Client: HMSA: PQSR 2007

Measure Title: PNEUMOCOCCAL VACCINE FOR THE ELDERLY AND OTHER HIGH-RISK GROUPS

Disease State: Streptococcus pneumoniae

Indicator Classification: Prevention

Strength of Recommendation: B

Clinic Intent: To ensure that all eligible members receive a pneumococcal vaccination during a clinically appropriate frequency.

Physician Specialties: Refer to PQSR 2007 Specialty Matrix

Clinical Rationale: Disease Burden
- Streptococcus pneumoniae accounts for approximately 485,000 to 620,000 hospitalizations per year in the United States in individuals ≥65 years of age [1, 2].
- In 1998, there were almost 63,000 cases (23 per 100,000 people) [1, 2] of invasive pneumococcal disease in the United States, and an estimated 44,000 deaths from pneumococcal infections [3].
- Annual incidences of invasive pneumococcal disease is higher among persons aged ≥65 years in North America and Europe range from 25 to 90 cases/100,000 persons. In the US and Canada, these rates represent between 15,000 and 30,000 cases annually among the elderly. Mortality caused by pneumococcal infections is highest among the elderly, with nearly 1 in 5 cases resulting in death [4, 5].
- In addition, there are about 500,000 cases of pneumococcal pneumonia per year [4] and an overall annual incidence of one to two cases of pneumococcal meningitis per 100,000 people [6].
- The overall cost for treating patients with community acquired pneumonia is more than $23 billion per year and more than $3.5 billion was spent on Medicare patients alone [7].

Reason for Indicated Intervention or Treatment
- Respondents to the 2003 Centers for Disease Control (CDC) Behavioral Risk Factor Surveillance System (BRFSS) who were 65 years of age or older reported rates between 31.6% and 73% of ever having received a pneumococcal vaccine, with a median of 64.2% [8].
- Increased pneumococcal vaccination rates in the elderly and immunocompromised could have prevented or decreased the extent of recent outbreaks of invasive pneumococcal disease [9, 10].

Evidence supporting Intervention or Treatment
- Multiple case-control and serotype prevalence studies demonstrate the effectiveness of the pneumococcal vaccine. Against invasive disease, case control studies show vaccine effectiveness rates of 56-81% [11-13], and a serotype prevalence study based on the CDC’s pneumococcal surveillance system indicate a 57% protective effectiveness [13, 14]. There was a protective efficacy of 75% in immunocompetent patients 65 years of age or older [13, 14], and of 65-84% for patients in specific high risk groups (e.g. diabetes mellitus, congestive heart failure, chronic...
pulmonary disease, coronary heart disease) [14].

- In addition, five meta-analyses of 8-16 randomized controlled trials concluded that the vaccine effectively reduces the frequency of bacteremic pneumococcal pneumonia in low-risk adults [15-19]
- However, there have been some conflicting findings about the efficacy of the pneumococcal vaccine in high-risk groups. Three of the five meta-analyses found no evidence that the vaccine protects against pneumonia in the elderly or high-risk populations [17-19], and results of a 2003 Cochrane Review meta-analysis of 15 trials (75,000 patients) showed a nonsignificant reduction in all-cause pneumonia and no reduction in mortality in those receiving the pneumococcal vaccine [20].

Clinical Recommendations
The Advisory Committee on Immunization Practices (ACIP), the American College of Obstetricians and Gynecologists (ACOG), and the American Academy of Family Physicians (AAFP) recommend the 23-valent pneumococcal polysaccharide pneumococcal vaccine for the following groups of people [5, 21]:
- Adults greater than or equal to 65 years old
- Persons between 2-64 years of age who are:
  - at increased risk of pneumococcal disease or its complications because of chronic illnesses such as chronic cardiovascular (congestive heart failure or cardiomyopathies) or pulmonary disease (COPD or emphysema, but not asthma), diabetes mellitus, alcoholism, cirrhosis, CSF leaks
  - have functional or anatomical asplenia
  - living in special environments or social settings (e.g. nursing homes or long-term care facilities, Alaskan Natives and certain American Indian populations)
- Immunocompromised adults (e.g. those with symptomatic or asymptomatic HIV, leukemia, lymphoma, Hodgkin's disease, chronic renal failure, generalized malignancy, immunosuppressive chemotherapy, other conditions associated with immunosuppression)
- Persons in any of the above categories with unknown prior immunization status

Source
Adapted from Health Plan Employer Data and Information Set (HEDIS®) 2007 Technical Specifications. The HEDIS measure utilized survey information and included all adults over 65 years old and did not include other immunocompromised individuals.

Denominator
Continuously enrolled members ages 65 – 67 at the beginning of the measurement year, or continuously enrolled members who had a qualifying diagnosis for a condition that would warrant pneumococcal vaccination (i.e. the member was immunocompromised) during the measurement year.

Relevant Billing Codes:


ICD-9 Status “V” code(s): V08, V10.72, V42.00-V42.49, V42.60-V42.99, V45.1x

Denominator
Exclusion
N/A

Numerator
Members who received a pneumococcal vaccination at any point in the available data.

Relevant Billing Codes:
CPT-4 code: 90732

Interpretation of Score
High score implies better performance

Physician Attribution
Score all physicians (in the selected specialties) who saw the member in the measurement year.

References
### Indicator Classification
(Adapted from Health Plan Employer Data Information Set (HEDIS®) technical specifications)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td>Measures applicable to patients receiving diagnostic workups for a symptom or condition that delineate appropriate laboratory or radiological testing to be performed (e.g., evaluation of thyroid nodule; pregnancy test in patients with vaginal bleeding or abdominal pain)</td>
</tr>
<tr>
<td>Effectiveness of Care</td>
<td>Measures applicable to asymptomatic individuals that are designed to prevent the onset of the targeted condition (e.g., immunizations).</td>
</tr>
<tr>
<td>Prevention</td>
<td>Measures applicable to asymptomatic patients who have risk factors or preclinical disease, but in whom the condition has not become clinically apparent (e.g., pap smears; screening for elevated blood pressure).</td>
</tr>
<tr>
<td>Screening</td>
<td>Measures applicable to individuals diagnosed with a condition that are part of the treatment or management of the condition (e.g., cholesterol reduction in patients with diabetes; radiation therapy following breast conserving surgery; appropriate follow-up after acute event).</td>
</tr>
<tr>
<td>Disease Management</td>
<td>Measures applicable to patients taking medications with narrow therapeutic windows and/or potential preventable significant side effects or adverse reactions (e.g., thyroid stimulating hormone (TSH) testing after levothyroxine dose change; hepatic enzyme monitoring for patients using antimycotic pharmacotherapy)</td>
</tr>
<tr>
<td>Medication Monitoring</td>
<td>Measures applicable to patients taking medications for chronic conditions that are designed to assess patient adherence to medication (e.g., adherence to lipid lowering medication).</td>
</tr>
<tr>
<td>Medication Adherence</td>
<td>Measures applicable to patients receiving treatment for a symptom or condition that advocate appropriate utilization of laboratory and pharmaceutical resources (e.g., conservative use of imaging for low back pain; inappropriate use of antibiotics for viral upper respiratory infection).</td>
</tr>
</tbody>
</table>
FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation based on the benefits, harms, and costs of the intervention being recommended. (USPSTF = U.S. Preventive Services Task Force)