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hpsc

Annual Epidemiological Report

September 2018

Haemophilus influenzae, in Ireland, 2017

Key Facts

In 2017, 45 cases of invasive *Haemophilus influenzae* disease were notified in Ireland (0.95 cases per 100,000 total population)

Non-typeable/non-capsular cases accounted for the majority of the invasive *H. influenzae* cases notified (62.2%); the remaining cases were due to *H. influenzae* type f (11.1%), one each of type b, d, e and not b (2.2%) and isolates that were not typed (17.8%)

Highest frequency of cases occured in the 0-4 year age group (17.8%), and among those aged 65+ years (35.5%), a pattern consistent with what has been observed since 2004

In 2017, 37.8% of cases did not have a clinical diagnosis recorded, the highest proportion recorded since 2009

Highest incidence was seen in the first quarter of the year, similar to most years since 2004

Incidence of disease in 2017 was highest in HSE MW (1.8/100,000) and lowest in HSE NE (0.4/100,000) with no HSE area having an incidence rate significantly different from the national rate

One death was reported in a patient aged 60-64 years with a type f infection combined with pneumonia, but the actual cause of death was not known

Suggested citation: HSE Health Protection Surveillance Centre. *Haemophilus influenza* in Ireland, 2017. Dublin: HSE HPSC; 2018

Epidemiology

In 2017, 45 cases of invasive *Haemophilus influenzae* disease were notified in Ireland (0.95 cases per 100,000 total population). This is a 22.1% decrease on the number reported in 2016. In 2004 the incidence rate was 0.9 cases/100,000. No imported cases or outbreaks were reported in 2017.

The main change in 2017, when compared to 2016, is the reduction in the number of non-typeable/non-capsular strains from 34 to 28 and the decrease in untyped cases from 13 to 8 (Figure 1).

Non-typeable/non-capsular cases accounted for the majority of the invasive *H. influenzae* cases notified in 2017 (62.2%, n=28/45). The remaining cases were due to *H. influenzae* type f (11.1%; n=5), one each of type b, d, e and not b (2.2%, n=1) and isolates that were not typed (17.8%; n=8), of which 3 (6.7%) were diagnosed by PCR testing only. The median age of cases was 53.1 years (range 3 days to 91 years). The incidence rates were highest in infants <1 year (4.8/100,000) and those aged 65+ years (2.5/100,000) (Table 1).

Cases occurring in children <10 years of age (n=10) and in elderly adults (65 years of age and older (n=26)) accounted for 57.8% of all invasive *H. influenzae* notifications in 2017 (Table 1). One notable trend since 2004 is the increase in the overall proportion of cases 65+ years of age from 26.3% to 35.6% in 2017.

In 2017, the highest frequency of cases occured in the 0-4 year age group (17.8%; n=8), after which it falls sharply before increasing again among those aged 65+ years (35.5%; n=16) (Table 1), a pattern consistent with what has been observed since 2004 (Figure 2).

In 2017 the number of male cases (n=22) was similar to that of females (n=23) giving a male to female ratio of 0.96:1.0, markedly different from what was observed in 2016 (0.46:1.0) (Figure 3).

Highest incidence was in the first quarter of the year, a pattern that has been seen in most years since 2004 (Figure 3).

Incidence of disease in 2017 was highest in the HSE MW area (1.8/100,000) with the lowest in the HSE NE area (0.4/100,000) (Table 2). No HSE area had an incidence rate that was significantly different from the national rate (Figure 4).

A breakdown by clinical diagnosis for all cases by age group between 2004 and 2017 is presented in Table 3. In 2017, 37.8% (n=17/45) of cases did not have a clinical diagnosis recorded, the highest proportion recorded since 2009 when it was 53.5% (n= 23/43).

One death was reported among the 45 cases in 2017; aged 60-64 years. The actual cause of death was not known, but the patient had a type f infection combined with pneumonia.

In 2017, one case of *H. influenzae* type b (Hib) was reported, a case aged 75-79 years, compared to three in 2016. Between Q3-2007 and Q4-2017, a period of more than ten years, only one true Hib vaccine failure was reported, highlighting the continuing positive impact that 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 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 due to underlying medical conditions or treatments.

The figures presented in this summary are based on data extracted from the Computerised Infectious Disease Reporting (CIDR) system on 21st September, 2018. These figures may differ from those published previously due to on-going updating of notification data on CIDR.

Further information available on HPSC website:

http://www.hpsc.ie/a-z/vaccinepreventable/haemophilusinfluenzae/

Acknowledgements

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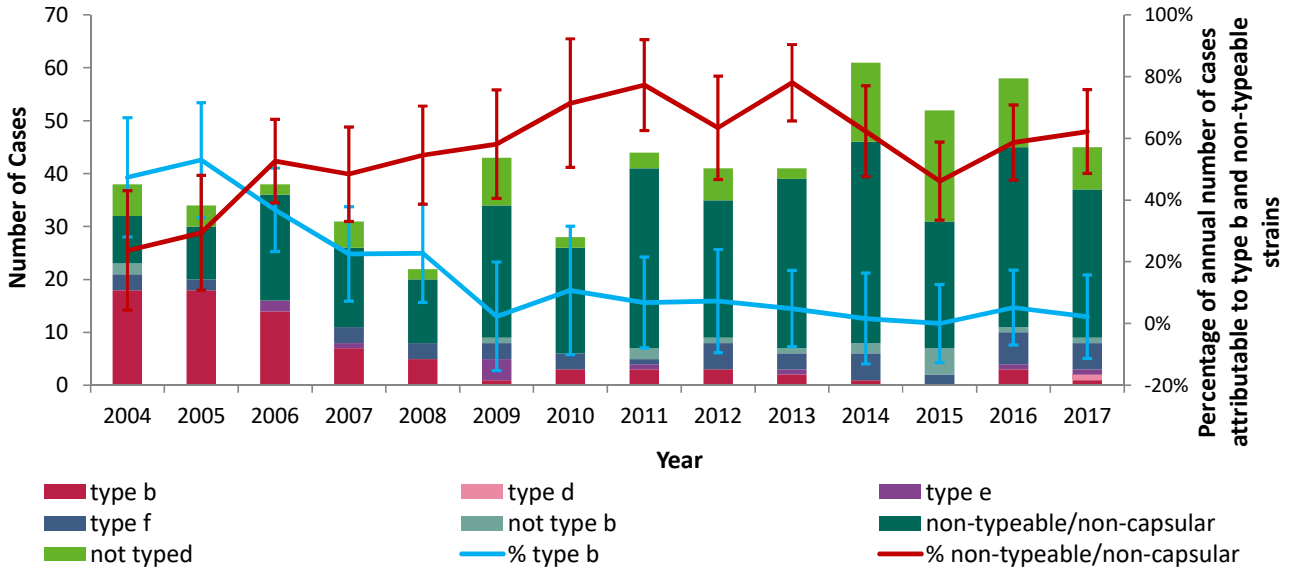

Figure 1. **Number of invasive *H. influenzae* cases and proportion of cases attributable to type b and non-typeable strains with 95% confidence intervals, Ireland, 2004-2017**

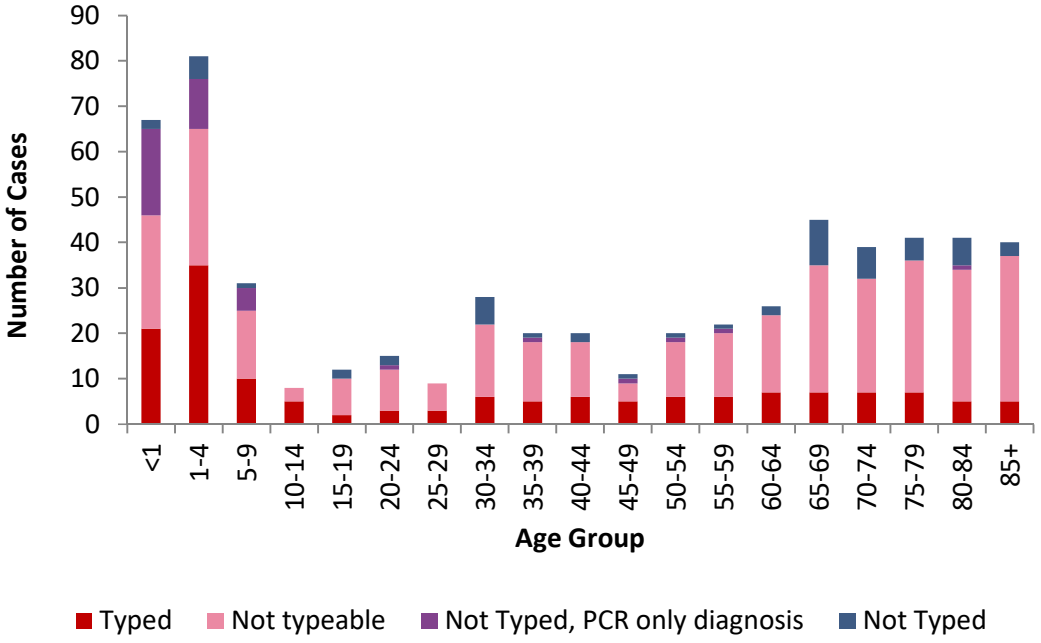

Figure 2. **Number of *H. influenzae* cases by age group and type*, Ireland, 2004-2017**
*Typed includes b, e, f, not-b

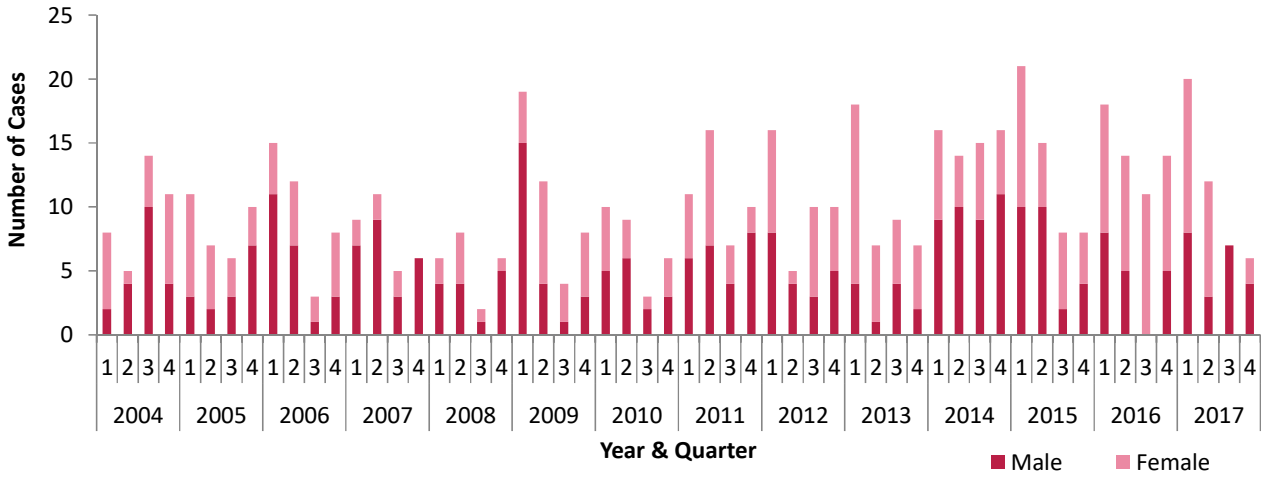

Figure 3. **Number of *H. influenzae* cases by year/quarter and gender, Ireland, 2004-2017**

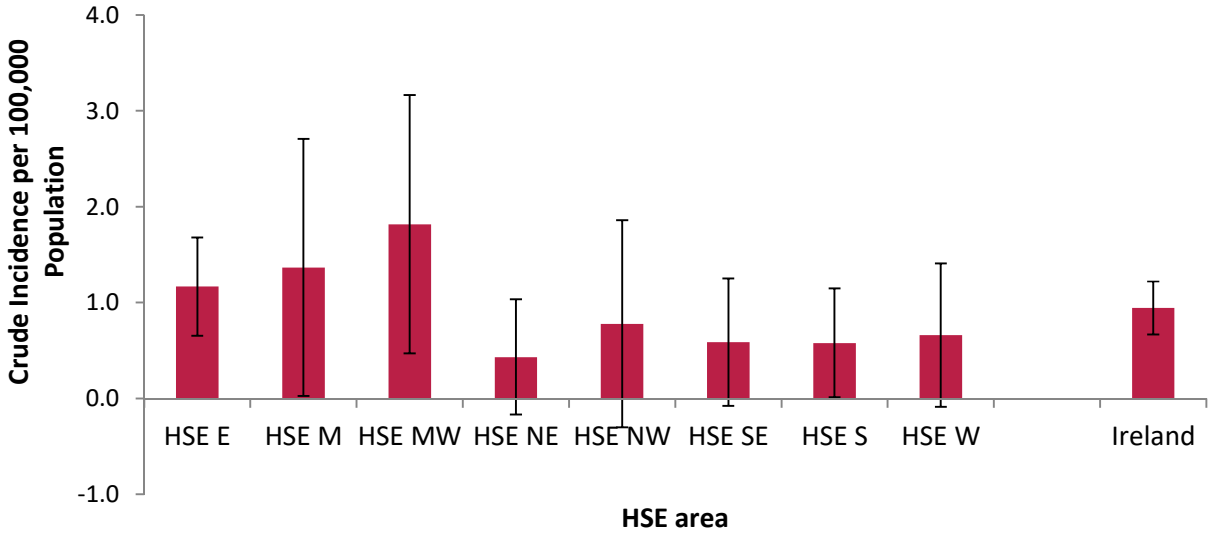

Figure 4. **Crude incidence rates per 100,000 population with 95% confidence intervals for *H. influenzae* notifications by HSE area, Ireland, 2017** (Incidence rates based on Census 2016 data)

Table 1. **Number and incidence rates of invasive *H. influenzae* cases by serotype and age group, Ireland, 2017**

Age Group	type b	type d	type e	type f	not type b	non-typeable/non-capsular	not typed (all)	not typed, PCR only diagnosis	not typed	Total	ASIR
<1	0	0	0	1	0	0	2	2	0	3	4.82
1-4	0	0	0	1	1	3	0	0	0	5	1.86
5-9	0	0	0	1	0	1	0	0	0	2	0.56
10-14	0	0	0	0	0	1	0	0	0	1	0.31
15-19	0	1	0	0	0	0	0	0	0	1	0.33
20-24	0	0	0	0	0	1	0	0	0	1	0.37
25-34	0	0	0	0	0	2	0	0	0	2	0.30
35-44	0	0	0	0	0	2	1	0	1	3	0.40
45-54	0	0	1	0	0	5	2	1	1	8	1.28
55-64	0	0	0	1	0	1	1	0	1	3	0.59
65+	1	0	0	1	0	12	2	0	2	16	2.51
Total	**1**	**1**	**1**	**5**	**1**	**28**	**8**	**3**	**5**	**45**	**0.95**
CIR	0.02	0.02	0.02	0.11	0.02	0.59	0.17	0.06	0.11	0.95	-

CIR, crude incidence rate per 100,000 total population; ASIR, age specific incidence rate per 100,000 population; ASIR values calculated using Census 2016 data

Table 2. **Incidence rates per 100,000 population of invasive *H. influenzae* by HSE area, Ireland, 2004-2017**

HSE Area	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
E	1.07	1.00	0.87	0.80	0.53	0.74	0.56	1.11	1.11	0.62	0.93	1.52	1.11	1.17
M	1.19	1.19	0.40	1.19	0.79	1.06	0.35	1.06	0.35	1.42	1.71	0.34	2.05	1.37
MW	0.83	0.28	0.83	0.55	0.83	2.11	0.53	0.53	1.05	0.79	2.08	1.04	1.30	1.82
NE	0.25	1.27	0.25	0.00	0.00	0.23	0.45	1.59	0.91	1.36	1.52	0.87	1.08	0.43
NW	0.42	0.00	2.11	0.42	0.00	0.39	0.39	0.77	0.77	1.16	0.39	0.78	1.95	0.78
SE	1.08	0.43	0.87	1.08	0.65	1.00	1.00	0.80	1.21	1.00	1.74	0.87	0.72	0.43
S	1.13	0.32	1.29	0.32	0.64	1.20	1.05	0.30	0.60	0.90	1.57	0.98	1.37	0.78
W	0.48	1.45	0.72	1.45	0.48	1.12	0.22	1.35	0.45	0.90	0.88	0.88	1.32	0.66
Ireland	**0.90**	**0.80**	**0.90**	**0.73**	**0.52**	**0.94**	**0.61**	**0.96**	**0.89**	**0.89**	**1.28**	**1.09**	**1.22**	**0.95**

Table 3. Number of invasive *H. influenzae* cases by clinical diagnosis, Ireland, 2004-2017

Clinical diagnosis	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Septicaemia	8	14	13	6	3	9	9	11	11	14	15	14	18	12
Pneumonia	5	0	3	6	3	8	5	12	12	4	12	8	12	7
Other	1	2	1	0	0	0	0	3	4	7	7	3	9	3
Bacteraemia (without focus)	1	0	1	1	2	0	0	3	5	6	9	8	6	4
Meningitis	3	9	3	2	2	2	1	3	2	2	7	3	1	1
Epiglottitis	1	3	3	1	1	0	2	0	0	3	1	1	1	0
Cellulitis	1	1	2	1	1	0	0	1	0	0	0	1	1	0
Meningitis & septicaemia	1	0	1	0	1	1	1	1	1	0	0	2	0	0
Septic arthritis	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Osteomyelitis	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Not specified	16	4	11	14	8	23	10	10	6	5	10	12	10	17
Total	**38**	**34**	**38**	**31**	**22**	**43**	**28**	**44**	**41**	**41**	**61**	**52**	**58**	**45**
%Not specified	42.1	11.8	28.9	45.2	36.4	53.5	35.7	22.7	14.6	12.2	16.4	23.1	17.2	37.8