



Public Health
England

Protecting and improving the nation's health

Invasive meningococcal disease in England: annual laboratory confirmed reports for epidemiological year 2019 to 2020

Health Protection Report
Volume 15 Number 1

12 January 2021

Laboratory confirmations

This report presents data on laboratory-confirmed invasive meningococcal disease (IMD) for the last complete epidemiological year, 2019 to 2020 [1]. Epidemiological years run from week 27 in each year (beginning of July) to week 26 the following year (end of June)¹.

In England, the national Public Health England (PHE) Meningococcal Reference Unit (MRU) confirmed 461 cases of IMD during 2019 to 2020, 12% lower than the 526 cases reported in 2018 to 2019 (table 1).

The COVID-19 pandemic and the implementation of social distancing measures and lockdown across the UK from 23 March 2020 has had a significant impact on the spread and detection of other infections including IMD. Between April and June 2020, 29 individuals were confirmed with IMD, 76% lower than in the same period in the previous year (121 cases).

In England, there has been an overall decline in confirmed IMD cases over the last two decades from a peak of 2,595 cases in 1999 to 2000. The initial decline in IMD cases was driven by the introduction of immunisation against group C (MenC) disease in 1999 which reduced MenC cases by approximately 96% (to around 30 to 40 cases each year).

The overall incidence of total IMD has continued to decrease over the past decade from 2 per 100,000 in 2006 to 2007 to 1 per 100,000 since 2011 to 2012; this latter decline was mainly due to secular changes in MenB cases (figure 1). Overall IMD incidence in 2019 to 2020 has remained stable at 1 per 100,000 [2].

¹ 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 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 are captured in a single calendar year.

Incidence in infants decreased from 16 per 100,000 population in 2017 to 2018 to 9 per 100,000 in 2018 to 2019 (55 cases) and increased slightly to 10 per 100,000 in 2019 to 2020 (63 cases). Incidence in children aged 1 to 4 years continued to decrease from 3 per 100,000 in 2018 to 2019 to 2 per 100,000 (42 cases) in 2019 to 2020 (figure 2). Young adults aged between 15 and 24 years accounted for 17% (n=77; 1 per 100,000) of all laboratory confirmed IMD in 2019 to 2020 and those aged 25 years or older comprised 47% of cases (n=216; 1 per 100,000).

The distribution of IMD cases by capsular group is summarised in Table 1, with MenB accounting for 66% (305/461) of all cases, followed by MenW (n=79, 17%), MenY (n=41, 9%) and MenC (n=26, 6%). This was similar to the distribution in 2018 to 2019; with 58% MenB (305/526), 21% MenW (n=113), 11% MenY (n=59) and 8% MenC (n=43).

In 2019 to 2020, 305 individuals were confirmed with MenB, the same number of cases as in the previous year. MenB was responsible for the majority of IMD cases in individuals under 25 years of age: infants (78%; 49/63), toddlers (88%; 37/42) and young adults (91%; 70/77) but, in line with previous years, contributed to a lower proportion (45% n=98/216) of cases in individuals aged 25+ years where other capsular groups were more prevalent (table 2).

Annual MenW cases decreased by 30% from 113 cases in 2018 to 2019 to 79 cases in 2019 to 2020 after peaking at 225 cases in 2016 to 2017. The number of MenC cases in 2019 to 2020 were 40% lower compared with 2018 to 2019 (26 and 43 cases respectively). MenY cases decreased by 30% from 59 cases in 2018 to 2019 to 41 cases in 2019 to 2020 (table 1). Adults aged 25 years and older accounted for most MenC (77%), MenW (81%) and MenY cases (68%) (table 2).

The overall provisional IMD case fatality ratio (CFR) in England was 7.0% (30/461) during 2019 to 2020 based on ONS deaths with meningococcal disease as an underlying cause².

² 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.

Vaccine coverage

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. The latest annual vaccine coverage estimates (1 April 2019 to 31 March 2020), for those eligible for infant MenB immunisation were 92.5% for two doses by 12 months of age and 88.7% for the booster dose by 24 months of age [4]. The 2-dose infant MenB schedule has been shown to be highly effective in preventing MenB disease in infants [5].

The previously reported increase in MenW cases [6,7] led to the introduction of MenACWY conjugate vaccine to the national immunisation programme in England [8]. Targeted catch-up with MenACWY vaccine began in August 2015 at which time it also replaced the existing time-limited MenC ‘freshers’ vaccination programme. MenC vaccine was also directly substituted with MenACWY vaccine in the routine adolescent school programme (school year 9 or 10) from autumn 2015.

Coverage for the first cohorts to be routinely offered MenACWY vaccine in schools from September 2015 and evaluated up to the end August 2019 was 88.0% (Year 9 in 2018 to 2019) and 86.7% (Year 10) [9].

In October 2018 the Joint Committee on Vaccination and Immunisation (JCVI) released a statement advising that the Department of Health and Social Care, Public Health England and the Chief Medical Officer will be supporting efforts to improve MenACWY vaccine coverage in young adults aged 18 to less than 25 years who are eligible for vaccination. It is anticipated that efforts to improve MenACWY vaccine coverage in this age group will lead to a reduction in cases of MenC and MenW disease across the population [10].

The impact of the MenACWY teenage vaccination and the MenB infant programme continues to be monitored. A first assessment of the infant MenB programme [11] and MenACWY vaccination in the 2015 school leaver cohort have been published [12].

All teenage cohorts remain eligible for opportunistic MenACWY vaccination until their 25th birthday and it is important that these teenagers continue to be encouraged to be immunised, particularly if they are entering Higher Education Institutions.

Whilst overall IMD cases have declined since measures to control the spread of COVID19 were introduced earlier this year, it continues to be important to encourage parents of eligible children to ensure their children are up to date with their vaccinations according to the vaccination schedule.

Table 1: Invasive meningococcal disease in England by capsular group and laboratory testing method: April to June 2019 and 2020

Capsular groups*	CULTURE AND PCR		CULTURE ONLY		PCR ONLY		Annual total	
	2018/2019	2019/2020	2018/2019	2019/2020	2018/2019	2019/2020	2018/2019	2019/2020
B	88	67	64	79	153	159	305	305
C	10	5	24	15	9	6	43	26
W	26	9	72	55	15	15	113	79
X	0	1	0	0	0	0	0	1
Y	10	9	43	26	6	6	59	41
29E	0	0	0	2	0	0	0	2
Ungrouped/Ungroupable~	1	0	3	3	2	4	6	7
Total	135	91	206	180	185	190	526	461

* No cases of group A and Z were confirmed during the periods summarised in the table.

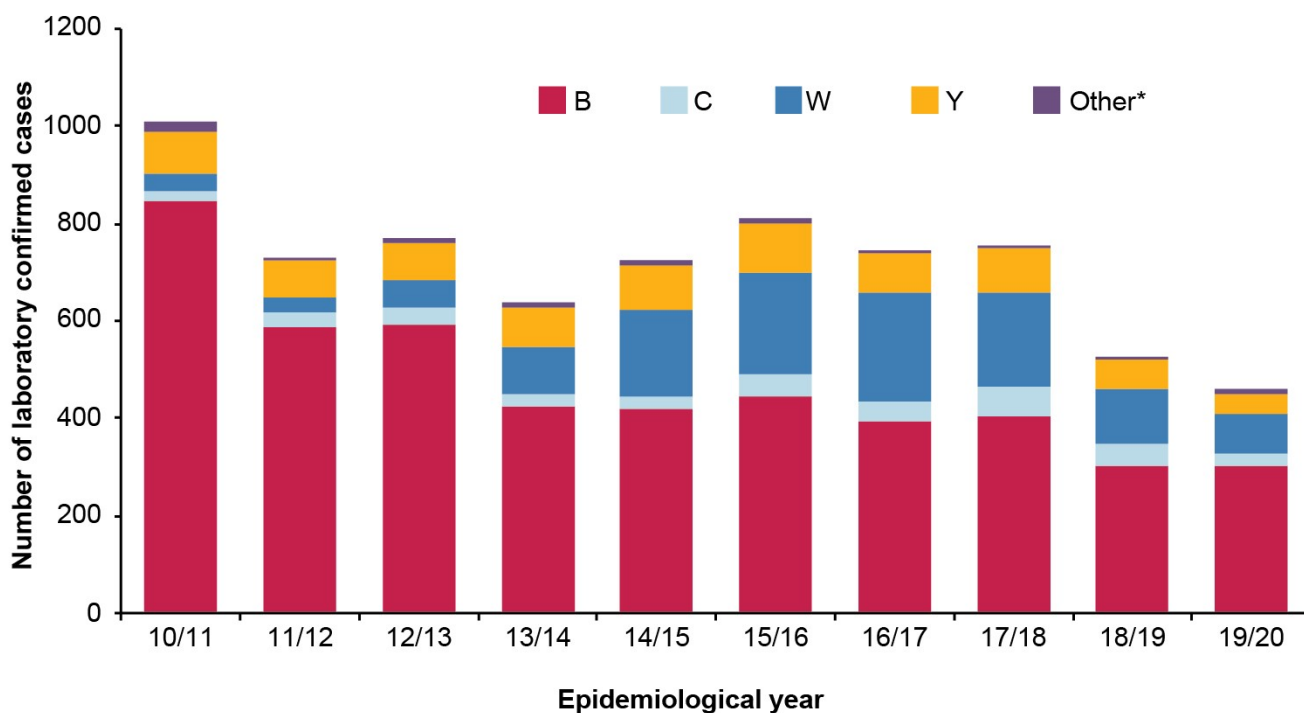
~ Ungroupable refers to invasive clinical meningococcal isolates that were non-groupable, while ungrouped cases refers to culture-negative but PCR screen (ctrA) positive and negative for the four genogroups [B, C, W and Y] routinely tested for).

Table 2. Invasive meningococcal disease in England by capsular group and age group at diagnosis: April to June 2020

Age groups	Capsular Group										Annual total	
	B		C		W		Y		Other*			
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
<1 year	49	16	1	4	6	8	6	15	1	10	63	14
1-4 years	37	12	1	4	2	3	1	2	1	10	42	9
5-9 years	36	12	2	8	4	5	3	7	0	-	45	10
10-14 years	15	5	1	4	1	1	0	-	1	10	18	4
15-19 years	40	13	0	-	1	1	3	7	1	10	45	10
20-24 years	30	10	1	4	1	1	0	-	0	-	32	7
25+ years	98	32	20	77	64	81	28	68	6	60	216	47
Total	305		26		79		41		10		461	

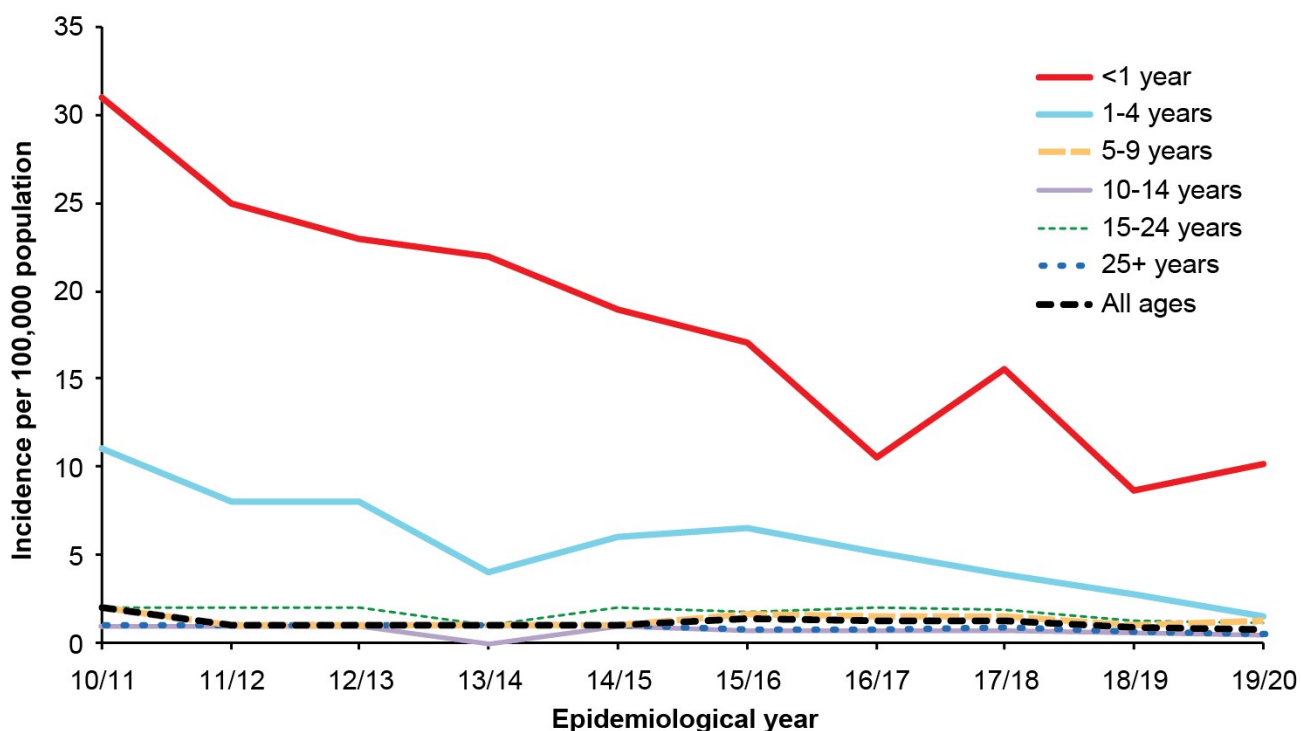
* Other includes X, E, ungrouped and ungroupable. Ungroupable refers to invasive clinical meningococcal isolates that were non-groupable, while ungrouped cases refers to culture-negative but PCR screen (ctrA) positive and negative for the four genogroups [B, C, W and Y] routinely tested for).

Figure 1. Invasive meningococcal disease in England by capsular group: 2010 to 2011 to 2019 to 2020



* Other includes X, E, ungrouped and ungroupable.

Figure 2. Incidence of invasive meningococcal disease in England: 2010 to 2011 to 2019 to 2020



References

- 1 Data source: PHE Meningococcal Reference Unit, Manchester.
- 2 Office of National Statistics. Mid-year 2019 population estimates
- 3 PHE and NHS England (22 June 2015). Introduction of Men B immunisation for infants (Bipartite letter).
- 4 PHE and NHS Digital (24 September 2020). Childhood vaccination coverage statistics – England 2019-20.
- 5 Parikh SR, Andrews NJ, Beebeejaun K, Campbell H, Ribeiro S, Ward C et al (2016). Effectiveness and impact of a reduced infant schedule of 4CMenB vaccine against group B meningococcal disease in England: a national observational cohort study, *Lancet* **388** (10061), 2775-2782 (27 October).
- 6 PHE (2015). Continuing increase in meningococcal group W (MenW) disease in England. *HPR* **9**(7): news.
- 7 “Freshers told ‘it’s not too late’ for meningitis C vaccine”. PHE press release, 27 November 2014.
- 8 PHE and NHS England (22 June 2015). Meningococcal ACWY conjugate vaccination (MenACWY) (Bipartite letter.)
- 9 PHE (2020). Vaccine coverage estimates for the school based meningococcal ACWY (MenACWY) adolescent vaccination programme in England, to 31 August 2019, *HPR* **14**(2).
- 10 JCVI (2018). Statement on meningococcal vaccination (24 October).
- 11 PHE (2016). Impact of MenB vaccination programme in England, *HPR* **10**(37).
- 12 Campbell H, Edelstein M, Andrews N, Borrow R, Ramsay M, Ladhani S, et al (2017). Emergency Meningococcal ACWY Vaccination Program for Teenagers to Control Group W Meningococcal Disease, England, 2015–2016. *Emerg Infect Dis.* 2017 **23**(7): 1184–1187 (July).

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-leading science, research, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

Public Health England
Wellington House
133-155 Waterloo Road
London SE1 8UG
Tel: 020 7654 8000

www.gov.uk/phe

Twitter: [@PHE_uk](https://twitter.com/PHE_uk)

www.facebook.com/PublicHealthEngland

© Crown copyright 2021

Prepared by: Immunisation and Countermeasures Division, PHE National Infection Service

For queries relating to this document, please contact: immunisation@phe.gov.uk

OGL

Published: January 2021

PHE gateway number: GW-1862



PHE supports the UN Sustainable Development Goals

