Approach to managing community-acquired pneumonia (CAP) in residents of an aged-care facility

- Establish whether the resident has an **advance care plan**, and if antibiotic therapy is appropriate. Antibiotic therapy may be consistent with a declared palliative treatment plan.
- If there is no advance care plan and the resident lacks the capacity to make decisions about their medical treatment, speak with the medical treatment decision maker to establish **goals of care**.
- Assess **aspiration** risk. If the resident has had an aspiration event, try to exclude aspiration pneumonitis before starting antibiotic therapy. If aspiration pneumonia is suspected (eg pneumonia in a resident with recurrent aspiration), and treatment aligns with the resident's preferences and goals of care, start empirical therapy for CAP.
- Consider if a **viral respiratory infection** (eg influenza, COVID-19) is the cause of the resident's symptoms. Viral respiratory infections are common in aged-care facility residents and are difficult to differentiate from CAP. Do not rule out influenza or COVID-19 in a vaccinated resident because circulating strains may differ from the vaccine, and vaccine response can be suboptimal in older patients.
  - If a viral respiratory infection is suspected, consider performing NAAT (eg PCR) to establish the diagnosis, guide appropriate treatment and direct infection control measures (eg facility outbreak control, influenza prophylaxis for other residents) [NB1].
- **Sputum samples** can be difficult to obtain in residents of an aged-care facility. Only collect sputum samples for Gram stain and culture if the resident can produce sputum. Ideally, collect sputum samples before or soon after starting antibiotic therapy and interpret results with care [NB2].
- Ensure **immunisations** against pneumococcal disease, influenza and COVID-19 are up to date – see the Australian Immunisation Handbook. For other strategies to prevent CAP, see *Therapeutic Guidelines*.
- If antibiotic treatment is indicated and consistent with the resident's goals of care, determine the appropriate **location of care** by assessing:
  - the severity of CAP [NB3]
  - physiological status (eg hypoxaemia requiring supportive oxygen therapy)
  - comorbidities (particularly cardiac, respiratory and cognitive comorbidities)
  - functional status
  - ability to tolerate and absorb oral therapy.
- Consider **management in the aged-care facility** with oral therapy if the resident can eat and drink, and the following clinical parameters are met:
  - heart rate less than 100 beats per minute
  - systolic blood pressure more than 90 mmHg
  - respiratory rate less than 25 breaths per minute
  - oxygen saturation more than 92%
  - no evidence of acute-onset confusion.
- If **transfer to hospital** is indicated (eg residents who do not meet the above criteria or who require supportive oxygen therapy for hypoxaemia):
  - transfer the resident and manage as for CAP in adults if this is consistent with the resident's goals of care.
  - consider parenteral therapy in the aged-care facility (eg an organised Residential In-Reach Program or ambulatory antimicrobial therapy) if transfer to hospital is **not** consistent with the resident's goals of care.
- **Review** the resident's response to therapy within 24 to 48 hours and reassess the diagnosis if they are not improving, or an alternative diagnosis (eg aspiration pneumonitis, a respiratory virus) is more likely.

COVID-19 = Coronavirus disease 2019 (COVID-19); NAAT = nucleic acid amplification testing; PCR = polymerase chain reaction

NB1: For advice on testing for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), refer to state and territory health department guidelines. For links to resources on diagnosis and management of COVID-19, see *Therapeutic Guidelines*.

NB2: Gram stain of poor-quality sputum samples can give misleading results. Use a good-quality sample (presence of polymorphs but few or no squamous epithelial cells on microscopy), collected before starting antibiotics, to adjust antibiotic therapy – the pathogen should be predominant in the Gram stain as well as the culture.

NB3: Pneumonia severity scoring tools can overestimate disease severity in residents of an aged-care facility, leading to inappropriate broad-spectrum therapy. Use these tools as a guide and not as a substitute for clinical judgement.

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