



OPERATIONAL DEFINITION

MEASUREMENT: Evidence-Based Care Provided

I. Description and Rationale

This measure answers the question:

What percentage of the time the defined outcome goals are met for eligible patients in the emergency department and on inpatient units?

The Evidence Based Practice Team has identified 1-2 evidence based outcomes for each of seven acute care conditions (see attachment A). These outcomes reflect the key clinical recommendations as stated in the evidence based guideline and supported by published evidence.

II. Population Definition

All non-ICU inpatients and ED patients who meet the eligibility criteria for the following evidence based guidelines: Asthma, Bronchiolitis, Community Acquired Pneumonia, Gastroenteritis, Fever of Unknown Source I & II, & Sinusitis (**Sinusitis discontinued in July 2007 for ED and July 2008 for overall measure**).

See attached link for specific criteria of each guideline

<http://www.cincinnatichildrens.org/svc/alpha/h/health-policy/ev-based>

III. Data Source(s)

Chart review by Clinical Data Reviewers in the Department of Health Policy & Clinical Effectiveness & electronic data from ICIS

IV. Sampling and Data Collection Plan

A systematic random sample of patients. See attachment B for sampling plan.

V. Calculation

$$P = \frac{\sum_{i=1}^m x}{m} \text{ where}$$

P = proportion of time the evidence based care outcome goals are met

$x = 1$ if the patient receives the appropriate care for the measure and 0 if they do not receive the appropriate care

m = Total number of measures (outcomes) included in the sample.

Note: patients with conditions having two evidence based outcomes can be included twice (once for each measure for which they are eligible)

VI. Analysis Plan and Frequency of Reporting

Data is collected daily and reported monthly

VII. Reporting Venues

Monthly Acute Care Pursuing Perfection IHI report
CCHMC Hospital Scorecard under “Health Care Delivery”
ED Monthly Dashboard
Inpatient Quarterly Dashboards
Monthly charts posted on intranet

VIII. Limitations

The measure is an estimate based on a random sample of patients.

IX. Experts/Resources

Evidence based guidelines & Acute Care Pursuing Perfection Grant
<http://centerlink/Portal/DesktopDefault.aspx?q=432&gl=574>

X. Revision History

Version	Primary Author(s)	Description of Version	Date Completed
1	Kate Rich & Terri Byczkowski	Modified sampling plan	6/16/04
2	Pursuing Perfection Inpatient Care Team	Updated appropriate antibiotics for pneumonia population based on newly developed order set	5/23/05
3	ED CSI Team	Sinusitis measures discontinued for ED	7/1/07
4	ED CSI Team	Measure 3 under “Bronchiolitis % of patients receiving appropriate inhalation therapy” was discontinued	7/1/08
5		Sinusitis measures discontinued for overall measure	7/1/08
6	ED CSI Team	Asthma measure changed for ED population	7/1/11

Attachment A

Composite Measure Outcomes Definitions

Gastroenteritis first PO attempt w/in 6 hrs of triage:

Description:

Percent of guideline eligible gastroenteritis patients who receive their first attempted PO feed within 6 hours of ED triage(ED admits) or admission to the unit (direct admits)

ED Calculation:

Numerator: The number of eligible sampled patients that are offered a PO feed within 6 hours of triage

Denominator: Number of eligible gastroenteritis patients who receive an IV in the ED and have ED LOS >6 hours

Inpatient Calculation:

Numerator: The number of eligible sampled patients that are offered a PO feed within 6 hours of ED triage if they arrive through the ED or within 6 hours of arriving on unit if they are a direct admit

Denominator: Number of eligible gastroenteritis inpatients who receive an IV and stay in the ED for <6 hours or are admitted directly to the unit

Gastroenteritis % of patients discharged on a regular diet:

Description:

Percent of guideline eligible gastroenteritis patients that are discharged on a regular diet as described below:

ED patients: Advance to a regular (or unrestricted) diet must be part of discharge instructions. If they received the Emstat handout for Gastroenteritis, Diarrhea, or free text that states unrestricted diet, the goal is met. If they received anything else such as vomiting, or dehydration, the goal is not met

Admitted patients: If the patient is advanced to a diet without restrictions while in the hospital the goal is met regardless of what type of diet instructions received.

If the patient is discharged while on clear liquids the goal is not met, unless there is explicit documentation that the discharge diet instructions are for regular diet without restrictions.

Calculation:

Numerator: The number of eligible sampled patients that are advanced to a regular diet or instructed to do so in discharge instructions

Denominator: Number of eligible gastroenteritis patients

Sinusitis % of patients with correct antibiotic given:

Description:

~~Percent of guideline eligible sinusitis ED patients who have symptoms ≥ 10 days and who receive antibiotics during visit or who are discharged on antibiotics that receive either of the following:~~

~~1. Amoxicillin~~

~~2. Augmentin.~~

~~**Exclusions:** Patients where it is noted in chart that the antibiotic is for treating a comorbid condition~~

Calculation:

Numerator: The number of eligible sampled patients that receive Amoxicillin or
——— Augmentin

Denominator: Number of eligible sinusitis patients with symptoms ≥ 10 days
receiving antibiotics

Sinusitis % of patients receiving antibiotics who had symptoms ≥ 10 days:

Description: Percent of guideline eligible sinusitis ED patients who receive antibiotics during visit or discharged on antibiotics that meet one of the following criteria:

1. Having symptoms for 10 or more days
2. Patient documented as severely ill

Calculation:

Numerator: The number of eligible sampled patients that have symptoms
for 10 days or more or are severely ill

Denominator: Number of eligible gastroenteritis patients that receive antibiotics

Asthma % of ED patients receiving steroids if given more than one dose of reliever medication in the ED:

Description: Percent of guideline eligible asthma ED patients who receive more than one dose of reliever medication who are prescribed steroids in the ED.

Calculation:

Numerator: The number of eligible asthma ED patients who received more than one dose of reliever medication in the ED and one or more doses of steroids in the ED

Denominator: Number of eligible asthma ED patients who received more than one dose of reliever medication in the ED.

Asthma % patients receiving one or more Albuterol treatments via MDI:

Description: Percent of guideline eligible asthma inpatients who receive at least one Albuterol treatment via MDI

Calculation:

Numerator: The number of eligible sampled patients that receive an MDI

CAP % of patients receiving age appropriate antibiotics:

Description: Percent of guideline eligible CAP patients receiving antibiotics during visit or discharged on antibiotics that receive antibiotics as follows:

- Age < 5 years: Ceftriaxone, Amoxicillin, Cefuroxime
- Age ≥ 5 years: Ceftriaxone, Cefuroxime, Azithromycin, Clarithromycin, Erythromycin/sulfisoxazole, or Erythromycin

Calculation:

Numerator: The number of eligible sampled patients that receive appropriate antibiotics

Denominator: Number of eligible CAP patients

FUS II % of ED patients receiving appropriate antibiotics:

Description: Percent of guideline eligible FUS patients receiving antibiotics during visit or discharged on antibiotics that receive either Ceftriaxone or Amoxicillin

Calculation:

Numerator: The number of eligible sampled patients that receive appropriate antibiotics

Denominator: Number of eligible FUS II patients

FUS I % of patients receiving appropriate antibiotics & dose according to weight:

Description: Percent of guideline eligible FUS patients < 61 days of age receiving the following antibiotic care in ED:

- < =30 Days
 1. Ampicillin 50-100 mg/kg & Gentamycin 3 mg/kg
 2. Ampicillin 50-100 mg/kg & Cefotaxime 50 mg/kg
 3. Ampicillin 50-100 mg/kg & Ceftriaxone 50 mg/kg
- >30 Days
 1. Ampicillin 50-100 mg/kg & Gentamycin 3 mg/kg
 2. Ampicillin 50-100 mg/kg & Cefotaxime 50 mg/kg
 3. Ampicillin 50-100 mg/kg & Ceftriaxone 50 mg/kg
 4. Ceftriaxone or Cefotaxime 50 mg/kg
 5. No antibiotics received

Calculation:

Numerator: The number of eligible sampled patients that receive appropriate antibiotics

Denominator: Number of eligible FUS I patients

FUS I % of patients receiving cultures prior to antibiotics:

Description: Percent of guideline eligible FUS patients < 61 days that receive a urine culture from a catheter obtained specimen, a blood culture, and a CSF culture prior to receiving their first dose of antibiotics.

Calculation:

Numerator: The number of eligible sampled patients that have a culture workup prior to first dose of antibiotics

Denominator: Number of eligible FUS I patients

Bronchiolitis % of patients receiving RSV washes only if necessary:

Description: Percent of guideline eligible Bronchiolitis patients who meet one of the following criteria:

1. Patient does not receive an RSV wash
2. Patient receives an RSV wash and has documentation of a chronically ill family member
3. Patient receives an RSV was and is < 61 days of age

Calculation:

Numerator: The number of eligible sampled patients that receive appropriate care regarding RSV washes

Denominator: Number of eligible Bronchiolitis patients

Bronchiolitis % of patients receiving appropriate inhalation therapy:

Description: Percent of guideline eligible Bronchiolitis patients who receive appropriate inhalation therapy treatment as described by meeting one of the following:

1. No respiratory therapy treatments given
2. 1 or more treatments with a documented pre score on all treatments ≥ 3
3. ~~≥ 2 treatments with a documented pre score on all treatments ≥ 3 and a documented post score on at least one treatment less than the documented pre score (sign of improvement)~~ – **This part of measure was discontinued 7/1/08**

Calculation:

Numerator: The number of eligible sampled patients that receive appropriate care regarding inhalation therapy

Denominator: Number of eligible Bronchiolitis patients

Attachment B

Acute Care Team – Sampling Plan May 2004

Population

Patients admitted to the ED or for an inpatient stay who are guideline eligible for one of the guideline conditions.

Sampling plan

Draw a systematic random sample (i.e.: every n^{th} patient) in each of the ED and Inpatient populations. Suggested annual sample size: ED—1560, Inpatient—1040

Rationale

This sampling methodology will result on average a sample of 130 ED and 87 inpatient charts per month for the monthly P2 report.

This will result in an approximate sample size of 390 ED and 260 inpatient charts for the quarterly CCHMC report card. We anticipate that, on average, the estimate of the percentage of time goals are met will have an approximate margin of error of .04 in the ED and for inpatients, with probability 0.95.

The total number of ED visits for the seven conditions in 2003 was 18,967. Drawing every 9th name will result in a total sample of 2,107. We estimate that 75% of those will be guideline eligible resulting in an annual *effective* sample of 1580.

The total number of inpatient stays for the seven conditions in 2003 was 2,676. Drawing every 2nd name will result in a total sample of 1,338. We estimate that 75% of those will be guideline eligible resulting in an annual *effective* sample of 1003.

Limitations

We are not drawing a stratified random sample by condition. Because the sample will be representative, we may not achieve sufficient sample sizes in some small population conditions for developing conditions specific conclusions. The sample will be dominated by the large population conditions.