Health Care Acquired Pneumonia In Non-Intubated Patients

**Suspicion of Pneumonia**
- Presence of new or progressive radiologic infiltrates
- Fever $\geq 38^\circ$
- Leukocytosis or Leukopenia
- Purulent secretions

**Sputum production by patient**

- Yes
  - RN will collect sputum
  - Empiric Therapy with modification of treatment based on gram stain and culture/sensitivity

- No
  - Sputum Induction by Respiratory Therapist

**Empiric Treatment based upon time of onset and risks of MDR**

- Early onset < 5 days and no MDR risks
  - No Risk Multi-drug Resistance
    - Ceftriaxone and Azithromycin
    - Ampicillin Sulbactam and Azithromycin
    - OR
    - Moxifloxacin (PCN Allergy)

- Late onset $\geq$ 6 days and/or MDR risks
  - Risk of Multi-drug Resistance
    - Pip-Tazo or Cefepime or Carbapenems
    - TObramycin (or Ciprofloxacin if renal impairment)
    - Vancomycin (if history of MRSA and/or gram positive cocci in cluster on gram stain, Linezolid in selected cases approved)

**Assessment of Clinical Improvement 48-72/hours**

- Cultures Negative
  - Search for other pathogens, complications, other diagnosis or sites for infection
  - Consider stopping Pneumonia targeted antibiotics if clinically appropriate

- Cultures Positive
  - Adjust antibiotics
  - Continue to search for other pathogens, complications, other diagnosis or other sites of infections

- Cultures Positive
  - Adjust (De-escalate) antibiotics
  - Treatment duration 7-8 days and reassess
  - Consider 15 day treatment for Pseudomonas aeruginosa, Acinetobacter

- Cultures Negative
  - Consider stopping antibiotics

---

*Risk Factors For Multi-Drug Resistance*
- Antimicrobial therapy in preceding 90 days
- Current hospitalization of 5 days or more
- High frequency of antibiotic resistance in the community or in the specific hospital unit
- Presence of risk factors for HCAP:
  - Hospitalization for 2 days or more in the preceding 90 day
  - Residence in a nursing home or extended care facility
  - Home infusion therapy (including antibiotics)
  - Chronic dialysis within 30 days
  - Home wound care
  - Family member with multidrug-resistant pathogen
- Immunosuppressive disease and/or therapy

---

**Consider if recent Piperacillin-Tazobactam use or strong concern for extended spectrum Beta-lactamase producers (ex. Pseudomonas aeruginosa, enterobacteriaceae). (Carbapenems include Imipenem or Meropenem)**