

# Epidemiology and surveillance of meningococcal disease in Ireland

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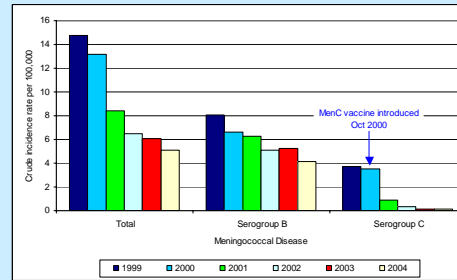
## Background

Ireland has been producing statistics on invasive meningococcal disease since 1997. Outlined here are the methods used to ascertain the number of cases and conclusions that can be drawn from the pattern of incidence. MenC vaccine was introduced in October 2000 and national coverage at 24 months is approximately 88%.

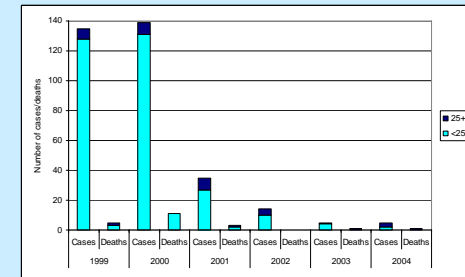
## Methods

- Meningococcal disease is a notifiable disease, with clinicians and laboratories legally obliged to notify.
- An enhanced surveillance system has been in operation since 1997 whereby clinical, microbiological and epidemiological information are collected on each suspected case notified.
- HPSC collates data on these notifications at national level.
- Blood and CSF samples are sent to the reference laboratory (IMMRL) for PCR testing and any isolates cultured should also be forwarded to IMMRL for confirmation and serosubtyping.
- A national laboratory surveillance system is maintained by IMMRL.
- Each month notification data are reconciled with these laboratory data.
- Over 85% of notified meningococcal disease cases are laboratory confirmed. Only 13% of cases in 2004 were made on the basis of clinical diagnosis (laboratory results negative but clinical picture indicative of meningococcal disease).

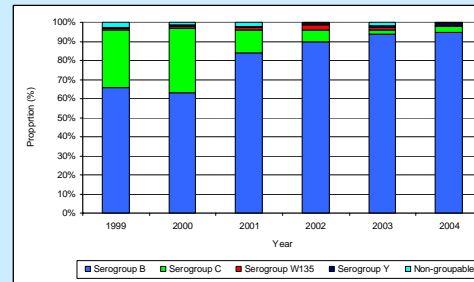
## Results



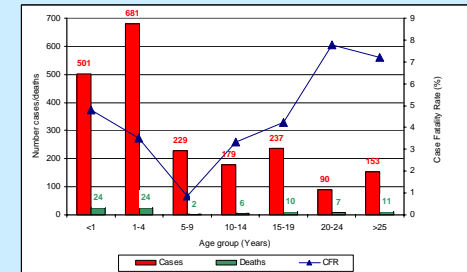
**Figure 1.** Crude incidence rates of invasive meningococcal disease in Ireland, 1999 - 2004



**Figure 2.** Serogroup C cases and deaths in under and over 25 year olds, 1999 - 2004



**Figure 3.** Proportion meningococcal disease notifications by serogroup, 1999 - 2004



**Figure 4.** Meningococcal disease cases, deaths and case fatality rates from 1999-2004 by age group

## Conclusions

- Incidence of meningococcal disease has declined from 14 cases per 100,000 population in 1999 to 5 per 100,000 in 2004 (Figure 1).
- MenC vaccine introduced in October 2000, has had a major impact in reducing serogroup C morbidity and mortality (Figure 2). Incidence rate of serogroup C disease is now 0.1 per 100,000 population, compared to 3.7 cases per 100,000 prior to the availability of the vaccine (Figure 1). There have been no serogroup C deaths in those <25 years since 2001.
- Serogroup B disease is by far the most predominant serogroup, accounting for 95% of confirmed cases in 2004. Serogroup C disease now only accounts for 3% of cases compared to 30% in 1999. (Figure 3).
- Between 1999-2004, there were 2070 meningococcal disease notifications and 84 deaths – overall case fatality rate (CFR) of 4.1%. Over 50% of cases and deaths were in <5 year olds – CFR approx. 4%. CFR tended to be higher in the older age groups, 7-8% (Figure 4).
- The majority of cases are confirmed by PCR. In 2004, 60% of confirmed cases were by PCR alone, 36% by culture and PCR and just 4% by culture alone.