



## 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 #:** 3599

**Corresponding Measures:**

**De.2. Measure Title:** Pediatric Asthma Emergency Department Use

**Co.1.1. Measure Steward:** Albert Einstein College of Medicine

**De.3. Brief Description of Measure:** This measure estimates the rate of emergency department visits for children ages 3 – 21 who are being managed for identifiable asthma, using specified definitions. The measure is reported in visits per 100 child-years. The rate construction of the measure makes it a more actionable measure compared to a more traditional quality measure percentage construct (e.g., percentage of patients with at least one asthma-related ED visit). The rate construction means that a plan can improve on performance either through improvement efforts targeting all patients with asthma, or through efforts targeted at high-utilizers, since all visits are counted in the numerator. For a percentage measure, efforts to address high-utilizers will be less influential on performance and potentially have no effect at all even if a high utilizer goes from 8 visits a year to 1, since in order to improve performance, a high-utilizer has to get down to zero visits.

This measure was developed under the Pediatric Quality Measurement Program, funded by the Centers for Medicare and Medicaid Services and administered by the Agency for Healthcare Research and Quality. <https://www.ahrq.gov/pqmp/about/what-is-pqmp.html>

**1b.1. Developer Rationale:** In 2009, Congress passed the Children's Health Insurance Program Reauthorization Act (CHIPRA, Public Law 111-3), which presented an unprecedented opportunity to measure and improve health care quality and outcomes for the nation's children, including those enrolled in Medicaid/CHIP. When CHIPRA was enacted, the Agency for Healthcare Research and Quality (AHRQ) and the Centers for Medicare & Medicaid Services (CMS) began working together to implement selected provisions of the legislation related to children's health care quality.

The law called for the establishment of the CHIPRA Pediatric Quality Measures Program (PQMP) to improve and strengthen the "Child Core Set" of measures and develop new measures as needed.

The proposed measure 3599 Pediatric Asthma Emergency Department Use was developed and then further tested and refined under the PQMP. Here we present the rationale for the proposed measure, informed by our work in convening state-level quality improvement collaboratives (one in CA and one in VT) specifically focused on improved asthma care, and assessing the relationship between improvements in asthma care processes and performance on the proposed pediatric ED utilization measure. The following text draws from the PQMP Toolkit for the measure for use by clinics and health plans interested in using the measure for quality improvement efforts.

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**What is needed for QI success:**

The Pediatric Asthma Emergency Department Use measure is an outcome measure based on administrative data. In that context, the toolkit user entity (state agency, health plan, healthcare organization, improvement partnership, provider group) will need to partner with practices and quality improvement coaches to evaluate systems and develop process measures to guide improvement efforts that will impact the measure. Examples of process measures can be developed from clinical guidelines such as the National Heart Lung and Blood Institute Guidelines for the Diagnosis and Management of Asthma.

It is important to recognize that most process measures will be contained in a practice's electronic health record (EHR) or a data source separate from claims data. Additionally, effective process measures should be evaluated longitudinally to assess performance over time and allow for identification of variation, either intended or unintended.

Successful improvement requires sound quality improvement science methodology, appropriate resources and ready access to reliable data. Without these components (appropriate training, infrastructure and data access), application of QI may lead to unintended consequences, such as provider frustration or QI 'fatigue'.

See below for a summary of potential strategies to support implementing quality measurement and improvement strategies in primary care settings to reduce asthma-related ED visits from the perspective of a health plan.

#### Summary of Strategies and Complementary Toolkit Resources

- 1) Goal: Understand the population and the system resources in your care delivery area
  - a. Resources Required: Understand the population and the system resources in your care delivery area
  - b. Health Plan contributions: Foster partnerships and determine strategic alignment(s)
- 2) Goal: Partner with practices in Health Plan network
  - a. Resources Required: Practice network
  - b. Health Plan contributions: Engage practices in collaborative
- 3) Goal: Engage practice leadership
  - a. Resources Required: Practice champion
  - b. Health Plan contributions: Financial alignment for clinical champion(s)
- 4) Goal: Develop improvement science expertise
  - a. Resources Required: QI Coaching
  - b. Health Plan contributions: Offer financial support for QI infrastructure
- 5) Goal: Determine baseline performance on NHLBI measures
  - a. Resources Required: Process measures from EHR
  - b. Health Plan contributions: Support practices to engage EHR vendor/ practice support to obtain data
- 6) Goal: Assess periodic performance/improvement over time
  - a. Resources Required: Periodic data pull from EHR for process measures (by practice-based clinicians or chart auditor)
  - b. Health Plan contributions: Develop practice-based incentives for improvement
- 7) Goal: Understand variation in performance and guide improvement efforts
  - a. Resources Required: Practice level strategies
  - b. Health Plan contributions: NA
- 8) Goal: Systems Learning
  - a. Resources Required: Practice data of children who went to ED
  - b. Health Plan contributions: Health plan provides practice reports on ED utilization for clinic health plan members

#### QI Strategies

##### Overview: Approaches to Quality Improvement in Asthma Care

There are numerous factors and settings that impact the asthma emergency department (ED) measure (e.g., schools, ED, acute care, access to specialists, community, etc.), and must be considered in trying to reduce inappropriate ED use for pediatric asthma. Many factors can lead to a child with asthma receiving care in the ED such as poor asthma control, severity of symptoms, decreased access to care, and ability to enact emergency care (such as use of a rescue inhaler) among many others. When thinking of these factors and where they occur, they generally can be attributed to the patient's home and school environment, medical home, the ED or a combination (Allen, 2019). Interventions engaging the ED should be considered if there is a high rate of patients with multiple visits to the ED. In this scenario, it is important to evaluate access to care, environmental factors, ED care and the connection between the ED and the medical home.

There are three general quality improvement (QI) approaches to decrease pediatric ED visits for asthma that have a strong evidence base:

- Primary Care,
- Provider Continuing Medical Education, and
- Parental and School-Based

There is insufficient evidence to recommend a single approach, or set of interventions, over another because there are many factors that influence what will be the most effective approach for a care system. Some systems with a high degree of integration and QI capacity have chosen multiple interventions to reduce ED visits (Allen, 2019). However, most care systems will likely be best served to identify a single approach after evaluating their outcome and process measures while identifying the key drivers of performance. Assembling an interprofessional team to understand key stakeholder priorities and readiness coupled with a thorough and systematic approach to QI are essential to achieving success.

This pediatric asthma measure has potential to improve asthma care, reduce ED utilization, and promote collaboration between health plans and primary care practices. Successful utilization of the measure will necessitate interpreting data from multiple sources and business entities. Because of this, there will be practical, ethical and legal limitations relative to sharing data and how improvement efforts are implemented. While the approaches described above each have merit, the PQMP grantees charged with testing how to use the pediatric ED use measure chose to focus on the intervention area with the most evidence of success. This

toolkit outlines primary care-focused interventions using an intensive educational approach and methods to develop improved systems of care.

#### Primary Care-Focused Approach

Most interventions that have been successful in improving asthma ED outcomes through provider-based activities have included intensive educational approaches or methods to develop improved systems of care within the primary care office setting. Harder et al. examined the effects of a one-year QI collaborative for primary care clinicians that focused on office systems strategies (e.g. asthma assessment, control and management, and patient education). Compared to control practices, the participating practices noted a substantial decrease of nearly 40 percent in asthma-related ED visit rates more than a year after the end of the collaborative (Harder, 2020). The development of a systematic primary care approach to asthma care can also improve asthma health care utilization. In a pragmatic, cluster randomized controlled trial, Yawn et al. demonstrated that the use of Asthma APGAR (Activities, Persistent, triGGers, Asthma medications, Response to therapy) tools improved rates of asthma control and reduced asthma-related ED and urgent care visits (Yawn, 2018).

#### PQMP Toolkit Approach: Primary Care Collaboratives

The IMPLEMENT for Child Health initiative (IMPLEMENT) is the overall program that tested out the usability of the PQMP asthma ED measure by conducting QI initiatives in both San Francisco, California (SF Collaborative) and in Burlington, Vermont (VT Collaborative), both aimed to improve pediatric asthma care delivered in a primary care setting. The strategies described in this toolkit reflect the learnings from those two QI initiatives aimed at examining the usability of the asthma measure. In the SF Collaborative, primary care practices participated in a 12-month learning collaborative. In the VT Collaborative, practices had participated in an earlier Vermont statewide asthma learning collaborative (CHAMP Learning Collaborative, for more information see <https://www.med.uvm.edu/vchip/champ>) and therefore a more targeted approach was undertaken – performing a “deep dive” to examine factors that contributed to high ED rates. Staff and faculty from the University of Vermont’s Vermont Child Health Improvement Program’s (VCHIP) provided the QI expertise for both initiatives.

In summary, the proposed pediatric asthma measure is responsive to improvements in QI process measures, as demonstrated by Harder et al. (publication in press), and improvements can be driven either by individual clinics, clinics participating in a collaborative, or health plans supporting clinics in improvement efforts. Health plans could also consider addressing the social determinants of health, as described in the Logic Model section of the Evidence attachment. Addressing the social determinants of health, while not a focus of the PQMP work, is another avenue for potential intervention to improve performance on this measure.

**S.4. Numerator Statement:** Number of asthma-related ED visits

**S.6. Denominator Statement:** 100 Child Years for children with identifiable asthma

**S.8. Denominator Exclusions:** Children with specified concurrent or pre-existing diagnosis and children who have not been consecutively enrolled in the reporting plan for at least three months, including the month being assessed.

**De.1. Measure Type:** Outcome

**S.17. Data Source:** Claims

**S.20. Level of Analysis:** Health Plan

**IF Endorsement Maintenance – Original Endorsement Date: Most Recent Endorsement Date:**

**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?**

### 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**

[3599\\_NQF\\_evidence\\_attachment\\_2020\\_11\\_20.docx](#)

**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.*

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**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.**

#### CA health plans

Year: Measurement year 2016, data used from 2015-2016

Number of plans: 103

Number of patients: 321,072

Mean: 24.4

Std dev: 9.4

Min: 7.6

Max: 63.5

IQR: 18.3-28.9

Scores by decile:

#### CALIFORNIA

Decile	Predicted #ED visits/100 child-years
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1	12.1
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2	16.8
---	------

3	19.3
---	------

4	21.4
---	------

5	23.5
---	------

6	25.6
---	------

7	27.9
---	------

8	30.9
---	------

9	35.5
---	------

10	46.7
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#### MA health plans

Year: Measurement year 2015, data used from 2014-2015

Number of plans: 29

Number of patients: 83,577

Mean: 12.7

Std dev: 6.7

Min: 0

Max: 27.7

Median: 11.2

IQR: 9.6-18.0

Scores by decile:

MASSACHUSETTS

Decile	Predicted #ED visits/100 child-years
1	5.7
2	7.2
3	10.3
4	13.5
5	17.4
6	19.8
7	24.0
8	26.0
9	29.8
10	36.4

**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.**

NA

**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.**

For CALIFORNIA DATA:

Gender:

Females: 26.0 per 100 child-years

Males: 26.1 per 100 child-years

Race/Ethnicity	Pediatric ED visits/100 child-years
White	23.6
Latinx	24.2
Black	40.6
API	15.2
Other	24.3
Unknown	35.9

**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**

NA

## 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):

**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):

**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.)

<https://chipper.ucsf.edu/studies/implement/documents>

**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: [IMPLEMENT\\_Asthma\\_ED\\_Use\\_ICD\\_and\\_CPT\\_Codes-637413960397551146.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.

[No, this is not an instrument-based measure](#) 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.

[Not an instrument-based measure](#)

**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.

[No](#)

**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.

[NA](#)

**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).

[Number of asthma-related ED visits](#)

**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).

[Numerator details:](#) The numerator counts all emergency visits and hospitalizations with a primary or secondary ICD-based diagnosis of asthma in a child who was eligible in the reporting month. The asthma ICD codes are in the Excel workbook in S.2b. Since most hospitalizations for asthma are from the ED and many ED visits that result in hospitalization are not captured in encounter data, a



numerator event may be either an ED visit or a hospitalization. In the datafiles created for the measure, the data is in member-month rows. Thus the numerator is the number of visits for that member in each month. See S.14 for more information on measure calculation.

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

100 Child Years for children with identifiable asthma

**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).

The denominator represents the person-time experience among eligible children with identifiable asthma (definition below).

Assessment of eligibility is determined for each child monthly. The total number of child months in the measurement year experienced is summed and divided by 1200 to achieve the units of 100 child years for the denominator.

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

Children with specified concurrent or pre-existing diagnosis and children who have not been consecutively enrolled in the reporting plan for at least three months, including the month being assessed.

**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.)

Children with concurrent or pre-existing: Cystic Fibrosis (CF) diagnosis, or Emphysema diagnosis.

Please see attached list of ICD codes (“IMPLEMENT Asthma ED Use ICD and CPT Codes”) for exclusion criteria for CF and emphysema.

Consecutive enrollment is defined as being consecutively enrolled within the same payer. This allows for a change in plan type (e.g. changing to a PPO to an HMO within same payer). Continuous enrollment does not include moving payers even if continuously enrolled (e.g. moving from Kaiser to Blue Cross within the three month window would exclude them from the denominator. This is due to the measure being a health plan-level measure.

**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.)

This is not a stratified measure.

**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.)

Step 1: Measure person-time eligible for each patient and record by month.

a. For each month in the reporting year, identify all children ages 3 – 21 years who meet the criteria for Identifiable asthma - and do not satisfy one of the exclusion criteria - during the assessment period. The assessment period is defined as the year prior to the

reporting year plus all months in the reporting year prior to the reporting month. Identify and maintain a unique patient identifier and all stratification variables.

To illustrate: if the goal is to report for January 2016, first one would identify children with Identifiable asthma using the criteria, and analyze all of calendar year 2015 when doing so. Continuous enrollment criterion requires that the child was enrolled in November and December of 2015, as well as January 2016. This total represents the number of person-months (child-months) for January.

Next, for February: one would identify children with Identifiable asthma using the criteria, and analyze all of calendar year 2015 AND January 2016 when doing so. Continuous enrollment criterion requires that the child was enrolled in December 2015 and January 2016, as well as February 2016. This is the number of person-months (child-months) for February.

Repeat this progression monthly so that for December, one would identify children with Identifiable asthma and analyze all of calendar year 2015 AND January through November 2016 when doing so. Continuous enrollment criterion requires that the child was enrolled in October 2016 and November 2016, as well as December 2016. This is the number of person-months (child-months) for December.

b. Sum all months that are eligible from the reporting year. This sum is the denominator in people-months. Divide by 1200. This is denominator in 100 people-years. This is the denominator for the year.

Step 2: Month by month, considering the definitions above, identify the number of discrete numerator events that occur in children eligible in that specific month:

a. Prior hospitalization with asthma as primary or secondary diagnosis

b. Other qualifying events after the fifth birthday (age is age at occurrence):

i. One or more prior ambulatory visits with asthma as the primary diagnosis, OR

ii. Two or more ambulatory visits with asthma as a diagnosis, OR

iii. One ambulatory visit with asthma as a diagnosis AND at least one asthma-related prescription

c. Other qualifying events, any age:

i. Three or more ambulatory visits with diagnosis of asthma, OR

ii. Two or more ambulatory visits with a diagnosis of asthma AND one or more asthma-related prescriptions

Note, these age differences are per NHLBI guidelines (<https://www.nhlbi.nih.gov/health-topics/guidelines-for-diagnosis-management-of-asthma>) and were reviewed and developed in collaboration with the Delphi panel of experts convened during the development of this measure.

Step 3. Calculate rate as Numerator / Denominator.

- If a qualified member has no numerator events during a month, the event count value is 0.

See document at [https://chipper.ucsf.edu/upload/chipper/documents/Flowsheet\\_Asthma\\_1.pdf](https://chipper.ucsf.edu/upload/chipper/documents/Flowsheet_Asthma_1.pdf)

for a flow chart for data flow and management steps to calculate the measure.

SAS code is available at [https://chipper.ucsf.edu/upload/chipper/documents/asthma\\_1\\_sas\\_code.pdf](https://chipper.ucsf.edu/upload/chipper/documents/asthma_1_sas_code.pdf)

**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.

NA

**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.

NA

**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.

Administrative claims, including state Medicaid claims and state All-payer claims databases.

**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)

No data collection instrument provided

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

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

**2. Validity – See attached Measure Testing Submission Form**  
Asthma\_1\_NQF\_testing\_attachment\_2020\_11\_19.docx

**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.

**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).

**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:

**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.

**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 **maintenance of**

**endorsement.**

ALL data elements are in defined fields in electronic claims

**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 maintenance of endorsement, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).**

NA

**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:**

**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.

**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.

Data on social determinants of health were missing for some patients. Please see Testing Attachment for results of missingness analysis and implications.

**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).**

None

## 4. Usability and Use

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.

**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.

**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)
Public Health/Disease Surveillance	
Regulatory and Accreditation Programs	
Quality Improvement (external benchmarking to organizations)	
Quality Improvement (Internal to the specific organization)	

Use Unknown

**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

NA

**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?)

This is a new measure, and since not yet endorsed it is not currently in use. It is publicly available to all, with technical specifications and SAS code posted online for public use.

**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.)

Dissemination and measure uptake are key goals of the Pediatric Quality Measurement Program. AHRQ provides leadership in developing and disseminating materials to facilitate uptake across health plans and accountability programs. Specifically, AHRQ is working with LNM consulting to create a toolkit for this measure for dissemination and to encourage uptake by health plans. Judith Shaw, a co-investigator on the team, plays a leadership role in the National Improvement Partnership Network (NIPN) and will share the measure and measure toolkit with that group. Endorsement by the NQF will facilitate additional use in accountability programs, and may lead to potential inclusion in the Child Core Set for Medicaid plan measurement.

Timeline: We are meeting with a number of state Medicaid Medical Directors in the next few months to share the data on importance, validity, feasibility, and usability, based on the work we have conducted under the PQMP. We anticipate that there will be interest in implementation in at least one state, with potential use of the measure within 18-24 months. We will likely start with Medicaid managed care plans for internal reporting and then move towards public reporting, depending on interest in the state Medicaid offices.

**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.**

The IMPLEMENT team, led by Dr. Michael Cabana, and funded by PQMP to further develop and refine this measure through feasibility and usability work, convened a CA asthma QI collaborative for CA-based pediatric primary care practices. There were 9 participating practices from northern, central and southern California. As part of the collaborative, there was an in-person all-day kick off meeting in March 2018, which included education on asthma management, evidence-based practices, and QI methodology. In addition, performance results on the proposed measure of Pediatric Asthma ED Use for Medicaid patients from the prior year were presented to participating practices. Results of performance were reviewed at the kick off meeting. Each site received a report showing their own performance and the overall group performance, and were shown the overall state performance, county performance within the state, and the de-identified performance of the other clinics. Measurement experts and asthma experts on the team then led a moderated group discussion, reviewing the validity of the results and interpretation of the data and discussion of how to approach improving performance on the measure.

**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.**

See above.

In addition, we are waiting to receive 2019 data from CA Medicaid office in order to report on post-collaborative performance, as the collaborative ran for 18 months. We will provide the same report for clinics as they received in the initial meeting.

To inform ongoing improvement work during the collaborative, practices focused on asthma processes of care in their clinics, assessed through chart review, as the claims-based ED visit data has a lag period to availability. The process measure included the

following: 1) The percentage of patients with asthma severity documented as intermittent or persistent (mild, moderate, or severe); 2) The percentage of patients prescribed inhaled corticosteroids or other control medications if asthma severity is persistent; 3) The percentage of patients with asthma control assessed with a validated tool; 4) The percentage of patients with an asthma action plan initiated, reviewed or updated as needed within the last 12 months; 5) The percentage of patients with at least one planned asthma visit every 6 months; 6) The percentage of patients assessed for tobacco use/exposure; 7) The percentage of patients and their caregivers educated about their asthma; 8) The percentage of patients and their caregivers instructed on how to use their asthma delivery device. Measures 1–4 were required and teams chose any two of the remaining five to improve at their practice.

**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.**

After the quality improvement collaborative was complete, IMPLEMENT team leadership conducted semi-structured qualitative interviews with physician and QI champions at each of the participating clinics.

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

Sites that found the data helpful said:

- it made them aware of the magnitude of the problem of asthma ED use for their clinic population in a way not previously possible.
- it motivated them to look more closely at processes of care
- it was a good way to start the collaborative, in order to frame the importance of the project
- Provided a motivation for participation in the collaborative, since performance for the clinic was a lot higher than the state average.

Suggested improvements included:

- include data on urgent care visits, since some clinics have an urgent care that manages asthma exacerbations most of the time.
- the data from one of the sites was difficult to get and they were not confident in the number of patients (they seemed very low, and the site knew there were more patients for the denominator)

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

NA

**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.**

In response to the national advisory council members, we included social determinants of health variables into the risk adjustment model, following the NQF and ASPE guidance on considerations around data sources and rationale for inclusion vs. not including these variables. We used an evidence-based approach to including these variables (see testing document).

**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.

Improvement on this measure was associated with participation in the Vermont state-level quality improvement collaborative, as presented in the Evidence attachment.

**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.**

None

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

None

## 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.

Yes

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

0728 : Asthma Admission Rate (PDI 14)

1381 : Asthma Emergency Department Visits

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

1381 is no longer endorsed. Endorsement last updated 2014. Measure title: Asthma Emergency Department Visits. Steward: Alabama Medicaid Agency

### 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?

Yes

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

Regarding measure 0728: Full technical specifications are not available as this measure is being reviewed for maintenance of endorsement. However, the measure we propose focuses on a different types of utilization, ED use, rather than asthma hospitalizations. Measure 0728 is also intended for population level analysis at the regional or state level, which differs from the use case for the proposed measure, which is health plan use, generally in collaboration with primary care practices.

### 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.)

NA

## 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.

Available at [measure-specific web page URL identified in S.1 Attachment:](#)

### Contact Information

**Co.1 Measure Steward (Intellectual Property Owner):** [Albert Einstein College of Medicine](#)

**Co.2 Point of Contact:** [Michael, Cabana, \[mcabana@montefiore.org\]\(mailto:mcabana@montefiore.org\)](#)

**Co.3 Measure Developer if different from Measure Steward:** [University of California San Francisco](#)

**Co.4 Point of Contact:** [Naomi, Bardach, \[naomi.bardach@ucsf.edu\]\(mailto:naomi.bardach@ucsf.edu\)](#)

### 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.**

**Asthma Advisory Council:**

Members of the asthma national advisory council met with the measure developer and steward twice annually to inform testing and refinement of the measure. They gave expert advice regarding the validity and usability of the measure regarding improving asthma care and outcomes.

Members were:

Barbara Yawn MD, MSc Adjunct Professor of Family and Community Health at the University of Minnesota

Elizabeth Cox MD, PhD Associate Professor of Pediatrics at the University of Wisconsin

Lisa Cicutto BSN, MSc, PhD Director of Community Outreach and Research at National Jewish Health the Director of the Clinical Science Graduate Program at the University of Colorado Denver

Joseph Zorc MD, MSCE Pediatric Emergency Medicine Physician and a Professor of Pediatrics at the University of Pennsylvania

Keith Robinson MD Assistant Professor of Pediatric Pulmonology, Vice Chair of Quality Improvement and Population Health, University of Vermont Children's Hospital

Judith Shaw EdD, MPH, RN, FAAP Executive Director of Vermont Child Health Improvement Program (VCHIP), Professor of Pediatrics and Nursing, UVM Health

David Brousseau MD, MS Professor of Pediatrics and Chief of the Section of Emergency Medicine at the Medical College of Wisconsin

Jernee Carter Parent of a child with asthma

**Usability advisory council:**

Members of the usability council met with measure developer and steward twice annually to inform testing and refinement of the measure. They gave expert advice regarding the usability of the measure for use in primary care quality improvement efforts and quality improvement collaboratives, providing a wide range of stakeholder perspectives, including those of EQROs, health plans, quality improvement officers, and others.

Members were:

Virginia Moyer MD, MPH Vice President for Maintenance of Certification and Quality at the American Board of Pediatrics. She served as the first Chief Quality Officer for Medicine at Texas Children's Hospital

Maria Britto MD, MPH Professor of Pediatrics and Founding Director of the Center for Innovation in Chronic Disease Care

Nora Wells MS Ed Executive Director of the National Office of Family Voices

Mary Fermazin MD, MPA Chief Medical Officer, Health Services Advisory Group, Inc. (HSAG)

Jim Glauber MD, MPH Chief Medical Officer at San Francisco Health Plan

Susan Fleischman MD Chief Medical Officer at Blue Shield Promise Health Plan

Barsam Kasravi MD, MBA, MPH Medical director in the area of Clinical Quality and Innovation at Blue Cross of California

Judith Shaw EdD, MPH, RN, FAAP Executive Director of Vermont Child Health Improvement Program (VCHIP), Professor of Pediatrics and Nursing, UVM Health

Irwin Charles MD, MPH Distinguished Professor of Pediatrics, Director of the Division of Adolescent Medicine and Adolescent Health at the University of California, San Francisco

Margaret Morris MA, CHCA Managed Care Senior Director on the Pediatric Value-Measurement Advisory Panel of the Washington DC-based Children's Hospital Association

**Feasibility advisory council:**

Members of the feasibility council met with measure developer and steward twice annually to inform testing and refinement of the measure. They gave expert advice regarding the use of administrative claims in performance measurement for this measure, risk adjustment model choices, including the choice of social determinants variables for risk adjustment, and methods for identifying performance outliers.

**Members were:**

Patrick Romano MD, MPH      Professor of Medicine and Pediatrics at the University of California, Davis  
Adams Dudley MD, MBA      Professor of Medicine and Director of the University of California, San Francisco (UCSF) Center for Healthcare Value (CHV)  
Susan Paulukonis MA, MPH      Program Director at the California Rare Disease Surveillance Program at the Public Health Institute and the California Department of Public Health  
Judith Shaw EdD, MPH, RN, FAAP      Executive Director of Vermont Child Health Improvement Program (VCHIP), Professor of Pediatrics and Nursing, UVM Health  
Chuck McCulloch PhD      Professor and Head of the Division of Biostatistics and Vice Chair of the Department of Epidemiology and Biostatistics at the University of California, San Francisco  
Valerie Harder PhD, MHS      Director of Health Services Research at the Vermont Child Health Improvement Program (VCHIP)

**Measure Developer/Steward Updates and Ongoing Maintenance**

**Ad.2 Year the measure was first released:** 2018

**Ad.3 Month and Year of most recent revision:** 10, 2019

**Ad.4 What is your frequency for review/update of this measure?** Every 2 years

**Ad.5 When is the next scheduled review/update for this measure?** 10, 2021

**Ad.6 Copyright statement:** This measure is available in the public domain.

**Ad.7 Disclaimers:** none

**Ad.8 Additional Information/Comments:** none