

1.3 Meningococcal Disease

Summary

Number of cases, 2007: 179
 Number of cases, 2006: 209
 Number of cases, 2005: 203
 Crude incidence rate, 2007: 4.2/100,000

In 2007, 179 cases (4.2/100,000) cases of invasive meningococcal disease (IMD) were notified in Ireland. This was a notable decrease from the previous two years when 209 cases (4.9/100,000) and 203 cases (4.8/100,000), were notified in 2006 and 2005, respectively (figure 1). When compared with rates reported in 1999 and 2000, incidence rates have substantially declined in recent years (figure 1).

Based on the meningococcal disease case definition, 161 of the 179 cases (90%) notified in 2008 were classified as definite, one (1%) as presumed and 17 (9%) as possible. Ninety-one percent (162/179) of the cases were laboratory confirmed. Most cases were confirmed by PCR alone (48.6%, n=87). Confirmation of the remaining 75 cases was by culture only (n=9), by PCR and/or culture (n=66), and none by serology or microscopy exclusively.

In 2007, male cases (n=97) exceeded female cases (n=82), resulting in a male to female ratio of 1.2:1.0. Cases ranged in age from one month to 83 years, with a median age of three years. The incidence of IMD was highest in infants and young children. Age specific incidence rate (ASIR) was highest among infants <1 year of age (78.6 per 100,000), followed by children in the 1-2 year age groups (32.2/100,000), and the 3-4 year age groups (15.8/100,000) (table 1).

Neisseria meningitidis serogroup B was the pathogen most commonly associated with IMD in 2007 and accounted for 157 (88%) of the 179 notifications (figure 1). Each year since 2003 serogroup B has accounted for 80% or more of the IMD notifications (figure 1).

IMD due to serogroup C has remained at very low levels over the last five years with no more than five cases occurring annually. In 2007, just two (0.04/100,000) serogroup C cases arose (figure 1). Both cases occurred in adults (age range 17-33 years), one of whom was vaccinated. One MenC vaccine failure also occurred in 2006 and again in 2005, while no failures arose in either 2004 or 2003.

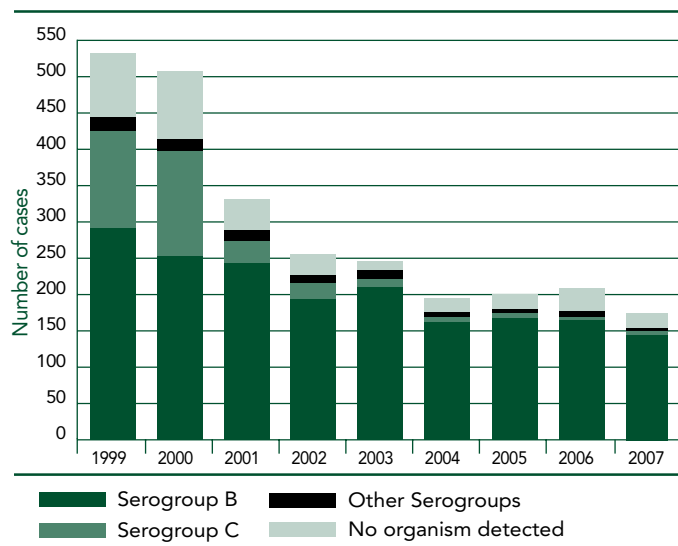


Figure 1. Number of invasive meningococcal disease notification in Ireland by serogroup, 1999-2007

These low incidence rates highlight the huge impact the introduction of the MenC conjugate vaccine in October 2000 has had in almost eliminating IMD due to serogroup C (figure 1). Prior to the introduction of this vaccine, the serogroup C incidence rate in 1999 was 3.7 per 100,000 total population.

There were seven IMD related deaths in 2007 (case fatality ratio of 3.9%) compared to six in 2005 and 6 in 2005. The case fatality ratio (CFR) was highest amongst cases 1-2 years of age (10.3%) as a result of four deaths from 39 cases (table 1). The next highest CFR occurred in young adults aged 15-19 years (5%) and adults aged 25 years or more (4.8%). Six of the seven deaths in 2007 were due to serogroup B disease; no organism was identified for the seventh. Five of the deaths (71%) occurred in children \leq 2 years of age and the remaining two were in adults (age range 18-83 years) (table 1).

No serogroup C deaths occurred between 2005 and 2007, while one occurred in both 2003 and 2004 in adults over 55 year of age. In 2001 one death from

serogroup C disease occurred in a child $<$ 15 years of age, but since then there have been no deaths reported in Ireland in this age bracket. Thus, the introduction of the MenC vaccine in October 2000 has also substantially reduced mortality due to serogroup C disease in Ireland.

Despite a reduction in the overall incidence of IMD in recent years, this disease continues to be treated as a serious public health concern due to its severity, high mortality rate and serious adverse sequelae associated with it.

Effective vaccination is necessary for the complete prevention and control of meningococcal disease. Although effective vaccines are available against serogroups A, C, W135 and Y forms of the disease, a suitable vaccine against serogroup B disease, the most common form of the disease in Ireland, is not yet available. Until such time that an effective MenB vaccine, suitable for use in infants, is on the market, IMD remains a significant cause of morbidity and mortality in children and young adults in Ireland.

Table 1. Number of cases, deaths, incidence rates and case fatality ratios, by age group, of invasive meningococcal disease in Ireland, 2007

	No. Cases	ASIR	No. Deaths	CFR (%)
<1	48	78.6	1	2.1%
1-2	39	32.2	4	10.3%
3-4	19	15.8	0	0%
5-9	14	4.9	0	0%
10-14	13	4.7	0	0%
15-19	20	6.9	1	5%
20-24	5	1.5	0	0%
25+	21	0.8	1	4.8%
All ages	179	4.2	7	3.9%

ASIR, age specific incidence rate of cases
CFR, case fatality ratio

The figures presented in this summary are based on data extracted from the Computerised Infectious Disease Reporting (CIDR) system on 15th August 2008. These figures may differ slightly from those published previously due to ongoing updating of notification data on CIDR.