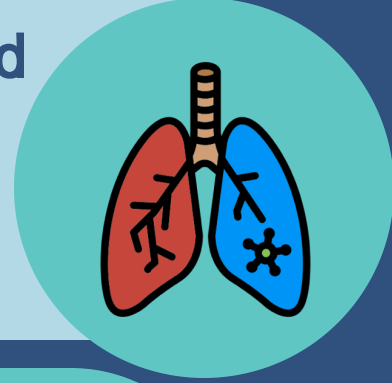


Management of Hospital-Acquired (HAP) and Ventilator-Associated Pneumonia (VAP)



This pathway is to be used in adult (age > 18 years) patients only. An Infectious Diseases consult is recommended when dealing with complicated or immunocompromised patients. See [ASP website](#) for detailed guidance.

Definition



Hospital-Acquired Pneumonia (HAP) is defined as pneumonia that occurs 48 hours or more after admission, which was not incubating at the time of admission.

Ventilator-Acquired Pneumonia (VAP) is defined as pneumonia that arises more than 48 hours after endotracheal intubation.

Diagnosis

- Patients without clinical evidence of pneumonia should not be started on antibiotics!
- New or progressive radiographic infiltrate **AND**
- Signs, symptoms, and/or laboratory evidence of pneumonia:
 - Fever, cough, dyspnea, increased or purulent secretions, chest pain
 - Crackles, rhonchi, and new or worsened hypoxia
 - Elevated WBC, bandemia, and elevated PCT



Diagnostic Testing

Microbial diagnostic testing does not diagnose pneumonia but defines the etiology. Use only when clinical evidence of pneumonia is present.

- Blood Cultures – Obtain before antibiotics in all patients
- Lower Respiratory Tract Cultures – Obtain in all patients
- Pneumonia Panel – Obtain in all patients
- Urine Antigens & Respiratory Pathogen Panel - Obtain only if pneumonia panel unavailable.



Pneumonia Treatment

Hospitalized < 5 days:

- Refer to CAP Guidance for all patients including those with risk factors for resistance.

Hospitalized ≥ 5 days:

- Preferred: Vancomycin* plus cefepime **OR** Vancomycin* plus piperacillin/tazobactam**
- Severe beta-lactam allergy: Vancomycin* plus aztreonam
- Consider addition of the following agent based on severity of illness and likelihood of resistant pathogen isolation:
 - Tobramycin – if concern for multidrug-resistant Pseudomonas
 - Substitute meropenem for cefepime or P/T – **ONLY** if history of ESBL colonization or defined resistance to recommended agents.

*Linezolid is an acceptable alternative to vancomycin. Vancomycin/linezolid should be stopped if MRSA is not detected within 72 hours.

**Avoid use of vancomycin with piperacillin/tazobactam >48 hours.



Duration of Therapy

- 7 days is adequate for all pathogens.
- Procalcitonin can be used to safely shorten duration to <7 days.

Aspiration Pneumonitis : Antibiotics **NOT recommended.** Antibiotics do not decrease the need for ICU care, subsequent antibiotics, or mortality.