



SUMMARY

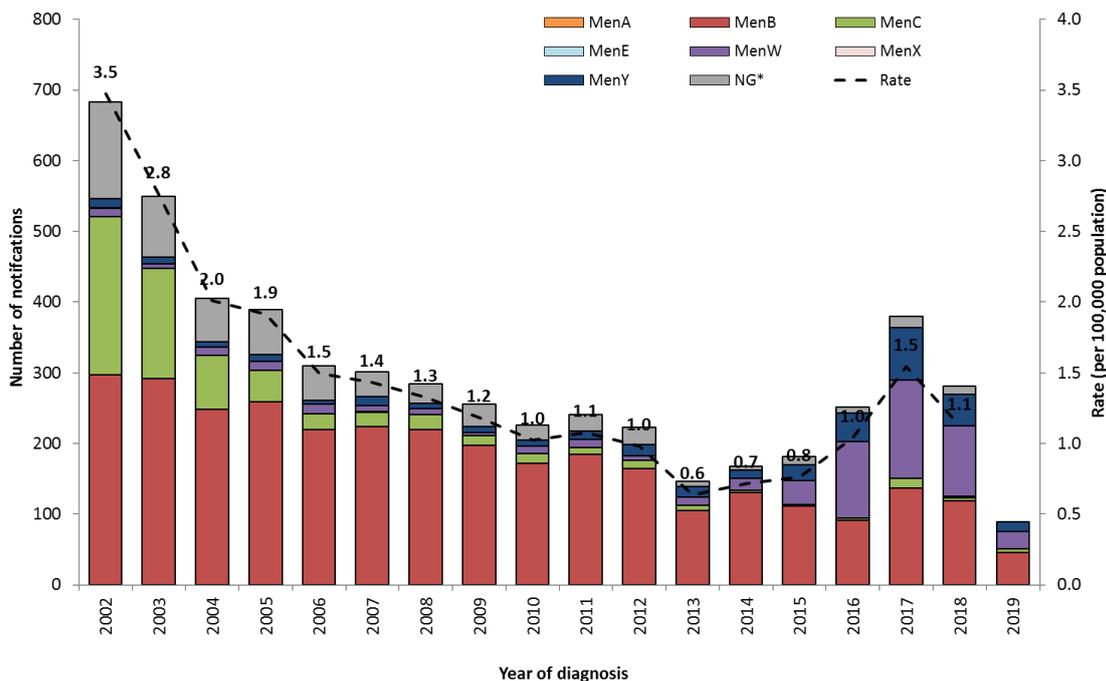
- For the period 1 January to 30 June 2019, 89 cases of invasive meningococcal disease (IMD) were reported to the National Notifiable Diseases Surveillance System (NNDSS).
- Nationally, the number of IMD cases in the first six months of 2019 remains within the range of the previous five years and is lower than the number of cases reported in the first six months in 2017 (n=137) and 2018 (n=108).
- Just over half of the cases in this reporting period were due to serogroup B (MenB, n=46, 52%), 25 cases (28%) were due to serogroup W (MenW), 13 cases (15%) were due to serogroup Y (MenY) and five (6%) were due to serogroup C (MenC).
- There were five deaths amongst IMD cases reported during this period in 2019.

ANALYSIS

National trends

- The national incidence of IMD in Australia is low (Figure 1). Since 2002, rates of IMD declined up until 2013, after which rates increased until 2017, which was largely driven by an increase in MenW cases. Following 2017, combined cases of IMD have declined in 2018.
- There were 89 cases of IMD reported from 1 January to 30 June 2019, which is 18% (n=108) lower than the number of IMD cases reported in the first six months in 2018.
- Of the 89 cases reported in the first six months of 2019, 22 (25%) occurred in Aboriginal and Torres Strait Islander peoples. This is higher than the number of cases reported in the same period in 2018, in which 16% (17/108) occurred in Aboriginal and Torres Strait Islander peoples.

Figure 1. Annual cases and annual rate of IMD, Australia, 1 January 2002 to 30 June 2019 by serogroup

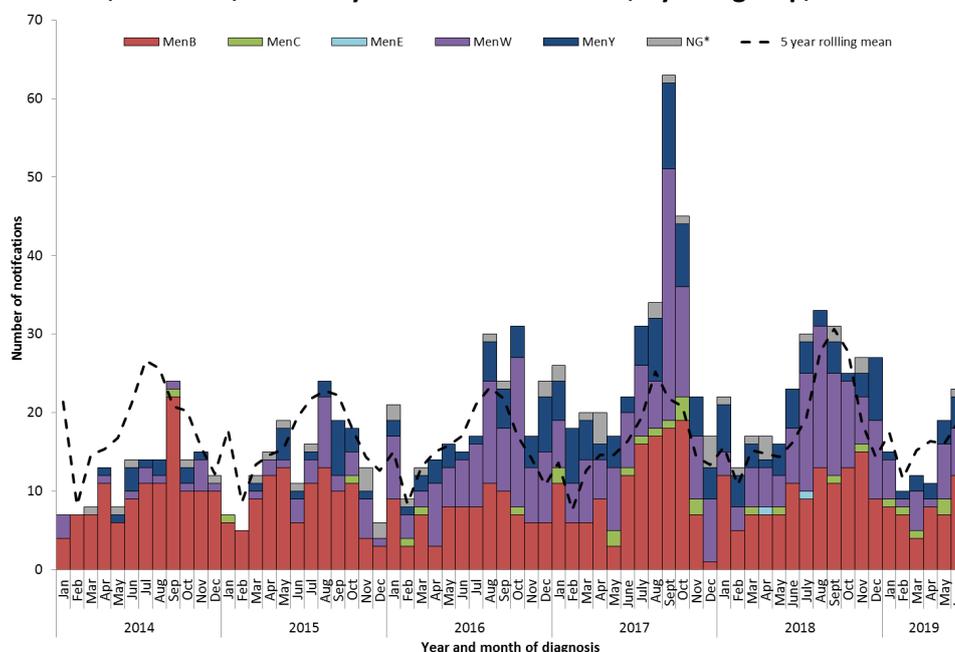


*NG includes where meningococcal isolates could not be identified ('not groupable'), other isolates not grouped and where serogroup was not known.

Seasonality

- IMD tends to follow a seasonal pattern in Australia, with increased disease activity between June and September each year (Figure 2).
- IMD notifications in the first six months of 2019 continued to follow the seasonal pattern, with notifications rising from May/June.
- From January to April 2019, cases of IMD were below the five year monthly rolling mean, however, cases exceeded the five year monthly rolling mean in May and June 2019 (Figure 2).

Figure 2. Cases of IMD, Australia, 1 January 2014 to 30 June 2019, by serogroup, month and year of diagnosis

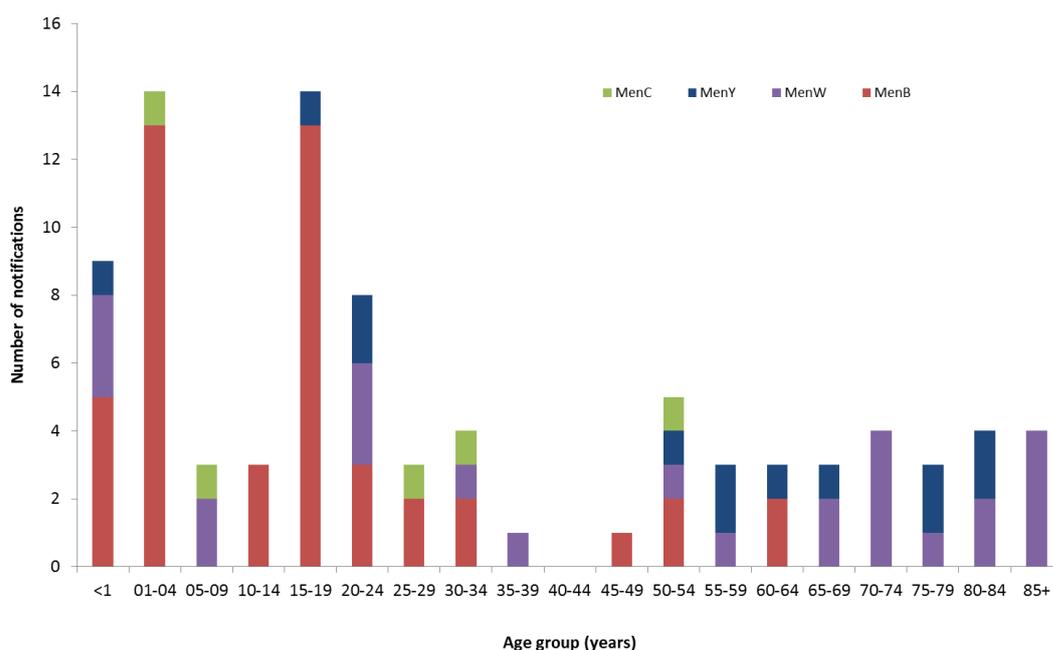


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Age Distribution

- Cases of IMD were reported across all age groups in the first six months of 2019, apart from those aged 40-44 years (Figure 3). The median age of all IMD cases in this reporting period was 20 years (range: 0 years to 101 years).
- Amongst five year age groups, the number of cases were highest in those under 5 years (n=23) followed by those aged 15-19 (n=14).

Figure 3. Notifications of IMD, Australia, 1 January to 30 June 2019, by serogroup and age group



Geographical Distribution

- From January to June 2019, cases of IMD were reported in all jurisdictions (Table 1).
- The Australian Capital Territory and New South Wales experienced the lowest rate of IMD (0.2 per 100,000 population) and the Northern Territory experienced the highest (2 per 100,000).

Table 1. Notifications and rates of IMD, Australia, 1 January to 30 June 2019, by serogroup and state and territory

State or territory	Notifications						Total	Rate (per 100,000 population)
	B	C	E	W	Y	NG*		
ACT	1	0	0	0	0	0	1	0.2
NSW	13	0	0	4	2	0	19	0.2
NT	1	0	0	4	0	0	5	2.0
QLD	10	0	0	2	7	0	19	0.4
SA	8	0	0	2	2	0	12	0.7
TAS	2	0	0	2	0	0	4	0.8
VIC	8	0	0	8	2	0	18	0.3
WA	3	5	0	3	0	0	11	0.4
Australia	46	5	0	25	13	0	89	0.4

*NG includes where meningococcal isolates could not be identified ('not groupable'), other isolates not grouped and where serogroup was not known.

Severity

- Of the 87 IMD cases reported in the first six months of 2019 for which data was available for intensive care unit (ICU) admissions, 45% (n=39) were admitted to ICU. This is higher when compared to the proportion of IMD cases admitted to ICU in the same period in 2018 (38%; 30/79); although, it is important to note that data completeness for IMD ICU admissions was also higher in 2019 (97%) compared to 2018 (73%).
- The serogroup with the highest proportion of cases admitted to ICU was MenC (60%; 3/5), followed by MenW (48%; 12/25), MenB (43%; 20/46) and MenY (31%; 4/13).
- There were five deaths amongst the 89 reported IMD cases for the period 1 January to 30 June 2019. Of these, two deaths were due to MenW, two due to MenB and one death was due to MenY.

Serogroup analyses

- The three most common meningococcal serogroups reported in Australia from January to June 2019 were MenB, MenW and MenY (Table 1).
- From 2002 to 2015, MenB was the predominant serogroup in Australia. Although the majority of cases are still due to MenB, since 2016 an increasing proportion of cases have been caused by MenW and MenY (Figure 1).

Serogroup B (MenB)

- In the first six months of 2019 there were 46 cases of MenB reported (Table 1), representing 52% of all IMD cases reported.
- The number of IMD cases reported this period (n=46) was slightly lower compared to the number of cases reported in the same period in 2018 (n=49).
- MenB cases were predominantly reported in those aged 0-4 years and 15-19 years of age (Figure 3). The median age of MenB cases reported was 15.5 years (range: 0 years to 64 years).
- In this reporting period, 26% (12/46) of MenB cases were reported in Aboriginal and Torres Strait Islander peoples.

Serogroup W (MenW)

- In the first six months of 2019 there were 25 cases of MenW reported (Table 1), representing 28% of all IMD cases reported. This was similar to the number of MenW cases reported in the same period in 2018 (n=27).
- MenW was reported across most age groups, with those aged 65 years and over most affected (n=13)(Figure 3). The median age of MenW cases increased from 31 years (range: 0 years to 92 years) in the first six months of 2018 to 65 years (range: 0 years to 101 years) for the same period in 2019.
- In this reporting period, 20% (5/25) of MenW cases were reported in Aboriginal and Torres Strait Islander peoples.

Serogroup Y (MenY)

- In the first six months of 2019 there were 13 cases of MenY reported (Table 1), representing 14% of all IMD cases reported and a decrease of 43% on the number of MenY cases reported in the same period in 2018 (n=23).
- MenY was mostly reported in those aged over 50 years old (Figure 3). The median age of MenY cases reported was 59 years (range: 0 years to 81 years).
- There was one case (8%) of MenY reported in Aboriginal and Torres Strait Islander peoples.

Other serogroups (Men C, E, A and X)

- Annual notifications of MenC have dramatically declined from 225 cases in 2002 to 13 cases in 2017 and four cases in 2018 (a 98% decrease) since the introduction of the MenC vaccine in 2003. In the first six months of 2019 there were five cases of MenC reported in Australia, all of which have been reported from WA. These cases were reported as part of a known outbreak during this reporting period and almost all were reported as being Indigenous (n=4).

- No MenE cases have been reported in 2019. In 2018, there were two cases of MenE reported, both from Queensland with no identified epidemiological link. Prior to 2018, there have only been two other cases of MenE reported in Australia, one in 2007 and one in 1997.
- Serogroup A (MenA) and serogroup X (MenX) are also rare in Australia. Since 2002 there have been only four cases of MenA, and one case of MenX reported in Australia.

BACKGROUND

- IMD typically manifests as meningitis or sepsis and overall, mainly affects children aged younger than 5 years and adolescents (15–19 years), however, age distribution differs by serogroup. IMD typically experiences a seasonal peak of cases in winter and early spring.
- The bacteria causing this disease, *Neisseria meningitidis*, are carried by a proportion of the population without developing disease. The prevalence and duration of asymptomatic nasopharyngeal carriage of meningococci vary over time and in different population and age groups. Adolescents and young adults have the highest carriage rates, peaking in 19-year olds, and thus this age group play an important role in transmission.¹
- The clinical manifestations of meningococcal septicaemia and meningitis may be non-specific and can include sudden onset of fever, rash (petechial, purpuric or maculopapular), headache, neck stiffness, photophobia, altered consciousness, muscle ache, cold hands, thirst, joint pain, nausea and vomiting. However, non-specific presentation is not uncommon for IMD, making early diagnosis challenging.
- Meningococcal infections can progress rapidly to serious disease or death in previously healthy persons. A number of medical conditions are known to increase the risk of an individual developing IMD. People who survive infection can develop permanent sequelae, including limb deformity, skin scarring, deafness and neurologic deficits.
- Vaccination against meningococcal disease, targeting MenC, has been provided free of charge for babies at 12 months of age through the National Immunisation Program in Australia from 2003 to 30 June 2018. In 2018, the NIP schedule changed to replace MenC with meningococcal ACWY (MenACWY) vaccination. MenACWY immunisation has been funded for adolescent groups under the NIP since April 2019.
- Prior to the introduction of the MenACWY onto the NIP, jurisdictions provided state-based MenACWY immunisation programs in 2017 and early 2018 targeting adolescents aged 15-19 years.
- For further information on IMD cases reported in Australia and MenACWY immunisation programs please see the [Department of Health Meningococcal Disease website](#).

DATA CONSIDERATIONS

Data were extracted from the NNDSS on 25 November 2019, by diagnosis date. Due to the dynamic nature of the NNDSS, data in this extract are subject to retrospective revision and may vary from data reported in published NNDSS reports and reports of notification data by states and territories.

REFERENCES

¹ Christensen H. et al. 2010. Meningococcal carriage by age: a systematic review and meta-analysis. *Lancet Infectious Diseases Dec 2010: 853-61*.