the meningococcal
2019 guide for general practitioners

Meningococcal disease progresses very rapidly. Deaths can occur in as little as a few hours.

IMMUNISATION COALITION

UPDATE:
Invasive meningococcal disease is increasing

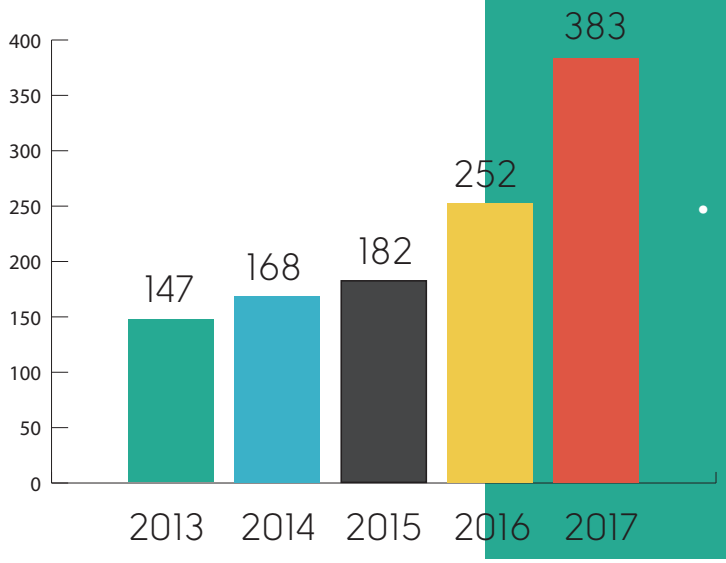
The number of notifications and deaths have more than doubled.

Number of deaths: 2015 (12), 2016 (11), 2017 (28).

Notifications: In 2017 Men W (37%) and Men B (36%) emerged as predominant strains.[1]

Many of the MenW cases belong to a hyper-virulent strain associated with a higher risk of invasive disease and a higher case fatality rate.[2]

MenW was the predominant strain in Australia in 2016. Notifications of MenW doubled from 2014 (17) to 2015 (34), then more than tripled in 2016 (109) surpassing strain B (92 cases).[2] In 2017, Men W notifications dramatically increased to 141 and Men B notifications to 138.[1]

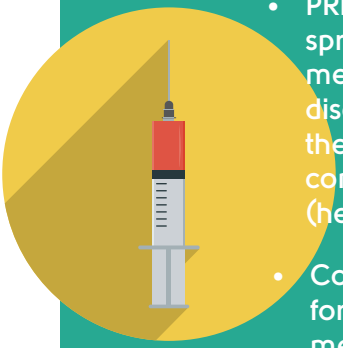


Number of invasive meningococcal disease notifications, Australia

Australian Government Department of Health. National Notifiable Diseases Surveillance System.

GPs can help to stop the spread!

- ADVISE patients and parents about the importance and safety of vaccination.
- PREVENT meningococcal disease in adolescents. Vaccine effectiveness of a 4vMenCV adolescent vaccination program in the United States has been estimated at 80 to 85%.[3]



- PREVENT the spread of meningococcal disease to the broader community (herd immunity).
- Consider TESTING for invasive meningococcal disease in older patients who may have atypical presentations (septic arthritis and epiglottitis).[4]
- Be on the lookout for DIAGNOSIS and provide early MANAGEMENT.

What are the symptoms?

People with meningococcal disease can become extremely unwell very quickly. THEY MAY FEEL SICKER THAN THEY HAVE EVER FELT BEFORE.

After being infected, it usually takes one to ten days for symptoms to appear. The possible symptoms are: sudden onset of fever, rash of red-purple pinpricks or bruises, headache, neck stiffness, photophobia, muscle aches, cold hands and feet, confusion, irritability, joint pain, nausea and vomiting.[5]

Complications

A common presentation of MenW in Australia has been severe sepsis. MenW disease has been associated with atypical presentations, such as septic arthritis, pneumonia and epiglottitis, in up to 20% of cases.[6]

Some people may experience permanent brain damage, and 1 in 10 may die. One in five people[7] who recover may have lingering health problems:

- Skin scarring
- Limb deformity
- Limb loss
- Deafness
- Impaired vision
- Learning difficulties[8]

Risk factors[5,9]

- Immunocompromised e.g. complement deficiencies
- Medical treatments e.g. eculizumab
- Asplenia
- Occupational exposure in labs
- Exposure to smokers
- Crowded living conditions
- Intimate kissing
- Recent viral infection
- Aboriginal and Torres Strait Islanders

What causes meningococcal disease?

Meningococcal disease is transmitted by close, prolonged household and intimate contact. The spread of the disease is through the infected secretions from the back of the nose and throat.

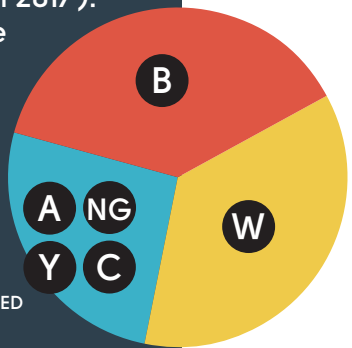
The bacteria can only survive a few seconds outside the body so they cannot be picked up from surfaces, swimming pools, buildings or animals.

About one in 10 people[10] can have meningococcal bacteria in their throat or nose. These very rarely cause illness, but can be transmitted to others more susceptible and cause illness. TEENAGERS have the highest carriage rates, peaking in 19-year-olds, and so play an important role in transmission.[11]

Meningococcal disease is caused by the bacterium *Neisseria meningitidis*. The most common strains worldwide are A, B, C, W and Y.

Men W emerged as an increasing cause of meningococcal disease, making up almost half of the Australian cases in 2016. In 2017, MenB strains increased to levels similar to MenW.

MenC, the target of a national immunisation programme since 2003, has dramatically declined (225 in 2002, 3 in 2016, 14 in 2017[1]). There has been an increase in MenY.



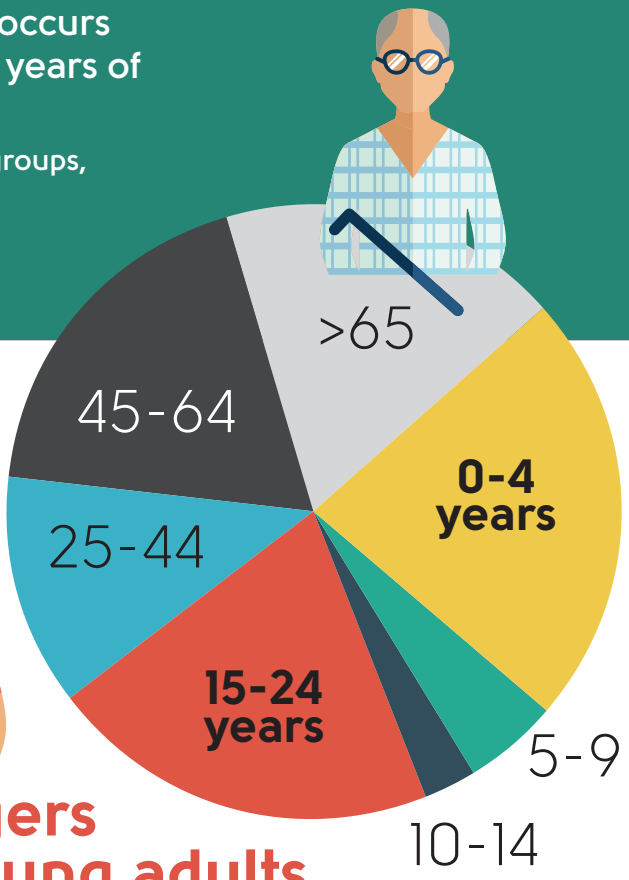
NG: NOT GROUPED

What age groups are most affected?[12]

Most meningococcal disease occurs in CHILDREN aged less than 5 years of age and ADOLESCENTS.

MenW also has its peak in these age groups, however it has a diverse age range.[13]

teenagers and young adults



babies and young children

Notifications of invasive meningococcal disease, Australia 2017: age group distribution

Department of Health, National Notifiable Diseases Surveillance System, Accessed 5 February 2018.

What vaccinations are available?[14,18]

As of April 2019 Nimenrix (4vMenCV for serogroups A, C, W and Y) will be available on NIP for 14–16 year olds, with 15–19 year olds eligible for the vaccine under an ongoing GP based catch-up program

Trade Name/ Age available	Formulation	Who should be vaccinated?
Menactra (from 9 months of age onwards)**	Quadrivalent diphtheria toxoid conjugate	Those with increased medical, occupational or other exposure including travel risks of meningococcal disease caused by serogroups A, C, W and Y. Infants 12 months of age Adolescents/ young adults 14–19 years of age **Vaccination may be offered to anyone aged 2 months or older wishing to reduce the risk of Men A, C, W and Y.** **AVAILABILITY**: Funded for adolescents or children (for varying and limited periods of time*): Funded on NIP for children 12 months of age Vaccine is otherwise available on private prescription*. *Contact your state or territory health department for more information.
Menveo (from 2 months onwards)*	Quadrivalent CRM 197 conjugate	
Nimenrix (from 12 months onwards)*	Quadrivalent tetanus toxoid conjugate	

* ATAGI recommends Menveo and Nimenrix can be given from 6 weeks of age
** Do not co-administer Menactra with 13vPCV
** Menveo and Nimenrix are preferred in individuals ≥ 2 years of age. If unavailable, use Menactra.

Administering quadrivalent meningococcal vaccines Menactra is in a liquid form and simply drawn up and administered to the individual. Menveo and Nimenrix consist of a powder and a liquid which need to be combined before they are administered.

Vaccine safety Meningococcal vaccines are safe and well tolerated. 4vMenCV's most frequent side effects: fever, headache, dizziness and erythema around injection site. Erythema resolves in 48–72 hours.

Meningococcal B vaccine (MenBV for serogroup B)

Trade Name	Formulation	Who should be vaccinated?
Bexsero In SA: Bexsero for childhood program Bexsero/Trumenba for school immunisation program and under 21 catch up program	Recombinant multicomponent MenB	Infants and young children, particularly those <2 years, adolescents and those with increased medical or occupational exposure risks of MenB disease. Vaccination can be offered to anyone aged 6 weeks** or older who wants to reduce the risk of MenB disease. **AVAILABILITY**: Private prescription. Funded vaccination available in SA.[15]

**MenBV is registered for use from 2 months of age. However, the first dose can be given as early as 6 weeks of age to align with the schedule for other routine infant vaccines.[5]

Vaccine effectiveness Based on laboratory tests, estimated vaccine induces protective antibodies against 76% of MenB strains in Australia.[16]

Vaccine safety Fever is the most common side effect in infants and young children especially when given concurrently with other vaccines. Prophylactic paracetamol is recommended with MenBV administration in children aged under 2 years of age.

Meningococcal C conjugate vaccines (MenCCV for serogroup C)

Trade Name	Formulation	Who should be vaccinated?
NeisVacC	Men C conjugate vaccine	Monovalent vaccine replaced by Hib-MenCCV combination vaccine for use under NIP since July 2013. In July 2018, Men A, C, W and Y replaced Hib-Men C on the NIP at 12 months In July 2018, an injection of Hib became available on NIP at 18 months as Hib no longer available at 12 months[17] **AVAILABILITY**: Monovalent Men C vaccine available on the NIP for those requiring catch-up of the 12-month childhood dose (when they are not eligible to receive MenACWY vaccine[18]
Menitorix	Hib-MenC conjugate combination vaccine	

Vaccine effectiveness Use from 2003 in Australia resulted in a 96% reduction in MenC invasive disease in all age groups by 2012.[19]

Vaccine safety Common side effects: pain, tenderness and occasional erythema at injection site which resolves in 1 day, transient headache.

REFERENCES

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The Immunisation Coalition is a not for profit advocacy group with a mission to create awareness regarding the importance of immunisation. Immunisation still provides the best protection against infectious diseases. We work with consumers, health professionals and organisations with an interest in immunisation and government health agencies, ensuring that the information provided to consumers through our website and other communication channels is current, easily understood and scientifically informed.

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