MEASURE 2

A. Description

This measure characterizes care that follows Emergency Department (ED) visits with a primary or secondary diagnosis of asthma for children ages 2-21 that occur in the Reporting Year. We further stratify those visits into those that occurred for children who can or cannot be identified as having asthma, using the specified definitions. We are operationalizing an identifiable asthmatic as a child who has utilized health care services that suggest the health care system has enough information to conclude that the child has an asthma diagnosis that requires ongoing care. Specifically, this measure describes the connection with the primary care system (timely visits to primary care providers and filling of controller asthma medications) following ED visits for children with asthma.

B. Eligible Population

Children age 2-21 who have an ED visit for asthma (primary or secondary diagnosis) in the reporting year and who are enrolled in the health plan for two consecutive months following the visit are eligible. We further stratify reporting to describe performance among those who can and cannot be identified as having asthma, using our specifications and incorporating a 2 year look back period before the reporting year.

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 children with identifiable asthma are as follows. Specifications follow the descriptive definitions:

1. Any prior hospitalization with asthma as primary or secondary diagnosis
2. 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 and/or hospitalization 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
3. 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

Note: 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.

Use the definitions/specifications in Table 1 for assessing the presence or absence of identifiable asthma:

TABLE 1: Criteria for assessing "identifiable asthma" (Evidence must include all readily available data regarding whether or not a child used a service. CPT and revenue codes are indicated as appropriate)	Codes
Hospitalization	CPT Codes: 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 Or Revenue Codes: 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
Office Visits	CPT 99201 CPT 99211 CPT 99202 CPT 99212 CPT 99203 CPT 99213 CPT 99204 CPT 99214 CPT 99205 CPT 99215

ED Visits	**CPT Codes:** CPT 99281 CPT 99284 CPT 99282 CPT 99285 CPT 99283 **Revenue Codes:** 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
Diagnoses of asthma	**ICD-9 Codes:** All codes beginning with 493
Filled prescriptions for Asthma related medications	Use NCQA NDC list ASM-C_DASM-C_final_2013, found by clicking through at http://www.ncqa.org/HEDISQualityMeasurement/HEDISMeasures/HEDIS2013/HEDIS2013FinalNDCLists.aspx *Eliminate medications in the following 2 categories: leukotriene modifiers, short-acting inhaled beta-2 agonists). May use equivalent updated lists when provided by NCQA.*

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 six months following the index reporting month.

Table 2 codes used to identify primary care visits for the numerators:

TABLE 2: CAP- A: Codes to Identify Ambulatory or Preventative Care Visits		
Description	**CPT**	**HCPCS**
Outpatient or other outpatient services	99201-99205, 99211-99215, 99241-99245	
Preventive medicine	99381-99385, 99391-99395, 99401-99404, 99411-99412, 99420, 99429	G0438, G0439
AAP-A: Codes to Identify Preventive/ Ambulatory Health Services		
Office or other outpatient services	99201-99205, 99211-99215, 99241-99245	
Preventive medicine	99385-99387, 99395-99397, 99401-99404, 99411, 99412, 99420, 99429	

Table 3 NCQA 2013 NDC list used to identify medication use (short acting beta agonists and controller medications) for the numerators:

Table 3: HEDIS 2013 NDC List- Use of Appropriate Medications for People with Asthma (ASM)	
Description	**Prescriptions**
Short acting, inhaled beta-2 agonists	Albuterol Levalbuterol Metaproterenol Pirbuterol
Asthma Controller Medications	**Prescriptions**
Antiasthmatic combinations	Dyphylline-guaifenesin Guaifenesin-theophylline
Antibody inhibitor	Omalizumab
Inhaled steroid combinations	Budesonide-formoterol Fluticasone-salmeterol Mometasone-formoterol
Inhaled corticosteroids	Beclomethasone Budesonide Ciclesonide Triamcinolone Flunisolide Fluticasone CFC free Mometasone
Leukotriene modifiers	Montelukast Zafirlukast Zileuton
Mast cell stabilizers	Cromolyn
Methylxanthines	Aminophylline Dyphylline Theophylline

The complete list can be found at: http://www.ncqa.org/HEDISQualityMeasurement/HEDISMeasures/HEDIS2013/HEDIS2013FinalNDCLists.aspx

Table 4. Specification of primary care clinicians*.

TABLE 4: Primary Care Clinicians
Adolescent family medicine
Family practice
Pediatric adolescent medicine
Pediatric internal medicine
Internal medicine
Pediatrics (unspecified)
General practice
Pediatric general medicine

* These classes are those used by NY State. Other states may use their own generally used codes to specify clinical specialties that generally provide primary care to children and/or adolescents, including general pediatricians, adolescent medicine physicians, family physicians, general practitioners, and general internists.

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, primary care provider or hospitalization
ii. Asthma medication prescription fills
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)
vii. Specialty of the physician

D. CALCULATION

Step 1: Look for any qualifying events (eligible events) using the criteria for ED visits in Table 2.

Step 2: Assess eligibility for events that occur in each month by confirming that the child was continuously enrolled for 2 months following the month in which the ED visit occurs (3 months total including the index month).

Step 3: The denominator is all events identified in Step 1 who meet the continuous enrollment criteria in Step 2.

Step 4: Find children with identifiable asthma among those with eligible events. Use the presence or absence of identifiable asthma as a stratification variable as specified below.

A. **Identify the assessment period**. We classify children as having identifiable asthma by evaluating services used during what we call the assessment period. The analysis period consists of the 2 year look back period plus all prior months in the Reporting Year. In other words if calendar year 2012 is the Reporting Year, the look back period would include calendar years 2010 and 2011. When

looking for events in January 2011, the assessment period would include only CY 2010 and CY 2011. For February 2011, the assessment period would include CY 2010, CY 2011 and January 2012, and so on until for December the look back period would include CY 2010, CY 2011 and January-November, 2012.

B. Analyze the data month by month in chronological order.

1. Exclude those children who have not been enrolled in the health plan for the two months following the month of the ED visit;

2. Evaluate for the presence of identifiable asthma if *any* of the criteria described in a, b, or c below are satisfied, (along with an ED visit with the primary or secondary diagnosis of asthma):

a. Any prior hospitalization with asthma as primary or secondary diagnosis

b. Qualifying events after the fifth birthday at time of event:

- One or more prior ambulatory visits with asthma as the primary diagnosis **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

c. Qualifying events, any age:

1) Three or more ambulatory visits with diagnosis of asthma or bronchitis, **OR**
2) Two or more ambulatory visits with a diagnosis of asthma **AND/OR**
3) Bronchitis **AND** one or more asthma related prescriptions

NOTE: 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. Leukotriene inhibitors are excluded for this purpose.

3. Classify by yes or no whether or not the child met the criteria for identifiable asthma during the month of the visit.

Step 5: Identify Numerator A. Numerator A is the number of eligible children seen in an outpatient visit by a primary care physician among those with primary care visits (See Table 2 for PCP visit codes and see Table 4 for definitions of Primary Care Clinicians) within 14 days following the ED visit (plus some inpatient codes).

Step 6: Identify Numerator B. Numerator B is the number of eligible children seen in an outpatient visit by a primary care physician among those with primary care visits (See Table 2 for PCP visit codes and see Table 4 for definitions of Primary Care Clinicians) within 30 days following the ED visit (plus some inpatient codes).

Step 7: Identify Numerator C. Numerator C is the number of eligible children that have at least one fill of a controller medication within 2 months following the ED visit (including the day of the visit).

** For Steps 5-7, report as 100 x (numerator/denominator) to 1 decimal place. **

Step 8: Repeat by strata: presence of identifiable asthma, and both overall and within identifiable asthma category by 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 50 children.

See Step 9 for specification of stratifying variables.

Step 9: Specification of Stratification Variables:

a. Record status with regard to having identifiable asthma as described in Step 4.

b. 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.

c. Identify the Urban Influence Code 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 .

d. 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 <=12.5%
   ii. Second Quartile of Poverty if percent in poverty is >12.5% and <=16.5%
   iii. Third Quartile of poverty if percent in poverty is >16.5% and <=20.7%
   iv. First upper quartile (75^{th}-90^{th}) if percent in poverty is

>20.7% and <=25.7%

v. Second upper quartile (>90th percentile)

e. Categorize age by age at the last day of the prior month. Aggregate into age categories ages 2-4, ages 5-11, ages 12-18, ages 19-21.

f. Categorize Race/Ethnicity as Hispanic, non-Hispanic White, Non-Hispanic Black, non-Hispanic Asian/Pacific Islander, and Non-Hispanic Other.

g. Insurance as Private (Commercial), Public, None or Other

h. Benefit Type as HMO, PPO, FFS, PCCM, Other