Client: HEALTH BENCHMARKS, INC. STANDARD ALGORITHM

Measure Title: APPROPRIATE TREATMENT FOR CHILDREN WITH UPPER RESPIRATORY INFECTION

Disease State: Upper respiratory infections

Strength of Recommendation: B

Organizations Providing Recommendation:
- American Academy of Family Physicians
- American Academy of Pediatrics
- American College of Physicians
- American Society of Internal Medicine
- Centers for Disease Control and Prevention
- Infectious Diseases Society of America

Clinical Intent: To ensure that children diagnosed with nonspecific upper respiratory infections are not being inappropriately treated with antibiotics.

Background Disease Burden:
- The vast majority of upper respiratory infections (URIs) are caused by viruses, for which antibiotics are ineffective, yet almost 65% of patients with these conditions receive antibiotic prescriptions.[1, 2]

Reason for Indicated Intervention or Treatment:
- Antibiotics are ineffective treatments for URIs and widespread inappropriate antibiotic utilization has led to increasing levels of antibiotic resistance.[3, 4]
- Most patients do not require antibiotic treatment as the symptoms will often resolve naturally within 1-2 weeks.[5]
- Physicians who have practiced for a short time or physicians with high patient volume are more likely to prescribe antibiotics for respiratory tract infections without proper diagnosis of the condition.[4]
- Despite attempts to reduce inappropriate antibiotic use for URI, the rate of prescriptions still remains inadequately high.[6]

Evidence Supporting Intervention or Treatment:
- A recent study of 5 health plans discovered that for 119,128 cases of URI/bronchitis in children 3 months to 18 months of age, physicians prescribed antibiotics 31% of the time. Individual plan rates varied from 2%-75%.[7]
- Another recent study of 2,270 cases of acute respiratory infections in the acute care setting also found that 31% of patients were given antibiotic treatment for URIs.[8]
Clinical Recommendations

- The American Academy of Family Physicians through development with the Alliance Working for Antibiotic Resistance Education (AWARE) Project advises against prescription of antibiotics for unspecified URIs.[9, 10]

Source

Healthcare Effectiveness Data and Information Set (HEDIS®) 2009 Technical Specification for Physician Measurement

Denominator

<table>
<thead>
<tr>
<th>Denominator Definition</th>
<th>Continuously enrolled members ages 3 months to 18 years old who were diagnosed with only a URI in an outpatient or emergency room setting during the 1 year period beginning 6 months prior to the start of the measurement year.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denominator Index Date</td>
<td>First instance of Members diagnosed with an URI in an outpatient or emergency department setting during the 1 year period beginning 6 months prior to the start of the measurement year.</td>
</tr>
<tr>
<td>Denominator Encounters/Claims Criteria</td>
<td>ICD-9 diagnosis code(s): 460.xx, 465.xx CPT-4 code(s): 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99281-99285, 99381-99385, 99391-99395, 99401-99404, 99411, 99412, 99420, 99429 UB revenue code(s): 045x, 051x, 0520-0523, 0526-0529, 077x, 0981, 0982, 0983</td>
</tr>
</tbody>
</table>

Denominator Exclusion

<table>
<thead>
<tr>
<th>Denominator Exclusion Definition</th>
<th>Members who filled a prescription for an antibiotic in the 1-30 days prior to the index date or members who had a competing diagnosis 0-3 days after the index date.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denominator Exclusion Claims Criteria</td>
<td>Drug List: amoxicillin, ampicillin, amoxicillin-clavulanate, cefadroxil, cefazolin, cephalaxin, cephradine, trimethoprim, clindamycin, azithromycin, clarithromycin, erythromycin, erythromycin ethylsuccinate, erythromycin lactobionate, erythromycin estolate, erythromycin stearate, erythromycin-sulfisoxazole, penicillin G potassium, penicillin G sodium, penicillin V potassium, dicloxacillin, ciprofloxacin, gatifloxacin, levofloxacin, lomefloxacin, moxifloxacin, ofloxacin, sparfloxacin, cefaclor, cefprozil, cefuroxime, loracarbef, sulfamethoxazole-trimethrombin, sulfisoxazole, doxycycline, minocycline, tetracycline, cefdinir, cefixime, cefpodoxime, ceftibuten, ceftriaxone</td>
</tr>
</tbody>
</table>
| ICD-9 diagnosis code(s): 001.xx-009.xx, 033.x, 034.0, 382.xx, 383.xx, 041.9x, 078.88, 079.88, 079.98, 088.xx, 090.xx-097.xx, 098.xx, 099.xx, 131.xx, 461.x, 462, 463, 473.x, 464.1x-464.3x, 474.xx, 478.21-478.24, 478.29, 478.71, 478.79, 478.9x, 481.xx-486.xx, 590.xx, 595.xx, 599.0x, 601.x, 614.xx-616.xx, 681.xx,
<table>
<thead>
<tr>
<th>Numerator</th>
<th>Members who did NOT receive an antibiotic prescription 0-3 days after the index date.</th>
</tr>
</thead>
</table>

*Note: This definition allows the measure to be reported as an inverted rate to facilitate a meaningful score interpretation across measures that are scored on the same scale.*

| Numerator Claims Criteria | Drug List: amoxicillin, ampicillin, amoxicillin-clavulanate, cefadroxil, cefazolin, cephalaxin, cephalexin, clarithromycin, erythromycin, erythromycin ethylsuccinate, erythromycin lactobionate, erythromycin estolate, erythromycin stearate, erythromycin-sulfisoxazole, penicillin G potassium, penicillin G sodium, penicillin V potassium, dicloxacillin, ciprofloxacin, gatifloxacin, levofloxacin, lomefoxacin, moxifloxacin, ofloxacin, sparfloxacin, cefaclor, cefazolin, cefprozil, cefuroxime, doxycycline, minocycline, tetracycline, cefdinir, cefixime, cefpodoxime, ceftibuten, ceftriaxone |

<table>
<thead>
<tr>
<th>Physician Attribution Description</th>
<th>If client data contains prescribing provider:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>If the member filled a prescription for an antibiotic (i.e., numerator criterion [A]; a non-numerator hit), score the prescribing provider.</td>
</tr>
<tr>
<td></td>
<td>If the member did not fill an antibiotic prescription (i.e., NOT numerator criterion [A]; a numerator hit), score all physicians who saw the member 0-3 days after the index date.</td>
</tr>
<tr>
<td></td>
<td><strong>If client data does not contain prescribing provider:</strong></td>
</tr>
<tr>
<td></td>
<td>Score all physicians who saw the member 0-3 days after the index date.</td>
</tr>
</tbody>
</table>

**References**


1 Indicator Classification (Adapted from HEDIS® technical specifications)

**Diagnosis**
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).

**Effectiveness of Care**

**Prevention**
Measures applicable to asymptomatic individuals that are designed to prevent the onset of the targeted condition (e.g., immunizations).

**Screening**
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).

**Disease Management**
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).

**Medication Monitoring**
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).

**Medication Adherence**
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).

**Utilization**
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).
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)