

# INVASIVE MENINGOCOCCAL DISEASE, BACTERIAL & VIRAL MENINGITIS IN IRELAND

A REPORT BY THE HEALTH PROTECTION SURVEILLANCE CENTRE IN COLLABORATION WITH THE  
IRISH MENINGOCOCCAL AND MENINGITIS REFERENCE LABORATORY



Quarter 1, 2011

Provisional Figures

10<sup>th</sup> June 2011

## Summary

### Q1-2011

Thirty-five cases of invasive meningococcal disease (IMD) were notified in Q1-2011. This compares to an average of 53 cases in Q1 of the years 2010, 2009 and 2008. There was one IMD related death reported in Q1-2011. This compares to two, three and five IMD deaths reported in the same quarter in 2010, 2009 and 2008, respectively.

## Introduction

Meningococcal disease became a notifiable disease on the 1<sup>st</sup> January 2004 with the implementation of the Infectious Disease (Amendment) (No. 3) Regulations 2003 (SI No. 707 of 2003). Prior to this, it was notifiable under the category bacterial meningitis (including meningococcal septicaemia). Most forms of bacterial meningitis are now notifiable under the specific disease pathogen name as listed in the legislation. For bacterial meningitis pathogens not listed, these forms of meningitis are notifiable under the disease termed 'bacterial meningitis (not otherwise specified)'. The case definitions used are described in the NDSC Case Definitions for Notifiable Diseases booklet.

An enhanced surveillance system is in place for invasive meningococcal disease and other forms of bacterial meningitis. Details of this surveillance system are described in the meningococcal disease chapter of the HPSC Annual Report 2005.

Data on invasive meningococcal disease notifications and on bacterial and viral meningitis notifications for Q1-2011 are presented in this report. The figures presented in this report are based on data extracted from the CIDR system on the 25<sup>th</sup> of May 2011. **These figures are provisional.** Incidence rates were calculated using 2006 Census of Population as denominator data.

## Acknowledgements

HPSC wish to thank all who provided data for this report:  
Departments of Public Health, IMMRL and Microbiology  
Laboratories.

## Results

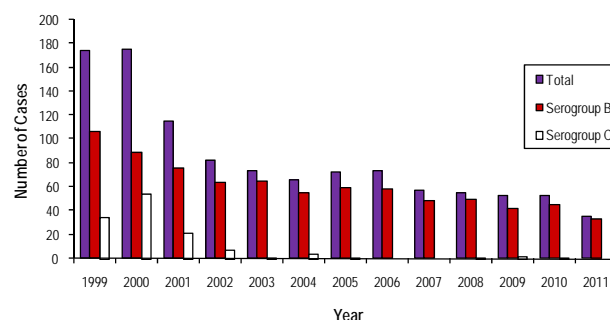
### Meningococcal Disease Cases

In Q1-2011, 35 cases of invasive meningococcal disease (IMD) were notified: 33 serogroup B, one serogroup Y and one where no organism was detected. In contrast, there were 52 cases each notified during the same quarter in 2010 and 2009. No imported cases were reported in Q1-2011. Of the 35 cases notified in Q1-2011, 34 were classified as definite, one as presumed and none as possible (Table 1).

**Table 1.** Classification of IMD cases notified in Q1-2011

Classification	Invasive Meningococcal Disease					Total IMD
	Grp. B	Grp. C	Grp. W135	Grp. Y	No organism/serogroup detected	
Definite	33	0	0	1	0	34
Presumed	0	0	0	0	1	1
Possible	0	0	0	0	0	0
Not specified	0	0	0	0	0	0
<b>Total</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>35</b>

In comparison, in Q1-2010, 52 cases of IMD were reported, including 45 serogroup B cases, one serogroup C and six where no organism was detected. In the same quarter in 2009, there were also 52 IMD notifications with 41 attributable to serogroup B, two cases each of serogroup C, W135 and Y and five where no organism was detected (Figure 1; Appendix 1).



**Figure 1.** Number of invasive meningococcal disease cases notified in Ireland in the first quarters of 1999-2011.

Serogroup B disease accounted for 94.3% (n=33/35) of the IMD notifications in Q1-2011 compared to 80.7% (n=45/52) in Q1-2010. Between January and March 2011, there were no confirmed cases reported on CIDR that were not also included in the list of laboratory tested *N. meningitidis* isolates provided to HPSC by the Irish Meningococcal and Meningitis Reference Laboratory.

### IMD Cases by HSE Area and Age

In Q1-2011 the crude incidence rate was 0.8 cases per 100,000 population ranging from a high of 2.0/100,000 in HSE-M to a low of 0.5/100,000 in HSE-E and HSE-W (Appendix 2).

In Q1-2011 the quarterly incidence rate of IMD cases reported by age was highest amongst infants <1 year of age (n=11; 18.0/100,000) followed by children aged 1-4 years (n=9; 3.7/100,000). In the 5-14 and 15-24 year age groups, seven and three cases were reported with rates of 1.2/100,000 and 0.5/100,000, respectively. In addition, there were five cases (0.2/100,000) reported in the 25-years and older age group (Appendix 3).

### IMD Deaths by HSE Area and Age

One serogroup B IMD death in an adult was notified in Q1-2011. In contrast, two and three IMD deaths were reported in Q1-2010 and Q1-2009, respectively, all attributable to serogroup B (Appendices 1, 2 and 3).

### Other forms of Bacterial meningitis

#### *Streptococcus pneumoniae* meningitis

In the first quarter of 2011, six cases of *Streptococcus pneumoniae* infection presenting as meningitis were notified. One case occurred in a child aged <1 year with an unknown vaccination status. Two others occurred in children aged between five and seven years while the remaining three cases occurred in adults (age range 35-59 years).

No deaths were reported from *S. pneumoniae* meningitis in Q1-2011. In the same period in 2010 six cases of pneumococcal meningitis were also notified, none of whom died; one was aged <1 year with the remainder over 50 years of age.

There were 134 reported cases of invasive *S. pneumoniae* infection in Q1-2011. Apart from the six reported cases with meningitis (or meningitis with septicaemia), 24 had septicaemia, 18 had pneumonia, one had a soft tissue infection, another has an infected abscess and the clinical diagnoses of the remaining 84 cases were not reported. For further information on *Streptococcus pneumoniae* notifications please refer to the latest report available at

<http://www.hpse.ie/hpsc/A-Z/VaccinePreventable/PneumococcalDisease/SurveillanceReports>.

#### *Haemophilus influenzae* meningitis

In Q1-2011, no cases of invasive *Haemophilus influenzae* causing meningitis were reported in Ireland. Similarly no cases occurred in the same quarter of 2010. For further information on *H. influenzae* notifications, please refer to the quarterly reports available at

<http://www.hpse.ie/hpsc/A-Z/VaccinePreventable/Haemophilusinfluenzae/Publications/>

#### *Listeria* meningitis

In Q1-2011 one possible case of *Listeria* meningitis was reported in an immunosuppressed, elderly patient.

#### *Leptospira* meningitis

There were no cases of *Leptospira* meningitis reported in Q1-2011.

### Tuberculosis meningitis

There were no cases of TB meningitis notified in Q1-2011.

### Streptococcus Group A meningitis

There were no notifications of Streptococcus Group A (*Streptococcus pyogenes*) meningitis in Q1-2011.

### Bacterial meningitis by other specified notifiable diseases

No cases of bacterial meningitis caused by other specified notifiable diseases were reported during Q1-2011.

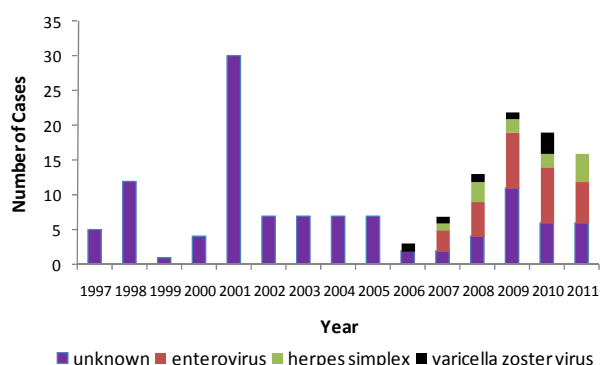
### Bacterial meningitis (not otherwise specified)

In the first quarter of 2011, six cases of bacterial meningitis due to pathogens not otherwise specified (NOS) under the Infectious Disease (Amendment) (No. 3) Regulations (S.I. No. 707 of 2003) were notified. No deaths were reported from this disease. Of the four cases that were case classified as confirmed, all were attributable to *Streptococcus agalactiae* (age range ≤ 1 month). In addition there was one probable case and one possible bacterial meningitis case reported in Q1-2011.

In comparison, 12 cases of bacterial meningitis (NOS) cases were notified in Q1-2010, the causative pathogens being identified in four of the cases: one case of *Streptococcus agalactiae*, one *Streptococcus species* and two *Staphylococcus aureus* (one of which was also methicillin resistant).

### Viral meningitis

Sixteen viral meningitis notifications (age range 1 month to 49 years) were reported in Q1-2011 compared to 19 in Q1-2010 and 22 in Q1-2009 (Figure 2). In Q1-2011, ten of the 16 cases had their causative organism identified: six enterovirus (serotypes not determined) and four herpes simplex virus (three of which were type 6).



**Figure 2.** Number of viral meningitis cases notified in Ireland in the first quarters of 1997-2011

## Appendix 1

### Meningococcal Disease Cases and Deaths by Serogroup in Quarter 1, between 1999 and 2011

#### Meningococcal Disease - Cases

Serogroup	Q1 1999	Q1 2000	Q1 2001	Q1 2002	Q1 2003	Q1 2004	Q1 2005	Q1 2006	Q1 2007	Q1 2008	Q1 2009	Q1 2010	Q1 2011
Serogroup B	106	89	75	63	65	55	59	58	48	49	41	45	33
Serogroup C	35	54	22	7	1	4	1	0	0	1	2	1	0
Serogroup W135	1	0	0	2	2	0	1	0	1	1	2	0	0
Serogroup Y	0	1	1	0	1	0	1	2	0	0	2	0	1
Non-groupable (NG)	4	1	3	0	1	0	2	1	0	0	0	0	0
No organism detected	28	30	14	10	3	7	8	12	8	4	5	6	1
<b>Total</b>	<b>174</b>	<b>175</b>	<b>115</b>	<b>82</b>	<b>73</b>	<b>66</b>	<b>72</b>	<b>73</b>	<b>57</b>	<b>55</b>	<b>52</b>	<b>52</b>	<b>35</b>

#### Meningococcal Disease - Deaths

Serogroup	Q1 1999	Q1 2000	Q1 2001	Q1 2002	Q1 2003	Q1 2004	Q1 2005	Q1 2006	Q1 2007	Q1 2008	Q1 2009	Q1 2010	Q1 2011
Serogroup B	5	6	3	1	3	4	4	2	2	3	3	2	1
Serogroup C	2	4	1	0	0	1	0	0	0	1	0	0	0
Serogroup W135	0	0	0	0	0	0	0	0	0	1	0	0	0
Serogroup Y	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-groupable (NG)	0	0	0	0	0	0	0	0	0	0	0	0	0
No organism detected	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>7</b>	<b>10</b>	<b>4</b>	<b>1</b>	<b>3</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>3</b>	<b>2</b>	<b>1</b>

## Appendix 2

### Meningococcal Disease Cases and Deaths by HSE Area in Quarter 1, between 1999 and 2011

#### Meningococcal Disease – Cases

HSE Area	Q1 1999	Q1 2000	Q1 2001	Q1 2002	Q1 2003	Q1 2004	Q1 2005	Q1 2006	Q1 2007	Q1 2008	Q1 2009	Q1 2010	Q1 2011	Q1-2011 CIR*
HSE-E	76	64	40	26	23	21	25	33	14	12	13	20	7	0.5
HSE-M	11	10	9	6	10	5	5	4	4	3	3	1	5	2.0
HSE-MW	13	11	8	6	6	3	7	5	6	6	5	8	3	0.8
HSE-NE	13	22	9	10	6	9	6	4	4	11	9	4	5	1.3
HSE-NW	7	9	4	3	1	5	4	4	6	2	1	6	4	1.7
HSE-SE	17	24	19	8	10	5	10	9	10	11	8	9	5	1.1
HSE-S	29	22	17	17	14	11	9	11	6	9	11	3	4	0.6
HSE-W	8	13	9	6	3	7	6	3	7	1	2	1	2	0.5
<b>Total</b>	<b>174</b>	<b>175</b>	<b>115</b>	<b>82</b>	<b>73</b>	<b>66</b>	<b>72</b>	<b>73</b>	<b>57</b>	<b>55</b>	<b>52</b>	<b>52</b>	<b>35</b>	<b>0.8</b>

\* CIR, crude incidence rate per 100,000

#### Meningococcal Disease – Deaths

HSE Area	Q1 1999	Q1 2000	Q1 2001	Q1 2002	Q1 2003	Q1 2004	Q1 2005	Q1 2006	Q1 2007	Q1 2008	Q1 2009	Q1 2010	Q1 2011	Q1-2011 CFR*
HSE-E	2	4	1	0	2	1	3	2	0	1	0	0	1	14.3%
HSE-M	1	1	0	0	1	1	0	0	0	0	0	0	0	0.0%
HSE-MW	1	1	1	0	0	0	0	0	0	0	0	1	0	0.0%
HSE-NE	1	2	0	1	0	1	1	0	0	1	2	0	0	0.0%
HSE-NW	0	1	0	0	0	0	0	0	2	0	0	0	0	0.0%
HSE-SE	0	0	1	0	0	1	0	0	0	1	1	0	0	0.0%
HSE-S	1	0	1	0	0	1	0	0	0	2	0	1	0	0.0%
HSE-W	1	1	0	0	0	0	0	0	0	0	0	0	0	0.0%
<b>Total</b>	<b>7</b>	<b>10</b>	<b>4</b>	<b>1</b>	<b>3</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>2.9%</b>

\* CFR, Case fatality ratio (%)

### Appendix 3

#### Meningococcal Disease Cases and Deaths by Age Group in Quarter 1, between 1999 and 2011

##### Meningococcal Disease – Cases

AgeGrp (yrs)	Q1 1999	Q1 2000	Q1 2001	Q1 2002	Q1 2003	Q1 2004	Q1 2005	Q1 2006	Q1 2007	Q1 2008	Q1 2009	Q1 2010	Q1 2011	Q1- 2011 CIR*
<1	31	32	20	23	18	14	19	18	16	12	12	12	11	18.0
1-4	62	61	46	27	23	21	32	26	20	18	15	22	9	3.7
5-9	22	16	13	7	6	8	4	8	1	8	4	4	6	2.1
10-14	20	18	10	6	8	5	2	3	5	4	3	2	1	0.4
15-19	19	25	14	8	7	6	6	10	6	4	7	6	2	0.7
20-24	9	10	3	4	0	5	3	2	2	4	4	1	1	0.3
25+	11	13	9	7	11	7	6	6	7	5	7	5	5	0.2
<b>Total</b>	<b>174</b>	<b>175</b>	<b>115</b>	<b>82</b>	<b>73</b>	<b>66</b>	<b>72</b>	<b>73</b>	<b>57</b>	<b>55</b>	<b>52</b>	<b>52</b>	<b>35</b>	<b>0.8</b>

\* CIR, crude incidence rate per 100,000

##### Meningococcal Disease – Deaths

AgeGrp (yrs)	Q1 1999	Q1 2000	Q1 2001	Q1 2002	Q1 2003	Q1 2004	Q1 2005	Q1 2006	Q1 2007	Q1 2008	Q1 2009	Q1 2010	Q1 2011	Q1- 2011 CMR*
<1	1	3	2	1	1	0	2	1	1	0	0	1	0	0.00
1-4	2	3	0	0	0	4	1	1	1	2	2	1	0	0.00
5-9	0	0	0	0	0	0	0	0	0	1	1	0	0	0.00
10-14	0	0	1	0	1	0	0	0	0	0	0	0	0	0.00
15-19	0	2	1	0	1	0	0	0	0	0	0	0	0	0.00
20-24	2	2	0	0	0	0	1	0	0	1	0	0	0	0.00
25+	2	0	0	0	0	1	0	0	0	1	0	0	1	0.04
<b>Total</b>	<b>7</b>	<b>10</b>	<b>4</b>	<b>1</b>	<b>3</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0.02</b>

\* CMR, crude mortality rate per 100,000