

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 #: 1800	NQF Project: Pulmonary Project
(for Endorsement Maintenance Review)	
Original Endorsement Date: Most Recent Endorsement Date:	
BRIEF MEASURE INFORMATION	
De.1 Measure Title: Asthma Medication Ratio (AMR)	
Co.1.1 Measure Steward: National Committee for Quality Assurance	
De.2 Brief Description of Measure: The percentage of members 5–64 years of age who were identified as having persistent asthma and had a ratio of controller medications to total asthma medications of 0.50 or greater during the measurement year.	
2a1.1 Numerator Statement: The number of members who have a medication ratio of at least 0.50	
2a1.4 Denominator Statement: All health plan members 5–64 years of age during the measurement year who were identified as having moderate to severe persistent asthma	
2a1.8 Denominator Exclusions: 1)Exclude any members who had at least one encounter, in any setting, with any code to identify a diagnosis of emphysema, COPD, cystic fibrosis or acute respiratory failure (Table ASM-E). Look as far back as possible in the member's history through December 31 of the measurement year. 2)Exclude any members who have no medication events present in their record during the measurement year.	
1.1 Measure Type: Process	
2a1. 25-26 Data Source: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Pharmacy	
2a1.33 Level of Analysis: Clinician : Group/Practice, Clinician : Individual, Clinician : Team, Facility, Health Plan, Integrated Delivery System, Population : National, Population : Regional	
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): N/A	

STAFF NOTES (issues or questions regarding any criteria)
Comments on Conditions for Consideration:
Is the measure untested? Yes <input type="checkbox"/> No <input type="checkbox"/> 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, OPPORTUNITY, 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): Pulmonary/Critical Care, Pulmonary/Critical Care : Asthma

De.5 Cross Cutting Areas (Check all the areas that apply): Population Health

1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, A leading cause of morbidity/mortality, Patient/societal consequences of poor quality, Severity of illness

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

1a.3 Summary of Evidence of High Impact (Provide epidemiologic or resource use data):

Asthma is one of the most prevalent chronic diseases; becoming increasingly more commonplace over the past twenty years. Approximately 23.3 million Americans have asthma and it is responsible for over 3,000 deaths in the U.S. annually (American Lung Association, 2010). In 2006, 13.3 million clinical visits (hospital, outpatient, emergency department, and physician offices) were attributed to asthma (CDC, 2008). The incidence rate, and subsequently the number of asthma-related health visits, is expected to increase by an additional 100 million globally by 2025 (World Health Organization, 2007). Appropriate medication adherence could ameliorate the severity of many asthma-related symptoms (Akinbami, 2009). According to the Asthma Regional Council, two-thirds of adults and children who display asthma symptoms are considered "not well controlled" or "very poorly controlled" as defined by clinical practice guidelines (2010). Pharmacologic therapy is used to prevent and control asthma symptoms, improve quality of life, reduce the frequency and severity of asthma exacerbations, and reverse airflow obstruction (NHLBI/NAEPP). Medications for asthma are usually categorized into long-term controller medications used to achieve and maintain control of persistent asthma and quick-reliever medications used to treat acute symptoms and exacerbations (NHLBI/NAEPP 2007, British Thoracic Society 2009). Appropriate medication management could potentially prevent a significant proportion of asthma-related costs (hospitalizations, emergency room visits and missed work and school days) (Akinbami, 2009).

1a.4 Citations for Evidence of High Impact cited in 1a.3: Akinbami, LJ. The State of Childhood Asthma, United States, 1980–2007. Advance Data from Vital and Health Statistics. Revised February 16, 2009. Pediatrics 123 (Supplement); S131-45.

Hyattsville, MD: National Center for Health Statistics. Available from:

http://pediatrics.aappublications.org/cgi/content/full/123/Supplement_3/S131. (March 2010)

American Lung Association. Epidemiology & Statistics Unit, Research and Program Services. Asthma. 2010. Available from: <http://www.lungusa.org/lung-disease/asthma/>. (September 2010)

American Lung Association. Trends in Asthma Morbidity and Mortality. 2009.

Asthma Regional Council. Living with Asthma in New England: Results from the 2006 BRFSS and Call-back Survey. 2010.

Available from: <http://www.asthmaregionalcouncil.org/uploads/Surveillance/BRFSS%20-%20Living%20with%20Asthma%20in%20New%20England%20February%202010.pdf>. (December 2010)

British Thoracic Society. British Guideline on the management of asthma. A national clinical guideline. Scotland: British Thoracic Society (BTS); 2009 June.

Centers for Disease Control and Prevention. Asthma: A Presentation of Asthma Management and Prevention. 2009. Available from:

<http://www.cdc.gov/asthma/speakit/default.htm>. (September 2010)

Columbia University. Best Practice Asthma Program Saves the US Healthcare System More than \$4500 a Year per Child. 2010.

Available from: <http://www.mailman.columbia.edu/news/best-practice-asthma-program-saves-us-healthcare-system-more-4500-year-child>. (December 2010)

NQF #1800 Asthma Medication Ratio (AMR)

National Heart Lung and Blood Institute/National Asthma Education and Prevention Program. Measures of asthma assessment and monitoring: Expert panel report 3: guidelines for the diagnosis and management of asthma. Washington (DC): National Heart Lung and Blood Institute (NHLBI); 2007 Aug.

World Health Organization. Global surveillance, prevention and control of chronic respiratory diseases: a comprehensive approach. 2007.

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:

Appropriate medication management could potentially prevent a significant proportion of asthma-related costs (hospitalizations, emergency room visits and missed work and school days) (Akinbami, 2009). The Asthma Regional Council supported this inference, stating that proper management could potentially save at least 25 percent of total asthma costs, or \$5 billion, nationally by reducing health care costs (American Lung Association, 2009).

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.]

See section 2a2.3 and attachment “AMR Data” for results of field test results demonstrating the variation in plan performance.

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]

N/A

1b.4 Summary of Data on Disparities by Population Group: [For Maintenance –Descriptive statistics for performance results for this measure by population group]

This measure is not stratified to detect disparities. NCOA has participated with IOM and others in attempting to include information on disparities in measure data collection. However, at the present time, this data, at all levels (claims data, paper chart review, and electronic records), is not coded in a standard manner, and is incompletely captured. There are no consistent standards for what entity (physician, group, plan, employer) should capture and report this data. While “requiring” reporting of the data could push the field forward, it has been our position that doing so would create substantial burden with inability to use the data because of its inconsistency. At the present time, we agree with the IOM report that disparities are best considered by the use of geocoding analysis which has limited applicability in most reporting situations. At the health plan level, for HEDIS health plan data collection, NCOA does have extensive data related to our 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 subcriterion 1c?
M-H	M-H	M-H	Yes <input type="checkbox"/>
L	M-H	M	Yes <input type="checkbox"/> IF additional research unlikely to change conclusion that benefits to patients outweigh harms: otherwise No <input type="checkbox"/>
M-H	L	M-H	Yes <input type="checkbox"/> IF potential benefits to patients clearly outweigh potential harms: otherwise No <input type="checkbox"/>

NQF #1800 Asthma Medication Ratio (AMR)

L-M-H	L-M-H	L	No <input type="checkbox"/>
Health outcome – rationale supports relationship to at least one healthcare structure, process, intervention, or service		Does the measure pass subcriterion 1c? Yes <input type="checkbox"/> IF rationale supports relationship	
<p>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): Members with a ratio of 0.5 or greater experience significantly fewer asthma exacerbations defined as either emergency department (ED) or acute inpatient visits with asthma listed as the primary diagnosis. The intent of the measure is to have members utilize both controllers and relievers in their regimens, instead of relievers alone thereby minimizing the number of preventable asthma exacerbations.</p> <p>1c.2-3 Type of Evidence (Check all that apply): Clinical Practice Guideline, Systematic review of body of evidence (other than within guideline development)</p> <p>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): Clinical practice guidelines and field research have both illustrated the significance of adherence to medication regimens in controlling asthma. The evidence suggests that asthma patients that are adherent to their prescribed controllers and reliever medication regimens experience fewer exacerbations and thus fewer visits to the ED.</p> <p>1c.5 Quantity of Studies in the Body of Evidence (Total number of studies, not articles):</p> <p>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):</p> <p>1c.7 Consistency of Results across Studies (Summarize the consistency of the magnitude and direction of the effect): The studies included evidence-based guidelines with and without systematic reviews/ evaluations, economic evaluations of asthma medications, survey based research and retrospective studies. Research and studies consistently show that appropriate medication management could potentially prevent a significant proportion of asthma-related costs.</p> <p>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: Prevention and management of asthma symptoms Improved quality of life Reduction in the frequency and severity of asthma exacerbations Fewer ED visits Harms: Potential adverse effects of long-term control and quick-relief medications</p> <p>1c.9 Grading of Strength/Quality of the Body of Evidence. Has the body of evidence been graded? No</p> <p>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</p> <p>1c.11 System Used for Grading the Body of Evidence: Other</p> <p>1c.12 If other, identify and describe the grading scale with definitions: N/A</p> <p>1c.13 Grade Assigned to the Body of Evidence: N/A</p>			

1c.14 Summary of Controversy/Contradictory Evidence: [N/A](#)

1c.15 Citations for Evidence other than Guidelines (*Guidelines addressed below*):

[N/A](#)

1c.16 Quote verbatim, the specific guideline recommendation (Including guideline # and/or page #):

[American College of Chest Physicians/American College of Allergy, Asthma and Immunology \(ACCP/ACAAI\)](#)

• Patients with cough due to asthma should initially be treated with a standard anti-asthmatic regimen of inhaled bronchodilators and inhaled corticosteroids.

[British Thoracic Society \(BTS\)](#)

- Inhaled steroids are the recommended preventer drug for adults and children for achieving overall treatment goals.
- Inhaled (short-acting) beta2 agonists are the first line treatment for acute asthma.
- Prescribe an inhaled short-acting beta2 agonist as short term reliever therapy for all patients with symptomatic asthma.
- If control remains inadequate on 800 mcg BDP (beclomethasone dipropionate) daily (adults) and 400 mcg daily (children) of an inhaled steroid plus a long-acting beta2 agonist, consider the following interventions:
 - Increasing inhaled steroids to 2000 mcg BDP/day (adults) or 800 mcg BDP/day (children 5-12 years)
 - Leukotriene receptor antagonists
 - Theophyllines
 - Slow release beta2 agonist tablets, though caution needs to be used in patients already on long-acting beta2 agonists

[Joint Task Force on Practice Parameters \(comprised of American Academy of Allergy, Asthma & Immunology \[AAAAI\], American College of Allergy, Asthma & Immunology \[ACAAI\], and the Joint Council of Allergy, Asthma & Immunology \[JCAAI\]\)](#)

Steps for pharmacotherapy of asthma:

- Step 1 – Prescribe an inhaled short-acting beta2 agonist as short-term reliever therapy for all patients with symptomatic asthma.
- Step 2 – Low-dose inhaled corticosteroids (ICSs), leukotriene modifiers, theophylline, cromolyn, or nedocromil
- Step 3 – Low-dose/medium dose ICSs plus inhaled long-acting beta-agonist (long-acting beta-2 agonists) or medium-dose ICSs; low-dose/medium-dose ICSs plus either leukotriene modifier or theophylline
- Step 4 – High-dose ICSs and long-acting beta2 agonists

[Institute for Clinical Systems Improvement \(ICSI\)](#)

- Treatment is begun with inhaled short-acting beta 2-agonists administered by meter dose inhaler (MDI)/spacer or nebulizer.

[National Heart Lung and Blood Institute/National Asthma and Education Prevention Program \(NHLBI/NAEPP\)](#)

- Long-term control medications (include ICSs, inhaled long-acting bronchodilators, leukotriene modifiers, cromolyn, theophylline, and immunomodulators) are used daily to achieve and maintain control of persistent asthma. The most effective are those that attenuate the underlying inflammation characteristic of asthma. The Expert Panel defines anti-inflammatory medications as those that cause a reduction in the markers of airway inflammation in airway tissue or airway secretions (e.g., eosinophils, mast cells, activated lymphocytes, macrophages, and cytokines; or ECP and tryptase; or extravascular leakage of albumin, fibrinogen, or other vascular protein).
- Inhaled corticosteroids are the preferred treatment option for mild persistent asthma in adults and children. LTRAs are an alternative, although not preferred, treatment.
- Long-acting beta2 agonists should only be used in combination with ICSs for long-term control and prevention of symptoms in moderate or severe persistent asthma (step 3 care or higher in children ≥5 years of age and adults). There is a strong recommendation against the use of LABAs as monotherapy. Of the adjunctive therapies available, long-acting beta2 agonists is the preferred therapy to combine with ICS in youths ≥12 years of age and adults.
- The beneficial effects of long-acting beta2 agonists in combination therapy for the great majority of patients who require more therapy than low-dose ICS alone to control asthma (i.e., require step 3 care or higher) should be weighed against the increased risk of severe exacerbations, although uncommon, associated with the daily use of long-acting beta 2 agonists (see discussion in text).
- The NHLBI/NAEPP guideline strongly recommends against the use of long-acting beta2 agonists for the treatment of acute symptoms or exacerbations.

[Singapore Ministry of Health \(SMOH\)](#)

Leukotriene modifiers can either be used as an alternative to low dose inhaled glucocorticosteroids in patients with mild persistent

asthma, or as an add-on drug when low dose inhaled glucocorticosteroids or when the combination of inhaled corticosteroids with long acting beta2-agonist have not given the desired effect.

1c.17 Clinical Practice Guideline Citation: British Thoracic Society. British Guideline on the management of asthma. A national clinical guideline. Scotland: British Thoracic Society (BTS); 2009 June.

Dolovich MB et al. Device selection and outcomes of aerosol therapy: evidence-based guidelines: American College of Chest Physicians/American College of Asthma, Allergy, and Immunology. Chest 2005 Jan; 127(1): 335-71.

Institute for Clinical Systems Improvement. Diagnosis and management of asthma. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2008 Jan.

Joint Task Force on Practice Parameters. Attaining optimal asthma control: a practice parameter. J Allergy Clin Immunol 2005 Nov; 116(5): S3-11.

National Heart Lung and Blood Institute/National Asthma Education and Prevention Program. Measures of asthma assessment and monitoring: Expert panel report 3: guidelines for the diagnosis and management of asthma. Washington (DC): National Heart Lung and Blood Institute (NHLBI); 2007 Aug.

National Medical Research Council (Singapore Ministry of Health). Management of asthma. Singapore: Singapore Ministry of Health (SMOH); 2008 Jan.

1c.18 National Guideline Clearinghouse or other URL:

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(s) authors' rating of strength/category of evidence:**

American College of Chest Physicians/American College of Allergy, Asthma and Immunology (ACCP/ACAAI)

Ia: Evidence from meta-analysis of randomized controlled trials

Ib: Evidence from at least one randomized controlled trial

IIa: Evidence from at least one controlled study without randomization

IIb: Evidence from at least one other type of quasi-experimental study

III: Evidence from nonexperimental descriptive studies, such as comparative studies, correlation studies, and case-control studies

IV: Evidence from expert committee reports, opinions or clinical experiences of respected authorities, or both

British Thoracic Society (BTS)

Category 1++: High quality meta analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias

Category 1+: Well conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias

Category 1-: Meta-analyses, systematic reviews, or RCTs with a high risk of bias

Category 2++: High quality systematic review of case control or cohort studies

Category 2+: Well conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal

Category 2: Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal

Category 3: Non-analytic studies, eg case reports, case series

Category 4: Expert opinion

Institute for Clinical Systems Improvement (ICSI)

Grade I: The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of significant doubts about generalizability, bias, and flaws in research design. Studies with negative results have sufficiently large samples to have adequate statistical power.

Grade II: The evidence consists of results from studies of strong design for answering the question addressed, but there is uncertainty attached to the conclusion because of inconsistencies among the results from different studies or because of minor doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the question addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.

Grade III: The evidence consists of results from studies of strong design for answering the question addressed, but there is substantial uncertainty attached to the conclusion because of inconsistencies among the results from different studies or because of serious doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from a limited number of studies of weak design for answering the question addressed.

Grade Not Assignable: There is no evidence that directly supports or refutes the conclusion.

National Heart Lung and Blood Institute/National Asthma Education and Prevention Program (NHLBI/NAEPP)

Category A: Randomized controlled trials (RCTs), rich body of data. Evidence is from end points of well-designed RCTs that provide a consistent pattern of findings in the population for which the recommendation is made. Category A requires substantial numbers of studies involving substantial numbers of participants.

Category B: RCTs, limited body of data. Evidence is from end points of intervention studies that include only a limited number of patients, post hoc or subgroup analysis of RCTs, or meta-analysis of RCTs. In general, category B pertains when few randomized trials exist; they are small in size, they were undertaken in a population that differs from the target population of the recommendation, or the results are somewhat inconsistent.

Category C: Nonrandomized trials and observational studies. Evidence is from outcomes of uncontrolled or nonrandomized trials or from observational studies.

Category D: Panel consensus judgment. This category is used only in cases where the provision of some guidance was deemed valuable, but the clinical literature addressing the subject was insufficient to justify placement in one of the other categories. The Panel consensus is based on clinical experience or knowledge that does not meet the criteria for categories A through C.

Singapore Ministry of Health (SMOH)

Category 1++: High quality meta-analyses, systematic reviews of randomized controlled trials (RCTs), or RCTs with a very low risk of bias.

Category 1+: Well conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias.

Category 1-: Meta-analyses, systematic reviews of RCTs, or RCTs with a high risk of bias.

Category 2++: High quality systematic reviews of case control or cohort studies. High quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal

Category 2+: Well conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal

Category 2-: Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal

Category 3: Non-analytic studies, e.g. case reports, case series

Category 4: Expert opinion

1c.23 Grade Assigned to the Recommendation:

1c.24 Rationale for Using this Guideline Over Others: It is NCOA policy to use guidelines which are evidence-based, applicable to physicians and other healthcare providers, and developed by a national specialty organization or government agency.

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: [High](#) 1c.26 Quality: [High](#) 1c.27 Consistency: [Moderate](#)

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*):

[The number of members who have a medication ratio of at least 0.50](#)

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*):

[The steps below help to determine numerator-compliant members.](#)

[Step 1: For each member, count the units of controller medications \(Table ASM-A\) dispensed during the measurement year. Each dispensing event is one unit.](#)

[Step 2: For each member, count the units of reliever medications \(Table ASM-A\) dispensed during the measurement year. Each dispensing event is one unit.](#)

[Step 3: For each member, sum the units calculated in step 1 and step 2 to determine units of total medications.](#)

[Step 4: For each member, calculate the ratio of controller medications to total asthma medications using the following formula.](#)

[AMR Ratio = Units of Controller Medications \(step 1\)/ Units of Total Medications \(step 3\)](#)

[Step 5: Sum the total number of members who have a ratio of =0.50 in step 4.](#)

[Table ASM-A: Asthma Controller and Reliever Medications](#)

[Asthma Controller Medications](#)

[Antiasthmatic combinations: dyphylline-guaifenesin; guaifenesin-theophyllinW; potassium iodide-theophylline](#)

[Antibody inhibitor: omalizumab](#)

[Inhaled steroid combinations: budesonide-formoterol; fluticasone-salmeterol; mometasone-formoterol; Inhaled corticosteroid; beclomethasone; budesonide; ciclesonide; flunisolide; fluticasone CFC free; mometasone; triamcinolone;](#)

[Leukotriene modifier: montelukast; zafirlukast; zileuton](#)

[Mast cell stabilizers: cromolyn; nedocromil](#)

NQF #1800 Asthma Medication Ratio (AMR)

Methylxanthines: aminophylline; dyphylline; oxtriphylline; theophylline

Asthma Reliever Medications

Short-acting, inhaled beta-2 agonists: albuterol; levalbuterol; metaproterenol; pirbuterol

2a1.4 Denominator Statement (Brief, narrative description of the target population being measured):

All health plan members 5–64 years of age during the measurement year who were identified as having moderate to severe persistent asthma

2a1.5 Target Population Category (Check all the populations for which the measure is specified and tested if any): Adult/Elderly Care, Children's Health, Populations at Risk

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

The measurement year (one calendar year) and the year prior to the measurement year (2-year denominator identification window)

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):

The eligible population for the denominator is defined by following the series of steps below:

Step 1

Identify members as having persistent asthma who met at least one of the following criteria during both the measurement year and the year prior to the measurement year. Criteria need not be the same across both years.

- At least one ED visit (Table ASM-B) with asthma as the principal diagnosis (Table ASM-A)
- At least one acute inpatient claim/encounter (Table ASM-B) with asthma as the principal diagnosis (Table ASM-A)
- At least four outpatient asthma visits (Table ASM-B) with asthma as one of the listed diagnoses (Table ASM-A) and at least two asthma medication dispensing events (Table ASM-C)
- At least four asthma medication dispensing events (Table ASM-C)

Step 2:

A member identified as having persistent asthma because of at least four asthma medication dispensing events where leukotriene modifiers were the sole asthma medication dispensed in that year, must also have at least one diagnosis of asthma (Table ASM-A), in any setting, in the same year as the leukotriene modifier (i.e., the measurement year or the year prior to the measurement year).

Table ASM-A: Codes to Identify Asthma

ICD-9-CM Diagnosis: 493.0, 493.1, 493.8, 493.9

Table ASM-B: Codes to Identify Visit Type

Outpatient

CPT: 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99341-99345, 99347-99350, 99382-99386, 99392-99396, 99401-99404, 99411, 99412, 99420, 99429

UB Revenue: 051x, 0520-0523, 0526-0529, 057x- 059x, 0982, 0983

Acute inpatient

CPT: 99221-99223, 99231-99233, 99238, 99239, 99251-99255, 99291

UB Revenue: 010x, 0110-0114, 0119, 0120-0124, 0129, 0130-0134, 0139, 0140-0144, 0149, 0150-0154, 0159, 016x, 020x,021x, 072x, 0987

ED

CPT: 99281-99285

UB Revenue: 045x, 0981

Table ASM-C: Asthma Medications

Antiasthmatic combinations: dyphylline-guaifenesin; guaifenesin-theophylline; potassium iodide-theophylline

Antibody inhibitor: omalizumab

NQF #1800 Asthma Medication Ratio (AMR)

Inhaled steroid combinations: budesonide-formoterol; fluticasone-salmeterol
Inhaled corticosteroids: beclomethasone; budesonide ; ciclesonide; flunisolide; fluticasone CFC free; mometasone ; triamcinolone
Leukotriene modifiers: montelukast; zafirlukast; zileuton
Long-acting, inhaled beta-2 agonists: aformoterol; formoterol; salmeterol
Mast cell stabilizers: cromolyn; nedocromil
Methylxanthines: aminophylline; dyphylline; oxtriphylline; theophylline
Short-acting, inhaled beta-2 agonists: albuterol; levalbuterol; metaproterenol; pirbuterol

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

1) Exclude any members who had at least one encounter, in any setting, with any code to identify a diagnosis of emphysema, COPD, cystic fibrosis or acute respiratory failure (Table ASM-E). Look as far back as possible in the member's history through December 31 of the measurement year.

2) Exclude any members who have no medication events present in their record during the measurement year.

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*):

Table ASM-E: Codes to Identify Required Exclusions

Description: ICD-9-CM Diagnosis

Emphysema: 492, 506.4, 518.1, 518.2

COPD: 491.2, 493.2, 496

Cystic fibrosis: 277.0

Acute respiratory failure: 518.81

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*):

The NQQA age strata for asthma measures are designed to align with both clinical practice guidelines and reporting requirements for child health quality improvement programs. Clinical guidelines specify appropriate age cohorts for measuring use of asthma medications as 5–11 years of age and 12–50 years of age, to account for the differences in medication regimens for children vs. for adolescents and adults. Implementation requires further stratification of the age ranges, to enable creation of comparable cohorts that align with child health populations. Four age stratifications and a total rate are reported for this measure. Age for each stratum is based on the member's age as of December 31st of the Measurement Year.

1) 5–11 years

2) 12–18 years

3) 19–50 years

4) 51–64 years

5) Total

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: Rate/proportion

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.*):

The measure determines how well a health plan member with moderate to severe persistent asthma is able to control their symptoms using controller medications as prescribed. The measure calculation is detailed in the steps listed below:

Step 1: Determine eligible population: Identify members as having persistent asthma who met at least one of the following criteria during both the measurement year and the year prior to the measurement year. Criteria need not be the same across both years.

- At least one ED visit (Table ASM-B) with asthma as the principal diagnosis (Table ASM-A)
- At least one acute inpatient claim/encounter (Table ASM-B) with asthma as the principal diagnosis (Table ASM-A)
- At least four outpatient asthma visits (Table ASM-B) with asthma as one of the listed diagnoses (Table ASM-A) and at least two asthma medication dispensing events (Table ASM-C)
- At least four asthma medication dispensing events (Table ASM-C)

Step 2: A member identified as having persistent asthma because of at least four asthma medication dispensing events where leukotriene modifiers were the sole asthma medication dispensed in that year, must also have at least one diagnosis of asthma (Table ASM-A), in any setting, in the same year as the leukotriene modifier (i.e., the measurement year or the year prior to the measurement year).

Step 3: Required Exclusions.

Exclude any members who had at least one encounter, in any setting, with any code to identify a diagnosis of emphysema, COPD, cystic fibrosis or acute respiratory failure (Table ASM-E). Look as far back as possible in the member's history through December 31 of the measurement year. Exclude any members who have no medication events present in their record during the measurement year.

Step 4: For each member, count the units of controller medications (Table AMR-A) dispensed during the measurement year. Each dispensing event is one unit.

Step 5: For each member, count the units of reliever medications (Table AMR-A) dispensed during the measurement year. Each dispensing event is one unit.

Step 6: For each member, sum the units calculated in step 4 and step 5 to determine units of total medications.

Step 7: For each member, calculate the ratio of controller medications to total asthma medications using the following formula.

AMR Ratio= Units of Controller Medications (step 4)/ Units of Total Medications (step 6)

Step 8: Sum the total number of members who have a ratio of =0.50 in step 7.

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 : Electronic Health Record, 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.*): NCQA collects HEDIS data directly from Health Management Organizations and Preferred Provider Organizations via a data submission portal - the Interactive Data Submission System (IDSS).

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

<http://www.ncqa.org/tabid/370/default.aspx>

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*): Clinician : Group/Practice, Clinician : Individual, Clinician : Team, Facility, Health Plan, Integrated Delivery System, Population : National, Population : Regional

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

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 measure seeks to evaluate cross-plan performance comparisons of asthma medication regimens among health plan members. Nine health plans provided member-level administrative data to NCQA for the field test. Plans' enrollment included both commercial and Medicaid product lines, with representative membership ranging in size from 2,000 to 700,288. The service areas of the participating plans were also fairly extensive, providing comprehensive coverage to select states or regions from a variety of geographic areas within the United States. Participating plans were asked to submit enrollment, encounter and medication data to NCQA, who then performed the actual calculations of the measure rates. These calculations were designed to address a large number of research questions about the specific population identified as having persistent asthma.

2a2.2 **Analytic Method** (*Describe method of reliability testing & rationale*):

The field test relied on a number of previously validated criteria for identifying an eligible population with persistent asthma using administrative claims data. Using the dataset provided, NCQA examined several different scenarios to determine the effects of different specification criteria on this particular population. The ultimate objective of the field test was to determine the ability of health plans to reliably report complex administrative measures requiring multiple sources of data in addition to determining the completeness of the data for this specific population. The current HEDIS asthma specification (NQF #0036) uses multiple criteria (diagnoses, encounters, medications) collected across two years to identify members as having persistent asthma. For this field test we examined how many members met each criterion when qualifying for the denominator to assess how precisely these measures identify at-risk populations. For example, of the members identified, we determined what proportion of members were identified based on medications alone (without an asthma diagnosis) in comparison to those identified using a combination of encounters and medication-related events.

The specific objectives of the field test were to:

- Gather initial data on asthma-related medication dispensing practices
- Gather data on the level of adherence to asthma medications for persistent asthma
- Test the feasibility of implementing new effectiveness of care process measures for asthma based on administrative claims data
- Refine and calibrate the measure specifications
- Determine if significant gaps in asthma medication management practices exist that can be addressed through implementation of new NCQA Health Effectiveness and Information Data Set (HEDIS) measures.

Reliability is estimated by using the beta-binomial model. Beta-binomial is a better fit when estimating the reliability of simple pass/fail rate measures as is the case with most HEDIS® health plan measures. The beta-binomial model assumes the plan score is a binomial random variable conditional on the plan's true value that comes from the beta distribution. The beta distribution is usually defined by two parameters, alpha and beta. Alpha and beta can be thought of as intermediate calculations to get to the needed variance estimates. Reliability used here 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. A reliability of zero implies that all the variability in a measure is attributable to measurement error. A reliability of one implies that all the variability is attributable to real differences in performance. The higher the reliability score, the greater is the confidence with which one can distinguish the performance of one plan from another. A reliability score greater than or equal to 0.7 is considered very good.

2a.2.3 Testing Results (*Reliability statistics, assessment of adequacy in the context of norms for the test conducted*):

NCQA requested member level data from the plans in order to assess the completeness of the data required to reliably calculate these measures. Tables 1 and 2 outline the performance rates for each product line stratified by age group and totals. The age group totals were calculated to approximate typical HEDIS reporting strategy. Table 3 outlines performance rates by each plan, with confidence intervals, segregated by product line.

Table 1: Field test Results for the Asthma Ratio (Commercial)

Age	Rate
5-11	60.9%
12-50	58.6%
51-64	67.2%
Tot 1 (5-50)	59.1%
Tot 2 (5-64)	61.6%

Table 2: Field test Results for the Asthma Ratio (Medicaid)

Age	Rate
5-11	59.4%
12-50	47.0%
51-64	48.4%
ToT 1 (5-50)	52.1%
Tot 2 (5-64)	51.9%

Table 3: Field test Results for Asthma Medication Ratio by Health Plan (Commercial & Medicaid)

Plan #	Prod In	Rate	95% Lower CI Rate	95% Upper CI Rate
Plan 1	Medicaid	0.53391	0.5239	0.5439
Plan 2	Commercial	0.75188	0.7355	0.7683
Plan 3	Commercial	0.73476	0.7227	0.7468
Plan 3	Medicaid	0.46489	0.4168	0.513
Plan 4	Commercial	0.74138	0.7316	0.7511
Plan 5	Medicaid	0.51981	0.5077	0.532
Plan 6	Commercial	0.48263	0.4751	0.4901
Plan 6	Medicaid	0.24638	0.1745	0.3183
Plan 7	Commercial	0.58225	0.5329	0.6316
Plan 7	Medicaid	0.46164	0.4409	0.4824
Plan 8	Commercial	0.58115	0.5317	0.6306
Plan 8	Medicaid	0.49164	0.4658	0.5175
Plan 9	Commercial	0.75098	0.7342	0.7678
Plan 9	Medicaid	0.57154	0.5447	0.5984

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*):

Nine health plans covering a variety of geographic areas within the United States were asked to provide complete administrative data file consisting of any member in their commercial and Medicaid product lines for anyone that had a diagnosis code for asthma during the calendar years of 2009-2010. The complete member-level administrative file used for analysis included a total of more than 82,000 health plan members with asthma.

2b2.2 Analytic Method (*Describe method of validity testing and rationale; if face validity, describe systematic assessment*):

NCOA tested the measure for face validity using a panel of stakeholders with relevant clinical expertise and research and measurement, experience. This panel included representatives from key stakeholder groups, including the CDC, pulmonologists, provider and deliver organizations and researchers (See list of members for the Respiratory Advisory Panel (RMAP) under section Ad.1). RMAP experts reviewed the results of the field test and assessed whether the results were consistent with expectations, whether the measure represented quality care, and whether we were measuring the most important aspect of care in this area.

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):*

This measure was deemed valid by the RMAP expert panel and approved by NCOA's Committee on Performance Measurement (CPM) for inclusion in HEDIS

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):*

The presence of diagnostic exclusions was extensively tested on the entire field test population (>82,000 members) to determine the effect on eligible population and the measure results experienced as a result of the application of clinical exclusions.

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

Members identified as having persistent asthma were excluded from the measure calculation based on the following ICD-9 codes and corresponding diagnoses: COPD (493.2, 496), chronic bronchitis (491.2), emphysema (492, 506.4, 518.1, 518.2), cystic fibrosis (277.0), and acute respiratory failure (518.81). This information was particularly important in examining the 51-64 age cohort, as this group is most likely to experience concomitant diagnoses of asthma and COPD or chronic bronchitis. See attachment "AMR Data" for additional information on field testing results for this measure)

In addition, entry into the eligible population for persistent asthma requires a combination of multiple outpatient encounters and diagnoses. One of the shortcomings of this approach is that these encounters could be linked to the same event and therefore do not accurately capture a population with persistent asthma. Using the field test dataset, NCOA examined the different scenarios where encounters were less than 14 days apart (a standard HEDIS time frame for linked encounters) to determine the effect on the measure's eligible population. Section 2b3.3 details the results of this additional analysis revealing the proportion of the population that would potentially be excluded from the EP as a result of the additional criterion of <14 days between encounters.

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

Field test results indicated that clinical exclusions do, in fact, affect a significant proportion of the eligible population with persistent asthma-particularly in the older age cohort (~24.6%), however the stability of the coding in the administrative claims was found to be adequately reliable to continue to utilize the exclusions listed in section 2b3.2. See attachment "AMR Data" for additional information on field testing results for this measure)

Impact of Co-morbidity Exclusions on the Eligible Populations

Table 4: Eligible Population Excluded for a comorbidity (Commercial)

Age Group	Any	COPD	Chronic Bronchitis	Emphysema	CF	ARS
5 - 11	5.7%	3.7%	1.3%	0.3%	0.8%	1.0%
12 - 50	16.2%	14.2%	4.1%	0.9%	0.6%	1.3%
51 - 64	41.5%	39.6%	15.6%	6.4%	0.1%	3.5%
T1 (5-50)	14.1%	12.0%	3.5%	0.8%	0.6%	1.3%
T2(5-64)	24.6%	22.6%	8.2%	3.0%	0.4%	2.1%

Table 5: Eligible Population Excluded for a comorbidity (Medicaid)

Age Group	Any	COPD	Chronic Bronchitis	Emphysema	CF	ARS
5 - 11	3.8%	2.7%	0.4%	0.1%	0.4%	0.6%
12 - 50	18.3%	16.6%	3.4%	1.3%	0.4%	2.6%
51 - 64	45.2%	43.7%	13.8%	6.7%	0.2%	7.4%

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T1 (5-50)	12.8%	11.4%	2.3%	0.8%	0.4%	1.8%
T2(5-64)	18.1%	16.6%	4.2%	1.8%	0.3%	2.7%

Finally, the analyses included an assessment of the completeness of plan’s data to determine the ability to further identify and classify specific subgroups. Out of all the variables included in the administrative data file layout, race/ethnicity was the only variable across all nine plans that experienced any “missing” or “incomplete” elements that would hamper further efforts to target specific opportunities for improvement in asthma management. Missing race/ethnicity data in the commercial plans ranged from 0% to 89.4% and from 0% to 91.7% in Medicaid plans. The proportion of “Unknown” race/ethnicity data was relatively low across all plans (0-4.8% commercial, 0-4% Medicaid).

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):

Nine health plans covering a variety of geographic areas within the United States were asked to provide complete administrative data file consisting of any member in their commercial and Medicaid product lines for anyone that had a diagnosis code for asthma during the calendar years of 2009-2010. The complete member-level administrative file used for analysis included a total of more than 82,000 health plan members with persistent asthma.

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

Specific calculations involve average performance rate, distribution (percentiles), 95% confidence interval of average rate across the respective health plans per by product line.

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):

Table 6 outline the distribution of plan performance for MMA field test data set by each product line (commercial and Medicaid).

Table 6 Asthma Medication Ratio

Product line	Commercial	Medicaid
AverageRate	0.66072	0.46997
95%_Lower_Confidence_Interval	0.55895	0.37192
95%_Upper_Confidence_Interval	0.76249	0.56803
Standard_deviation	0.11004	0.10602
MinRate	0.48263	0.24638

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MaxRate		0.75188	0.57154
_10th_Percentile	0.48263	0.24638	
_25th_Percentile	0.58115	0.46164	
_50th_Percentile	0.73476	0.49164	
_75th_Percentile	0.75098	0.53391	
_90th_Percentile	0.75188	0.57154	

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):

N/A

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. The NCOA age strata for asthma measures are designed to align with both clinical practice guidelines and reporting requirements for child health quality improvement programs. Clinical guidelines specify appropriate age cohorts for measuring use of asthma medications as 5–11 years of age and 12–50 years of age, to account for the differences in medication regimens for children vs. for adolescents and adults. Implementation requires further stratification of the age ranges, to enable creation of comparable cohorts that align with child health populations. As indicated in the testing results presented in section 2b3.3 (See also attachment “AMR Data”), administrative claims data is incomplete with regard to identifying such variables as patient race and ethnicity thereby making disparities analyses difficult.

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

NCOA has participated with IOM and others in attempting to include information on disparities in measure data collection. However, at the present time, this data, at all levels (claims data, paper chart review, and electronic records), is not coded in a standard manner, and is incompletely captured. There are no consistent standards for what entity (physician, group, plan, employer) should capture and report this data. While “requiring” reporting of the data could push the field forward, it has been our position that doing so would create substantial burden with inability to use the data because of its inconsistency. At the present time, we agree with the IOM report that disparities are best considered by the use of geocoding analysis which has limited applicability in most reporting situations. At the health plan level, for HEDIS health plan data collection, NCOA does have extensive data related to our 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:

Attachment
AMR DATA.docx

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 Purpose/ Use (Check all the purposes and/or 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): 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 a first year measure for the Healthcare Effectiveness Data and Information Set (HEDIS) whose results may appear through venues such as the annual State of Healthcare Quality report, Quality Compass, 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: HEDIS measures adhere to the desirable attributes of scientific acceptability, feasibility and usability. The measures provide performance rates that are audited for consistency and accuracy.

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): N/A

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 included in HEDIS

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:
 Upon review of the field test results, public comment feedback and the recommendations from the RMAP, the Committee on Performance Measurement (CPM) approved the measure for HEDIS. NCOA continually collects feedback on HEDIS measures through its public Policy Clarification Support (PCS) system, through frequent education presentations, and through the NQF endorsement review committees. HEDIS measure specifications are updated annually and external feedback from user experience in implementing the measures is seriously considered as part of this annual review. HEDIS measures also undergo a major re-evaluation on a regular three year cycle which can necessitate additional testing based on user experience feedback and analysis of results from a national multi-year implementation and reporting.

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

4. FEASIBILITY

NQF #1800 Asthma Medication Ratio (AMR)

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), Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry)

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 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 (IS standards) followed by an evaluation of the MCO's ability to comply with HEDIS specifications (HD standards). 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 will examine an analysis of the measure after its first year of 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:

0036 : Use of appropriate medications for people with asthma

1799 : Medication Management for People with Asthma (MMA)

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? No

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

This measure's eligible population and denominator criteria are built off the same validated methodology as NQF #0036 "Use of Appropriate Medications for People with Asthma." The measure concepts including reporting strata and clinical exclusions were kept closely aligned with the currently endorsed measure to ensure harmonization with currently endorsed NQF specifications.

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*):

This measure's eligible population and denominator criteria are built off the same validated methodology as NQF #0036 "Use of Appropriate Medications for People with Asthma." The measure concepts including reporting strata and clinical exclusions were kept closely aligned with the currently endorsed measure to ensure harmonization with currently endorsed NQF specifications.

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, Suite 1000, Washington, District Of Columbia, 20005

Co.4 Point of Contact: Bob, Rehm, Assistant Vice President, Performance Measurement, Rehm@ncqa.org, 202-955-1728-

Co.5 Submitter: Bob, Rehm, Assistant Vice President, Performance Measurement, Rehm@ncqa.org, 202-955-1728-, 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

NQF #1800 Asthma Medication Ratio (AMR)

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

The Respiratory Measurement Advisory panel (RMAP) has guided NCOA staff through most of the measure development process. The RMAP provide methodological expertise as well as feedback from their respective organizations experiences in programming the measures. They evaluated the specified measures for accuracy and feasibility, assessed the content validity of measures, and reviewed field test results. RMAP membership consisted of a balanced group of experts, including representatives from academia, clinical research, provider and delivery organizations, and clinical practice. Note that, in addition to the RMAP, we also vetted these measures with a host of other stakeholders, as part of our regular HEDIS measure development process. Thus, our measures are the result of consensus from a broad and diverse group of stakeholders.

Respiratory Measurement Advisory Panel (RMAP) Members:

David Au, MD, MS, (CHAIR) Associate Prof. of Medicine/Investigator HSRD

Anne Fuhlbrigge, MD, Clinical Director, Division of Pulmonary and Critical Care Medicine

Christine Joseph, PhD, MPH, BSc, Associate Director of Research, Epidemiologist

Allan Luskin, MD, Physician Pulmonologist

Joannie Shen, MD, MPH, PhD, Medical Officer/Epidemiologist

Tom Stibolt, MD, Senior Physician

Sean Sullivan, PhD, Prof. & Director, Pharmaceutical Outcomes Research and Policy Program (PORPP) Adjunct Prof., Allergy Section, Dept. Medicine

Jerry Krishnan, MD, PhD, Prof. of Medicine & Public Health, Director of Population Health Sciences, AVP, Office of the VP for Health Affairs

Todd Lee, PharmD, PhD, Primary: Senior Investigator, Secondary: Associate Professor

Richard O'Connor, MD, Director, Dept. of Quality Management, Allergist/Immunologist

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: 2011

Ad.4 Month and Year of most recent revision: 05, 2011

Ad.5 What is your frequency for review/update of this measure? Every 3 years or when clinical guidelines are updated

Ad.6 When is the next scheduled review/update for this measure? 08, 2013

Ad.7 Copyright statement: © 2012 by the National Committee for Quality Assurance

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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 SEPCIFICATIONS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND.

Ad.9 Additional Information/Comments:

Date of Submission (MM/DD/YY): 01/13/2012

AMR DATA

Table A. Asthma Medication Ratio (by Age Group) For Each Participating Plan

Plan	Product Line	Age Group	Denominator	Numerator	Rate
A	Medicaid	5-11	3048	2055	0.67421
		12-50	5537	2609	0.47119
		51-64	1044	477	0.4569
		Total 1 (5-50)	8585	4664	0.54327
		Total 2 (5-64)	9629	5141	0.53391
C	Commercial	5-11	343	271	0.79009
		12-50	1490	1075	0.72148
		51-64	827	654	0.79081
		Total 1 (5-50)	1833	1346	0.73432
		Total 2 (5-64)	2660	2000	0.75188
D	Commercial	5-11	726	528	0.72727
		12-50	2785	1981	0.71131
		51-64	1624	1264	0.77833
		Total 1 (5-50)	3511	2509	0.71461
		Total 2 (5-64)	5135	3773	0.73476
D	Medicaid	5-11	127	60	0.47244
		12-50	241	108	0.44813
		51-64	45	24	0.53333
		Total 1 (5-50)	368	168	0.45652
		Total 2 (5-64)	413	192	0.46489
B	Commercial	5-11	1386	1119	0.80736
		12-50	4387	3071	0.70002
		51-64	1968	1549	0.78709
		Total 1 (5-50)	5773	4190	0.72579
		Total 2 (5-64)	7741	5739	0.74138
E	Medicaid	5-11	3152	1731	0.54918
		12-50	3170	1532	0.48328
		51-64	163	108	0.66258
		Total 1 (5-50)	6322	3263	0.51613
		Total 2 (5-64)	6485	3371	0.51981
F	Commercial	5-11	2782	1192	0.42847
		12-50	8804	3909	0.444
		51-64	5423	3108	0.57311
		Total 1 (5-50)	11586	5101	0.44027
		Total 2 (5-64)	17009	8209	0.48263
F	Medicaid	5-11	50	5	0.1
		12-50	79	25	0.31646
		51-64	9	4	0.44444
		Total 1 (5-50)	129	30	0.23256
		Total 2 (5-64)	138	34	0.24638
G	Commercial	5-11	72	43	0.59722
		12-50	207	111	0.53623
		51-64	104	69	0.66346
		Total 1 (5-50)	279	154	0.55197
		Total 2 (5-64)	383	223	0.58225
G	Medicaid	5-11	890	459	0.51573
		12-50	1176	494	0.42007
		51-64	150	70	0.46667
		Total 1 (5-50)	2066	953	0.46128
		Total 2 (5-64)	2216	1023	0.46164

AMR DATA

Plan	Product Line	Age Group	Denominator	Numerator	Rate
H	Commercial	5-11			
		12-50	147	76	0.51701
		51-64	235	146	0.62128
		Total 1 (5-50)	147	76	0.51701
		Total 2 (5-64)	382	222	0.58115
H	Medicaid	5-11	589	312	0.52971
		12-50	847	394	0.46517
		51-64			
		Total 1 (5-50)	1436	706	0.49164
		Total 2 (5-64)	1436	706	0.49164
I	Commercial	5-11	361	301	0.8338
		12-50	1422	1049	0.73769
		51-64	763	562	0.73657
		Total 1 (5-50)	1783	1350	0.75715
		Total 2 (5-64)	2546	1912	0.75098
I	Medicaid	5-11	445	312	0.70112
		12-50	744	378	0.50806
		51-64	118	57	0.48305
		Total 1 (5-50)	1189	690	0.58032
		Total 2 (5-64)	1307	747	0.57154

Table B: Field test Results for the Asthma Ratio Measure (aggregate)

		Asthma Medication Ratio		
Product Line	Age Group	Den	Num	Rate
Commercial	5-11	5,670	3,454	60.9%
	12-50	19,242	11,272	58.6%
	51-64	10,944	7,352	67.2%
	Total 1 (5-50)	24,912	14,726	59.1%
	Total 2 (5-64)	35,856	22,078	61.6%
Medicaid	5-11	8,301	4,934	59.4%
	12-50	11,794	5,540	47.0%
	51-64	1,529	740	48.4%
	Total 1 (5-50)	20,095	10,474	52.1%
	Total 2 (5-64)	21,624	11,214	51.9%

AMR DATA

Table C: Impact of Co-morbidity Exclusions on the Eligible Populations

			Eligible Population Excluded for a comorbidity					
	Age Group	EP	Any	COPD	Chronic Bronchitis	Emphysema	Cystic Fibrosis	Acute Respiratory Syndrome
Commercial	5 - 11	6,031	5.7%	3.7%	1.3%	0.3%	0.8%	1.0%
	12 - 50	22,855	16.2%	14.2%	4.1%	0.9%	0.6%	1.3%
	51 - 64	18,154	41.5%	39.6%	15.6%	6.4%	0.1%	3.5%
	Total1(5-50)	28,886	14.1%	12.0%	3.5%	0.8%	0.6%	1.3%
	Total2(5-64)	47,040	24.6%	22.6%	8.2%	3.0%	0.4%	2.1%
Medicaid	5 - 11	8,614	3.8%	2.7%	0.4%	0.1%	0.4%	0.6%
	12 - 50	14,337	18.3%	16.6%	3.4%	1.3%	0.4%	2.6%
	51 - 64	4,432	45.2%	43.7%	13.8%	6.7%	0.2%	7.4%
	Total1(5-50)	22,951	12.8%	11.4%	2.3%	0.8%	0.4%	1.8%
	Total2(5-64)	27,383	18.1%	16.6%	4.2%	1.8%	0.3%	2.7%

Table D: Incomplete Race/Ethnicity Data for the Eligible Population by Plan

Product Line	Plan	N (EP)	Incomplete Data Categories		
			% Missing	% Unknown	% Blank
Commercial	B	10,497	0.1%	0.0%	0.0%
	C	3,129	0.0%	0.0%	0.0%
	D	5,874	43.8%	0.0%	0.0%
	F	23,020	31.3%	4.8%	0.0%
	G	453	41.3%	1.5%	0.0%
	H	629	84.9%	0.0%	0.0%
	I	3,920	0.0%	0.0%	0.0%
Medicaid	A	12,243	0.0%	0.0%	0.0%
	D	467	19.7%	0.0%	0.0%
	E	7,124	0.0%	0.0%	0.0%
	F	176	17.0%	0.6%	0.0%
	G	2,577	7.9%	4.8%	0.0%
	H	1,446	91.7%	0.0%	0.0%
	I	2,868	0.0%	0.0%	1.8%

Table E: Distribution of Rate and the 95% Confidence Interval for average rate across all plans by measure, indicator and Product Line

Product line	Average Rate	Lower CI	Upper CI	Standard deviation	MinRate	MaxRate	10 th	25 th	50 th	75 th	90 th
Commercial	0.66072	0.55895	0.76249	0.11004	0.48263	0.75188	0.48263	0.58115	0.73476	0.75098	0.75188
Medicaid	0.46997	0.37192	0.56803	0.10602	0.24638	0.57154	0.24638	0.46164	0.49164	0.53391	0.57154