

Prevention and Control of Pneumococcal Disease in Aged Care Homes

Pneumococcal disease is an infection caused by a bacteria called *Streptococcus pneumoniae*. Infection may be mild or severe invasive disease. Invasive disease includes meningitis (infection and inflammation of the fluid and membranes surrounding the brain and spinal cord), pneumonia (lung infection) and bloodstream infection. Milder infections include otitis media (middle ear infections).

Young children and elderly people have the highest incidence of invasive pneumococcal infection. Older people are more vulnerable as their immune systems may not be able to fight infection. Disease burden is also higher in Aboriginal and Torres Strait Islanders.

Signs and Symptoms

Symptoms of pneumococcal infection vary according to the site of infection, underlying immunity, and age. The incubation period is 1-3 days. Bacteria causing infection may spread from the nose and throat into other body sites to cause mild disease such as:

- sinusitis
- otitis media (middle ear infection)

Invasive infections include:

- meningitis
- pneumonia
- bloodstream infection

Symptoms of pneumococcal infection

respiratory symptoms – cough, chills and shaking	blood-stained sputum (spittle/mucus)
difficulty breathing	light sensitivity
ear pain or discharge from the ear	poor appetite
fever	confusion
nausea and vomiting	irritability
headaches	drowsiness
chest pain	skin rash
shortness of breath	

How can pneumococcal disease be prevented?

1. Pneumococcal vaccination for adults

In the context of Residential Aged Care, Australian Technical Advisory Group on Immunisation (ATAGI) recommends pneumococcal vaccine for:

- people aged ≥ 70 years
- Aboriginal and Torres Strait Islanders aged ≥ 50 years
- people any age, diagnosed with a 'Risk condition for pneumococcal disease'

A list of 'risk conditions for pneumococcal disease' can be found in The Australian Immunisation Handbook¹.

There are two types of pneumococcal vaccines registered in Australia:

1. Pneumococcal conjugate vaccines:

- Prevenar 13[®] - 13vPCV (13-valent pneumococcal conjugate vaccine),
- Vaxneuvance[®] - 15vPCV (15-valent pneumococcal conjugate vaccine), and
- Prevenar 20[®] - 20vPCV (20-valent pneumococcal conjugate vaccine [registered in ≥ 18 years of age])

2. Pneumococcal polysaccharide vaccines:

- Pneumovax 23[®] - 23vPPV (23-valent pneumococcal polysaccharide vaccine)

At present Prevenar 13 (13vPCV) and Pneumovax 23 (23vPPV) are the pneumococcal vaccines funded under the National Immunisation Program (NIP) for eligible individuals¹. 15vPCV and 20vPCV (if aged ≥ 18 years) are available as alternatives to 13vPCV but are not currently NIP-funded¹.

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The most suitable vaccination regimen is to be assessed by the treating clinician in accordance with the Australian Immunisation Handbook – Pneumococcal disease¹.

2. Infection prevention and control measures

Streptococcus pneumoniae is transmitted from person to person through contact with respiratory droplets of symptomatic and asymptomatic carriers. The following measures reduced the risk of transmission:

- Antibiotic therapy - appropriate therapy makes people non-infectious within 24 hours
- Strict hand hygiene practises by staff and visitors attending to the resident
- Droplet transmission-based precautions for 24 hours:
 - » affected resident to be cared for in a single room
 - » all staff and visitors are to wear surgical masks when attending to the resident

Diagnosis of pneumococcal disease

- Pneumococcal disease is diagnosed by medical review and physical examination. Depending on symptoms, a variety of tests may be required e.g., blood, urine and or sputum specimens for culture
- chest X ray
- lumbar puncture (collection of spinal fluid for testing)

Management of pneumococcal disease



- antibiotics
- pain relief
- drinking more fluids
- rest
- admission to hospital for acute cases

Further reading:

1. Australian Technical Advisory Group on Immunisation (ATAGI). Australian Immunisation Handbook – Pneumococcal disease [Internet]. Canberra: Australian government, Department of Health and Aged Care; 2018. [cited 2024 Feb 15]. Available from: <https://immunisationhandbook.health.gov.au/contents/vaccine-preventable-diseases/pneumococcal-disease>
2. National Centre for Immunisation, Research and Surveillance. Pneumococcal Vaccines for Australians – Fact Sheet [Internet]. Sydney: NCIRS; 2020. Available from: https://ncirs.org.au/sites/default/files/2020-07/Pneumococcal-fact-sheet_1%20July%202020_FINAL.pdf
3. Victorian Government. Invasive pneumococcal disease [Internet]. Melbourne: Department of Health; 2021. Available from: <https://www.health.vic.gov.au/infectious-diseases/invasive-pneumococcal-disease>

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