



Infection report

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Invasive meningococcal disease (laboratory reports in England): 2014/2015 annual data by epidemiological year

This report presents data on laboratory-confirmed invasive meningococcal disease (IMD) for the last complete epidemiological year, 2014/2015 [1]. Epidemiological years run from week 27 in one year (beginning of July) to week 26 the following year (end of June). When most cases of a disease arise in the winter months, as for IMD, epidemiological year is the most consistent way to present the data when comparing years as the peak incidence may be reached before or after the year end. Using epidemiological year avoids the situations where a calendar year does not include the seasonal peak or where two seasonal peaks could be captured in a single calendar year.

In England, the national Public Health England (PHE) Meningococcal Reference Unit (MRU) confirmed 724 cases of IMD during 2014/2015. This was a 14% increase from the 636 cases reported in 2013/2014 (figure 1). In England, there has been an overall decline in confirmed IMD cases from 2,595 cases in 1999/2000 to 1,226 cases reported in 2005/2006. A large decline in incidence occurred in England following the introduction of immunisation against group C (MenC) disease in 1999 which reduced MenC cases by approximately 96% (to around 30 cases each year). The overall incidence of total IMD has continued to decrease over the past decade from two per 100,000 in 2005/2006 to one per 100,000 since 2011/2012 [2]; this latter decline was mainly due to secular changes in MenB cases.

Compared to 2013/2014, overall IMD incidence in 2014/2015 has remained stable at one per 100,000, however, small increases have been seen in toddlers (1-4 year-olds) and adolescents (15-24 year-olds) while the number of cases in infants (aged <1 year) has continued to decrease (figure 2). In 2014/2015, infants accounted for 18% of all IMD cases with an incidence of 19 per 100,000, followed by toddlers (22%; 6/100,000) and adolescents (15%; 2/100,000). Over a third (39%; 279/724) of all cases in 2014/2015 were reported between January and March 2015 (Q1).

The distribution of capsular groups causing IMD by age group is summarised in table 1, with MenB accounting for 58% (418/724) of all cases, followed by MenW (n=176, 24%), MenY (n=93, 13%) and MenC (n=28, 4%). This compares with 67% (424/636), 15% (95/636), 13% (83/636) and 4% (27/636), respectively in 2013/14. The increase in 2014/15 relative to 2013/14 has been largely due to the rise in MenW cases and numbers of both MenW and MenY cases reported in 2014/2015 were the highest since the start of IMD surveillance in England in the late 1990's. MenW increased by 85% from 95 in 2013/2014 to 176 cases (previous highest was 125 cases in 2000/2001 due to an outbreak linked to pilgrims returning from the Hajj) and MenY increased by 12% (from 83 to 93 cases; while the previous highest was 84 cases reported in 2010/2011).

In 2014/2015, MenB was responsible for the majority of IMD cases in infants (80%) and toddlers (86%) but contributed to a lower proportion of cases in older age groups, where other capsular groups were more prevalent. The introduction of a routine national MenB immunisation programme for infants was announced in June 2015 [3] with immunisation of infants starting from 1 September 2015.

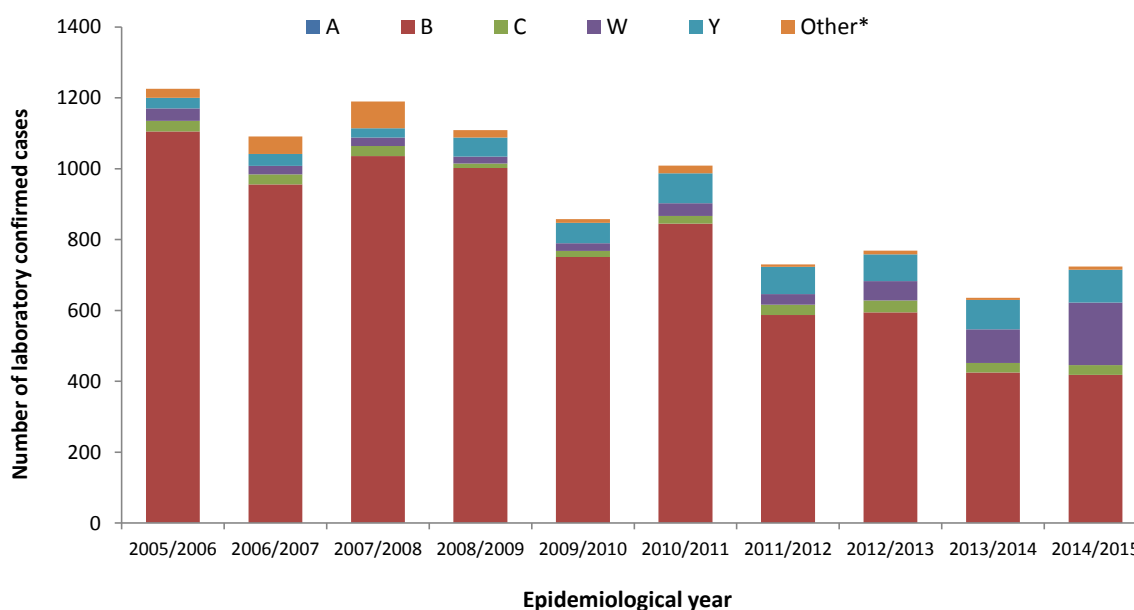
Of the 28 MenC cases in 2014/2015, 68% (19/28) were aged 25 years or older; 18% (n=5) were aged between 5-9 years, three cases (11%) in adolescents and one infant case. MenW cases were more common in adults aged 25 years or older (58%; 102/176), although a substantial proportion were diagnosed in children younger than 5 years (22%) and in adolescents (18%). MenY cases were also more prevalent in adults aged 25 years and older (67%; 62/93) and in adolescents (17%).

The previously reported increase in MenW cases [4,5] has continued and has led to the introduction of MenACWY conjugate vaccine to the national immunisation programme in England [6,7]. MenACWY vaccine replaced the existing time-limited 'freshers' programme from August 2015 and will directly

substitute for MenC vaccine in the routine adolescent schools programme (school year 9 or 10) from the 2015/16 academic year. In addition a catch-up campaign is being implemented offering MenACWY vaccine to all adolescents aged 14 to 18 years (to school year 13); 2015 school leavers (aged 18 before 1 September 2015) have been prioritised for the first phase of the catch-up.

The overall provisional IMD case fatality ratio (CFR) in England was 8% (56/724) during 2014/2015 [8]. MenB was responsible for 45% (n=25) of all deaths (CFR, 6%). MenC had the highest CFR (14%, 4/28), followed by MenY (11%, 10/93) and MenW (10%, 17/176). Almost half the deaths were in adults aged 25 years and over (48%; 27/56) and 36% (n=20, 19 MenB cases and one MenW case) were in children younger than five years.

Figure 1. Invasive meningococcal disease in England by capsular group: 2005/2006 to 2014/2015



* Other includes capsular groups: X, Z, E, ungrouped and ungroupable. Ungroupable refers to invasive clinical meningococcal isolates that were non-groupable, while ungrouped cases refers to culture-negative but PCR screen (*ctrA*) positive and negative for the four genogroups [B, C, W and Y] routinely tested for.

Figure 2. Incidence of invasive meningococcal disease in England: 2005/2006 to 2014/2015

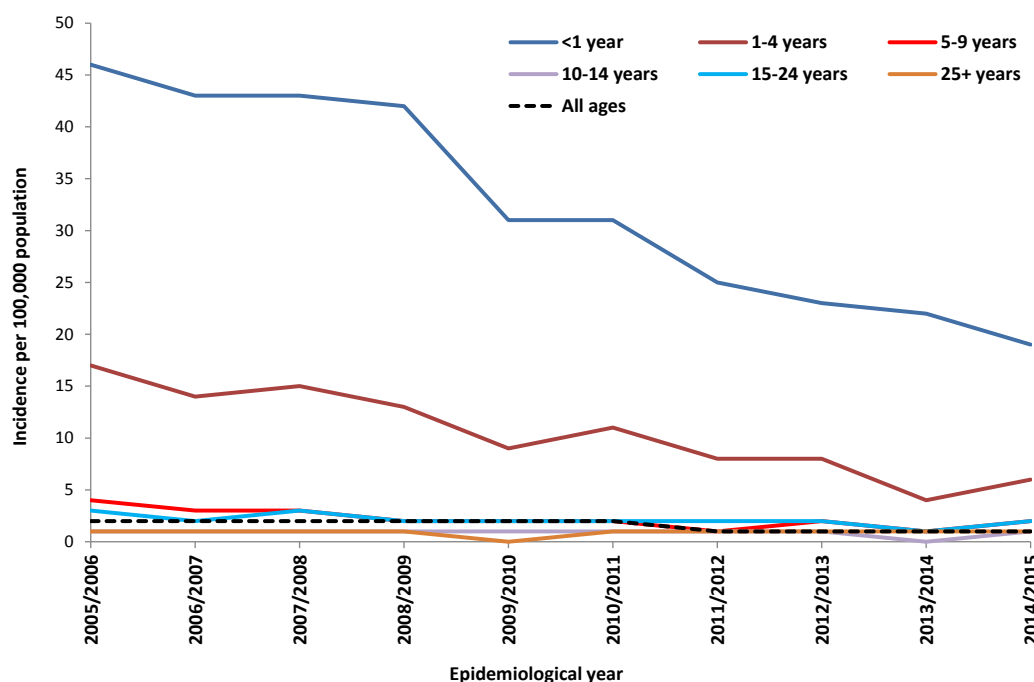


Table 1. Invasive meningococcal disease in England by capsular group and age group at diagnosis: 2014/2015

Age groups	Capsular Group										Annual total	
	B		C		W		Y		Other*			
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
<1 year	101	(24)	1	(4)	21	(12)	4	(4)	0	-	127	(18)
1-4 years	139	(33)	0	-	18	(10)	5	(5)	0	-	162	(22)
5-9 years	36	(9)	5	(18)	2	(1)	3	(3)	1	(11)	47	(6)
10-14 years	13	(3)	0	-	2	(1)	3	(3)	0	-	18	(2)
15-19 years	36	(9)	3	(11)	25	(14)	14	(15)	1	(11)	79	(11)
20-24 years	17	(4)	0	-	6	(3)	2	(2)	2	(22)	27	(4)
25+ years	76	(18)	19	(68)	102	(58)	62	(67)	5	(56)	264	(36)
Total	418		28		176		93		9		724	

* Other includes ungrouped and ungroupable.

Table 2. Invasive meningococcal disease in England by capsular group and laboratory testing method: 2013/2014 and 2014/2015

Capsular groups*	CULTURE AND PCR		CULTURE ONLY		PCR ONLY		Annual total	
	2013/2014	2014/2015	2013/2014	2014/2015	2013/2014	2014/2015	2013/2014	2014/2015
A	0	0	0	0	1	0	1	0
B	86	113	106	113	232	192	424	418
C	7	5	13	13	7	10	27	28
W	14	19	70	125	11	32	95	176
Y	13	11	57	70	13	12	83	93
Ungrouped	0	0	0	0	6	4	6	4
Ungroupable**	0	0	0	5	0	0	0	5
Total	120	148	246	326	270	250	636	724

* No cases of X or Z/E were reported in the time period shown.

** Ungroupable refers to invasive clinical meningococcal isolates that were non-groupable, while ungrouped cases refers to culture-negative but PCR screen (*ctrA*) positive and negative for the four genogroups [B, C, W and Y] routinely tested for.

References

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7. Public Health England:
<https://www.gov.uk/government/collections/meningococcal-acwy-menacwy-vaccination-programme>
8. Death data from the Office of National Statistics includes all deaths coded to meningitis or meningococcal infection as a cause of death and linked to a laboratory-confirmed case.