

Client	HEALTH BENCHMARKS, INC. STANDARD ALGORITHM		
Measure Title	APPROPRIATE TREATMENT FOR CHILDREN WITH UPPER RESPIRATORY INFECTION		
Disease State	Upper respiratory infections	Indicator Classification¹	Disease Management
Strength of Recommendation²	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	<p>Disease Burden</p> <ul style="list-style-type: none"> 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] <p>Reason for Indicated Intervention or Treatment</p> <ul style="list-style-type: none"> 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] <p>Evidence Supporting Intervention or Treatment</p> <ul style="list-style-type: none"> 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

Denominator Definition 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.

Denominator Index Date 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.

Denominator Encounters/Claims Criteria 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

Denominator Exclusion

Denominator Exclusion Definition 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.

Denominator Exclusion Claims Criteria Drug List: amoxicillin, ampicillin, amoxicillin-clavulanate, cefadroxil, cefazolin, cephalexin, cephadrine, trimethoprim, clindamycin, azithromycin, clarithromycin, erythromycin, erythromycin ethylsuccinate, erythromycin lacotobionate, 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

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,

Numerator

Numerator Definition Members who did NOT receive an antibiotic prescription 0-3 days after the index date.

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, cephalexin, cephradine, trimethoprim, clindamycin, azithromycin, clarithromycin, erythromycin, erythromycin ethylsuccinate, erythromycin lacotobionate, 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

Physician Attribution

Physician Attribution Description **If client data contains prescribing provider:**

If the member filled a prescription for an antibiotic (i.e., numerator criterion [A]; a non-numerator hit), score the prescribing provider.

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.

If client data does not contain prescribing provider:

Score all physicians who saw the member 0-3 days after the index date.

References

1. Rutschmann, O.T. and M.E. Domino, *Antibiotics for upper respiratory tract infections in ambulatory practice in the United States, 1997-1999: does physician specialty matter?* J Am Board Fam Pract, 2004. **17**(3): p. 196-200.
2. Hickner, J., *A new look at an old problem: inappropriate antibiotics for acute respiratory infections.* Ann Fam Med, 2006. **4**(6): p. 484-5.
3. Chamany, S., et al., *Knowledge, attitudes, and reported practices among obstetrician-gynecologists in the USA regarding antibiotic prescribing for upper respiratory tract infections.* Infect Dis Obstet Gynecol, 2005. **13**(1): p. 17-24.
4. Arnold, S.R. and S.E. Straus, *Interventions to improve antibiotic prescribing practices in ambulatory care.* Cochrane Database Syst Rev,

- 2005(4): p. CD003539.
5. Ben-David, D. and E. Rubinstein, *Appropriate use of antibiotics for respiratory infections: review of recent statements and position papers*. *Curr Opin Infect Dis*, 2002. **15**(2): p. 151-6.
 6. Metlay, J.P., et al., *Cluster-randomized trial to improve antibiotic use for adults with acute respiratory infections treated in emergency departments*. *Ann Emerg Med*, 2007. **50**(3): p. 221-30.
 7. Mangione-Smith, R., et al., *Measuring the quality of antibiotic prescribing for upper respiratory infections and bronchitis in 5 US health plans*. *Arch Pediatr Adolesc Med*, 2005. **159**(8): p. 751-7.
 8. Gonzales, R., et al., *Antibiotic treatment of acute respiratory infections in acute care settings*. *Acad Emerg Med*, 2006. **13**(3): p. 288-94.
 9. Foundation, C.M.A., *Acute Respiratory Tract Infection Guideline Summary*, in *Alliance Working for Antibiotic Resistance Education*, C.M.A.F. AWARE, Editor. 2007, California Medical Association Foundation: Sacramento.
 10. Wong, D.M., D.A. Blumberg, and L.G. Lowe, *Guidelines for the use of antibiotics in acute upper respiratory tract infections*. *Am Fam Physician*, 2006. **74**(6): p. 956-66.

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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).

2 Strength of Recommendation

Strength of Recommendation Based on a Body of Evidence

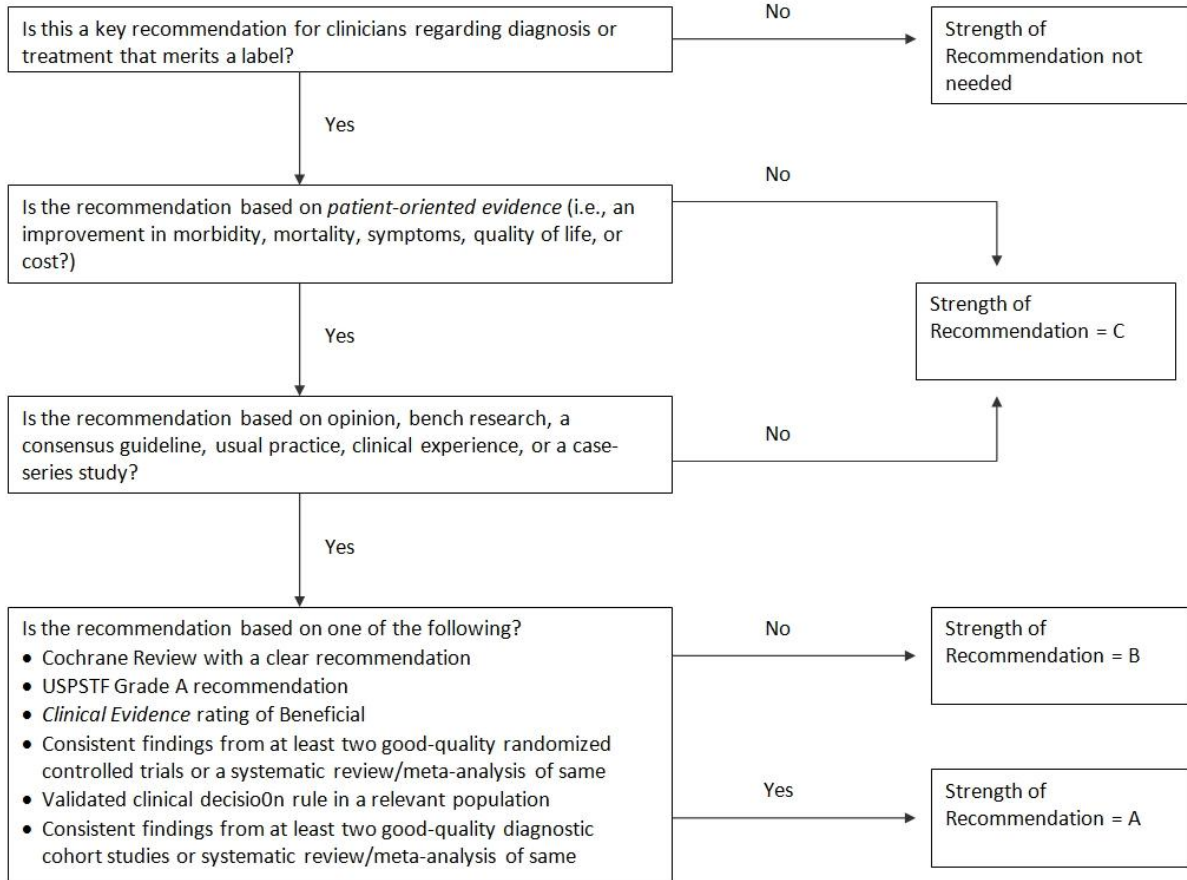


FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation based on the benefits, harms, and costs of the intervention being recommended. (USPSTF = U.S. Preventive Services Task Force)