

1.1 *Haemophilus influenzae* (invasive)

Summary

Number of cases, 2011: 44
 Number of cases, 2010: 28
 Number of cases, 2009: 43
 Crude incidence rate, 2011: 1.0/100,000

In 2011, 44 cases of invasive *Haemophilus influenzae* disease were notified in Ireland (1.0/100,000 total population). This is a sharp increase compared to 2010 when 28 cases were notified, but is very similar to that reported in 2009 (figure 1).

The main change in 2011, when compared to 2010, is the marked increase in the number of non-typeable/non-capsular strains from 20 to 34 (figure 1). No other noteworthy change in the overall number of cases due to other serotypes has been observed since 2004 apart from the decline in the proportion of type b cases and the rise of non-typeable/non-capsular strains (figure 1).

Non-typeable/non-capsular cases accounted for the majority of the invasive *H. influenzae* cases

notified in 2011 (77.3%, n=34/44). The remaining cases were due to *H. influenzae* type b (10.7%, n=3), type e (2.3%; n=1), type f (2.3%; n=1), not type b (4.5%; n=2) and isolates that were not typed (6.8%; n=3). The cases ranged in age from four days to 93 years. The incidence rates were highest in infants <1 year (5.5/100,000) and those aged 55-64 years (0.7/100,000) (table 1).

Cases occurring in children <10 years of age (n=10) and elderly adults over 65 years of age (n=20) accounted for 68.2% of all invasive *H. influenzae* notifications in 2011 (table 1). One notable trend since 2004 is the increase in the overall proportion of cases over 65 years of age from 26% to 45% compared to the declines in those aged less than five years from 26% to 18% and those aged between 5 and 64 years from 47% to 36%.

In 2011, male cases (n=25) exceeded female cases (n=19), resulting in a male to female ratio of 1.32:1.0.

The clinical manifestations of invasive *H. influenzae* disease in the ten children <10 years of age in 2011 were three cases of septicaemia, two cases

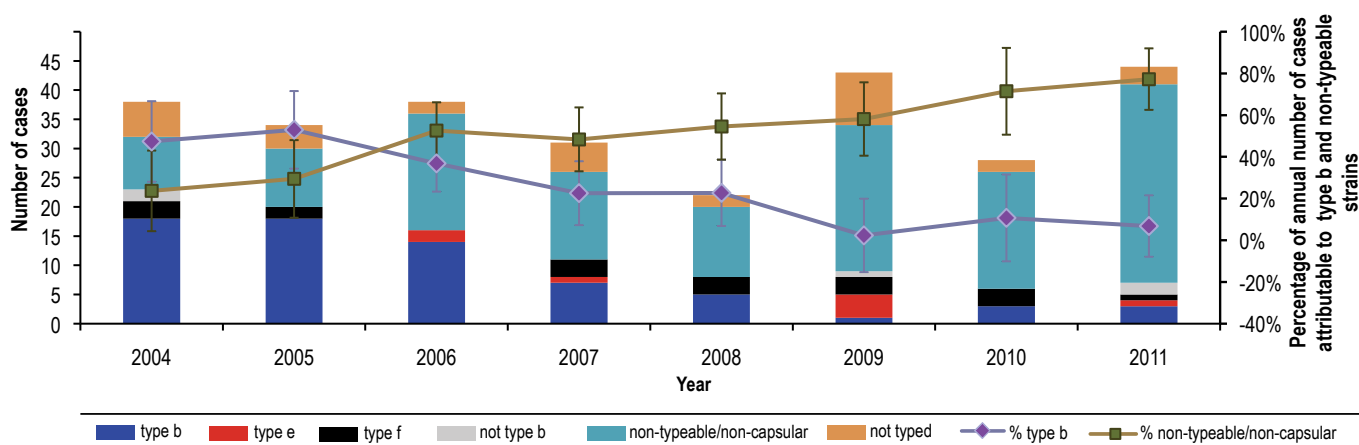


Figure 1. Number of invasive *H. influenzae* cases notified in Ireland and proportion of annual cases attributable to type b and non-typeable strains with 95% confidence intervals, 2004-2011

of meningitis, one pneumonia, one meningitis and septicaemia combined, two 'other' conditions and one where the clinical diagnosis was not reported.

A breakdown by clinical diagnosis for all age groups by year between 2004 and 2011 is presented in table 2. Of note is the proportion of cases notified each year with an unknown clinical diagnosis, accounting for an annual average of 38.1% since 2004.

Death was reported in four cases: the cause was unknown in two cases; one death was not attributable to infection and another is still awaiting a coroner's report at the time of writing. No imported cases occurred in 2011. In 2011 three cases of *H. influenzae* type b (Hib)

occurred, all of whom were > 65 years of age; two were unvaccinated and both were greater than 75 years of age and another case, who was 67 years of age, had an unknown vaccine status. In 2010, three cases of Hib occurred, one in a completely vaccinated ten year-old child who had received three doses of Hib vaccine and in two other unvaccinated adults (age range 23-76 years).

Between Q3-2007 and Q4-2011, only one true Hib vaccine failure was reported, highlighting the positive impact the Hib booster catch up campaign has had in Ireland.

Since September 2008, the Hib booster dose has been administered at 13 months of age as part of the routine childhood immunisation schedule in

Table 1. Number and incidence rates of invasive *H. influenzae* cases by serotype, 2011

Age Group	Type b	Type e	Type f	Not type b	Non-typeable/ non-capsular	Not Typed*	Total	ASIR of Hib	ASIR of all <i>H. influenzae</i>
<1	0	0	0	0	3	1	4	0.00	5.52
1-4	0	0	0	1	2	1	4	0.00	1.25
5-9	0	0	0	1	1	0	2	0.00	0.66
10-14	0	0	0	0	0	0	0	0.00	0.00
15-19	0	0	0	0	1	0	1	0.00	0.34
20-24	0	0	0	0	0	0	0	0.00	0.00
25-34	0	0	0	0	4	0	4	0.00	0.58
35-44	0	0	0	0	4	0	4	0.00	0.69
45-54	0	0	0	0	1	0	1	0.00	0.22
55-64	0	0	0	0	4	0	4	0.00	0.75
65+	3	1	1	0	14	1	20	0.07	0.44
All Ages	3	1	1	2	34	3	44	0.07	0.96
CIR	0.07	0.02	0.02	0.04	0.74	0.07	0.96	-	-

CIR, crude incidence rate per 100,000 total population
ASIR, age specific incidence rate per 100,000 population
TVFs, true Hib vaccine failures

*No isolate available for typing in two of three *H. influenzae* not typed cases, as PCR positive (culture negative) only

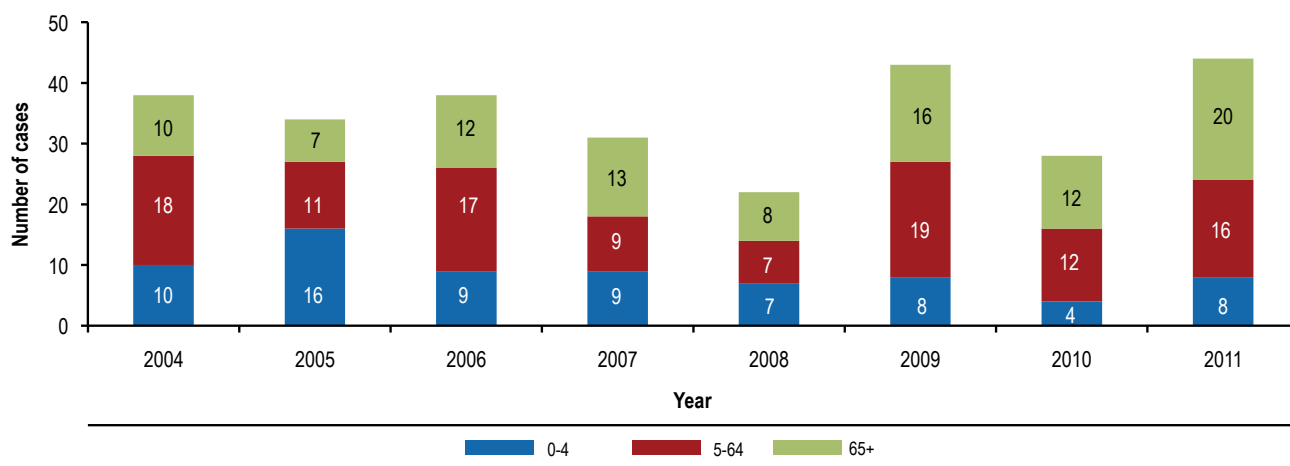


Figure 2. Number of invasive *H. influenzae* cases notified in Ireland annually by age group (years), 2004-2011

Table 2. Number of invasive *H. influenzae* cases by clinical diagnosis, 2004- 2011

Clinical Diagnosis	2004	2005	2006	2007	2008	2009	2010	2011	Total	% of Total
Septicaemia	8	14	13	6	3	9	9	11	73	26.3%
Pneumonia	5	0	3	6	3	8	5	12	42	15.1%
Meningitis	3	9	3	2	2	2	1	3	25	9.0%
Epiglottitis	1	3	3	1	1	0	2	0	11	4.0%
Cellulitis	1	1	2	1	1	0	0	1	7	2.5%
Meningitis & septicaemia	1	0	1	0	1	1	1	1	6	2.2%
Bacteraemia (without focus)	0	0	0	0	0	0	0	3	3	1.1%
Other	0	0	0	0	0	0	0	3	3	1.1%
Septic arthritis	0	1	0	0	1	0	0	0	2	0.7%
Osteomyelitis	1	0	0	0	0	0	0	0	1	0.4%
Unknown	18	6	13	15	10	23	10	10	105	37.8%
Total	38	34	38	31	22	43	28	44	278	100%

Table 3. Incidence rates per 100,000 population of invasive *H. influenzae* by HSE area, 2004-2011

HSE Area	2004	2005	2006	2007	2008	2009	2010	2011
E	1.1	1.0	0.9	0.8	0.5	0.7	0.6	1.1
M	1.2	1.2	0.4	1.2	0.8	1.1	0.4	1.1
MW	0.8	0.3	0.8	0.6	0.8	2.1	0.5	0.5
NE	0.3	1.3	0.3	0.0	0.0	0.2	0.5	1.6
NW	0.4	0.0	2.1	0.4	0.0	0.4	0.4	0.8
SE	1.1	0.4	0.9	1.1	0.7	1.0	1.0	0.8
S	1.1	0.3	1.3	0.3	0.6	1.2	1.1	0.3
W	0.5	1.4	0.7	1.4	0.5	1.1	0.2	1.3
Ireland	0.9	0.8	0.9	0.7	0.5	0.9	0.6	1.0

addition to the three doses given during infancy (at 2, 4 and 6 months of age). Furthermore, vaccination is routinely recommended for those at increased risk of Hib disease.

The figures presented in this summary are based on data extracted from the Computerised Infectious Disease Reporting (CIDR) system on 29th August, 2012. These figures may differ from those published previously due to ongoing updating of notification data on CIDR.