

**NQF-ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE**

**Measure Information Form**  
**Collected For:**  
**The Joint Commission Only**

**Measure Set:** Children's Asthma Care (CAC)

**Set Measure ID#:** CAC-1

Set Measure ID#	Performance Measure Name
<b>CAC-1a</b>	Relievers for Inpatient Asthma (age 2 years <b>through</b> 17 years) - Overall Rate
<b>CAC-1b</b>	Relievers for Inpatient Asthma (age 2 years <b>through</b> 4 years)
<b>CAC-1c</b>	Relievers for Inpatient Asthma (age 5 years <b>through</b> 12 years)
<b>CAC-1d</b>	Relievers for Inpatient Asthma (age 13 years <b>through</b> 17 years)

**Performance Measure Name:** Relievers for Inpatient Asthma

**Description:** Use of relievers in pediatric patients admitted for inpatient treatment of asthma

**Rationale:** Asthma is the most common chronic disease in children and a major cause of morbidity and increased health care expenditures nationally (Adams, et al., 2001). According to the 2006-2008 data from the Centers for Disease Control and Prevention (CDC), 9.3% of the United States population is composed of children suffering from asthma (CDC Health Disparities and Inequalities Report, 2011). In 2005, 5.2% of children with asthma had at least one asthma attack in the previous year (3.8 million children). Nearly two of every three children who currently have asthma had at least one attack in the past 12 months. Asthma admissions account for 3% of all childhood hospitalizations (Akinbami, L, 2006).

Although there are means to prevent attacks or exacerbations among children with asthma, unfortunately, the majority of children with asthma do not have the disease under control and still suffer from acute asthma attacks, or exacerbations of asthma ([www.cdc.gov/nchs/products/pub/pubd](http://www.cdc.gov/nchs/products/pub/pubd), 2006). Less effective treatment modalities such as under treatment, or over treatment of chronic asthmatic children contributes to morbidity and mortality, and has affected the already overwhelmed healthcare system in the United States.

The National Heart Lung and Blood Institute (NHLBI) recommend the use of relievers for acute asthma exacerbation. The NHLBI provides these updated, scientific

recommendations in an Expert Panel Report (EPR), and that report states that “SABAs are the drug of choice for treating acute asthma symptoms and exacerbations and for preventing EIB (Evidence A).” (Expert Panel Report 3, Guidelines for the Diagnoses and Management of Asthma, 2007). Additionally the Panel recommends the use of LABAs for reliever therapy in patients who are not well controlled.

**Type of Measure:** Process

**Improvement Noted As:** An increase in the rate

**Numerator Statement:** Pediatric asthma inpatients who received relievers during hospitalization.

**Included Populations:**

Patients who were administered relievers during this hospitalization.

**Excluded Populations:** None

**Data Elements:**

*Relievers Administered*

**Denominator Statement:** Pediatric asthma inpatients (age 2 years through 17 years) who were discharged with a principal diagnosis of asthma.

**Included Populations:** Discharges with:

- An *ICD-9-CM Principal Diagnosis Code* of asthma (as defined in Appendix A, Table 6.1)
- An age of 2 through 17 years

**Excluded Populations:**

- Patients with age less than 2 years or 18 years or greater
- Patients who have a Length of Stay greater than 120 days
- Patients enrolled in clinical trials
- Patients with a documented *Reason for Not Administering Relievers*

**Data Elements:**

- *Admission Date*
- *Birthdate*
- *Clinical Trial*
- *Discharge Date*
- *ICD-9-CM Principal Diagnosis Code*
- *Reason for Not Administering Relievers*

**Risk Adjustment:** No

**Data Collection Approach:** Retrospective data sources for required data elements include administrative data and medical record documents. Some hospitals may prefer to gather data concurrently by identifying patients in the population of interest. This

approach provides opportunities for improvement at the point of care/service. However, complete documentation includes the principal or other ICD-9-CM diagnosis and procedure codes, which require retrospective data entry.

**Data Accuracy:** Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

**Measure Analysis Suggestions:** Based on these data, healthcare organizations would be able to determine the overall percentage of pediatric asthma inpatients that do not receive appropriate quick relief or rescue treatment. This measure provides opportunity to assess differences, if any, in treatment modality for the different age groups.

**Sampling:** Yes, please refer to the measure set specific sampling requirements and for additional information see the Population and Sampling Section

**Data Reported As:** Aggregate rate generated from count data reported as a proportion

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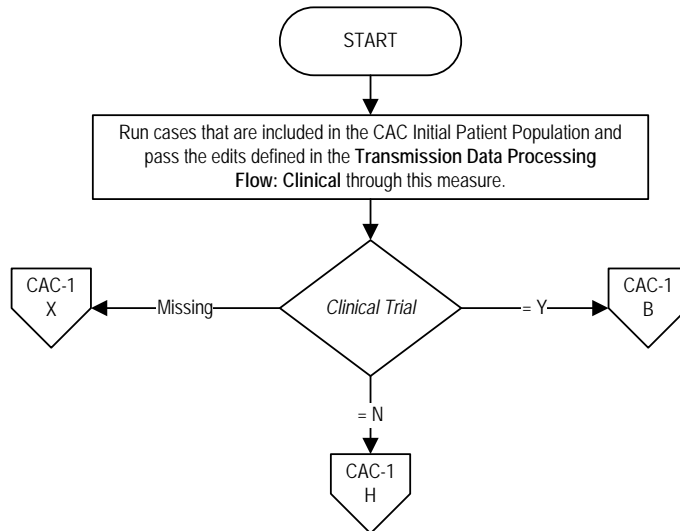
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## CAC-1: Relievers for Inpatient Asthma by AAP Age Groups.

**Numerator:** Pediatric asthma inpatients who received relievers during hospitalization

**Denominator:** Pediatric asthma inpatients (age 2 years through 17 years) who were discharged with a principal diagnosis of asthma

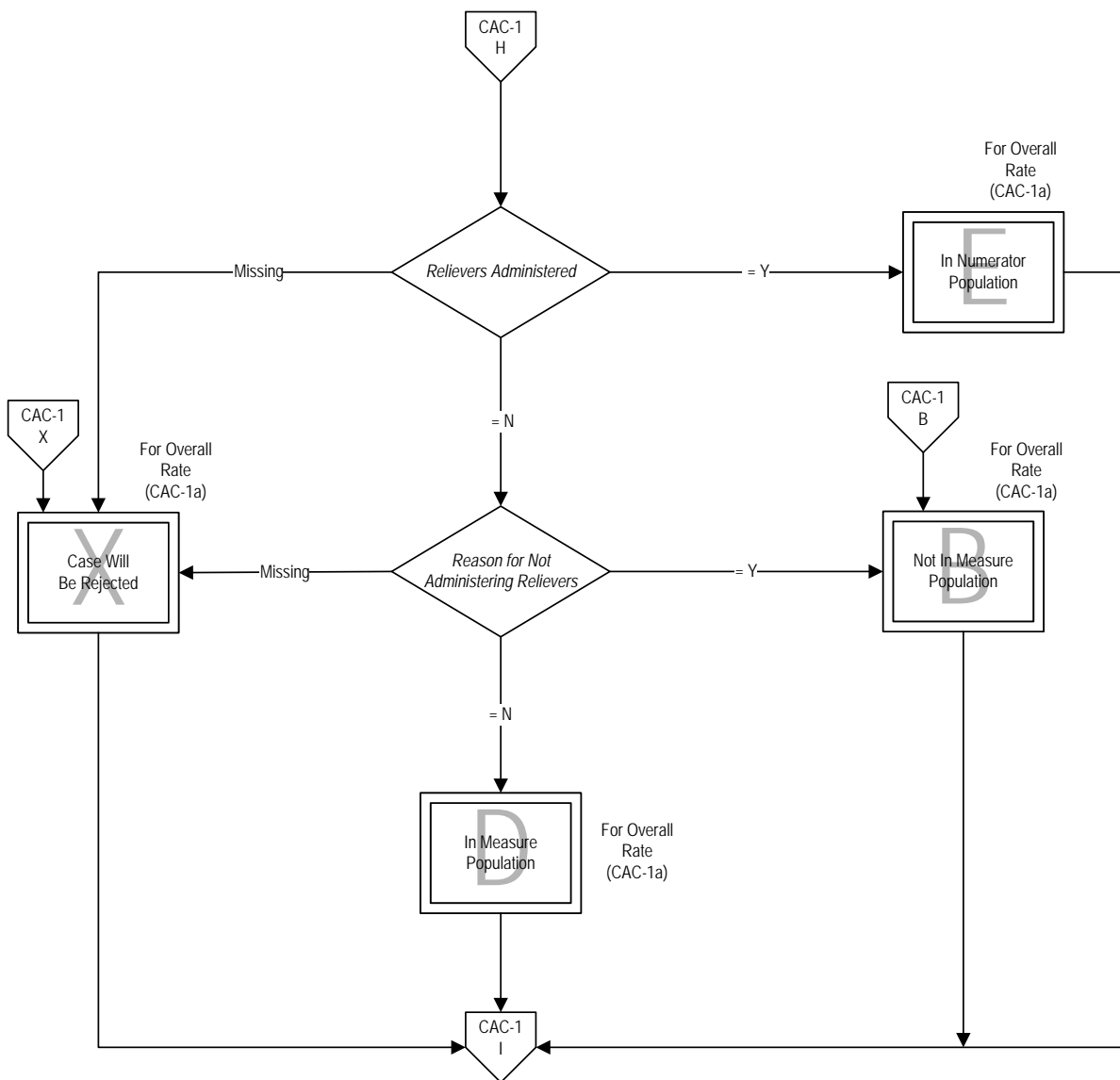
Variable Key:  
Patient Age

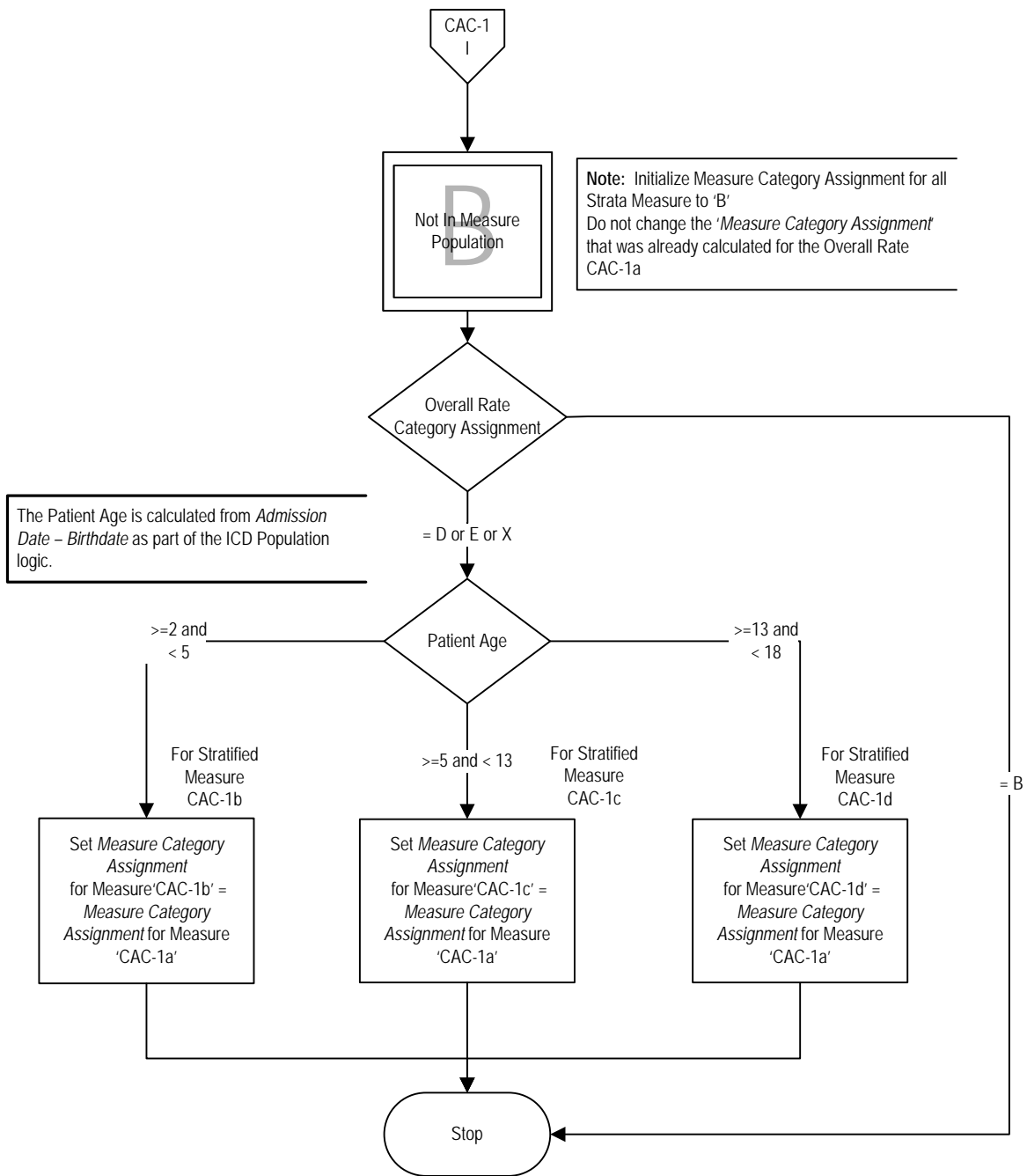


### Stratification Table:

Set#	Stratified By Age
CAC-1a	Overall Rate
CAC-1b	2-4
CAC-1c	5-12
CAC-1d	13-17

Each case will be stratified according to the age





## Children’s Asthma Care-1: Relievers for Inpatient Asthma

**Numerator:** Pediatric asthma inpatients who received relievers during hospitalization.

**Denominator:** Pediatric asthma inpatients (age 2 years through 17 years) who were discharged with a principal diagnosis of asthma.

**Variable Key:** Patient Age

### Stratification Table:

The Stratification Table includes the Set Number, Stratified By, and the Age Strata (Allowable Value). The Age Strata refers to Patient Age which is calculated by the data element Admission Date minus the data element Birthdate. Each case will be stratified according to the patient age, after the Category Assignments are completed and the overall rate is calculated.

Set Number	Stratified By	Age Strata
CAC-1a	Overall Rate	No allowable value exists for the overall rate. It includes all patients greater than or equal to 2 years and less than 18 years.
CAC-1b	Age 2 years through 4 years	A Patient Age ( <i>Admission Date</i> minus <i>Birthdate</i> ) greater than or equal to 2 years and less than 5 years.
CAC-1c	Age 5 years through 12 years	A Patient Age ( <i>Admission Date</i> minus <i>Birthdate</i> ) greater than or equal to 5 years and less than 13 years.
CAC-1d	Age 13 years through 17 years	A Patient Age ( <i>Admission Date</i> minus <i>Birthdate</i> ) greater than or equal to 13 years and less than 18 years.

1. Start processing. Run cases that are included in the CAC Initial Patient Population and pass the edits defined in the Transmission Data Processing Flow: Clinical through this measure.
2. Check Clinical Trial
  - a. If Clinical Trial is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Proceed to step 5 and check the Stratified Measures for Overall Rate (CAC-1a).
  - b. If Clinical Trial equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Proceed to step 5 and check the Stratified Measures for Overall Rate (CAC-1a).
  - c. If Clinical Trial equals No, continue processing and proceed to Relievers Administered.
3. Check Relievers Administered



- a. If Relievers Administered is missing, the case will proceed to a Measure Category Assignment of X for Overall Rate (CAC-1a) and will be rejected. Proceed to step 5 and check the Stratified Measures for Overall Rate (CAC-1a).
  - b. If Relievers Administered equals Yes, the case will proceed to a Measure Category Assignment of E and will be in the Numerator Population. Proceed to step 5 and check the Stratified Measures for Overall Rate (CAC-1a).
  - c. If Relievers Administered equals No, continue processing and proceed to Reason for Not Administering Relievers.
4. Check Reason for Not Administering Relievers
    - a. If Reason for Not Administering Relievers is missing, the case will proceed to a Measure Category Assignment of X for Overall Rate (CAC-1a) and will be rejected. Proceed to step 5 and check the Stratified Measures for Overall Rate (CAC-1a).
    - b. If Reason for Not Administering Relievers equals Yes, the case will proceed to a Measure Category Assignment of B for Overall Rate (CAC-1a) and will not be in the measure population. Proceed to step 5 and check the Stratified Measures for Overall Rate (CAC-1a).
    - c. If Reason for Not Administering Relievers equals No, the case will proceed to a Measure Category Assignment of D for Overall Rate (CAC-1a) and will be in the Measure Population. Proceed to step 5 and check the Stratified Measures for Overall Rate (CAC-1a).
  5. Continue processing for the Stratified Measures. Note: Initialize the Measure Category Assignment for all Strata Measure to equal 'B.' Do not change the Measure Category Assignment that was already calculated for the overall rate CAC-1a).
  6. Check Overall Rate Category Assignment
    - a. If the Overall Rate Category Assignment is equal to B, keep Measure Category Assignment for the strata measures equal B, not in the Measure Population. Stop processing.
    - b. If the Overall Rate Category Assignment is equal to D or E or X, continue processing and check the Patient Age. Note: The Patient Age is calculated from Admission Date minus Birthdate as part of the ICD Population logic.
  7. Check the Patient Age
    - a. If the Patient Age is greater than or equal to 2 years and less than 5 years for Stratified Measure CAC-1b, set the Measure Category Assignment for measure CAC-1b to equal the Measure Category Assignment for measure CAC-1a. Stop processing.

- b. If the Patient Age is greater than or equal to 5 years and less than 13 years for Stratified Measure CAC-1c, set the Measure Category Assignment for measure CAC-1c to equal the Measure Category Assignment for measure CAC-1a. Stop processing.
- c. If the Patient Age is greater than or equal to 13 years and less than 18 years for Stratified Measure CAC-1d, set the Measure Category Assignment for measure CAC-1d to equal the Measure Category Assignment for measure CAC-1a. Stop processing.