

Client	HEALTH BENCHMARKS, INC. STANDARD ALGORITHM		
Measure Title	AVOIDANCE OF ANTIBIOTIC TREATMENT IN ADULTS WITH ACUTE BRONCHITIS		
Disease State	Bronchitis	Indicator Classification¹	Utilization
Strength of Recommendation²	A		
Organizations Providing Recommendation	American Academy of Family Physicians American College of Chest Physicians American College of Physicians Centers for Disease Control and Prevention		
Clinical Intent	To ensure that members without comorbidity diagnosed with bronchitis are not being inappropriately treated with antibiotics.		
Background	<p>Disease Burden</p> <ul style="list-style-type: none"> • The vast majority of acute bronchitis cases (>90%) are not caused by bacteria. Yet, between 65% to 80% of patients diagnosed with acute bronchitis are prescribed antibiotics.[1, 2] • According to the 2007 NCQA State of Health Care Quality Report, 4 in 5 antibiotics prescribed for acute bronchitis were unnecessary.[3] <p>Reason for Indicated Intervention or Treatment</p> <ul style="list-style-type: none"> • Antibiotics are ineffective in most cases of acute bronchitis and widespread inappropriate antibiotic utilization leads to antibiotic drug resistance, reducing the ability to effectively treat bacterial infections, especially in the sick and elderly.[3] • Inappropriate antibiotic use also contributes to increased waste of healthcare resources both directly as ineffective therapy and indirectly with the emergence of drug-resistant pathogens in the healthcare setting.[3] <p>Evidence Supporting Intervention or Treatment</p> <ul style="list-style-type: none"> • 14 randomized control trials and several systematic reviews comparing antibiotics to placebo have shown that antibiotics are an ineffective treatment modality for patients with acute bronchitis.[1, 4-14] 		
Clinical Recommendations	<ul style="list-style-type: none"> • The Centers for Disease Control and Prevention and the American College of Physicians Guideline <i>Principles of appropriate antibiotic use for treatment of acute bronchitis in adults</i> states that “routine antibiotic treatment of uncomplicated acute bronchitis is not recommended, regardless of duration of cough.” In evaluation of adults with an acute cough, physicians should focus on ruling out pneumonia.[15, 16] 		

- The American College of Chest Physicians recommends against the use of antibiotics for patients putative diagnosis of acute bronchitis. However, explanations should always be given as patients previous experiences may drive expectations of antibiotic use.[1]
- The New England Journal of Medicine Clinical Practice Statement on Acute Bronchitis recommends against the use of antibiotics for patients diagnosed with acute bronchitis.[17]
- The American Academy of Family Physicians makes similar recommendations opposing the use of antibiotics in otherwise healthy adults diagnosed with acute bronchitis.[18]
- The Alliance Working for Antibiotic Resistance Education, which includes the American Academy of Urgent Care Medicine, the American College of Physicians, and other medical organizations, recommends against the use of antibiotics for adults diagnosed with acute bronchitis.[19]

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

Denominator

Denominator Definition Continuously enrolled members ages 18-64 years old who were diagnosed with acute bronchitis in an outpatient or emergency room setting during the first 358 days of the measurement year.

Denominator Index Date First instance of Members diagnosed with acute bronchitis in an outpatient or emergency room setting during the first 358 days of the measurement year.

Denominator Encounters/Claims Criteria ICD-9 diagnosis code(s): 466.0x
 CPT-4 code(s): 99201-99205, 99211-99215, 99217-99220, 99281-99285 99241-99245, 99385, 99386, 99395, 99396, 99401-99404, 99411, 99412, 99420, 99429,
 UB-92 revenue code(s): 045x, 051x, 0520-0523, 0526-0529, 077x, 0981, 0982, 0983

Denominator Exclusion

Denominator Exclusion Definition Members who had any diagnosis for a qualifying comorbid condition in the 0-12 months prior to the index date, members who had a competing diagnosis in the 30 days prior through 7 days after the index date, or members who filled a prescription for an antibiotic in the 1-30 days prior to the index date.

Denominator Exclusion Claims Criteria ICD-9 diagnosis code(s): 001.xx-009.xx, 010.xx-018.xx, 033.x, 034.0, 041.9x, 042, 078.88, 079.88, 079.98, 088.xx, 090.xx, 097.xx, 098.xx, 099.xx, 131.xx, 140.xx, 208.xx, 277.0x, 279.xx, 382.xx, 383.xx, 461.x, 462, 463, 464.1x-464.3x, 473.x, 474.xx, 478.21-478-24, 478.29, 478.71, 478.79, 478.9, 481.xx, 486.xx, 491.xx, 492.x, 493.x, 494.x, 495.x, 496, 500.x-508.x, 510.xx-519.xx, 590.xx, 595.xx, 599.0, 601.x, 614.xx-616.xx, 681.xx, 682.x, 683, 684, 683.xx, 730.xx, V01.6, V02.7, V02.8, V08

Drug List: sulfasalazine, metronidazole, amikacin, gentamicin, kanamycin, neomycin, streptomycin, tobramycin, amoxicillin, ampicillin, piperacillin, ticarcillin, amoxicillin-clavulanate, ampicillin-sulbactam, piperacillin-tazobactam, ticarcillin-clavulanate, cefadroxil, cefazolin, cephalexin, cephadrine, cefepime, telithromycin, clindamycin, lincomycin, azithromycin, clarithromycin, erythromycin, erythromycin ethylsuccinate, erythromycin lactobionate, erythromycin stearate, aztreonam, chloramphenicol, dalfopristin-quinuprisitn, daptomycin, erythromycin-sulfisoxazole, linezolid, metronidazole, doxycycline, sulfamethoxazole-trimethoprim, vanomycin, penicillin G benzathine-procaine, penicillin G potassium, penicillin G procaine, penicillin G sodium, penicillin V potassium, dicloxacillin, nafcillin, oxacillin, ciprofloxacin, gatifloxacin, gemifloxacin, levofloxacin, lomefloxacin, moxifloxacin, norfloxacin, ofloxacin, sparfloxacin, rifampin, cefaclor, cefotetan, cefoxitin, cefprozil, cefuroxime, loracarbef, sulfadiazine, sulfamethoxazole-trimethoprim, sulfisoxazole, doxycycline, minocycline, tetracycline, cefdinir, cefixime, cefoperazone, cefotaxamine, ceftazidime, ceftibuten, ceftriaxone, cefoperazone, fosfomycin, nitrofurantoin, nitrofurantoin macrocrystals, nitrofurantoin macrocrystals-monohydrate, trimethoprim

Numerator

Numerator Definition Members who did NOT fill a prescription for an antibiotic during the 0-3 days after the index date (inclusive of the index date).

Numerator Claims Criteria Drug List: sulfasalazine, metronidazole, amikacin, gentamicin, kanamycin, neomycin, streptomycin, tobramycin, amoxicillin, ampicillin, piperacillin, ticarcillin, amoxicillin-clavulanate, ampicillin-sulbactam, piperacillin-tazobactam, ticarcillin-clavulanate, cefadroxil, cefazolin, cephalexin, cephadrine, cefepime, telithromycin, clindamycin, lincomycin, azithromycin, clarithromycin, erythromycin, erythromycin ethylsuccinate, erythromycin lactobionate, erythromycin stearate, aztreonam, chloramphenicol, dalfopristin-quinuprisitn, daptomycin, erythromycin-sulfisoxazole, linezolid, metronidazole, doxycycline, sulfamethoxazole-trimethoprim, vanomycin, penicillin G benzathine-procaine, penicillin G potassium, penicillin G procaine, penicillin G sodium, penicillin V potassium, dicloxacillin, nafcillin, oxacillin, ciprofloxacin, gatifloxacin, gemifloxacin, levofloxacin, lomefloxacin, moxifloxacin, norfloxacin, ofloxacin, sparfloxacin, rifampin, cefaclor, cefotetan, cefoxitin, cefprozil, cefuroxime, loracarbef, sulfadiazine, sulfamethoxazole-trimethoprim, sulfisoxazole, doxycycline, minocycline, tetracycline, cefdinir, cefixime, cefoperazone, cefotaxamine, ceftazidime, ceftibuten, ceftriaxone, cefoperazone, fosfomycin, nitrofurantoin, nitrofurantoin macrocrystals, nitrofurantoin macrocrystals-monohydrate, trimethoprim

Physician Attribution

Physician Attribution Description **If client data contains prescribing provider:**
If member filled a prescription for an antibiotic (i.e., numerator criterion; a non-numerator hit), score the prescribing provider.

If the member did not fill an antibiotic prescription (i.e., NOT numerator criterion; 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

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19. 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.

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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

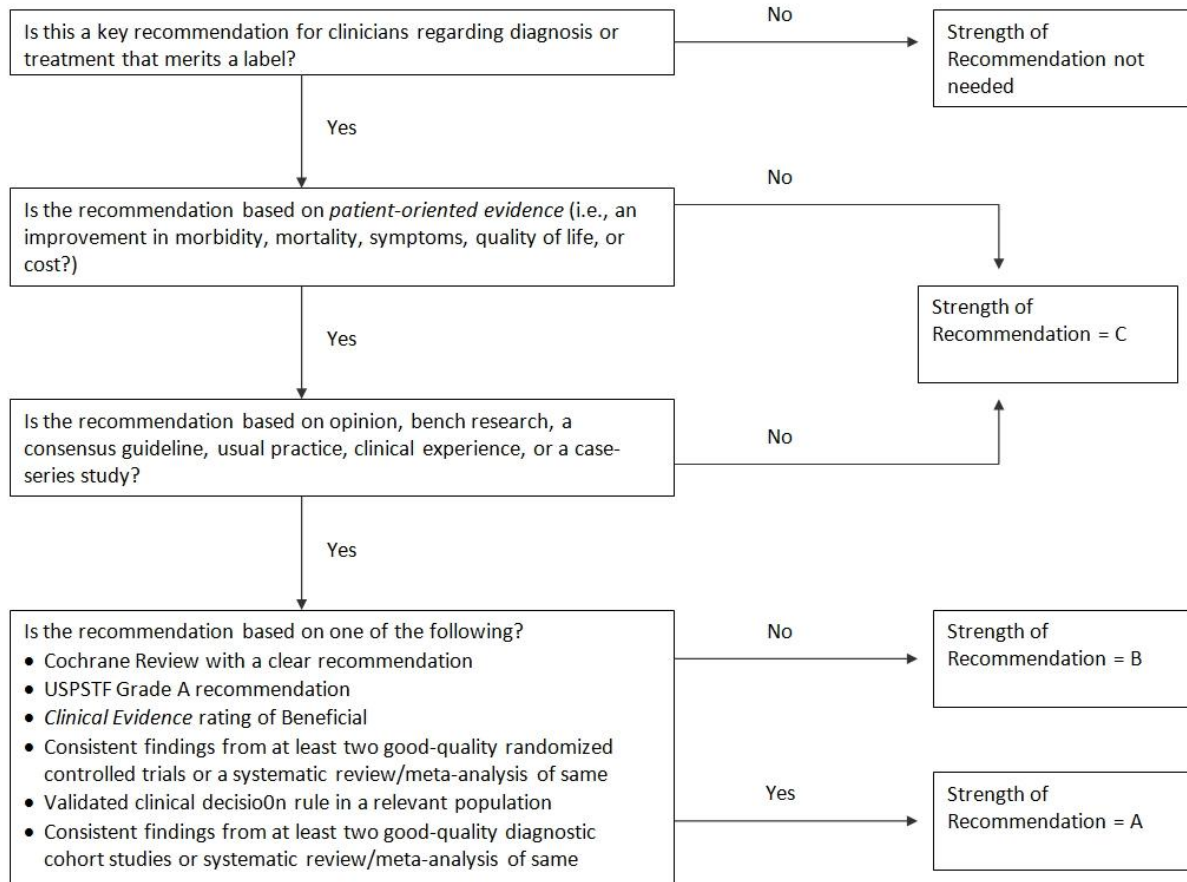


FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation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