

# 1.1 *Haemophilus influenzae* (invasive)

## Summary

Number of cases, 2012: 41  
 Number of cases, 2011: 44  
 Number of cases, 2010: 28  
 Crude incidence rate, 2012: 0.9/100,000

In 2012, 41 cases of invasive *Haemophilus influenzae* disease were notified in Ireland (0.9/100,000 total population). This is a slight reduction compared to 2011 when 44 cases were notified, but is still considerably higher than the 28 cases reported in 2010 (figure 1). No imported cases were reported in 2012.

The main change in 2012, when compared to 2011, is the marked reduction in the number of non-typeable/non-capsular strains from 34 to 26 and the increase in the type f strains from one to five (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 2012 (63.4%, n=26/41). The remaining cases were due to *H. influenzae* type b (7.3%, n=3), type f (12.2%; n=5), not type b (2.4%; n=1) and isolates that were not typed (14.6%; n=6). The cases ranged in age from three months to 89 years (median 56 years). The incidence rates were highest in infants <1 year (4.1/100,000) and those aged 15-19 years (1.4/100,000) (table 1).

Cases occurring in children <10 years of age (n=9) and elderly adults over 65 years of age (n=17) accounted for 63.4% of all invasive *H. influenzae* notifications in 2012 (table 1). One notable trend since 2004 is the increase in the overall proportion of cases over 65 years of age from 26.3% to 41.5% compared to the declines in those aged less than five years from 26.3% to 14.6% and those aged between 5 and 64 years from 47.4% to 43.9% (figure 2).

In 2011, male cases (n=21) marginally exceeded female cases (n=20), resulting in a male to female ratio of 1.1:1.0.

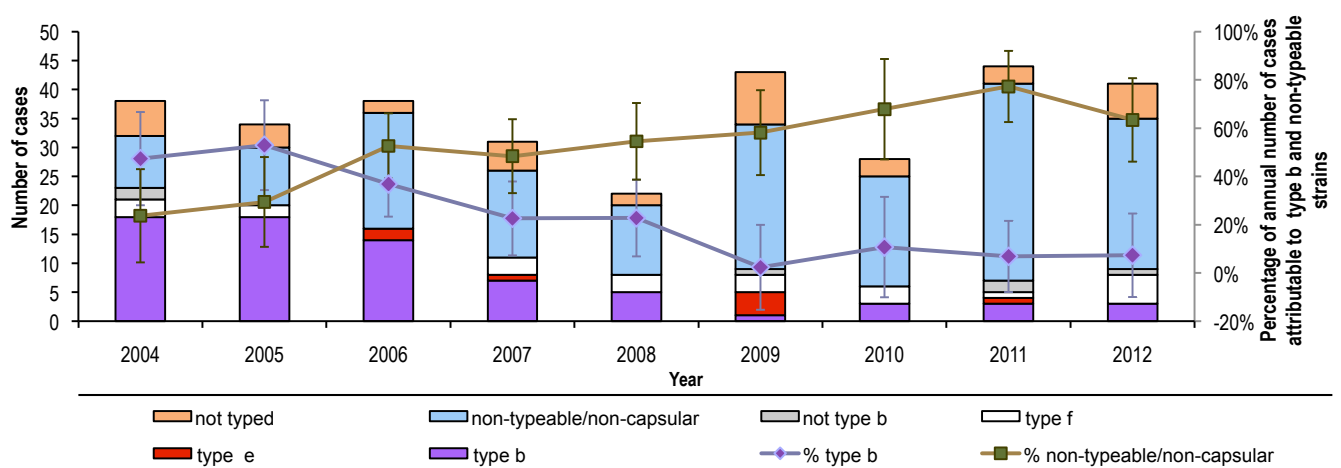


Figure 1. Number of invasive *H. influenzae* cases notified in Ireland and proportion of annual cases attributable to type b and non-typeable strains with 95% confidence intervals, 2004-2012

The clinical manifestations of invasive *H. influenzae* disease in the nine children < 10 years of age in 2012 were three cases of septicaemia, two cases of pneumonia, one case of meningitis, one case with a clinical diagnosis reported as 'other' and two cases where the clinical diagnosis was not known.

A breakdown by clinical diagnosis for all age groups by year between 2004 and 2012 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 34.2% since 2004.

One death in a child < 6 months was reported in 2012, the infection was not typed, no vaccination history was available and the coroner's report is still awaited at the time of writing.

In 2012 three cases of *H. influenzae* type b (Hib) occurred, two of whom were <5 years of age: one was unvaccinated and the other was incompletely vaccinated having received only three doses of the Hib vaccine; the remaining third case occurred in an adult aged 45-49 years and was unvaccinated. In the previous year, three cases of Hib also occurred in adults >65 years who were either unvaccinated or whose vaccination status was unknown.

Between Q3-2007 and Q4-2012, 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

Table 1. Number and incidence rates of invasive *H. influenzae* cases by serotype, 2012

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	1	0	0	0	1	1	3	1.38	4.14
1-4	1	0	1	0	0	1	3	0.31	0.94
5-9	0	0	1	0	1	1	3	0.00	0.99
10-14	0	0	0	0	0	0	0	0.00	0.00
15-19	0	0	0	0	4	0	4	0.00	1.35
20-24	0	0	0	0	0	1	1	0.00	0.13
25-34	0	0	0	0	0	1	1	0.00	0.14
35-44	0	0	1	0	3	0	4	0.00	0.69
45-54	1	0	0	0	0	0	1	0.22	0.22
55-64	0	0	1	0	3	0	4	0.00	0.75
65+	0	0	1	1	14	1	17	0.00	0.37
All Ages	3	0	5	1	26	6	41	0.07	0.89
CIR	0.07	0.11	0.02	0.57	0.13	0.07	0.89	-	-

CIR, crude incidence rate per 100,000 total population

ASIR, age specific incidence rate per 100,000 population

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

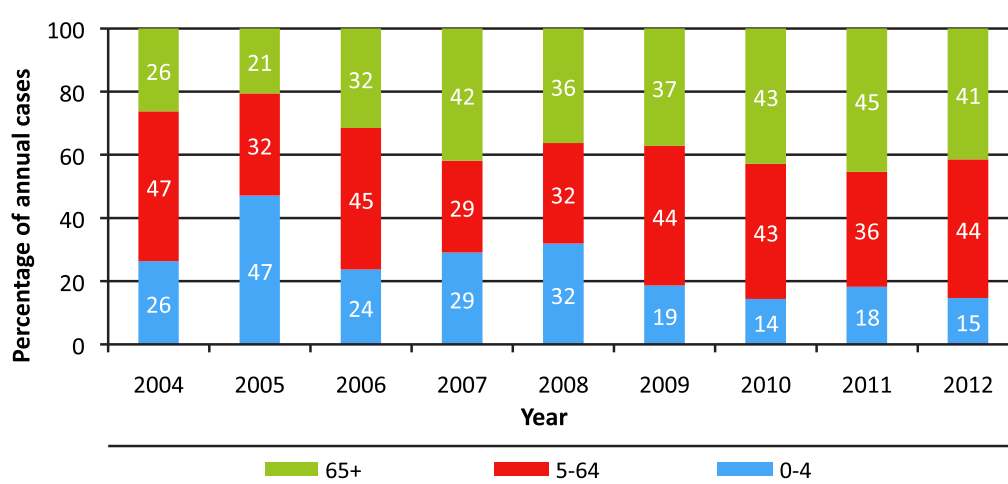


Figure 2. Percentage and number of annual cases of invasive *H. influenzae* cases notified in Ireland annually by age group (years), 2004-2012

Table 2. Number of invasive *H. influenzae* cases by clinical diagnosis, 2004-2012

Clinical Diagnosis	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total	% of Total
Septicaemia	8	14	13	6	3	9	9	11	11	84	26.3%
Pneumonia	5	0	3	6	3	8	5	12	12	54	16.9%
Meningitis	3	9	3	2	2	2	1	3	2	27	8.5%
Bacteraemia (without focus)	1	0	1	1	2	0	0	3	5	13	4.1%
Epiglottitis	1	3	3	1	1	0	2	0	0	11	3.4%
Cellulitis	1	1	2	1	1	0	0	1	0	7	2.2%
Meningitis & septicaemia	1	0	1	0	1	1	1	1	1	7	2.2%
Other	0	0	0	0	0	0	0	3	1	4	1.3%
Septic arthritis	0	1	0	0	1	0	0	0	0	2	0.6%
Osteomyelitis	1	0	0	0	0	0	0	0	0	1	0.3%
Unknown	17	6	12	14	8	23	10	10	9	109	34.2%
<b>Total</b>	<b>38</b>	<b>34</b>	<b>38</b>	<b>31</b>	<b>22</b>	<b>43</b>	<b>28</b>	<b>44</b>	<b>41</b>	<b>319</b>	<b>100%</b>

Table 3. Incidence rates per 100,000 population of invasive *H. influenzae* by HSE area, 2004-2012

HSE Area	2004	2005	2006	2007	2008	2009	2010	2011	2012
E	1.1	1.0	0.9	0.8	0.5	0.7	0.6	1.1	1.1
M	1.2	1.2	0.4	1.2	0.8	1.1	0.4	1.1	0.4
MW	0.8	0.3	0.8	0.6	0.8	2.1	0.5	0.5	1.1
NE	0.3	1.3	0.3	0.0	0.0	0.2	0.5	1.6	0.9
NW	0.4	0.0	2.1	0.4	0.0	0.4	0.4	0.8	0.8
SE	1.1	0.4	0.9	1.1	0.7	1.0	1.0	0.8	1.2
S	1.1	0.3	1.3	0.3	0.6	1.2	1.1	0.3	0.6
W	0.5	1.4	0.7	1.4	0.5	1.1	0.2	1.3	0.4
Ireland	0.9	0.8	0.9	0.7	0.5	0.9	0.6	1.0	0.9

of the routine childhood immunisation schedule in 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 29<sup>th</sup> July, 2013. These figures may differ from those published previously due to ongoing updating of notification data on CIDR.