Client: HMSA: PQSR 2007

Measure Title: TREATMENT AFTER EMERGENCY DEPARTMENT VISIT FOR ASTHMA

Disease State: Asthma

Indicator Classification: Disease Management

Strength of Recommendation: B

Clinical Intent: To ensure that eligible members who had an asthma related emergency department visit receive the appropriate follow up treatment.

Physician Specialties (suggested): Refer to PQSR 2007 Specialty Matrix

Clinical Rationale:

Disease Burden:
- In 2002, approximately 20 million people in the United States had asthma, and it is estimated that 12 million people (43 per 1000 population) had experienced an asthma attack in the previous year.[1]
- In addition, there were 13.9 million outpatient asthma visits to private physician offices and hospital outpatient departments and 1.9 million emergency department visits for asthma in 2002.[1]

Reason for Indicated Intervention or Treatment:
- Early diagnosis and proper treatment of acute asthma exacerbations is important in preventing recurrent emergency department visits, avoiding hospitalizations and decreasing mortality.

Evidence supporting Intervention or Treatment:

Oral Corticosteroids:
- A 2001 Cochrane Database meta-analysis of 7 randomized controlled trials showed that patients receiving corticosteroids (either intramuscular or oral) for an acute asthma exacerbation had significantly fewer relapses in the first week and less need for beta-agonists.[2]
- Another 1992 meta-analysis of 30 randomized controlled trials demonstrated that early corticosteroid therapy for acute asthma exacerbations, whether oral or intravenous, resulted in decreased hospitalizations and fewer relapses for both children and adults.[3]
- Several small randomized controlled trials of 16 to 93 patients showed that in the first week after an asthma exacerbation, patients treated with oral corticosteroids had a significantly lower risk of relapse, lower mean daily symptom scores and decreased frequency of inhaled bronchodilator use compared to those in the placebo group.[4-8]

Inhaled Corticosteroids:
- There is some debate about whether the practice of doubling the inhaled corticosteroid (ICS) dose in patients with asthma exacerbations is equivalent to using oral corticosteroids.
- One randomized controlled trial of 185 patients showed that ICS use is comparable to prednisone treatment in terms of improving asthma symptoms and quality of life, and preventing relapse.[9]
- Another randomized controlled trial of 115 asthmatic patients in Finland showed that patients practicing asthma self-management who increased their ICS dosages when suffering from mild asthma exacerbations had significantly fewer visits to ambulatory care facilities, fewer days off work,
and fewer oral corticosteroid prescriptions.[10]

- However, a 2002 meta-analyses of 7 randomized controlled trials with 1204 patients showed that while there is some evidence that doubling the ICS dose in mild asthmatics may be as effective as using oral corticosteroids, the study’s small sample size gives rise to a significant possibility of a Type II error in the analysis.[11]
- Another 2002 meta-analysis of 6 randomized controlled trials with 352 patients indicated that even though ICS use decreases admission rates when used for acute asthma exacerbations, there is insufficient evidence that it leads to clinically important pulmonary function changes, or that ICS use alone is as effective as systemic corticosteroids.[12]
- A more recent 2004 randomized controlled trial of 390 asthmatics with worsening peak flows or symptoms revealed that patients treated with twice their usual dose of ICS versus placebo had no significant difference in their eventual need for systemic corticosteroid therapy, suggesting that there is little evidence to support doubling the ICS dose for acute asthma exacerbations.[13]
- Furthermore, another 2004 randomized controlled trial of 290 patients evaluating the practice of doubling the dose of inhaled corticosteroids versus maintaining the regular regimen showed that patients already on ICS may not benefit from a doubling of the dose.[14]

**Clinical Recommendations**

- The National Asthma Education and Prevention Program (NAEPP) recommends supplementing regular treatment with an oral corticosteroid for acute asthma exacerbations.[15]
- The 1997 National Asthma Education and Prevention Program (NAEPP) Expert Panel recommended:
  - Patients already taking an inhaled corticosteroid and presenting with mild exacerbations should double the ICS dose for 7-10 days. [16]
  - Those with moderate-to-severe exacerbations and mild exacerbations that persist despite increasing the dose of inhaled corticosteroids should receive a course of oral steroids. [16]
  - The NAEPP 2002 update did not address this issue of doubling ICS dosages.
  - It should be noted that these recommendations preceded most of the studies assessing the efficacy of doubling the ICS dose for acute asthma exacerbations. In light of the controversial findings surrounding doubling of the inhaled corticosteroid dose versus initiating oral corticosteroids, care should be used if this option is chosen, and patients may require closer monitoring.
- The Joint Council of Allergy & Immunology (JCAAI) recommends the use of systemic corticosteroids for patients with acute intractable asthma. They also note that poor control of asthma is a special risk factor for life threatening asthma exacerbations in the period after hospitalization. [17]

**Source**

Health Benchmarks, Inc.

**Denominator**

Continuously enrolled members ages 6 years or older by the end of the measurement year who had an asthma-related emergency room visit during the one year period ending 60 days prior to the end of measurement year and a prescription for inhaled corticosteroids in the one year period ending 60 days prior to the end of the measurement year.
Relevant Billing Codes:

ICD-9 diagnosis code(s): 493.xx

CPT-4 code(s): 99234-99236, 99281-99285

UB-92 revenue code(s): 0450-0452, 0456, 0459, 0981, 450-452, 456, 459, 981

Denominator Exclusion

Members diagnosed with emphysema or chronic obstructive pulmonary disease (COPD) any time prior to the end of the measurement year.

Relevant Billing Codes:

ICD-9 diagnosis code(s): 365.04, 365.1x, 491.20, 491.21, 492.x, 496.xx, 506.4, 518.1, 518.2

Numerator

Members who: (1) filled a prescription for an inhaled corticosteroid or a prednisone/prednisone substitute 0-30 days after the index date (ER service date), or (2) filled a prescription for an inhaled corticosteroid or prednisone/prednisone substitute 1-30 days prior to the index date (ER service date) and again 0-60 days after the index date (ER service date), or (3) members who had an outpatient office visit 1-7 days after the index date.

Relevant Billing Codes:


UB-92 revenue code(s): 0500-0529, 0570-0599, 0770-0779, 0820-0859, 0882, 0982-0983, 500-529, 570-599, 770-779, 820-859, 882, 982-983

Interpretation of Score

High score implies better performance

Physician Attribution

Score all physicians (in the selected specialties) who saw the member 1-30 days prior to index date (ER service date) or 0-60 days after the index date (ER service date).

References


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

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diagnosis</strong></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><strong>Effectiveness of Care</strong></td>
<td></td>
</tr>
<tr>
<td>Prevention</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>Screening</td>
<td>Measures applicable to asymptomatic patients who have risk factors or pre-clinical disease, but in whom the condition has not become clinically apparent (e.g., pap smears; screening for elevated blood pressure).</td>
</tr>
<tr>
<td>Disease Management</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>Medication Monitoring</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 antymycotic pharmacotherapy)</td>
</tr>
<tr>
<td>Medication Adherence</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>Utilization</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>
Strength of Recommendation Based on a Body of Evidence

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)