

## Asthma

### **Measure 9: Inhaled Corticosteroid for Children with Persistent Asthma Prescribed at Time of Discharge from the Emergency Department**

#### **Description**

This measure assesses the percentage of children, ages 1 through 17 years with persistent asthma, who, during the measurement year, presented to a hospital emergency department (ED) for an asthma exacerbation and were prescribed an inhaled corticosteroid (ICS) at the time of discharge. A higher proportion indicates better performance, as reflected by children with persistent asthma being prescribed an appropriate medication.

#### **Calculation**

This measure requires administrative claims and medical record data and is calculated as follows:

The percentage of children, ages 1 through 17 years with persistent asthma, who, during the measurement year, presented to a hospital ED for an asthma exacerbation and were prescribed an ICS at the time of discharge (numerator divided by denominator).

#### **Definitions**

- Persistent Asthma** Children who met at least one of the following criteria during both the measurement year and the year prior to the measurement year. Criteria need not be the same across both years. See Tables 1 and 2.
- At least one ED visit with a principal diagnosis of asthma
  - At least one acute inpatient encounter with a principal diagnosis of asthma
  - At least three outpatient visits with an asthma diagnosis on different dates
  - At least four asthma medication dispensing events (Appendix 1 - Asthma Drug and Device List).
- Inhaled corticosteroid** Daily, anti-inflammatory asthma medication, which helps control narrowing and inflammation in the bronchial tubes (Appendix 2 - Inhaled Corticosteroids). Prescription of an ICS based upon medical record review.
- ED Visit for Asthma** ED visits were defined using CPT and Revenue Codes (Table 1); ED visits related to asthma were defined as an ED visit with at least one asthma diagnosis related to such visit (Table 2).

**Table 1: Codes to Identify Visit Type**

Description	CPT	UB Revenue
Outpatient	99201-99205, 99211-99215, 99217-99220, 99241-99245, 99341-99345, 99347-99350, 99382-99386, 99392-99396, 99401-99404, 99411, 99412, 99420, 99429	051x, 0520-0523, 0526-0529, 057x-059x, 0982, 0983
Acute inpatient	99221-99223, 99231-99233, 99238, 99239, 99251-99255, 99291	010x, 0110-0114, 0119, 0120-0124, 0129, 0130-0134, 0139, 0140-0144, 0149, 0150-0154, 0159, 016x, 020x, 021x, 072x, 0987
Emergency Department	99281-99285	045x, 0981

**Table 2: Codes to Identify Diagnosis of Persistent Asthma**

Condition Name	ICD-9 Code(s)
Asthma	493
Extrinsic asthma	493.0
Extrinsic asthma, unspecified	493.00
Extrinsic asthma with status asthmaticus	493.01
Extrinsic asthma with (acute) exacerbation	493.02
Intrinsic asthma	493.1
Intrinsic asthma, unspecified	493.10
Intrinsic asthma with status asthmaticus	493.11
Intrinsic asthma with (acute) exacerbation	493.12
Chronic obstructive asthma	493.2
Chronic obstructive asthma, unspecified	493.20
Chronic obstructive asthma with status asthmaticus	493.21
Chronic obstructive asthma with (acute) exacerbation	493.22
Other forms of asthma	493.8
Cough variant asthma	493.82
Asthma unspecified	493.9
Asthma, unspecified type, unspecified	493.90
Asthma, unspecified type, with status asthmaticus	493.91
Asthma, unspecified type, with (acute) exacerbation	493.92

## Eligible Population

<b>Ages</b>	Children 1 year or older on January 1 of the measurement year but younger than 18 years on December 31 of the measurement year
<b>Enrollment</b>	Continuous enrollment during both the measurement year and the year prior to the measurement year
<b>Event/Diagnosis</b>	Diagnosis of persistent asthma in the measurement year and the year prior to the measurement year (see Table 2)

## Specification

**Denominator** The number of children, 1 through 17 years with persistent asthma who, during the measurement year, presented to a hospital ED for an asthma exacerbation

**Numerator** The number of children, 1 through 17 years with persistent asthma, who, during the measurement year, presented to a hospital ED for an asthma exacerbation and were prescribed an ICS at the time of discharge

### Denominator Exclusions

- Children with claims-based evidence of current ICS use (Appendix 2)
- Children with claims-based evidence of current controller medication use (Appendix 3 – Controller Medications)
- Children in the ED who are admitted to the hospital
- Children with a diagnosis during the measurement year or the year prior to the measurement year indicating cystic fibrosis or bronchiectasis (Table 3)
- Children younger than 6 years with a diagnosis during the measurement year or the year prior to the measurement year indicating bronchopulmonary dysplasia, tracheomalacia, or bronchomalacia (Table 3)
- Children 6 years old or older with a diagnosis during the measurement year or the year prior to the measurement year indicating bronchopulmonary dysplasia, tracheomalacia, or bronchomalacia (Table 3), unless there is also a diagnosis for persistent asthma (Table 2)
- Children with a diagnosis indicating “Exercise induced bronchospasm” (ICD-9 code 493.81) (Table 3) unless there is also a diagnosis for persistent asthma (Table 2)

**Table 3: Codes to Identify Exclusions**

Exclusions for All Cases	ICD-9 Code(s)
Cystic fibrosis without meconium ileus	277.0, 277.00
Cystic fibrosis with meconium ileus	277.01
Cystic fibrosis with pulmonary manifestations	277.02
Cystic fibrosis with GI manifestations	277.03
Cystic fibrosis with other manifestations	277.09
Bronchiectasis	494
Bronchiectasis, without acute exacerbation	494.0
Bronchiectasis, with acute exacerbation	494.1
Exclusions for All Cases under 6 years old	ICD-9 Code(s)
Chronic obstructive lung disease	496
Chronic lung disease, NOS	518.89
Tracheomalacia	519.1, 519.11, 519.19
Chronic respiratory disease arising in the perinatal period	770.7
Bronchomalacia	748.3
Not Sufficient for Inclusion, 6 years or older	ICD-9 Code(s)
Chronic obstructive lung disease	496
Chronic lung disease, NOS	518.89
Tracheomalacia	519.11, 519.19
Chronic respiratory disease arising in the perinatal period	770.7

Bronchomalacia	748.3
<b>Not Sufficient for Inclusion, All Ages</b>	<b>ICD-9 Code</b>
Exercise induced bronchospasm	493.81