5% (5/90).

Legionella infection in Northern Ireland

- 11 cases of Legionnaires' disease were reported in 2007.

Legionnaires' disease is a notifiable disease in Northern Ireland. The disease, caused by *Legionella pneumophila*, is a multi-system illness which can have severe widespread clinical symptoms, though the principal manifestation of the disease is pneumonia.

The organism is commonly found in various natural and man-made aquatic environments, often in low numbers. Water-cooling towers, air conditioning systems and spa pools have been implicated as major sources of infection. Colonisation is enhanced by temperatures of 25-42°C, stagnation and the presence of scale and sediment. Airborne or aerosol transmission of the organism from contaminated water in water systems in large institutions has accounted for numerous outbreaks throughout the world, associated with hotels, leisure complexes and hospitals. A significant proportion of cases are travel related. Sporadic cases may also occur worldwide. The elderly, immunosuppressed and chronically ill people are most at risk of infection.

Monitoring of Legionella infections in Northern Ireland is carried out in conjunction with the European Working Group for Legionella infections (EWGLI). Although the disease is not currently a serious risk to public health in Northern Ireland in terms of numbers, participation in this surveillance scheme ensures standardised methods of detection, diagnosis, recording and reporting of disease, and permits direct comparisons with data from other participating regions. Outbreaks or clusters of cases of Legionnaires' disease in returning travellers can be quickly identified through this European network, allowing rapid alerts to be communicated to all collaborating countries, WHO and other relevant centres.

Case definitions for Legionnaires' Disease

- I) Confirmed case – A clinical diagnosis of pneumonia with laboratory evidence of one or more of the following: culture of *Legionella spp* from clinical specimens; seroconversion (a four fold rise or greater) by the indirect immunofluorescent antibody test (IFAT) using *L. pneumophila* serogroup 1 antigen; positive urine ELISA using validated reagents.
- II) Presumptive case – A clinical diagnosis of pneumonia with laboratory evidence of one or more of the following: A single high titre using IFAT above; positive direct fluorescence (DFA) on a clinical specimen using validated monoclonal antibodies; seroconversion (a four fold rise or greater) by the indirect immunofluorescent antibody test (IFAT) to *L. pneumophila* other serogroups or other legionella species.

During 2007, eleven cases of Legionnaires' disease were reported in Northern Ireland, all of which were confirmed and met the above case definition. This was the highest annual total recorded. Ages ranged between 41 and 83 years, mean 61.8 years. Two cases were female and nine were male. Eight cases were reported to be associated with travel, having traveled outside the UK for all or some of the 2-10 days prior to the onset of symptoms. These individuals had visited Estonia, France, Italy, Turkey, Mallorca and Spain. Two deaths were recorded in 2007. In all cases the diagnosis was confirmed by urinary antigen tests. None of the cases in 2007 had a recent organ transplant. Ten of the cases were admitted to hospital. The European Working Group for Legionella Infection (EWGLI) identified potential links between two Northern Ireland cases and clusters of travel associated cases of Legionnaires' disease, associated with accommodation in France and in Turkey.

Between 1980 and 2007 sixty-three cases have been notified in Northern Ireland. Forty-one (65%) cases are known to have been travel associated, having traveled outside the UK, with Spain (n=9) the country most frequently reported. Information relating to age of patient was available in sixty-one cases: ages ranged from 23 years to 83 years, with mean age of 55 years and median age of 56 years. The sex of cases was known in sixty-two cases: 45 male, 17 female (2.7:1). Since 1995, travel to Spain, Italy and Turkey accounted for 52% of all infections likely acquired abroad.

There was an increase in the number of cases reported after 2001 which was mainly due to better ascertainment, especially with regards to travel-related cases. Since the initial rise following 2001 between four and eleven cases have been reported each year.

For further information on Legionnaires' Disease, please see : http://www.hpa.org.uk/infections/topics_az/legionella/menu.htm

Fig 3: Legionnaires' disease: annual reports and deaths, Northern Ireland, 1995-2007

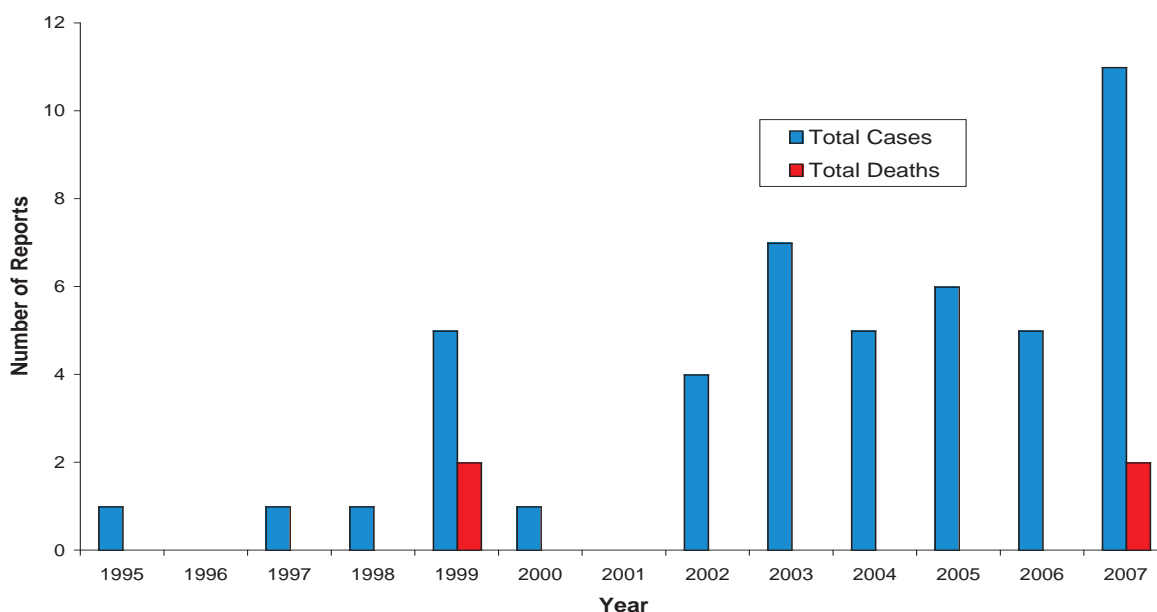


Fig 4: Legionnaires' disease: travel associations, Northern Ireland, 1995-2007

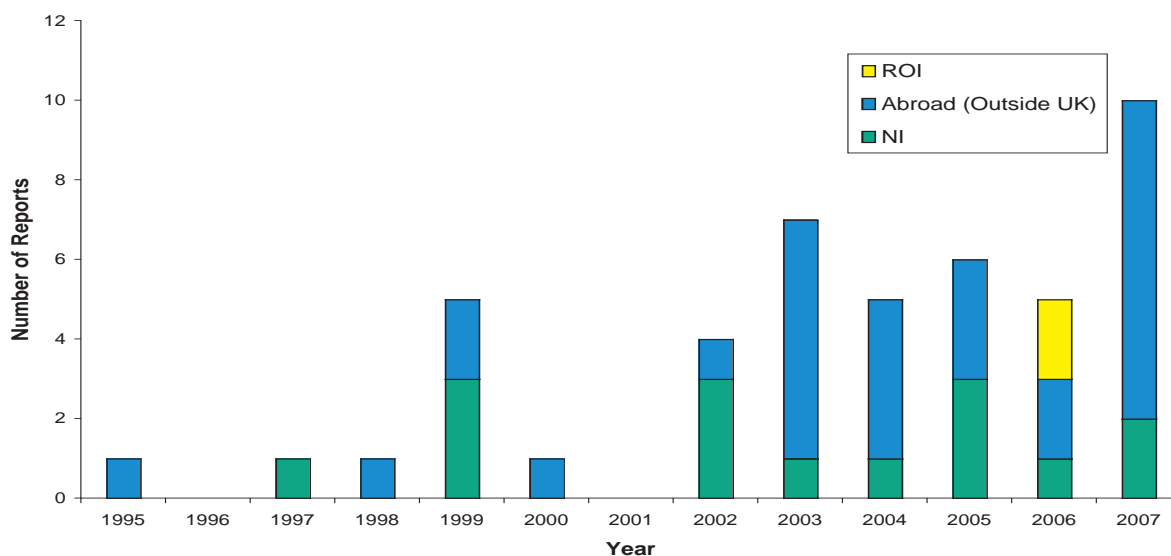


Fig 5: Legionnaires' disease: infections acquired abroad, Northern Ireland, 1995-2007

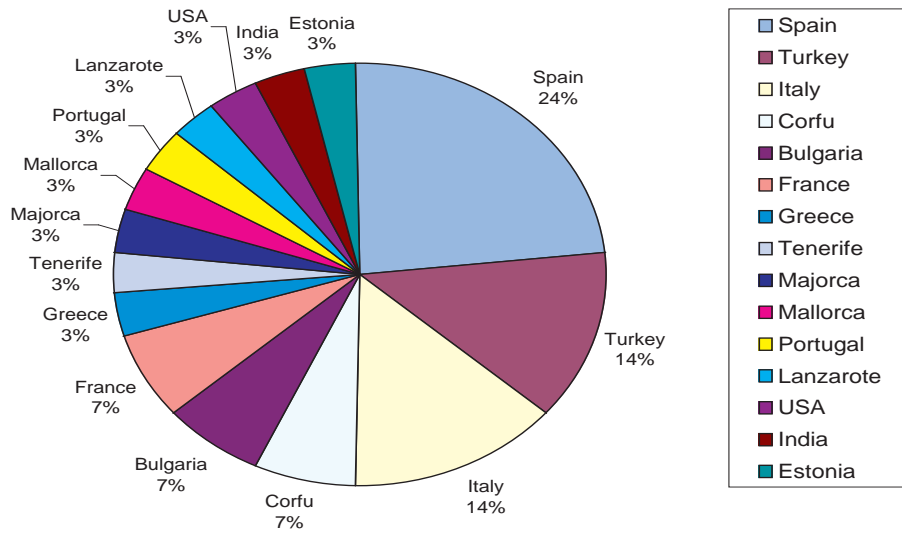
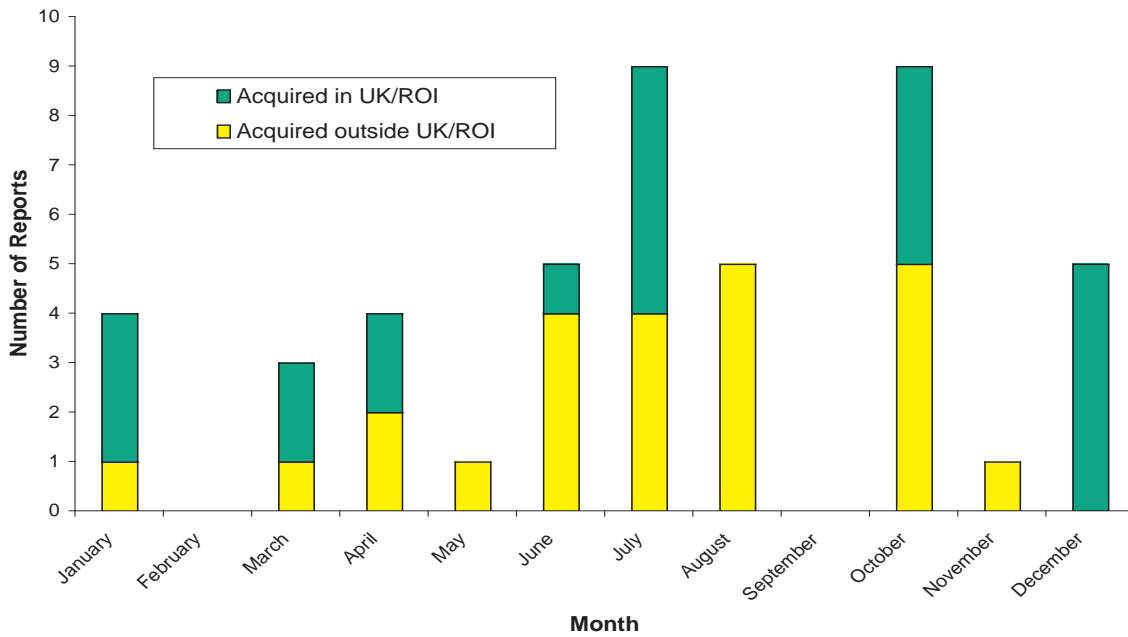


Fig 6: Legionnaires' disease: Travel associations by month of onset, Northern Ireland, 1995-2007



CoSurv laboratory update

CoSurv laboratory module enables a lab to send information on reportable isolates to CDSC(NI) electronically. Currently there are approximately 13,500 reports received each year and all of the main microbiology labs are using CoSurv. The Regional Virus lab has recently had CoSurv installed and is currently reporting approximately 80% of reportable cases using the software.

The benefits to the lab are that CoSurv can import data from the lab computer system which minimises the need for manually keying in data. Once imported into CoSurv the data can be checked, encrypted and sent to CDSC(NI) for Northern Ireland analysis and onward transmission to the Health Protection Agency at Colindale. CoSurv also has the functionality to export the data into MSAccess and some labs are using this process to produce internal management information about their activity.

Electronic reporting through CoSurv helps to ensure that notifications are reported as quickly as possible. In 2006 there were 4 labs reporting by this method, and national figures showed that approximately 17% of all N Ireland reportable isolates were being received at Colindale within 21 days of their specimen date. Recently with 10 labs using CoSurv that figure has increased to 67% compared to a national average of 76% and is anticipated to move closer towards the national average in the next 6 months.

This increase has been achieved because of the implementation of CoSurv, the move to weekly reporting by lab staff and the ongoing commitment of all staff to produce accurate and timely data.

Foodborne and gastrointestinal tract infections: Laboratory reports, Weeks 05-08

| | Number of Reports received | | Cumulative total | |
|--------------------------------|----------------------------|----------|------------------|----------|
| | 08/05-08 | 07/05-08 | 08/01-08 | 07/01-08 |
| <i>Campylobacter</i> | 34 | 42 | 61 | 78 |
| <i>C. difficile</i> Toxin | 104 | 127 | 230 | 220 |
| <i>C. perfringens</i> | 1 | 0 | 3 | 0 |
| <i>E. coli</i> O 157 | 2 | 0 | 2 | 2 |
| <i>Salmonella</i> total | 5 | 7 | 12 | 22 |
| <i>S. enteritidis</i> (PT 4) | 1 (0) | 2 (0) | 2 (0) | 4 (0) |
| <i>S. typhimurium</i> (DT 104) | 0 (0) | 3 (0) | 3 (3) | 7 (0) |
| <i>Salmonella</i> other | 4 | 2 | 7 | 11 |
| <i>Shigella</i> | 0 | 0 | 3 | 3 |
| <i>Cryptosporidium</i> | 2 | 4 | 4 | 6 |
| <i>Giardia</i> | 0 | 0 | 1 | 0 |
| Adenovirus (faeces) | 4 | 13 | 24 | 31 |
| Enterovirus (faeces) | 0 | 0 | 0 | 1 |
| Rotavirus | 11 | 25 | 26 | 35 |
| Norovirus | 52 | 51 | 131 | 121 |

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

| | |
|-------------------|---|
| <i>S. spp</i> | 1 |
| <i>S. unnamed</i> | 3 |

Comment:

No foodborne and gastrointestinal tract infections were associated with foreign travel.

Respiratory tract infections: Laboratory reports, weeks 01-08

| | Number of Reports received | | Cumulative Total | |
|--------------------------------------|----------------------------|----------|------------------|----------|
| | 08/01-04 | 08/05-08 | 08/01-08 | 07/01-08 |
| <i>Coxiella burnetii</i> | 0 | 0 | 0 | 2 |
| <i>Mycoplasma pneumoniae</i> | 0 | 0 | 0 | 3 |
| Respiratory <i>Chlamydia</i> | 0 | 0 | 0 | 5 |
| <i>Adenovirus</i> (excluding faeces) | 3 | 1 | 4 | 7 |
| RSV | 91 | 24 | 115 | 133 |

Contributing Laboratories

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Mater

Antrim

Regional Virus

Belfast City

Royal Hospitals Bacteriology

Causeway

Tyrone County

Craigavon

Ulster

Greenpark

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