

## Section II: Detailed Measure Specifications

Provide sufficient detail to describe how a measure would be calculated from the recommended data sources, uploading a separate document (+ Upload attachment) or a link to a URL. Examples of detailed measure specifications can be found in the CHIPRA Initial Core Set Technical Specifications Manual 2011 published by the Centers for Medicare & Medicaid Services. Although submission of formal programming code or algorithms that demonstrate how a measure would be calculated from a query of an appropriate electronic data source are not requested at this time, the availability of these resources may be a factor in determining whether a measure can be recommended for use.

## **A. Description**

This measure describes the percentage of eligible children ages 2 to 21 with emergency department visits had:

1. Visit with primary care physician with a primary or secondary diagnosis of asthma within 3, 4, or 6 months.
2. Medication fills of short-acting beta-agonists (SABAs) within 12 months
3. Medication fills of controller medications within 6 months.
4. Medication fills of short-acting beta-agonists (SABAs) and controller medications
5. Visit with primary care physician with a primary care visit and Mixed =1 and primary care visit (as above)

## **B. Eligible Population**

**Numerator:** Number of visits to the emergency department in the reporting year with a primary or secondary diagnosis of asthma among the eligible population, which includes children who are being managed for identifiable asthma.

**Denominator:** Children age 2-21 who meet criteria for being managed for identifiable asthma in the assessment period. The assessment period includes the time between identifiable asthmatics and the first emergency department visit. Excluded are children who have NOT been continuously enrolled in the index plan for the 2 months immediately prior to the reporting month. Change(s) in eligibility criteria and/or benefit package or plan do(es) not relieve the reporting entity of the need to determine denominator eligibility – all available sources should be linked. For health plans, this includes utilizing any existing data sharing arrangements. For State Medicaid plans, this requires that the unit of analysis for eligibility assessment is the child, not the child-insurer pair.

Descriptive definitions of identifiable asthma management are as follows. Specifications follow the descriptive definitions:

Any prior hospitalization with asthma as primary or secondary diagnosis

Other qualifying events after the fifth birthday at time of event):

One or more prior ambulatory visits with asthma as the primary diagnosis (this criterion implies an asthma ED visit in the reporting month), **OR**

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

One ambulatory visit with asthma as a diagnosis **AND** at least One asthma related prescription, **OR**

Two or more ambulatory visits with a diagnosis of bronchitis

Other qualifying events, any age:

Three or more ambulatory visits with diagnosis of asthma or bronchitis, **OR**

Two or more ambulatory visits with a diagnosis of asthma and/or bronchitis  
**AND** one or more asthma related prescriptions

For eligibility purposes, asthma-related medicine refers to long acting beta agonist (alone or in combination) or inhaled corticosteroid (alone or in combination), anti-asthmatic combinations, methylxanthines (alone or in combination), and/or mast cell stabilizers.

<b>Criteria for assessing “persistent asthma”</b> (Evidence must include all readily available data regarding whether or not a child used a service. CPT and revenue codes are indicated as appropriate.)	<b>Codes</b>
<b>Hospitalization</b>	<b>CPT Codes:</b> CPT 99238    CPT 99232 CPT 99239    CPT 99233 CPT 99221    CPT 99234 CPT 99222    CPT 99235 CPT 99223    CPT 99236 CPT 99356    CPT 99218 CPT 99357    CPT 99219 CPT 99231    CPT 99220  <b>Or Revenue Codes:</b> 0110      0133 0111      0134 0112      0137 0113      0139 0114      0150 0117      0151 0119      0152 0120      0153 0121      0154 0122      0157 0123      0159 0124      0200 0127      0201 0129      0202 0130      0203 0131      0204 0132      0206
<b>Office visits</b>	CPT 99201    CPT 99211 CPT 99202    CPT 99212 CPT 99203    CPT 99213 CPT 99204    CPT 99214 CPT 99205    CPT 99215

<b>Criteria for assessing “persistent asthma”</b> (Evidence must include all readily available data regarding whether or not a child used a service. CPT and revenue codes are indicated as appropriate.)	<b>Codes</b>
<p style="text-align: center;"><b>Previous ED Visits</b></p>	<p><b>CPT Codes:</b>            CPT 99281    CPT 99284            CPT 99282    CPT 99285            CPT 99283</p> <p><b>Revenue Codes:</b>            0450 Emergency Room            0451 Emergency Room: EM/EMTALA            0452 Emergency Room:                  ER/Beyond EMTALA            0456 Emergency Room: Urgent Care            0459 Emergency Room: Other                  Emergency Room            450 Emergency Room            451 Emergency Room: EM/EMTALA            452 Emergency Room:                  ER/Beyond EMTALA            456 Emergency Room: Urgent Care            459 Emergency Room: Other                  Emergency Room            0981 Professional Fees (096x)                  Emergency Room            981 Professional Fees                  emergency room</p>
<p style="text-align: center;"><b>Diagnoses of asthma</b></p>	<p><b>ICD-9 Codes:</b>            All codes beginning with 493</p>
<p style="text-align: center;"><b>Filled prescriptions for Asthma related medications</b></p>	<p><i>Use NCQA NDC list (ASM-C_DASM-C_final_2012, found by clicking through at <a href="http://www.ncqa.org/HEDISQualityMeasurement/HEDISMeasures/HEDIS2012/HEDIS2012FinalNDCLists.aspx">http://www.ncqa.org/HEDISQualityMeasurement/HEDISMeasures/HEDIS2012/HEDIS2012FinalNDCLists.aspx</a>)            Eliminate medications in the following 2 categories: leukotriene modifiers, short-acting inhaled beta-2 agonists).            May use equivalent updated lists when provided by NCQA.</i></p>

Excluded from the denominator are:

Children with concurrent or pre-existing: Chronic Obstructive Pulmonary Disease (COPD) diagnosis (ICD 9 Code: 496); Cystic Fibrosis diagnosis (ICD-9 code 277.0, 277.01, 277.02, 277.03, 277.09); Emphysema diagnosis (ICD-9 code 492xx)

Children who have not been consecutively enrolled in the reporting plan for at least two months prior to the index reporting month.

### **C. DATA and SOURCES**

#### A. General data elements include:

- i. Age
- ii. Race and ethnicity
- iii. Insurance type (Medicaid, Private, Uninsured)
- iv. Benefit type among insured – (HMO, PPO, FFS, Medicaid Primary Care Case Management Plan (PCCM), Other)
- v. Zip code or State and County of residence (Please record FIPS where available)

#### B. Administrative data with billing and diagnosis codes, utilized to identify:

- i. Asthma-related visits to an emergency department, outpatient office, or hospitalization
- ii. Asthma medication prescriptions
- iii. Insurance benefit type
- iv. Medicaid or CHIP benefit category or benefit plan (if applicable)
- v. Zip code or State and County of residence (Please record FIPS where available)
- vi. Race and ethnicity (from hospital administrative data or charts if not in administrative data from plan)

### **D. CALCULATION**

Step 1: Measure the denominators and record by month.

For each month in the reporting year, identify all children ages 2 – 21 years who meet the criteria for identifiable asthmatics as defined in the denominator (using indicated exclusions) as of the last day of the month prior to the reporting month.

Identify and maintain all stratification variables described below.

For example, if the goal is to report for January 2011, first one would identify children with identifiable asthma using the denominator criteria, and analyzing all of calendar year 2010 when doing so. Continuous enrollment criterion requires that the child was enrolled

in November and December of 2010. The total represents the number of person-months (child-months) for January.

Next, one would identify children with identifiable asthma using the denominator criteria, and analyzing all of calendar year 2010 AND January 2011 when doing so. Continuous enrollment criterion requires that the child was enrolled in December 2010 and January 2011. 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 2010 AND January through November 2011 when doing so. Continuous enrollment criterion requires that the child was enrolled in October 2011 and November 2011. This is the number of person-months (child-months) for December.

Sum all month denominators. This is denominator in people-months. Divide by 1200. This is denominator in 100 people-years. This is the denominator for the year.

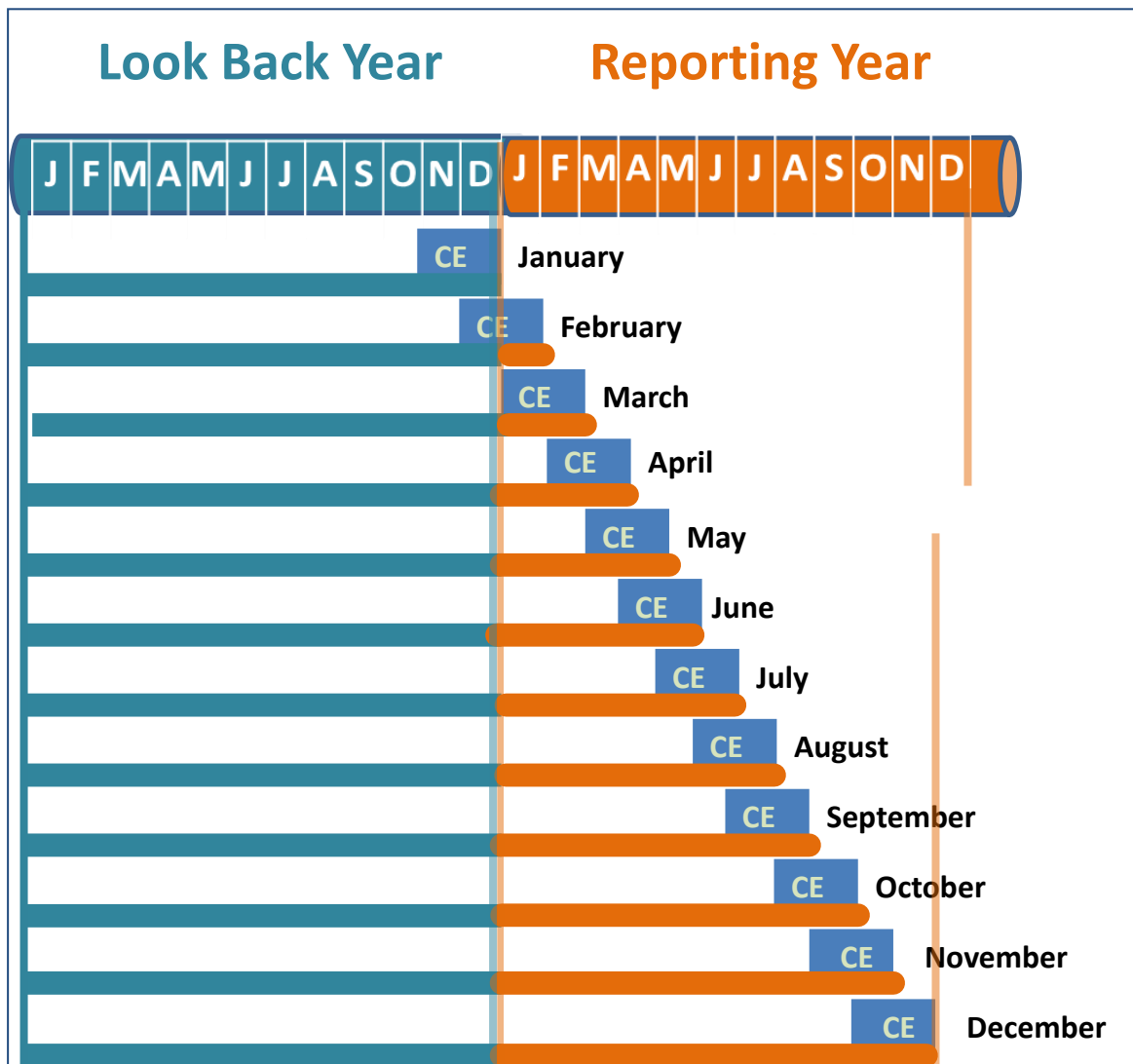
- Step 2. Month by month, identify the number of numerator events among those children who are eligible for that reporting month. Maintain stratification variables. Sum for the year.
- Step 3. Calculate rate as Numerator / Denominator. While this measure is specified for the year, it has also been validated to demonstrate seasonality using monthly rates.
- Step 4 Repeat by strata: age, race/ethnicity, Urban Influence Code (UIC), county poverty level, insurance type, benefit type. Report by race/ethnicity within age strata and repeat that analysis by UIC, and by county poverty level. Report by insurance type and benefit type within race/ethnicity.

Eliminate any strata with less than 40 person-months in any month's denominator OR less than 1000 person-months for the year.

Step 5. Specification of Stratification Variables:

- a. Identify County equivalent of child's residence. If County and State or FIPS code are not in the administrative data, the zip codes can be linked to County indirectly, using the Missouri Census Data Center (<http://mcdc.missouri.edu/>). These data will link to County or County equivalents as used in various states.
- b. Identify the Urban Influence Code[1] or UIC for the County of child's residence. (2013 urban influence codes available at: <http://www.ers.usda.gov/data-products/urban-influence-codes.aspx#.UZUvG2cVoj8> .

- c. Identify the Level of Poverty in the child's county of residence. The percent of all residents in poverty by county or county equivalent are available from the US Department of Agriculture at <http://www.ers.usda.gov/data-products/county-level-data-sets/download-data.aspx> . Our stratification standards are based on 2011 US population data that we have analyzed with SAS 9.3. Using child's state and county of residence (or equivalent) or FIPS code, use the variable PCTPOVALL\_2011 to categorize into one of 5 Strata:
- i. Lowest Quartile of Poverty if percent in poverty is  $\leq 12.5\%$
  - ii. Second Quartile of Poverty if percent in poverty is  $> 12.5\%$  and  $\leq 16.5\%$
  - iii. Third Quartile of poverty if percent in poverty is  $> 16.5\%$  and  $\leq 20.7\%$
  - iv. First upper quartile (75<sup>th</sup>-90<sup>th</sup>) if percent in poverty is  $> 20.7\%$  and  $\leq 25.7\%$
  - v. Second upper quartile ( $> 90^{\text{th}}$  percentile)
- d. Categorize age by age at the last day of the prior month. Aggregate into age categories ages 2-4, ages 5 through 11, ages 12-18, ages 19-21.
- e.. Categorize Race/Ethnicity as Hispanic, non-Hispanic White, Non-Hispanic Black, non-Hispanic Asian/Pacific Islander, and Non-Hispanic Other.
- f . Insurance as Private (Commercial), Public, None or Other
- g. Benefit Type as HMO, PPO, FFS, PCCM, Other



**Diagram of Eligibility Requirements for Asthma Measure**

**Description of Diagram Components**

Aqua: Look Back Year

Orange: Reporting Year

Blue: Continuous Enrollment (CE) period must be met to be eligible in a given reporting month

Black: Label of Reporting Month

**Description of Eligibility Criteria Assessment**

Eligibility Criteria are assessed month by month, using both the entire Look Back Year and the Reporting Year.

For any given reporting month, assess eligibility on 2 criteria. Eligible children are those that meet both of the following:



- 1) Has the child been continuously enrolled (CE) for the two months prior to the Reporting Month (3 months of continuous enrollment including the current Reporting Month)
- 2) Does the child meet the criteria for having been managed for persistent asthma in the assessment period (Aqua + Orange Lines)

**Description of Calculation Based on Eligibility Criteria**

Add one (1) child-month to the denominator for every child found to be eligible in each Reporting Month.

Add one numerator event to the numerator for each ED visit with asthma as a primary or secondary diagnosis in any month for which that child was eligible.

The measure is calculated as #ED visits per 12 child months for 100 children. This is an incidence rate, also called incidence density.

