Clinical Practice Guideline (CPG)

PNEUMOCOCCAL PNEUMONIA

SCOPE:

☒ Family Care ☒ PACE ☒ Partnership

AUDIENCE:

Interdisciplinary Team Staff (IDTS), Clinicians, Providers

PURPOSE:

To provide best practice approach to Community Care, Inc. Interdisciplinary Team Staff, Physicians and other providers who care for our members.

Community care Clinical Practice Guidelines (CPG) are recommendations intended to guide an overall approach to care. (Please see references for an in-depth review of the condition/disease.)

Individual member factors, comorbidities, member preferences and member "Goals of Care" should be considered when making recommendations for an individual member.

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CONTENTS:

1) Overview of Pneumococcal Pneumonia

- Pneumococcal Pneumonia, a common cause of Community Acquired Pneumonia (CAP) Pneumococcal pneumonia, is a bacterial infection caused by *Streptococcus pneumoniae* (pneumococcus).
- Pneumococcus spreads via droplet infection to a host.
- The host immune response plays an important role in determining disease severity. For some patients, a local inflammatory response within the lung predominates and may be sufficient for controlling infection. In others, a systemic response is necessary to control infection and to prevent spread or complications, such as bacteremia. In a minority, the systemic response can become dysregulated, leading to tissue injury, sepsis, acute respiratory distress syndrome and/or multiorgan dysfunction.
- Clinical Presentation: The clinical presentation of CAP varies, ranging from mild pneumonia characterized by fever and productive cough to severe pneumonia characterized by respiratory distress and sepsis.
- Symptoms of CAP include cough, dyspnea, pleuritic chest pain, fever/chills, fatigue, malaise and anorexia. If sepsis develops, a member can present with hypotension and altered mental status.
- Signs on exam include tachypnea, increased work of breathing, rales/crackles and rhonchi, tachycardia.

- Laboratory findings can include leukocytosis with a leftward shift, elevated ESR, C-reactive protein (CRP) and procalcitonin.
- Imaging: Chest x ray may show infiltrates in the lung parenchyma.
- Risk factors include age ≥65 years, chronic comorbidities, concurrent or antecedent respiratory viral infections, impaired airway protection, smoking, alcohol abuse and other lifestyle factors (i.e., crowded living conditions).

2) Best Practice Standards

➢ Prevention of Community Acquired Pneumonia (CAP)

The three pillars for prevention of CAP are:

- Smoking cessation (when appropriate);
- Influenza vaccination for all patients; and
- Pneumococcal vaccination for at-risk patients.

➢ Pneumococcal Vaccination

Adults 19 through 49 Years

The CDC recommends pneumococcal vaccination for adults 19 through 49 years old who have specified immunocompromising conditions, Cochlear Implant, Cerebrospinal fluid leak or chronic health conditions. **(See current CDC recommendations for vaccine choice for the individual patient.)**

- Immunocompromising Conditions:
    - Chronic renal failure;
    - Congenital or acquired asplenia;
    - Congenital or acquired immunodeficiency§;
    - Generalized malignancy;
    - HIV infection;
    - Hodgkin's disease;
    - Latrogenic immunosuppression;
    - Luekemia;
    - Lymphoma;
    - Multiple myeloma;
    - Nephrotic syndrome;
    - Sickle cell disease/other Hemoglobinopathies; and
    - Solid organ transplant.
- Chronic Health Conditions:
    - Alcoholism;
    - Chronic heart disease, including congestive heart failure and cardiomyopathies;
    - Chronic liver disease;

- Chronic lung disease, including chronic obstructive pulmonary disease emphysema and asthma;
- Cigarette smoking; and
- Diabetes mellitus.

Adults 50 or Older

The CDC recommends pneumococcal vaccination for all adults 50 years or older. **(See Current CDC recommendations for vaccine choice for the individual patient.)**

- **Contraindications and Precautions**
  - Do no administer Pneumonia vaccination to:
    - A person with a severe allergy to any component of the pneumonia vaccine being administered; and
    - PCV20 to a person who has ever had a severe allergic reaction (i.e., anaphylaxis) to any vaccine containing diphtheria toxoid.

➢ Diagnosis of Pneumococcal Pneumonia

- Demonstration of an infiltrate on chest imaging in a patient with a clinically compatible syndrome.
- Older Adults – Signs and symptoms of pneumonia can be subtle in patients with advanced age and/or impaired immune systems and a higher degree of suspicion may be needed to make the diagnosis. As examples, older patients may present with mental status changes but lack fever or leucocytosis.
- In immunocompromised patients, pulmonary infiltrates may not be detectable on chest radiographs but can be visualized with computed tomography.

3) Preventive Care, Management of Acute and Chronic Medical Conditions

➢ Defining Severity and Most Appropriate Site of Care

- **Ambulatory Care** – Most patients, who are otherwise healthy with normal vital signs (apart from fever) and no concern for complication, are considered to have mild pneumonia and can be managed in the ambulatory setting.
- **Hospital Admission** – Patients who have altered mental status, confusion, low blood pressure, respiratory rate $\geq$ 30 breaths per minute, temperature < 96.8 degrees F or peripheral oxygen saturations <92 percent on room air (and a significant change from baseline) should be hospitalized.

  Practical concerns that may warrant hospital admission include an inability to take oral medications, cognitive or functional impairment or other social issues

that could impair medication adherence or ability to return to care for clinical worsening (i.e., substance abuse, homelessness or residence far from a medical facility).

- **Scoring Systems** – PSI and CURB are the most frequent systems used to determine level of care if oxygen saturation ≥92% on room air.
- **Microbiologic Testing** – Most patients, with mild CAP being treated in the ambulatory setting, do not need microbiologic testing.
- **Empiric Antibiotic Treatment for CAP in Adults in the Outpatient Setting** – For all outpatients, empiric regiments are designed to treat the most common bacterial causes of a CAP, which include Streptococcus pneumonia, Haemophilus influenze and atypical pathogens (i.e., Mycoplasma pneumonia, Legionella penumophila and chlamydia pneumonia). Coverage is expanded to better treat additional gram-negative pathogens (i.e., beta-lactamase producing H. influnzae, Moraxella catarrhalis), for those with comorbidities, older age or recent antibiotic use. For patients with structural lung disease, (i.e., advanced chronic obstructive pulmonary disease) a regimen that also includes coverage for Enterobacteriaceae (i.e., Eschreichia coli and Klebsiella spp) is recommended.

4) Process for Interdisciplinary Team Staff (IDTS)

- Review immunization status at initial and at each MCP review assessment.
- Educate members regarding risks and benefits of Pneumococcal vaccination if have not received age or risk appropriate vaccination.
- Offer pneumococcal vaccination utilizing a shared decision-making process.
- Use motivational interviewing techniques to assess barriers to immunization.
- Collaborate with Primary Care Provider (PCP).

5) Quality Assurance Monitoring

- Community Care monitors quality of care provided to all its members via Internal File Reviews, target audits, risk reports, HEDIS data, Acumen data, electronic health record guideline reports, Clinical Dashboards and feedback from providers.
- Community Care recognizes that Clinical Practice Guidelines are intended to assist in decision-making and may not apply to all members or circumstances; complete compliance is not expected for all guidelines.

6) References

1. Kobayashi M, Farrar JL, Gierke R, et al. Use of 25-Valent Pneumococcal Conjugate Vaccine and 20-Valent Pneumococcal Conjugate Vaccine Among U.S. Adults: Updated Recommendations of the Advisory Committee on Immunization Practices – United States, 2022. MMWR Morb Mortal Wkly Rep 2022:71:109-117. DOI: http://dx.doi.org/10.15585/mmwr.mm7104a1. Accessed 09/25/24
2. CDC Vaccines and Immunization for current immunization recommendations and schedule https://www.cdc.gov/vaccines accessed 4/29/25
3. Pneumococcal Vaccine Timing for Adults PDF
   Centers for Disease Control and Prevention NCIRDwt | 09/12/2024
   https://www.cdc.gov/pneumococcal/downloads/Vacine-Timing-Adults-JobAid.pdf accessed 4/29/25
4. Overview of community-acquired pneumonia in adults. UpToDate. Author: Julio A Ramirez, MD, FACP. Literature review current through: AUG 2024. | This topic last updated: APR 5, 2024. Accessed 9/25/2024
5. Treatment of community-acquired pneumonia in adults in the outpatient setting. UpToDate. Author: Thomas M File, Jr, MD. Literature review current through Aug 2024. This topic last updated: Jul 11, 2024.