

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. <ul style="list-style-type: none">• 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

| | |
|------------------------|--|
| Ages | Children 1 year or older on January 1 of the measurement year but younger than 18 years on December 31 of the measurement year |
| Enrollment | Continuous enrollment during both the measurement year and the year prior to the measurement year |
| Event/Diagnosis | 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 |
| Not Sufficient for Inclusion, All Ages | ICD-9 Code |
| Exercise induced bronchospasm | 493.81 |