NATIONAL QUALITY FORUM

Measure Submission and Evaluation Worksheet 5.0

This form contains the information submitted by measure developers/stewards, organized according to NQF's measure evaluation criteria and process. The evaluation criteria, evaluation guidance documents, and a blank online submission form are available on the submitting standards web page.

NQF #: 0058 NQF Project: Infectious Disease Project

(for Endorsement Maintenance Review)
Original Endorsement Date: Aug 10, 2009 Most Recent Endorsement Date: Aug 10, 2009 Last Updated Date: Sep 25, 2012

BRIEF MEASURE INFORMATION

De.1 Measure Title: Avoidance of Antibiotic Treatment in Adults with Acute Bronchitis

Co.1.1 Measure Steward: National Committee for Quality Assurance

De.2 Brief Description of Measure: The percentage of adults 18–64 years of age with a diagnosis of acute bronchitis who were not dispensed an antibiotic prescription.

2a1.1 Numerator Statement: Patients who were dispensed antibiotic medication (see Table 1) on or three days after an outpatient or ED encounter for acute bronchitis (a higher rate is better). The measure is reported as an inverted rate (i.e. 1-numerator/denominator) to reflect the number of people that were not dispensed an antibiotic.

2a1.4 Denominator Statement: All patients 18 years as of January 1 of the year prior to the measurement year to 64 years as of December 31 of the measurement year with a claim/encounter for a diagnosis of acute bronchitis (refer to Table 2) and an outpatient or ED visit code (refer to Table 3) during the Intake Period (January 1–December 24 of the measurement year).

2a1.8 Denominator Exclusions: N/A

1.1 Measure Type: Process
2a1. 25-26 Data Source: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Pharmacy
2a1.33 Level of Analysis: Health Plan, Integrated Delivery System

1.2-1.4 Is this measure paired with another measure? No

De.3 If included in a composite, please identify the composite measure (*title and NQF number if endorsed*):

STAFF NOTES (*issues or questions regarding any criteria*)

Comments on Conditions for Consideration:

Is the measure untested? Yes☐ No☐ If untested, explain how it meets criteria for consideration for time-limited endorsement:

1a. Specific national health goal/priority identified by DHHS or NPP addressed by the measure (*check De.5*):
5. Similar/related endorsed or submitted measures (*check 5.1*):
Other Criteria:

Staff Reviewer Name(s):

1. IMPACT, OPPORTUITY, EVIDENCE - IMPORTANCE TO MEASURE AND REPORT

Importance to Measure and Report is a threshold criterion that must be met in order to recommend a measure for endorsement. All

three subcriteria must be met to pass this criterion. See guidance on evidence.
Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria. (evaluation criteria)

1a. High Impact: H☐ M☐ L☐ I ☐
(*The measure directly addresses a specific national health goal/priority identified by DHHS or NPP, or some other high impact aspect of healthcare.*)

De.4 Subject/Topic Areas *(Check all the areas that apply)*: Infectious Diseases, Infectious Diseases : Respiratory
De.5 Cross Cutting Areas (*Check all the areas that apply)*: Overuse

1a.1 Demonstrated High Impact Aspect of Healthcare: Patient/societal consequences of poor quality

1a.2 If "Other," please describe:

1a.3 Summary of Evidence of High Impact *(Provide epidemiologic or resource use data)*:
Acute bronchitis is one of the most common diagnoses among emergency department and outpatient visits; it affects approximately 5 percent of U.S. adults annually and continues to rank among the top 10 conditions for which patients seek treatment in clinical settings.[1,2] The underlying cause in about 90 percent of cases is typically viral.[1,2] Meta analyses of randomized controlled trials have shown that empirical therapy with antibiotics is not appropriate for uncomplicated acute bronchitis in otherwise healthy adults.[3] The American College of Chest Physicians (ACCP) and American College of Physicians-American Society of Internal Medicine (ACP) have issued guidelines indicating that the routine treatment of uncomplicated acute bronchitis with antibiotics is not justified nor recommended.[3,4] Despite the evidence and guidelines, research has shown that antibiotics are prescribed in more than 60 percent of bronchitis cases; of those, 80 percent were unnecessary, according to the Centers for Disease Control and Prevention (CDC) guidelines.5,6 Antibiotic treatment is not usually appropriate for acute bronchitis, with the exception of comorbid diseases requiring antibiotics.[5,6] The need to decrease excess antibiotic use in ambulatory practice has been fueled by an epidemic of multidrug-resistant pathogens.[6]

1a.4 Citations for Evidence of High Impact cited in 1a.3:
1. Grijalva C.G., J.P. Nuorti, M. Griffin. 2009. Antibiotic prescription rates for acute respiratory tract infections in US ambulatory settings. JAMA. 302: 758–66.
2. Gonzales, R., et al. 2001. Principles of Appropriate Antibiotic Use for Treatment of Uncomplicated Acute Bronchitis: Background. Ann Intern Med. 134:521–9.
3. Snow V, Mottur-Pilson C, Gonzales R. Principles of appropriate antibiotic use for treatment of acute bronchitis in adults. Annals of Internal Medicine 2001; 134:518-520.
4. Irwin, R.S., et al. 2006. Diagnosis and Management of Cough: ACCP Evidence-Based Clinical Practice Guidelines. Chest. 1S–292S.
5. Evertsen, J., D.J. Baumgardner, A. Regnery, I. Banerjee. 2010. Diagnosis and management of pneumonia and bronchitis in outpatient primary care practices. Prim Care Respir J. 19(3):237–41.
6. Centers for Disease Control and Prevention. 2010. Appropriate Antibiotic Use – Saves lives, saves money, makes sense. http://www.cdc.gov/getsmart/healthcare/resources/factsheets/pdf/antibiotic-use.pdf (May 27, 2011)

1b. Opportunity for Improvement: H☐ M☐ L☐ I ☐
(*There is a demonstrated performance gap - variability or overall less than optimal performance*)

1b.1 Briefly explain the benefits (improvements in quality) envisioned by use of this measure:
The overuse of antibiotics contributes to antibiotic resistance and causes increased financial burden on patients and the healthcare system. Antibiotic-resistant infections are responsible for $20 billion in excess health care costs. [5] More than $1.1 billion is spent annually on unnecessary antibiotics for respiratory infections in adults.[5] Treating drug-resistant pathogens poses a significant burden on the system through repeated health care visits and a greater risk of disease complications and hospitalizations—which lead to increased health care costs.[5,6] Diminished effectiveness of antibiotics against bacterial infections, particularly for use in patients who may need them to fight future life-threatening bacterial infections, poses a significant public health concern. When resistance makes widely-used antibiotics ineffective, an alternative treatment may not be available,[7] or physicians may use more potent antibiotics, which are often more toxic and more expensive. This can result in longer hospital stays, more serious side effects and increased financial burden on patients and on the system.[8]

5. Evertsen, J., D.J. Baumgardner, A. Regnery, I. Banerjee. 2010. Diagnosis and management of pneumonia and bronchitis in outpatient primary care practices. Prim Care Respir J. 19(3):237–41.
6. Centers for Disease Control and Prevention. 2010. Appropriate Antibiotic Use – Saves lives, saves money, makes sense. http://www.cdc.gov/getsmart/healthcare/resources/factsheets/pdf/antibiotic-use.pdf (May 27, 2011)
7. Steinman, M.A., A. Sauaia, J.H. Maselli, P.M. Houck, R. Gonzales. 2004. Office evaluation and treatment of elderly patients with acute bronchitis. J Am Geriatr Soc. 52(6):875–9.
8. Braman, S.S. 2006. Diagnosis and management of cough: ACCP Evidence-Based Clinical Practice Guidelines. Chest. 129:1S–23S.
9. Smucny J, Fahey T, Becker L, Glazier R, McIsaac W. Antibiotics for acute bronchitis (Cochrane Review). Cochrane Database Syst Rev 2000;4:CD000245.

1b.2 Summary of Data Demonstrating Performance Gap *(Variation or overall less than optimal performance across providers)*: [*For Maintenance – Descriptive statistics for performance results for this measure - distribution of scores for measured entities by quartile/decile, mean, median, SD, min, max, etc.*]
The following data are extracted from HEDIS data collection reflecting the most recent years of measurement for this measure. It includes number of health plans, percentiles, mean, min, max and standard deviations.

Data is summarized at the health plan level (i.e. "N" represents the number of health plans)
The rate is reported as an inverted rate (i.e. 1- numerator/denominator) to reflect the number of people in the health plans that were not dispensed an antibiotic.
Data is stratified by year and product line (i.e. commercial, Medicare, Medicaid)

Commercial
2011 RATE
N 404
Mean 22.03
StdDev 7.86
Min 8.47
P10 15.44
P25 17.74
P50 20.61
P75 23.94
Max 86.24

2010 RATE
N 422
Mean 23.37
StdDev 7.93
Min 12.77
P10 17.06
P25 19.04
P50 21.80
P75 25.26
Max 87.67

2009 RATE
N 426
Mean 25.48
StdDev 9.15
Min 9.89
P10 18.40

P25 20.31
P50 23.45
P75 27.39
Max 90.54

Medicaid
2011; RATE
N; 145
Mean; 23.57
StdDev; 7.71
Min; 11.91
P10; 15.09
P25; 18.78
P50; 22.15
P75; 26.23
Max; 54.76

2010 RATE
N 133
Mean 25.78
StdDev 10.41
Min 11.39
P10 16.79
P25 19.74
P50 23.56
P75 27.00
Max 66.98

2009; RATE
N; 112
Mean; 25.76
StdDev; 10.52
Min; 8.89
P10; 17.71
P25; 20.21
P50; 23.67
P75; 28.09
Max; 85.37

1b.3 Citations for Data on Performance Gap: [*For **Maintenance*** – *Description of the data or sample for measure results reported in 1b.2 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*]
The data are extracted from HEDIS data collection reflecting the most recent years of measurement for this measure. It includes number of health plans, percentiles, mean, min, max and standard deviations.

Data is summarized at the health plan level (i.e. "N" represents the number of health plans)
The rate is reported as an inverted rate (i.e. 1- numerator/denominator) to reflect the number of people in the health plans that were not dispensed an antibiotic.
Data is stratified by year and product line (i.e. commercial, Medicare, Medicaid)

1b.4 Summary of Data on Disparities by Population Group: [*For **Maintenance*** –*Descriptive statistics for performance results for this measure by population group*]
The measure is not stratified to detect disparities. NCQA has participated with IOM and others in attempting to include information

on disparities in measure data collection. However, at the present time, these data, at all levels (claims data, paper chart review, and electronic records), are not coded in a standard manner, and are incompletely captured. There are no consistent standards for what entity (physician, group, plan, employer) should capture and report these data. While requiring data reporting could push the field forward, doing so could create a substantial burden with inability to use the data because of its inconsistency. Currently, we agree with the IOM report that disparities are best considered by the use of zip code analysis which has limited applicability in most reporting situations. At the health plan level, for HEDIS health plan data collection, NCQA has extensive data related to the use of stratification by insurance status (Medicare, Medicaid and private-commercial) and would strongly recommend this process where the data base supporting the measurement includes this information. However, we believe that the measure specifications should NOT require this since the measure is still useful where the data needed to determine disparities cannot be ascertained from the data available.

1b.5 Citations for Data on Disparities Cited in 1b.4: [*For Maintenance – Description of the data or sample for measure results reported in 1b.4 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*]
N/A

1c. Evidence (*Measure focus is a health outcome OR meets the criteria for quantity, quality, consistency of the body of evidence.*)
Is the measure focus a health outcome? Yes☐ No☐ If not a health outcome, rate the body of evidence.

Quantity: H☐ M☐ L☐ I☐ Quality: H☐ M☐ L☐ I☐ Consistency: H☐ M☐ L☐ I☐

Quantity	Quality	Consistency	Does the measure pass subcriterion1c?
M-H	M-H	M-H	Yes☐
L	M-H	M	Yes☐ IF additional research unlikely to change conclusion that benefits to patients outweigh harms: otherwise No☐
M-H	L	M-H	Yes☐ IF potential benefits to patients clearly outweigh potential harms: otherwise No☐
L-M-H	L-M-H	L	No ☐

Health outcome – rationale supports relationship to at least one healthcare structure, process, intervention, or service	Does the measure pass subcriterion1c? Yes☐ IF rationale supports relationship

1c.1 Structure-Process-Outcome Relationship *(Briefly state the measure focus, e.g., health outcome, intermediate clinical outcome, process, structure; then identify the appropriate links, e.g., structure-process-health outcome; process- health outcome; intermediate clinical outcome-health outcome)*:
Reduction in the inappropriate dispensing of antibiotics for acute bronchitis >> fewer strains of antibiotic-resistant pathogens>> reduction in community-acquired antibiotic resistant infections

The intended result of efforts to decrease indiscriminant antibiotic use in the ambulatory setting is to reduce (and preferably reverse) the increase in antibiotic-resistant S. pneumoniae. The Centers for Disease Control and Prevention underscores the importance of decreasing community use of antibiotics as an important strategy for combating the increase in community-acquired antibiotic resistant infections.

1c.2-3 Type of Evidence *(Check all that apply)*:
Clinical Practice Guideline, Systematic review of body of evidence (other than within guideline development)

1c.4 Directness of Evidence to the Specified Measure *(State the central topic, population, and outcomes addressed in the body of evidence and identify any differences from the measure focus and measure target population)*:
The evidence relates to the overuse of antibiotics for acute bronchitis.

1c.5 Quantity of Studies in the Body of Evidence *(Total number of studies, not articles)*: 9 trials involving over 750 patients aged eight to over 65 and including smokers and non-smokers were included Cochrane Review. The 9 studies were randomized controlled trials comparing any antibiotic therapy with placebo in acute bronchitis or acute productive cough without other obvious

cause in patients without underlying pulmonary disease

1c.6 Quality of Body of Evidence (*Summarize the certainty or confidence in the estimates of benefits and harms to patients across studies in the body of evidence resulting from study factors. Please address: a) study design/flaws; b) directness/indirectness of the evidence to this measure (e.g., interventions, comparisons, outcomes assessed, population included in the evidence); and c) imprecision/wide confidence intervals due to few patients or events*): The evidence has not been graded and the authors of the review did not summarize the quality of evidence. However, the quality of evidence was deemed high enough for a guideline to be developed.

1c.7 Consistency of Results across Studies *(Summarize the consistency of the magnitude and direction of the effect):* The studies consistently point towards the increased harms of inappropriate antibiotic use for acute bronchitis in adults under the age of 65 that is viral in origin.

1c.8 Net Benefit *(Provide estimates of effect for benefit/outcome; identify harms addressed and estimates of effect; and net benefit - benefit over harms)*:
Benefits
- Decrease in medication adverse effects like nausea and vomiting.
- Lower incidence of antibiotic resistance downstream.
- Lower healthcare spending and utilization for complications and hospitalizations due to antibiotic resistance.

1c.9 Grading of Strength/Quality of the Body of Evidence. Has the body of evidence been graded? No

1c.10 If body of evidence graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias: N/A

1c.11 System Used for Grading the Body of Evidence: Other

1c.12 If other, identify and describe the grading scale with definitions: N/A

1c.13 Grade Assigned to the Body of Evidence: N/A

1c.14 Summary of Controversy/Contradictory Evidence: None

1c.15 Citations for Evidence other than Guidelines*(Guidelines addressed below)*:
Smucny J, Fahey T, Becker L, Glazier R, McIsaac W. Antibiotics for acute bronchitis (Cochrane Review). Cochrane Database Syst Rev 2000;4:CD000245.

1c.16 Quote verbatim, the specific guideline recommendation *(Including guideline # and/or page #)*:
Recommendation 1. The evaluation of adults with an acute cough illness or a presumptive diagnosis of uncomplicated acute bronchitis should focus on clinically ruling out pneumonia.
In the healthy, nonelderly adult, pneumonia is uncommon in the absence of vital sign abnormalities or asymmetrical lung sounds, and chest radiography is usually not indicated. In patients with cough lasting 3 weeks or longer, chest radiography is warranted in the absence of other known causes.

Recommendation 2. Routine antibiotic treatment of uncomplicated acute bronchitis is not recommended, regardless of duration of cough.
Most patients with uncomplicated acute bronchitis have a viral illness that is self-limited and will improve on its own, with or without relief of symptoms. Although relief of symptoms will not shorten duration of illness, patients can certainly benefit from such treatments as analgesic or antipyretic agents, b-agonist inhalers, antitussives, or vaporizers.

1c.17 Clinical Practice Guideline Citation: Principles of Appropriate Antibiotic Use: Part V. Acute Bronchitis. Am Fam Physician. 2001 Sep 15;64(6):1098-1099.
American Family Physician: “Diagnosis and Management of Acute Bronchitis”. Vol.65/No. 10 (May 15, 2002).

1c.18 National Guideline Clearinghouse or other URL: http://qualitymeasures.ahrq.gov/content.aspx?id=34647

1c.19 Grading of Strength of Guideline Recommendation. Has the recommendation been graded? No

1c.20 If guideline recommendation graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:

1c.21 System Used for Grading the Strength of Guideline Recommendation: Other

1c.22 If other, identify and describe the grading scale with definitions: Guideline was not graded, however the Centers for Disease Control and Prevention (CDC) deemed the inappropriate use of antibiotics an important public health issue that warranted the development of this guideline. The CDC convened a panel of physicians representing the disciplines of internal medicine, family medicine, emergency medicine, and infectious diseases to develop a series of "Principles of Appropriate Antibiotic Use for Treatment of Acute Respiratory Tract Infections in Adults." These principles provide evidence-based recommendations for evaluation and treatment of adults with acute respiratory illnesses. These principles describe the background and specific aims of and methods used to develop these principles. The goal of these principles is to provide clinicians with practical strategies for limiting antibiotic use to the patients who are most likely to benefit from it.

Gonzales R, Bartlett JG, Besser RE, Cooper RJ, Hickner JM, Hoffman JR, Sande MA. Principles of appropriate antibiotic use for treatment of acute respiratory tract infections in adults. Ann Emerg Med. June 2001;37:690-697

1c.23 Grade Assigned to the Recommendation: N/A

1c.24 Rationale for Using this Guideline Over Others: NCQA used CDC's guideline as it is the most commonly used guideline. We are not aware of conflicting guidelines.

Based on the NQF descriptions for rating the evidence, what was the developer's assessment of the quantity, quality, and consistency of the body of evidence?
1c.25 Quantity: Moderate 1c.26 Quality: Moderate1c.27 Consistency: Moderate
1c.28 Attach evidence submission form:
1c.29 Attach appendix for supplemental materials:

Was the threshold criterion, *Importance to Measure and Report*, met?
(*1a & 1b must be rated moderate or high and 1c yes*) Yes☐ No☐
Provide rationale based on specific subcriteria:

For a new measure if the Committee votes NO, then STOP.
For a measure undergoing endorsement maintenance, if the Committee votes NO because of 1b. (no opportunity for improvement), it may be considered for continued endorsement and all criteria need to be evaluated.

2. RELIABILITY & VALIDITY - SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)
Measure testing must demonstrate adequate reliability and validity in order to be recommended for endorsement. Testing may be conducted for data elements and/or the computed measure score. Testing information and results should be entered in the appropriate field. Supplemental materials may be referenced or attached in item 2.1. See guidance on measure testing.

S.1 Measure Web Page *(In the future, NQF will require measure stewards to provide a URL link to a web page where current detailed specifications can be obtained*). Do you have a web page where current detailed specifications for this measure can be obtained? No

S.2 If yes, provide web page URL:

2a. RELIABILITY. Precise Specifications and Reliability Testing: H☐ M☐ L☐ I ☐

2a1. Precise Measure Specifications. (*The measure specifications precise and unambiguous.*)

2a1.1 Numerator Statement *(Brief, narrative description of the measure focus or what is being measured about the target population, e.g., cases from the target population with the target process, condition, event, or outcome)*:
Patients who were dispensed antibiotic medication (see Table 1) on or three days after an outpatient or ED encounter for acute bronchitis (a higher rate is better). The measure is reported as an inverted rate (i.e. 1- numerator/denominator) to reflect the number of people that were not dispensed an antibiotic.

2a1.2 Numerator Time Window *(The time period in which the target process, condition, event, or outcome is eligible for inclusion)*:
The measurement year (one calendar year)

2a1.3 Numerator Details *(All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, codes with descriptors, and/or specific data collection items/responses*:
Table 1: Antibiotic Medications

Aminoglycosides: Amikacin; Gentamicin; Kanamycin; Streptomycin; Tobramycin

Aminopenicillins: Amoxicillin; Ampicillin

Antipseudomonal penicillins: Piperacillin; Ticarcillin

Beta-lactamase inhibitors: Amoxicillin-clavulanate; Ampicillin-sulbactam ; Piperacillin-tazobactam; Ticarcillin-clavulanate

First-generation cephalosporins: Cefadroxil; Cefazolin ; Cephalexin

Fourth-generation cephalosporins: Cefepime;

Ketolides: Telithromycin;

Lincomycin derivatives: Clindamycin; Lincomycin

Macrolides: Azithromycin; Clarithromycin: Erythromycin; Erythromycin ethylsuccinate; Erythromycin lactobionate; Erythromycin stearate

Miscellaneous antibiotics: Aztreonam; Chloramphenicol; Dalfopristin-quinupristin; Daptomycin; Erythromycin-sulfisoxazole; Linezolid; Metronidazole; Vancomycin

Natural penicillins: Penicillin G benzathine-procaine; Penicillin G potassium; Penicillin G procaine; Penicillin G sodium; Penicillin V potassium; Penicillin G benzathine;

Penicillinase resistant penicillin: Dicloxacilli; Nafcillin; Oxacillin;

Quinolones: Ciprofloxacin; Gatifloxacin; Gemifloxacin; Levofloxacin; Lomefloxacin; Moxifloxacin; Norfloxacin; Ofloxacin; Sparfloxacin;

Rifamycin derivatives: Rifampin

Second generation cephalosporin: Cefaclor; Cefotetan; Cefoxitin; Cefprozil; Cefuroxime; Loracarbef;

Sulfonamides: Sulfadiazine; Sulfisoxazole; Sulfamethoxazole-trimethoprim

Tetracyclines: Doxycycline; Minocycline; Tetracycline

Third generation cephalosporins: Cefdinir; Cefditoren; Cefixime; Cefotaxime; Cefpodoxime; Ceftazidime; Ceftibuten; Ceftriaxone

Urinary anti-infectives: Fosfomycin; Nitrofurantoin; Nitrofurantoin macrocrystals-monohydrate; Trimethoprim; Nitrofurantoin macrocrystals

2a1.4 Denominator Statement *(Brief, narrative description of the target population being measured)*:
All patients 18 years as of January 1 of the year prior to the measurement year to 64 years as of December 31 of the measurement year with a claim/encounter for a diagnosis of acute bronchitis (refer to Table 2) and an outpatient or ED visit code (refer to Table 3) during the Intake Period (January 1–December 24 of the measurement year).

2a1.5 Target Population Category *(Check all the populations for which the measure is specified and tested if any)*: Adult/Elderly Care

2a1.6 Denominator Time Window *(The time period in which cases are eligible for inclusion)*:
The measurement year (one calendar year)

2a1.7 Denominator Details (*All information required to identify and calculate the target population/denominator such as definitions, codes with descriptors, and/or specific data collection items/responses)*:
All patients 18 years as of January 1 of the year prior to the measurement year to 64 years as of December 31 of the measurement year with a claim/encounter for a diagnosis of acute bronchitis (refer to Table 2) and an outpatient or ED visit code (refer to Table 3) during the Intake Period (January 1–December 24 of the measurement year). Patients must have (1) a negative medication history for antibiotics in the past 30 days; (2) a 12-month negative diagnosis history for comorbid conditions requiring treatment with antibiotics (see Table 4); and (3) a negative competing diagnosis for an acute condition in the past 30 days requiring antibiotics (see Table 5).

Table 2: Codes to Identify Acute Bronchitis
Acute bronchitis: ICD-9 - 466.0

Table 3: Codes to Identify Visit Type
Outpatient Codes:
CPT: 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99385, 99386, 99395, 99396, 99401-99404, 99411, 99412, 99420, 99429
UB Revenue: 051x, 0520-0523, 0526-0529, 0982, 0983
ED Codes*:
CPT: 99281-99285
UB Revenue: 045x, 0981
*Do not include ED visits that result in an inpatient admission.

1) A 30-day Negative Medication History prior to the Episode Date (date of service for any outpatient or ED visit during the Intake Period with any diagnosis of acute bronchitis). To qualify for Negative Medication History, the following criteria must be met

a) The patient must have no pharmacy claims for either new or refill prescriptions for an antibiotic drug listed on Table 1 during the 30 days prior to the Episode Date, (See Table 1)
b) The patient must not have filled a prescription from Table 1 more than 30 days prior to the Episode Date that are active on the Episode Date. A prescription is considered active if the "days-supply" indicated on the date the patient filled the prescription is the number of days or more between that date and the relevant service date. The 30-day look-back period for pharmacy data includes the 30 days prior to the Intake Period.

2) A 12-month Negative Comorbid Condition History prior to and including the Episode Date (Table 4),
Table 4: Codes to Identify Comorbid Conditions

HIV disease; asymptomatic HIV: 042, V08
Cystic fibrosis: 277.0
Disorders of the immune system: 279
Malignancy neoplasms: 140-208
Chronic bronchitis: 491
Emphysema: 492
Bronchiectasis: 494
Extrinsic allergic alveolitis: 495
Chronic airway obstruction, chronic obstructive asthma: 493.2, 496
Pneumoconiosis and other lung disease due to external agents: 500-508
Other diseases of the respiratory system: 510-519
Tuberculosis: 010-018

3) A Negative Competing Diagnosis during the 30 days prior to the Episode Date through 7 days after the Episode Date (inclusive) (Table 5) during which time the member had no claims/encounters with any competing diagnosis (Table 5).

Table 5: Diagnosis Codes to Identify Competing Diagnoses
Intestinal infections: 001-009
Pertussis: 033
Bacterial infection unspecified: 041.9
Lyme disease and other arthropod-borne diseases: 088
Otitis media: 382
Acute sinusitis: 461
Acute pharyngitis: 034.0, 462
Acute tonsillitis: 463
Chronic sinusitis: 473
Infections of the pharynx, larynx, tonsils, adenoids: 464.1-464.3, 474, 478.21-478.24, 478.29, 478.71, 478.79, 478.9
Prostatitis: 601
Cellulitis, mastoiditis, other bone infections: 383, 681, 682, 730
Acute lymphadenitis: 683
Impetigo: 684
Skin staph infections: 686
Pneumonia: 481- 486
Gonococcal infections and venereal diseases: 098, 099, V01.6, V02.7, V02.8
Syphilis: 090-097
Chlamydia: 078.88, 079.88, 079.98
Inflammatory diseases (female reproductive organs): 131, 614-616
Infections of the kidney: 590
Cystitis or UTI: 595, 599.0
Acne: 706.0, 706.1

2a1.8 Denominator Exclusions *(Brief narrative description of exclusions from the target population)*:
N/A

2a1.9 Denominator Exclusion Details *(All information required to identify and calculate exclusions from the denominator such as definitions, codes with descriptors, and/or specific data collection items/responses)*:
N/A

2a1.10 Stratification Details/Variables *(All information required to stratify the measure results including the stratification variables, codes with descriptors, definitions, and/or specific data collection items/responses)*:
N/A

2a1.11 Risk Adjustment Type *(Select type. Provide specifications for risk stratification in 2a1.10 and for statistical model in*

2a1.13): No risk adjustment or risk stratification 2a1.12 If "Other," please describe:

2a1.13 Statistical Risk Model and Variables *(Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development should be addressed in 2b4.)*:
N/A

2a1.14-16 Detailed Risk Model Available at Web page URL (or attachment). Include coefficients, equations, codes with descriptors, definitions, and/or specific data collection items/responses. Attach documents only if they are not available on a webpage and keep attached file to 5 MB or less. NQF strongly prefers you make documents available at a Web page URL. Please supply login/password if needed:

2a1.17-18. Type of Score: Other The measure is reported as an inverted rate [1 – (numerator/denomninator)], therefore a higher score represents the proportion of patients for whom antibiotics were not prescribed)

2a1.19 Interpretation of Score *(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)*: Better quality = Higher score

2a1.20 Calculation Algorithm/Measure Logic*(Describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; aggregating data; risk adjustment; etc.)*:
Episode Date is defined as the date of service for any outpatient or ED visit (Table 3) during the Intake Period with any diagnosis of acute bronchitis (Table 2).

Step 1 Determine the eligible population. To do so, identify all patients in the specified age range who had an outpatient or ED visit (Table 2) with a diagnosis of acute bronchitis (Table 3) during the Intake Period.

Step 2 Determine all acute bronchitis Episode Dates during the intake period. For each patient identified in step 1, determine all outpatient or ED claims/encounters with a diagnosis of acute bronchitis.

Step 3 Test for Negative Comorbid Condition History. Exclude Episode Dates when the patient had a claim/encounter with a diagnosis for a comorbid condition during the 12 months prior to or on the Episode Date (Table 4).

Step 4 Test for Negative Medication History. Exclude Episode Dates where a new or refill prescription for an antibiotic medication (Table 1) was filled 30 days prior to the Episode Date or was active on the Episode Date.

Step 5 Test for Negative Competing Diagnosis. Exclude Episode Dates where during the period 30 days prior to the Episode Date through 7 days after the Episode Date (inclusive) the patient had a claim/encounter with any competing diagnosis (Table 5).

Step 6 Calculate continuous enrollment. The patient must be continuously enrolled with no more than one gap in coverage from 365 days (1 year) prior to the Episode Date through 7 days after the Episode Date.

Step 7 Determine the number of patients in the eligible population who received a prescription for an antibiotic medication on or three days after the earliest episode start date
Step 8 Calculate a rate (number of patients receiving an antibiotic)

Step 9 Subtract the rate calculated in Step 8 from one to invert the measure result to represent appropriate treatment of adults with acute bronchitis (i.e. antibiotic not prescribed). The measure is reported as an inverted rate (i.e. 1- numerator/denominator) to reflect the number of people that were not dispensed an antibiotic.

2a1.21-23 Calculation Algorithm/Measure Logic Diagram URL or attachment:

2a1.24 Sampling (Survey) Methodology. If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate):
N/A

2a1.25 Data Source *(Check all the sources for which the measure is specified and tested*). If other, please describe:
Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Pharmacy

2a1.26 Data Source/Data Collection Instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*): This measure is based on administrative claims collected in the course of providing care to health plan members. NCQA collects the Healthcare Effectiveness Data and Information Set (HEDIS) data for this measure directly from Health Management Organizations and Preferred Provider Organizations via the Interactive Data Submission System (IDSS) portal.

2a1.27-29 Data Source/data Collection Instrument Reference Web Page URL or Attachment:

2a1.30-32 Data Dictionary/Code Table Web Page URL or Attachment:

2a1.33 Level of Analysis (*Check the levels of analysis for which the measure is specified and tested)*: Health Plan, Integrated Delivery System

2a1.34-35 Care Setting *(Check all the settings for which the measure is specified and tested)*: Ambulatory Care : Clinician Office/Clinic, Ambulatory Care : Urgent Care

2a2. Reliability Testing. (*Reliability testing was conducted with appropriate method, scope, and adequate demonstration of reliability*.)

2a2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
The data exist in HEDIS Performance Measurement data for 2011.
Number of commercial health plans, 2011 = 411
Number of Medicaid health plans, 2011 = 145
It was a geographically diverse sample of health plans.

2a2.2 Analytic Method *(Describe method of reliability testing & rationale)*:
In order to assess measure precision in the context of the observed variability across accountable entities, we utilized the reliability estimate proposed by Adams (2009) in work produced for the National Committee for Quality Assurance (NCQA).

The following is quoted from the tutorial which focused on provider-level assessment: “Reliability is a key metric of the suitability of a measure for [provider] profiling because it describes how well one can confidently distinguish the performance of one physician from another. Conceptually, it is the ratio of signal to noise. The signal in this case is the proportion of the variability in measured performance that can be explained by real differences in performance. There are three main drivers of reliability: sample size, differences between physicians, and measurement error. At the physician level, sample size can be increased by increasing the number of patients in the physician’s data as well as increasing the number of measures per patient.” This approach is also relevant to health plans and other accountable entities.

Adams' approach uses a Beta-binomial model to estimate reliability; this model provides a better fit when estimating the reliability of simple pass/fail rate measures as is the case with most HEDIS® measures. The beta-binomial approach accounts for the non-normal distribution of performance within and across accountable entities. Reliability scores vary from 0.0 to 1.0. A score of zero implies that all variation is attributed to measurement error (noise or the individual accountable entity variance) whereas a reliability of 1.0 implies that all variation is caused by a real difference in performance (across accountable entities). Generally, a minimum reliability score of 0.7 is used to indicate sufficient signal strength to discriminate performance between accountable entities.

Adams, J. L. The Reliability of Provider Profiling: A Tutorial. Santa Monica, California: RAND Corporation. TR-653-NCQA, 2009

2a2.3 Testing Results *(Reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
Reliability statistics for this measure were calculated using HEDIS health plan performance data for 2011. The results are as follows:

Commercial
AAB - Reported rate 0.99

Medicaid
AAB - Reported rate 0.96

2b. VALIDITY. Validity, Testing, including all Threats to Validity: H☐ M☐ L☐ I ☐

2b1.1 Describe how the measure specifications *(measure focus, target population, and exclusions)* are consistent with the evidence cited in support of the measure focus (*criterion 1c)* and identify any differences from the evidence:
The evidence is consistent with the focus and scope of this measure.

2b2. Validity Testing. (*Validity testing was conducted with appropriate method, scope, and adequate demonstration of validity.)*

2b2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
The Avoidance of Antibiotic Treatment in Adults with Acute Bronchitis measure was tested for face validity with panels of experts, both advisory panels and other subject matter workgroups to provide the clinical and technical knowledge required to develop the measure. The Adult Antibiotic Expert Panel included 20 experts with representation by consumers, health plans, health care providers and policy makers. Additional HEDIS Expert Panels and the Technical Measurement Advisory Panel (TMAP) provide invaluable assistance by identifying methodological issues and giving feedback. NCQA's Committee on Performance Measurement (CPM) is made up of 21 members reflecting the diversity of constituencies that performance measurement serves; members bring other perspectives and additional expertise in quality management and the science of measurement. The CPM meets with the NCQA Board of Directors to recommend measures for inclusion in HEDIS.

See Additional Information: Ad.1. Workgroup/Expert Panel Involved in Measure Development for names and affiliations of expert panel members.

2b2.2 Analytic Method *(Describe method of validity testing and rationale; if face validity, describe systematic assessment)*:
NCQA identified and refined measure management into a standardized process called the HEDIS measure life cycle. The following steps outline the components of the life cycle that are used to ensure that measure testing adheres to the highest standard possible.

*Step 1: Topic selection is the process of identifying measures that meet criteria consistent with the overall model for performance measurement. There is a huge universe of potential performance measures for future versions of HEDIS. The first step is identifying measures that meet formal criteria for further development.

NCQA staff identifies areas of interest or gaps in care. Clinical expert panels (MAPs—whose members are authorities on clinical priorities for measurement) participate in this process. Once topics are identified, a literature review is conducted to find supporting documentation on their importance, scientific soundness and feasibility. This information is gathered into a work-up format. Refer to

What Makes a Measure "Desirable?" The work-up is vetted by NCQA's MAPs, and the TMAP, and various other panels.

*Step 2: Development ensures that measures are fully defined and tested before the organization collects them. MAPs participate in this process by helping identify the best measures for assessing health care performance in clinical areas identified in the topic selection phase.

Development includes the following tasks:
1.Ensure funding throughout measure testing
2.Prepare a detailed conceptual and operational work-up that includes a testing proposal
3.Collaborate with health plans to conduct field-tests that assess the feasibility and validity of potential measures

The CPM uses testing results and proposed final specifications to determine if the measure will move forward to Public Comment.

*Step 3: Public Comment is a 30-day period of review that allows interested parties to offer feedback to the CPM about new measures or about changes to existing measures.
NCQA MAPs and technical panels consider all comments and advise NCQA staff on appropriate recommendations brought to the CPM. The CPM reviews all comments before making a final decision about Public Comment measures. New measures and changes to existing measures approved by the CPM will be included in the next HEDIS year and reported as first-year measures.

*Step 4: First-year data collection requires organizations to collect, be audited on and report these measures, but results are not publicly reported in the first year and are not included in NCQA's Quality Compass or in accreditation scoring.

The first-year distinction guarantees that a measure can be efficiently collected, reported and audited before it is used for public accountability or accreditation. The purpose of this first-year distinction is to ensure that there are no unforeseen problems when the measure is implemented in the real world. NCQA's experience is that the first year of large-scale data collection often reveals unanticipated issues.

After collection, reporting and auditing on a one-year introductory basis, NCQA conducts a detailed evaluation of first-year data. The CPM uses evaluation results to decide whether the measure should become publicly reportable or whether it needs further modifications.

*Step 5: Public reporting is based on the first-year measure evaluation results. If the measure is approved, it will be reported in Quality Compass and may be used for scoring in accreditation.

Step 6: Evaluation is the ongoing review of a measure's performance and recommendations for its modification or retirement. Every measure is reevaluated at least every three years. NCQA staff continually monitors the performance of publicly reported measures. Statistical analysis, audit result review and user comments contribute to measure evaluation. Information derived from analyzing the performance of existing measures is used to improve development of the next generation of measures.

Each year, a third of the measurement set is researched for changes in clinical guidelines or health care delivery systems, and the results from previous years are analyzed. Measure work-ups are updated with new information gathered from the literature review, and the appropriate MAPs review the work-ups and the previous year's data. If necessary, the measure specification may be updated or the measure may be recommended for retirement. The CPM reviews recommendations from the evaluation process and approves or rejects the recommendation. If approved, the change is included in the next year's HEDIS Volume 2.

What makes a measure "Desirable"?

Whether considering the value of a new measure or the continuing worth of an existing one, we must define what makes a measure useful. HEDIS measures encourage improvement. The defining question for all performance measurement— "Where can measurement make a difference?"—can be answered only after considering many factors. NCQA has established three areas of desirable characteristics for HEDIS measures, discussed below.

1. Relevance: Measures should address features that apply to purchasers or consumers, or which will stimulate internal efforts toward quality improvement. More specifically, relevance includes the following attributes.

Meaningful: What is the significance of the measure to the different groups concerned with health care? Is the measure easily interpreted? Are the results meaningful to target audiences?
Measures should be meaningful to at least one HEDIS audience (e.g., individual consumers, purchasers or health care systems). Decision makers should be able to understand a measure's clinical and economic significance.

Important to health: What is the prevalence and overall impact of the condition in the U.S. population? What significant health care aspects will the measure address?
We should consider the type of measure (e.g., outcome or process), the prevalence of medical condition addressed by the measure and the seriousness of affected health outcomes.

Financially important: What financial implications result from actions evaluated by the measure? Does the measure relate to activities with high financial impact?
Measures should relate to activities that have high financial impact.

Cost effective: What is the cost benefit of implementing the change in the health care system? Does the measure encourage the use of cost-effective activities or discourage the use of activities that have low cost-effectiveness? Measures should encourage the use of cost-effective activities or discourage the use of activities that have low cost-effectiveness.

Strategically important: What are the policy implications? Does the measure encourage activities that use resources efficiently? Measures should encourage activities that use resources most efficiently to maximize member health.

Controllable: What impact can the organization have on the condition or disease? What impact can the organization have on the measure? Health care systems should be able to improve their performance. For outcome measures, at least one process should be controlled and have an important effect on outcome. For process measures, there should be a strong link between the process and desired outcome.

Variation across systems: Will there be variation across systems? There should be the potential for wide variation across systems.

Potential for improvement: Will organizations be able to improve performance? There should be substantial room for performance improvement.

2. Scientific soundness: Perhaps in no other industry is scientific soundness as important as in health care. Scientific soundness must be a core value of our health care system—a system that has extended and improved the lives of countless individuals.

Clinical evidence: Is there strong evidence to support the measure? Are there published guidelines for the condition? Do the guidelines discuss aspects of the measure? Does evidence document a link between clinical processes and outcomes addressed by the measure? There should be evidence documenting a link between clinical processes and outcomes.

Reproducible: Are results consistent? Measures should produce the same results when repeated in the same population and setting.

Valid: Does the measure make sense? Measures should make sense logically and clinically, and should correlate well with other measures of the same aspects of care.

Accurate: How well does the measure evaluate what is happening? Measures should precisely evaluate what is actually happening.

Risk adjustment: Is it appropriate to stratify the measure by age or another variable? Measure variables should not differ appreciably beyond the health care system's control, or variables should be known and measurable. Risk stratification or a validated model for calculating an adjusted result can be used for measures with confounding variables.

Comparability of data sources: How do different systems affect accuracy, reproducibility and validity? Accuracy, reproducibility and validity should not be affected if different systems use different data sources for a measure.

3. Feasibility:
The goal is not only to include feasible measures, but also to catalyze a process whereby relevant measures can be made feasible.

Precise specifications: Are there clear specifications for data sources and methods for data collection and reporting? Measures should have clear specifications for data sources and methods for data collection and reporting.

Reasonable cost: Does the measure impose a burden on health care systems? Measures should not impose an inappropriate burden on health care systems.

Confidentiality: Does data collection meet accepted standards of member confidentiality?
Data collection should not violate accepted standards of member confidentiality.

Logistical feasibility: Are the required data available?

Auditability: Is the measure susceptible to exploitation or "gaming" that would be undetectable in an audit? Measures should not be susceptible to manipulation that would be undetectable in an audit.

2b2.3 Testing Results *(Statistical results, assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment)*:
Step 1: The Avoidance of Antibiotic Treatment in Adults with Acute Bronchitis measure was developed to address a gap in care concerning the need to decrease excess antibiotic use in ambulatory practice, fueled by the epidemic increase in antibiotic resistant Streptococcus pneumonia. NCQA's Performance Measurement Department and the Respiratory MAP worked together to determine the most appropriate way to decrease antibiotic use.

Step 2: The measure was written, field-tested, and presented to the CPM in 2005. The CPM recommended sending the measure to public comment.

Step 3: The measure was released for Public Comment in spring 2005. We received and responded to comments on this measure. The CPM approved to move this measure to first year data collection. The voting process involved a simple majority vote with a quorum of CPM members.

Step 4: The Avoidance of Antibiotic Treatment in Adults with Acute Bronchitis measure was introduced in HEDIS 2007. Organizations reported the measures in the first year and the results were analyzed for public reporting in the following year. The CPM recommended moving this measure public reporting. The voting process involved a simple majority vote with a quorum of CPM members.

Step 5: The Avoidance of Antibiotic Treatment in Adults with Acute Bronchitis measure will be reevaluated in 2013.

POTENTIAL THREATS TO VALIDITY:
This measure is validly specified by excluding patients from the denominator who may have conditions where antibiotics may be warranted, such as chronic comorbidities or competing bacterial infections. Field-test results show significantly lower rates of antibiotic prescribing found in patients with comorbidities (such as COPD) and with competing diagnoses where antibiotics may be indicated. Medical record validation of plans' administrative data was conducted to demonstrate the validity of administrative data to accurately identify the denominator population and exclusions, as well as the reliability of pharmacy data to capture inappropriate antibiotic prescriptions.

Overall, concordance of administrative data with medical record document shows that the denominator specifications (using ICD-9 code 466.0) are highly reliable and accurate (about 90 percent) in identifying patients with acute bronchitis. Findings suggest that

any unintentional inclusion of patients with comorbidities not identified in the administrative data (about 20 percent according to medical record documentation) or competing diagnoses (about 15 percent) the measure denominator would not adversely impact a plan's performance, and in fact, under-estimates the true extent of inappropriate antibiotic prescribing. Actual antibiotic prescribing rates (prescriptions ordered) may in fact be higher (by about 10 percent) than indicated by administrative data, since administrative data only captures filled prescriptions.

POTENTIAL THREATS TO VALIDITY. (*All potential threats to validity were appropriately tested with adequate results.*)

2b3. Measure Exclusions. (*Exclusions were supported by the clinical evidence in 1c or appropriately tested with results demonstrating the need to specify them.*)

2b3.1 Data/Sample for analysis of exclusions *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
N/A

2b3.2 Analytic Method (*Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference)*:
N/A

2b3.3 Results *(Provide statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses):*
N/A

2b4. Risk Adjustment Strategy. (*For outcome measures, adjustment for differences in case mix (severity) across measured entities was appropriately tested with adequate results.*)

2b4.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
N/A

2b4.2 Analytic Method (*Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables)*:
N/A

2b4.3 Testing Results *(Statistical risk model: Provide quantitative assessment of relative contribution of model risk factors; risk model performance metrics including cross-validation discrimination and calibration statistics, calibration curve and risk decile plot, and assessment of adequacy in the context of norms for risk models. Risk stratification: Provide quantitative assessment of relationship of risk factors to the outcome and differences in outcomes among the strata)*:
N/A

2b4.4 If outcome or resource use measure is not risk adjusted, provide rationale and analyses to justify lack of adjustment: N/A

2b5. Identification of Meaningful Differences in Performance. (*The performance measure scores were appropriately analyzed and discriminated meaningful differences in quality.*)

2b5.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.
The analysis included a geographically diverse universe of commercial and Medicaid plans between 2009 and 2011.
Number of commercial health plans, 2009= 426
Number of commercial health plans, 2010= 422
Number of commercial health plans, 2011= 404

Number of Medicaid health plans, 2009= 112
Number of Medicaid health plans, 2010= 133

Number of Medicaid health plans, 2011= 145

2b5.2 Analytic Method *(Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance)*:
Comparison of means and percentiles.

2b5.3 Results *(Provide measure performance results/scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
The following data are extracted from HEDIS data collection reflecting the most recent years of measurement for this measure. It includes number of health plans, percentiles, mean, min, max and standard deviations.

Data is summarized at the health plan level (i.e. "N" represents the number of health plans)
The rate is reported as an inverted rate (i.e. 1- numerator/denominator) to reflect the number of people in the health plans that were not dispensed an antibiotic.
Data is stratified by year and product line (i.e. commercial, Medicare, Medicaid)

Commercial
2011 RATE
N 404
Mean 22.03
StdDev 7.86
Min 8.47
P10 15.44
P25 17.74
P50 20.61
P75 23.94
Max 86.24

2010 RATE
N 422
Mean 23.37
StdDev 7.93
Min 12.77
P10 17.06
P25 19.04
P50 21.80
P75 25.26
Max 87.67

2009 RATE
N 426
Mean 25.48
StdDev 9.15
Min 9.89
P10 18.40
P25 20.31
P50 23.45
P75 27.39
Max 90.54

Medicaid

2011; RATE
N; 145
Mean; 23.57
StdDev; 7.71
Min; 11.91
P10; 15.09
P25; 18.78
P50; 22.15
P75; 26.23
Max; 54.76

2010 RATE
N 133
Mean 25.78
StdDev 10.41
Min 11.39
P10 16.79
P25 19.74
P50 23.56
P75 27.00
Max 66.98

2009; RATE
N; 112
Mean; 25.76
StdDev; 10.52
Min; 8.89
P10; 17.71
P25; 20.21
P50; 23.67
P75; 28.09
Max; 85.37

2b6. Comparability of Multiple Data Sources/Methods. (*If specified for more than one data source, the various approaches result in comparable scores.*)

2b6.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
This is an administrative claims only measure.

2b6.2 Analytic Method *(Describe methods and rationale for testing comparability of scores produced by the different data sources specified in the measure)*:
N/A

2b6.3 Testing Results *(Provide statistical results, e.g., correlation statistics, comparison of rankings; assessment of adequacy in the context of norms for the test conducted)*:
N/A

2c. Disparities in Care: H☐ M☐ L☐ I ☐ NA☐ (*If applicable, the measure specifications allow identification of disparities.*)

2c.1 If measure is stratified for disparities, provide stratified results *(Scores by stratified categories/cohorts)*: The measure is not stratified to detect disparities.

2c.2 If disparities have been reported/identified (e.g., in 1b), but measure is not specified to detect disparities, please

explain:
The measure is not stratified to detect disparities. NCQA has participated with IOM and others in attempting to include information on disparities in measure data collection. However, at the present time, these data, at all levels (claims data, paper chart review, and electronic records), are not coded in a standard manner, and are incompletely captured. There are no consistent standards for what entity (physician, group, plan, employer) should capture and report these data. While requiring data reporting could push the field forward, doing so could create a substantial burden with inability to use the data because of its inconsistency. Currently, we agree with the IOM report that disparities are best considered by the use of zip code analysis which has limited applicability in most reporting situations. At the health plan level, for HEDIS health plan data collection, NCQA has extensive data related to the use of stratification by insurance status (Medicare, Medicaid and private-commercial) and would strongly recommend this process where the data base supporting the measurement includes this information. However, we believe that the measure specifications should NOT require this since the measure is still useful where the data needed to determine disparities cannot be ascertained from the data available.

2.1-2.3 Supplemental Testing Methodology Information:

Steering Committee: Overall, was the criterion, *Scientific Acceptability of Measure Properties*, met?
(*Reliability and Validity must be rated moderate or high*) Yes☐ No☐
Provide rationale based on specific subcriteria:

If the Committee votes No, STOP

3. USABILITY

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)

C.1 Intended Actual/Planned Use *(Check all the planned uses for which the measure is intended)*: Public Reporting, Quality Improvement (Internal to the specific organization), Quality Improvement with Benchmarking (external benchmarking to multiple organizations)

3.1 Current Use *(Check all that apply; for any that are checked, provide the specific program information in the following questions)*: Public Reporting, Regulatory and Accreditation Programs, Quality Improvement with Benchmarking (external benchmarking to multiple organizations), Quality Improvement (Internal to the specific organization)

3a. Usefulness for Public Reporting: H☐ M☐ L☐ I ☐
(*The measure is meaningful, understandable and useful for public reporting.*)

3a.1. Use in Public Reporting - disclosure of performance results to the public at large *(If used in a public reporting program, provide name of program(s), locations, Web page URL(s)).* If not publicly reported in a national or community program, state the reason AND plans to achieve public reporting, potential reporting programs or commitments, and timeline, e.g., within 3 years of endorsement: [*For Maintenance – If not publicly reported, describe progress made toward achieving disclosure of performance results to the public at large and expected date for public reporting; provide rationale why continued endorsement should be considered.*]
This measure is used in public reporting for health plans through Healthcare Effectiveness Data and Information Set (HEDIS) whose results are published through venues such as the annual State of Healthcare Quality report, Quality Compass and America's Best Health Plans.

3a.2.Provide a rationale for why the measure performance results are meaningful, understandable, and useful for public reporting. If usefulness was demonstrated (e.g., focus group, cognitive testing), describe the data, method, and results: This measure is used in the HEDIS measurement set. Rates on these measures are presented in several products for consumers, employers and the federal government. NCQA continually works with consumer groups, such as Consumers Reports, to provide quality data that is meaningful, understandable and useful to NCQA customers. We ensure consumers are engaged in every stage

of the process from measurement development to implementation and reporting. In this way we ensure measures are useful for public reporting.

3.2 Use for other Accountability Functions (payment, certification, accreditation). If used in a public accountability program, provide name of program(s), locations, Web page URL(s): The measure is part of the CMS Physician Quality Reporting System (2011, 2012)
This measure is also under consideration for EHR Physician Incentive Program meaningful use stage 2.

3b. Usefulness for Quality Improvement: H☐ M☐ L☐ I ☐
(*The measure is meaningful, understandable and useful for quality improvement.*)

3b.1. Use in QI. If used in quality improvement program, provide name of program(s), locations, Web page URL(s):
[*For Maintenance – If not used for QI, indicate the reasons and describe progress toward using performance results for improvement*].
This measure is in the Healthcare Effectiveness Data and Information Set (HEDIS) and is used in NCQA's Health Plan Accreditation program.

3b.2. Provide rationale for why the measure performance results are meaningful, understandable, and useful for quality improvement. If usefulness was demonstrated *(e.g., QI initiative),* describe the data, method and results:
This measure is used in NCQA's Health Plan Accreditation program. As part of that program, we provide all health plan, providers, and auditors with policy clarification support. Questions and concerns about measures can be submitted through this open system and are reviewed by NCQA staff. If concerns are substantial, NCQA will move a measure forward for re-evaluation and potentially change a measures in response to concerns raised through this policy clarification system. In this way we ensure health plans which use HEDIS measures for quality improvement have measures which they find meaningful, understandable and useful. Additionally, NCQA engages health plan representatives in every stage of measure development, implementation and reporting. In this way we ensure measures are useful for quality improvement.

Overall, to what extent was the criterion, *Usability*, met? H☐ M☐ L☐ I ☐
Provide rationale based on specific subcriteria:

4. FEASIBILITY

Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)

4a. Data Generated as a Byproduct of Care Processes: H☐ M☐ L☐ I ☐

4a.1-2 How are the data elements needed to compute measure scores generated? *(Check all that apply).*
Data used in the measure are:
generated by and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition,
Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims)

4b. Electronic Sources: H☐ M☐ L☐ I ☐

4b.1 Are the data elements needed for the measure as specified available electronically *(Elements that are needed to compute measure scores are in defined, computer-readable fields)*: ALL data elements are in a combination of electronic sources

4b.2 If ALL data elements are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources:

4c. Susceptibility to Inaccuracies, Errors, or Unintended Consequences: H☐ M☐ L☐ I ☐

4c.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measurement identified during testing and/or operational use and strategies to prevent, minimize, or detect. If audited, provide results:
NCQA recognizes that, despite the clear specifications defined for HEDIS measures, data collection and calculation methods may vary and other errors may taint the results, diminishing the usefulness of HEDIS data for managed care organization (MCO)

comparison. In order for HEDIS to reach its full potential, NCQA conducts an independent audit of all HEDIS collection and reporting processes, as well as an audit of the data which are manipulated by those processes in order to verify that HEDIS specifications are met. NCQA has developed a precise, standardized methodology for verifying the integrity of HEDIS collection and calculation processes through a two-part program consisting of an overall information systems capabilities assessment followed by an evaluation of the MCO´s ability to comply with HEDIS specifications. NCQA-certified auditors using standard audit methodologies will help enable purchasers to make more reliable "apples-to-apples" comparisons between health plans.

The HEDIS Compliance Audit addresses the following functions:
1) information practices and control procedures
2) sampling methods and procedures
3) data integrity
4) compliance with HEDIS specifications
5) analytic file production
6) reporting and documentation

4d. Data Collection Strategy/Implementation: H☐ M☐ L☐ I ☐

A.2 Please check if either of the following apply (*regarding proprietary measures*): Proprietary measure
4d.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues *(e.g., fees for use of proprietary measures)*:
NCQA´s multi-stakeholder advisory panels examined an analysis of the measure after its first year of reporting. The measure was deemed appropriate for public reporting. NCQA has processes to ensure coding and specifications are clear and updated when needed.

Overall, to what extent was the criterion, *Feasibility*, met? H☐ M☐ L☐ I ☐
Provide rationale based on specific subcriteria:

OVERALL SUITABILITY FOR ENDORSEMENT

Does the measure meet all the NQF criteria for endorsement? Yes☐ No☐
Rationale:

If the Committee votes No, STOP.
If the Committee votes Yes, the final recommendation is contingent on comparison to related and competing measures.

5. COMPARISON TO RELATED AND COMPETING MEASURES

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure before a final recommendation is made.

5.1 If there are related measures *(either same measure focus or target population)* or competing measures *(both the same measure focus and same target population*), list the NQF # and title of all related and/or competing measures:

5a. Harmonization

5a.1 If this measure has EITHER the same measure focus OR the same target population as NQF-endorsed measure(s): Are the measure specifications completely harmonized?

5a.2 If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden:

5b. Competing Measure(s)

5b.1 If this measure has both the same measure focus and the same target population as NQF-endorsed measure(s): Describe why this measure is superior to competing measures *(e.g., a more valid or efficient way to measure quality);* OR provide a rationale for the additive value of endorsing an additional measure. *(Provide analyses when possible)*:

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner): National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005

Co.2 Point of Contact: Bob, Rehm, Assistant Vice President, Performance Measurement, Rehm@ncqa.org, 202-955-1728-

Co.3 Measure Developer if different from Measure Steward: National Committee for Quality Assurance, 1100 13th Street NW, Washington, District Of Columbia, 20005

Co.4 Point of Contact: Dawn, Alayon, MPH, CPH, alayon@ncqa.org, 202-955-3533-

Co.5 Submitter: Dawn, Alayon, MPH, CPH, Senior Health Care Analyst, alayon@ncqa.org, 202-955-3533-, National Committee for Quality Assurance

Co.6 Additional organizations that sponsored/participated in measure development:

Co.7 Public Contact: Bob, Rehm, Assistant Vice President, Performance Measurement, Rehm@ncqa.org, 202-955-1728-, National Committee for Quality Assurance

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development

Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.

The Adult Antibiotic Expert Panel advised NCQA during measure development. They evaluated the way staff specified measures, assessed the content validity of measures, and reviewed field test results. The MAP consisted of a balanced group of experts, including representatives from health plans and specialty societies. In addition to the Adult Antibiotic Expert Panel, NCQA also vetted these measures with a host of other stakeholders, which is a routine part of our process. Thus, our measures are the result of consensus from a broad and diverse group of stakeholders, including the Adult Antibiotic Expert Panel.

Adult Antibiotic Expert Panel
Edward Belongia, Marshfield Clinic Research Foundation
Pat Cook, Centers for Disease Control
Fred Fedorowicz, Blue Cross Blue Shield of Michigan
Donald Fetterolf, Highmark Blue Cross Blue Shield
Ralph Gonzales, University of California, San Francisco
Carolyn Greene, Centers for Disease Control
Lyn Hohmann, Capital District Physicians Health Plan
Jennifer Lis, CAQH
Rita Mangione-Smith, University of California
Barbara Sounder, CAQH

Committee on Performance Measurement (CPM)
Peter Bach, MD, Memorial Sloan Kettering Cancer Center
Bruce Bagley, MD, American Academy of Family Physicians
Andrew Baskin, MD, Aetna

A. John Blair lll, MD, Taconic IPA, Inc
Patrick Conway, MD, MSC, Center for Medicare & Medicaid Services
Jonathan D. Darer, MD, Geisinger Health System
Helen Darling, National Business Group on Health
Foster Gesten, MD, NYSDOH Office of Managed Care
Marge Ginsburg, Center for Healthcare Decisions
Christine S. Hunter, MD, US Office of Personnel Management (OPM)
George J. Isham, MD, MS, HealthPartners
Jeffrey Kelman, MMSc, MD, Centers for Medicare & Medicaid Services (CMS)
Lisa Latts, MD, MSPH, MBA, Well Point, Inc.
Arthur Levin, MPH (Co-Chair), Center for Medical Consumers
Philip Madvig, MD, The Permanente Medical Group
Susan Reinhard, RN, PhD, AARP
Bernard M. Rosof, MD, MACP, Huntington Hospital
Eric C. Schneider, MD, MSc (Co-Chair), RAND Corporation
Kevin Weiss, MD, FACP, American Board of Medical Specialties

Ad.2 If adapted, provide title of original measure, NQF # if endorsed, and measure steward. Briefly describe the reasons for adapting the original measure and any work with the original measure steward:

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.3 Year the measure was first released: 2009
Ad.4 Month and Year of most recent revision: 05, 2009
Ad.5 What is your frequency for review/update of this measure? Approximately every three years
Ad.6 When is the next scheduled review/update for this measure?

Ad.8 Disclaimers: These performance Measures are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications.

THE MEASURES AND SPECIFICATIONS ARE PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND.

Ad.9 Additional Information/Comments:

Date of Submission (*MM/DD/YY*): 07/02/2012