



Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to sub criterion 1b).

Brief Measure Information

NQF #: 0728

Corresponding Measures:

De.2. Measure Title: Asthma Admission Rate (PDI 14)

Co.1.1. Measure Steward: Agency for Healthcare Research and Quality

De.3. Brief Description of Measure: Admissions with a principal diagnosis of asthma per 100,000 population, ages 2 through 17 years. Excludes cases with a diagnosis code for cystic fibrosis and anomalies of the respiratory system, obstetric admissions, and transfers from other institutions.

[NOTE: The software provides the rate per population. However, common practice reports the measure as per 100,000 population. The user must multiply the rate obtained from the software by 100,000 to report admissions per 100,000 population.]

1b.1. Developer Rationale: The improvement in the measure equates to less hospitalizations for pediatric asthma. This results essentially means the population is experiencing greater control and better management of their asthma given the reduction in the rate acute asthma events.

This measure is an avoidable hospitalization/ambulatory care sensitive condition (ACSC) type indicator. ACSC type indicators are not measures of hospital quality, but rather measures of potentially avoidable hospitalization if appropriate outpatient care, other healthcare services or community services were accessed and obtained (i.e., measures of the health care system broadly defined). These measures are designed to assess population access to timely, high quality outpatient and public health services in a particular geographic area, for the purpose of managing chronic disease or diagnosing acute illnesses before progressing to inpatient treatment. These measures are of most interest to comprehensive health care delivery systems, such as some health maintenance organizations (HMOs), accountable care organizations (ACOs) or public health agencies. ACSC indicators correlate with each other and they may be used in conjunction as an overall examination of outpatient care and access to care at a national, regional or county level.

S.4. Numerator Statement: Discharges, for patients ages 2 through 17 years, with a principal ICD-9-CM diagnosis code for asthma.

S.6. Denominator Statement: Population ages 2 through 17 years in metropolitan area(1) or county. Discharges in the numerator are assigned to the denominator based on the metropolitan area or county of the patient residence, not the metropolitan area or county of the hospital where the discharge occurred.

S.8. Denominator Exclusions: Not applicable

De.1. Measure Type: Outcome

S.17. Data Source: Claims

S.20. Level of Analysis: Other, Population : Community, County or City, Population : Regional and State

IF Endorsement Maintenance – Original Endorsement Date: Jan 17, 2011 **Most Recent Endorsement Date:** Sep 18, 2014

IF this measure is included in a composite, NQF Composite#/title:

IF this measure is paired/grouped, NQF#/title:

De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results? Not applicable

1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. ***Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.***

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form**1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?**

Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. Please use the most current version of the evidence attachment (v7.1). Please use red font to indicate updated evidence.

1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- Disparities in care across population groups.

1b.1. Briefly explain the rationale for this measure (e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)

If a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and answer the composite questions.

The improvement in the measure equates to less hospitalizations for pediatric asthma. This results essentially means the population is experiencing greater control and better management of their asthma given the reduction in the rate acute asthma events.

This measure is an avoidable hospitalization/ambulatory care sensitive condition (ACSC) type indicator. ACSC type indicators are not measures of hospital quality, but rather measures of potentially avoidable hospitalization if appropriate outpatient care, other healthcare services or community services were accessed and obtained (i.e., measures of the health care system broadly defined). These measures are designed to assess population access to timely, high quality outpatient and public health services in a particular geographic area, for the purpose of managing chronic disease or diagnosing acute illnesses before progressing to inpatient treatment. These measures are of most interest to comprehensive health care delivery systems, such as some health maintenance organizations (HMOs), accountable care organizations (ACOs) or public health agencies. ACSC indicators correlate with each other and they may be used in conjunction as an overall examination of outpatient care and access to care at a national, regional or county level.

1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. *(This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.*

Data described in S.24

Table 1. Reference Population

Year	Area	Outcome	Pop at Risk	Obs Rate (per 100,000 population)
2011	3,099	78,738	65,928,307	119.430
2010	3,087	80,405	66,133,582	121.580
2009	3,078	88,562	66,075,893	134.030
2008	3,077	76,683	65,912,675	116.340
2007	3,062	75,598	65,617,418	115.210

Performance Score Distribution 2011 Rate per 100,000)

5th	25th	Median	75th	95th
19.766	55.720	99.184	161.373	288.284

Source: HCUP State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). 2007-2011. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/sidoverview.jsp. (AHRQ QI Software Version 4.5)

1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.

Not applicable

1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. (This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.) For measures that show high levels of performance, i.e., "topped out", disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

Data source described in S.24

Admissions for asthma per 100,000 population, ages 2-17 (PDI 14)

Adjusted rates by patient and hospital characteristics, 2011 (HCUPnet)

2011 Adjusted Rate^b

Characteristic	Estimate	Std err	P-value(ref=*)
Total U.S.	106.822	9.123	
Patient characteristic:			
Age groups for pediatric conditions			
0-4*	225.901	20.010	
5-9	129.406	10.786	0.000
10-14	63.116	5.758	0.000
15-17	29.651	2.804	0.000
Gender:			
Male*	127.387	10.953	
Female	85.348	7.329	0.001
Median income of patient's ZIP Code:			
First quartile (lowest income)	158.166	17.178	0.000
Second quartile	101.642	9.720	0.082
Third quartile	88.347	8.380	0.376
Fourth quartile (highest income)*	76.096	11.025	
Location of patient residence (NCHS):			
Large central metropolitan	129.648	23.300	0.160
Large fringe metropolitan*	91.799	13.517	
Medium metropolitan	92.050	15.321	0.990
Small metropolitan	100.811	14.355	0.648
Micropolitan	116.615	13.810	0.199
Noncore	97.480	8.476	0.722
Hospital characteristic:			
Location of inpatient treatment:			
Northeast*	149.858	25.643	
Midwest	110.371	27.320	0.292
South	119.565	14.265	0.302
West	55.858	7.250	0.000

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2011, and AHRQ Quality Indicators, version 4.4.

a Consistent with the AHRQ PDI software, asthma must be the principal diagnosis and the following cases are excluded: admissions with cystic fibrosis or anomalies of the respiratory system, transfers from other institutions, and obstetric admissions.

b Rates are adjusted by age and gender using the total U.S. resident population for 2010 as the standard population; when reporting is by age, the adjustment is by gender only; when reporting is by gender, the adjustment is by age only.

*Reference for p-value test statistics.

NCHS - National Center for Health Statistics designation for urban-rural locations.

1b.5. If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4

Asthma disproportionately affects low-income and minority children. A study using the AHRQ PDI for asthma hospitalizations and 2001-2004 HCUP data reported hospitalization rates per 100,000 children aged 2 to 17 years varied by state ranging from 51.1 to 185.9 in the six geographically and diverse states studied (1). Within these 6 states, authors reported that although rural children were the found to be most likely to be hospitalized for asthma, after controlling for rurality, poverty, uninsurance, and physician supply, uninsurance was the only variable to significantly impact hospitalization rates (1). In addition, as noted in Section 1.b.4, regional variation exists in the rate of hospitalizations for pediatric asthma with the Northeast being significantly higher than the West in 2011 (149.9 per 100,000 population vs 55.9 per 100,000 population, $p < .0001$). Various explanations have been hypothesized for this variation, including differences in physician training, differences in practices, higher penetration of large managed care organizations or organizations that have implemented aggressive chronic disease management programs, and differences in environmental triggers.

Other studies report higher prevalence and hospitalization rates among minority children, especially those of low socioeconomic status in urban areas (2-15). For example, a study using 2005 inpatient discharge data from the Healthcare Cost and Utilization Project found that compared with white and Asian Pacific Islander children, black and Hispanic children were more likely to have admissions for asthma (331.394 and 138.620 per 100 000 2-to 17-year-olds, respectively vs. 91.175 and 63.705 per 100,000 2-to 17-year-olds, respectively). Black children had at least 3 times the rate of asthma admissions than white children from every income group (15).

Universal health insurance coverage does not completely address the issue of disparities, as one study of Department of Defense dependents enrolled in TRICARE found that black children in all age groups and Hispanic children ages 5 to 10 years were significantly more likely to have an a potentially avoidable asthma hospitalization or emergency department visit ($OR = 1.24$ to 1.99) than white children (16). Further studies have focused on the interrelationship among hardship (caregivers looking for work, having no one to borrow money from, not owning a car or home and being single/never married), neighborhood characteristics, socioeconomic characteristics, insurance coverage and racial disparities as explanations for higher asthma readmission rates among a subgroup of the population (17-18). Others have pointed to significant environmental factors (pollution, tobacco exposure, housing quality) related to exacerbations of asthma as additional explanations for income and geographic disparities in hospitalizations (19-20).

References

1. Knudson A, Casey M, Burlew M, & Davidson G. Disparities in pediatric asthma hospitalizations. Public Health Manag Pract. 2009 May-Jun;15(3):232-7.
2. Akinbami LJ, Moorman JE, Garbe PL, Sondik EJ. Status of childhood asthma in the United States, 1980-2007. Pediatrics. 2009 Mar;123 Suppl 3:S131-45. doi: 10.1542/peds.2008-2233C.
3. Akinbami LJ; Centers for Disease Control and Prevention National Center for Health Statistics. The state of childhood asthma, United States, 1980-2005. Adv Data. 2006;(381) :1- 24.
4. Akinbami LJ, Moorman JE, Liu X. Asthma prevalence, health care use, and mortality: United States 2005-2009. Natl Health Stat Rep 2011;32:1-14.
5. Ernst P, Demissie K, Joseph L, Locher U, Becklake MR. Socioeconomic status and indicators of asthma in children. Am J Respir Crit Care Med. 1995;152 (2):570- 575.
6. Gold DR, Wright RJ. Population disparities in asthma. Ann Rev Public Health. 2005;26 :89-113.
7. Lang DM, Polansky M. Patterns of asthma mortality in Philadelphia from 1969 to 1991. N Engl J Med. 1994;331 (23):1542-1546.
8. Litonjua AA, Carey VJ, Weiss ST, Gold DR. Race, socioeconomic factors, and area of residence are associated with asthma prevalence. Pediatr Pulmonol. 1999;28 (6):394- 401.
9. Miller JE. The effects of race/ethnicity and income on early childhood asthma prevalence and health care use. Am J Public Health. 2000;90(3):428- 430.
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13. Merrill, C.T. (Thomson Reuters), Stranges, E. (Thomson Reuters), and Steiner, C. (AHRQ). Hospital Stays for Asthma Among

Children, 2006. HCUP Statistical Brief #58. August 2008. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb58.pdf>.

14. Hill TD, Graham LM, Divgi V. Racial disparities in pediatric asthma: a review of the literature. *Cuu Allergy Asthma Rep* 2011;11(1)85-90.

15. Berdahl T, Owens PL, Dougherty D, McCormick MC, Pylypchuk Y, Simpson LA. Annual report on health care for children and youth in the United States: Racial/ethnic and socioeconomic disparities in children's health care quality. *Acad Pediatr*. 2010;10:95-118.

16. Steward KA, Higgins PC, McLaughlin CG, Williams TV, Granger E, Croghan TW. Differences in prevalence, treatment and outcomes of asthma among a diverse population of children with equal access to care: findings from a study in the military health system. *Arch Pediatr Adolesc Med* 2010;164(8):720-726.

17. Beck AF, Huang B, Simmons JM, Moncrief T, Sauers HS, Chen C, Ryan PH, Newman NC, Kahn RS. Role of financial and social hardships in asthma racial disparities. *Pediatr* 2014; 133;431-439.

18. Liu SY, Pearlman DN. Hospital readmissions for childhood asthma: the role of individual and neighborhood factors. *Publ Health Rep* 2009;124(1)65-78.

19. Shaprio CG, Stout JQ. Childhood asthma in the United States: urban issues. *Pediatr Pumonol* 2002;33(1)47-55.

20. Kuo AA, Etzel RA, Chilton LA, Watson C, Gorski PA. Primary care pediatrics and public health: Meeting the needs of today's children. *Am J Public Health*. 2012; 102(12): e17-e23.

2. Reliability and 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. ***Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.***

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. Subject/Topic Area (check all the areas that apply):

Respiratory, Respiratory : Asthma

De.6. Non-Condition Specific(check all the areas that apply):

De.7. Target Population Category (Check all the populations for which the measure is specified and tested if any):

Children

S.1. Measure-specific Web Page (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)

http://www.qualityindicators.ahrq.gov/Downloads/Modules/PDI/V50/TechSpecs/PDI_14_Asthma_Admission_Rate.pdf

S.2a. If this is an eMeasure, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

This is not an eMeasure Attachment:

S.2b. Data Dictionary, Code Table, or Value Sets (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

Attachment Attachment: PDI14_Technical_Specifications.xlsx

S.2c. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

Attachment:

S.2d. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

S.3.1. For maintenance of endorsement: Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.

S.3.2. For maintenance of endorsement, please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.

As standard protocol, the AHRQ QI program annually updates all measures with Fiscal Year coding changes, refinements based on stakeholder input, refinements to improve specificity and sensitivity based on additional analyses, and necessary software changes. In addition, approximately every two years, AHRQ updates the risk adjustment parameter estimates and composite weights based on the most recent year of data (i.e., the most current reference population possible). The refined measures are tested and confirmed to be valid and reliable prior to release of the updated software.

Since the last update, the following changes have been made to the indicator:

- The data upon which to base the reference population was updated. V4.4 uses a 2008 reference population; v4.5 uses a 2010 reference population.
- Updated with 2012 US Census population estimates
- Fiscal Year coding updates

For additional information, see Pediatric Quality Indicator (PDI) Log of ICD-9-CM and DRG Coding Updates and Revisions to PDI Documentation and Software in the supplemental materials and available online at: http://www.qualityindicators.ahrq.gov/Downloads/Modules/PDI/V45/PDI_Changes_4.5.pdf and in the supporting information.

S.4. Numerator Statement (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.

IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Discharges, for patients ages 2 through 17 years, with a principal ICD-9-CM diagnosis code for asthma.

S.5. 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, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

ICD-9-CM Asthma diagnosis codes:

49300 EXT ASTHMA W/O STAT ASTH
49301 EXT ASTHMA W STATUS ASTH
49302 EXT ASTHMA W ACUTE EXAC
49310 INT ASTHMA W/O STAT ASTH
49311 INT ASTHMA W STATUS ASTH
49312 INT ASTHMA W ACUTE EXAC
49320 CH OB ASTH W/O STAT ASTH
49321 CH OB ASTHMA W STAT ASTH
49322 CH OBS ASTH W ACUTE EXAC
49381 EXERCSE IND BRONCHOSPASM
49382 COUGH VARIANT ASTHMA
49390 ASTHMA W/O STATUS ASTHM
49391 ASTHMA W STATUS ASTHMA
49392 ASTHMA W ACUTE EXACERBTN

Exclude cases:

- with any-listed ICD-9-CM diagnosis codes for cystic fibrosis and anomalies of the respiratory system
- transfer from a hospital (different facility)
- transfer from a Skilled Nursing Facility (SNF) or Intermediate Care Facility (ICF)
- transfer from another health care facility
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing), principal diagnosis (DX1=missing), or county (PSTCO=missing)

See Pediatric Quality Indicators Appendices:

- Appendix J – Admission Codes for Transfers

ICD-9-CM Cystic fibrosis and anomalies of the respiratory system diagnosis codes:

27700 CYSTIC FIBROS W/O ILEUS
27701 CYSTIC FIBROS W ILEUS
27702 CYSTIC FIBROS W PUL MAN
27703 CYSTIC FIBROSIS W GI MAN
27709 CYSTIC FIBROSIS NEC
51661 NEUROENDOCRINE CELL HYPERPLASIA OF INFANCY
51662 PULMONARY INTERSTITIAL GLYCOGENESIS
51663 SURFACTANT MUTATIONS OF THE LUNG
51664 ALVEOLAR CAPILLARY DYSPLASIA WITH VEIN MISALIGNMENT
51669 OTHER INTERSTITIAL LUNG DISEASES OF THE CHILDHOOD
74721 ANOMALIES OF AORTIC ARCH
7483 LARYNGOTRACH ANOMALY NEC
7484 CONGENITAL CYSTIC LUNG
7485 AGENESIS OF LUNG
74860 LUNG ANOMALY NOS
74861 CONGEN BRONCHIECTASIS
74869 LUNG ANOMALY NEC
7488 RESPIRATORY ANOMALY NEC
7489 RESPIRATORY ANOMALY NOS
7503 CONG ESOPH FISTULA/ATRES
7593 SITUS INVERSUS
7707 PERINATAL CHR RESP DIS

S.6. Denominator Statement *(Brief, narrative description of the target population being measured)*

Population ages 2 through 17 years in metropolitan area(1)or county. Discharges in the numerator are assigned to the denominator based on the metropolitan area or county of the patient residence, not the metropolitan area or county of the hospital where the discharge occurred.

S.7. Denominator Details *(All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*

IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

(1) The term “metropolitan area” (MA) was adopted by the U.S. Census in 1990 and referred collectively to metropolitan statistical areas (MSAs), consolidated metropolitan statistical areas (CMSAs), and primary metropolitan statistical areas (PMSAs). In addition, “area” could refer to either 1) FIPS county, 2) modified FIPS county, 3) 1999 OMB Metropolitan Statistical Area, or 4) 2003 OMB Metropolitan Statistical Area. Micropolitan Statistical Areas are not used in the QI software.

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

Not applicable

S.9. Denominator Exclusion Details (All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)

Not applicable

S.10. Stratification Information (Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)

Not applicable

S.11. Risk Adjustment Type (Select type. Provide specifications for risk stratification in measure testing attachment)

Statistical risk model

If other:

S.12. Type of score:

Rate/proportion

If other:

S.13. 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 = Lower score

S.14. Calculation Algorithm/Measure Logic (Diagram or 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; time period for data, aggregating data; risk adjustment; etc.)

The observed rate is the number of discharges flagged with the outcome of interest divided by the number of persons in the population at risk. The predicted rate is estimated for each person based on a logistic regression model. The expected rate is the average predicted rate for the unit of interest (i.e. the county of residence). The risk-adjusted rate is calculated using the indirect method as observed rate divided by expected rate multiplied by the reference population rate. The performance score is a weighted average of the risk-adjusted rate and the reference population rate, where the weight is the signal-to-noise ratio.

For additional information, please see supporting information in the Quality Indicator Empirical Methods. Information is also available on the AHRQ Quality Indicator website: www.qualityindicators.ahrq.gov

S.15. Sampling (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)

IF an instrument-based performance measure (e.g., PRO-PM), identify whether (and how) proxy responses are allowed.

Not applicable

S.16. Survey/Patient-reported data (If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)

Specify calculation of response rates to be reported with performance measure results.

Not applicable

S.17. Data Source (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.18.

Claims

S.18. Data Source or Collection Instrument (Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data are collected.)

IF instrument-based, identify the specific instrument(s) and standard methods, modes, and languages of administration.

All analyses were completed using data from the Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID), 2007-2011. HCUP is a family of health care databases and related software tools and products developed through a Federal-State-Industry partnership and sponsored by the Agency for Healthcare Research and Quality (AHRQ). HCUP databases bring together the data collection efforts of State data organizations, hospital associations, private data organizations, and the Federal government to create a national information resource of encounter-level health care data. The HCUP SID contain the universe of the inpatient

discharge abstracts in participating States, translated into a uniform format to facilitate multi-State comparisons and analyses. Together, the SID encompass about 97 percent of all U.S. community hospital discharges (in 2011, 46 states participated for a total of more than 38.5 million hospital discharges with approximately 5 million pediatric (including births) hospital discharges). As defined by the American Hospital Association, community hospitals are all non-Federal, short-term, general or other specialty hospitals, excluding hospital units of institutions. Veterans hospitals and other Federal facilities are excluded. General and specialty children's hospitals are included in the hospital universe. Taken from the Uniform Bill-04 (UB-04), the SID data elements include ICD-9-CM coded principal and secondary diagnoses and procedures, additional detailed clinical and service information based on revenue codes, admission and discharge status, patient demographics, expected payment source (Medicare, Medicaid, private insurance as well as the uninsured), total charges and length of stay (www.hcup-us.ahrq.gov)

HCUP State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). 2007-2011. Agency for Healthcare Research and Quality, Rockville, MD. www.ahrq.gov/sidoverview.jsp (AHRQ QI Software Version 4.5, www.qualityindicators.ahrq.gov)

S.19. Data Source or Collection Instrument (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

Available at measure-specific web page URL identified in S.1

S.20. Level of Analysis (Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)

Other, Population : Community, County or City, Population : Regional and State

S.21. Care Setting (Check ONLY the settings for which the measure is SPECIFIED AND TESTED)

Inpatient/Hospital

If other:

S.22. COMPOSITE Performance Measure - Additional Specifications (Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)

Not applicable

2. Validity – See attached Measure Testing Submission Form

2.1 For maintenance of endorsement

Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

2.2 For maintenance of endorsement

Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

2.3 For maintenance of endorsement

Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes social risk factors is not prohibited at present. Please update sections 1.8, 2a2, 2b1, 2b4.3 and 2b5 in the Testing attachment and S.140 and S.11 in the online submission form. NOTE: These sections must be updated even if social risk factors are not included in the risk-adjustment strategy. You MUST use the most current version of the Testing Attachment (v7.1) -- older versions of the form will not have all required questions.

3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without

undue burden and can be implemented for performance measurement.
<p>3a. Byproduct of Care Processes For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).</p> <p>3a.1. Data Elements Generated as Byproduct of Care Processes. Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims) If other:</p>
<p>3b. Electronic Sources The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.</p> <p>3b.1. To what extent are the specified data elements available electronically in defined fields (i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields) Update this field for <u>maintenance of endorsement</u>. ALL data elements are in defined fields in electronic claims</p> <p>3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources. For <u>maintenance of endorsement</u>, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).</p> <p>3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card. Attachment:</p>
<p>3c. Data Collection Strategy Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.</p> <p>3c.1. Required for maintenance of endorsement. Describe difficulties (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. IF instrument-based, consider implications for both individuals providing data (patients, service recipients, respondents) and those whose performance is being measured. Because the indicator is based on readily available administrative data and U.S. Census data, feasibility is not an issue.</p> <p>3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified (e.g., value/code set, risk model, programming code, algorithm). Public use SAS and Windows software available on the URL provided in S.1.</p>
<p>4. Usability and Use</p> <p>Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.</p> <p>4a. Accountability and Transparency Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.</p>

4.1. Current and Planned Use

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)

4a1.1 For each CURRENT use, checked above (update for maintenance of endorsement), provide:

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

Agency for Healthcare Research and Quality (AHRQ), National Healthcare Quality Report & National Healthcare Disparities Reports
2010 data are from 45 participating states in the Healthcare Cost and Utilization Project (HCUP) database
<http://www.hcup-us.ahrq.gov/reports/methods/2012-02.pdf>

Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP)
Largest collection of longitudinal hospital care data in the United States, with patient-level data from State data organizations, hospital associations, private data organizations, and the Federal government
<http://www.hcup-us.ahrq.gov/>

California Office of Statewide Health Planning and Development, Healthcare Information Division
Area-Level Quality Indicators (Preventable Hospitalizations) for California; Racial & Ethnic Disparities in Healthcare in California Report
1999-2011 OSHPD Patient Discharge Data from all hospitals in California, totaling over 4 million records annually
http://www.oshpd.ca.gov/HID/Products/PatDischargeData/AHRQ/pdi_overview.html

State of Connecticut, Office of Health Care Access
Preventable Hospitalizations in Connecticut: A Current Assessment of Access to Community Health Services; Health Disparities Reports
2004-2009 state- and county-level hospital admission rate data from most hospitals in CT
http://www.ct.gov/dph/lib/dph/ohca/publications/2010/prev_hosp_report01-2010.pdf
http://www.ct.gov/dph/lib/dph/hisr/pdf/2009ct_healthdisparitiesreport.pdf

New York State Department of Health,
Managed Care Reports (Potentially Avoidable Hospitalizations, New York State Medicaid Program; Access and Utilization Reports, Hospital Admissions for Ambulatory Sensitive Conditions)
Data are provided for commercial and government-sponsored managed care in the state of New York.
http://www.health.ny.gov/health_care/managed_care/reports/

University of Cincinnati, Division of Pharmacy Practice and Administrative Sciences, College of Pharmacy
Adaptation and application of the Agency for Healthcare Research and Quality's asthma admission rate pediatric quality indicator to Ohio Medicaid claims data, Res Social Adm Pharm. 2013 May-Jun;9(3):240-50
<http://www.ncbi.nlm.nih.gov/pubmed/22695214>

4a1.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons? (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)
Not applicable

4a1.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement. (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data

aggregation and reporting.)

Not applicable

4a2.1.1. Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.

How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

4a2.1.2. Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.

4a2.2.1. Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.

Describe how feedback was obtained.

4a2.2.2. Summarize the feedback obtained from those being measured.

4a2.2.3. Summarize the feedback obtained from other users

4a2.3. Describe how the feedback described in 4a2.2.1 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.

Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b1. Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)

If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

Not applicable

4b2. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4b2.1. Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.

Principal diagnoses are generally accurate for asthma in children. However, patients may be treated in an outpatient setting, short stay unit or emergency department without admission. These practice patterns, especially if only represented by coding changes (such as short stay versus regular admission) may result in rate changes without actual change in quality of care. Another source of systematic variation unrelated to quality of care is underlying disease burden, since asthma rates are known to be higher in some populations.

4b2.2. Please explain any unexpected benefits from implementation of this measure.

5. Comparison to Related or 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.

5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

No

5.1a. List of related or competing measures (selected from NQF-endorsed measures)

5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.

5a. Harmonization of Related Measures

The measure specifications are harmonized with related measures;

OR

The differences in specifications are justified

5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):

Are the measure specifications harmonized to the extent possible?

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

5b. Competing Measures

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

OR

Multiple measures are justified.

5b.1. If this measure conceptually addresses 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.)

Not applicable

Appendix

A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

[Attachment Attachment: PDI_14_Supporting_Documents.pdf](#)

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): [Agency for Healthcare Research and Quality](#)

Co.2 Point of Contact: [Pamela, Owens, Pam.Owens@ahrq.hhs.gov, 301-427-1412-](#)

Co.3 Measure Developer if different from Measure Steward:

Co.4 Point of Contact:
Additional Information
Ad.1 Workgroup/Expert Panel involved in measure development Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development. Not applicable
Measure Developer/Steward Updates and Ongoing Maintenance Ad.2 Year the measure was first released: 2001 Ad.3 Month and Year of most recent revision: 05, 2013 Ad.4 What is your frequency for review/update of this measure? annual Ad.5 When is the next scheduled review/update for this measure? 08, 2014
Ad.6 Copyright statement: Ad.7 Disclaimers:
Ad.8 Additional Information/Comments: