

Sickle Cell Disease

Measure 15: Appropriate Emergency Department Fever Management for Children with Sickle Cell Disease

Description

The percentage of children identified as having Sickle Cell Disease presenting to an emergency department with fever during the measurement year who received parenteral broad-spectrum antibiotic treatment within 60 minutes following initial contact. A higher proportion indicates better performance as reflected by appropriate treatment.

Calculation

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

The percentage of eligible children who received parenteral broad-spectrum antibiotic treatment within 60 minutes (numerator divided by denominator).

Definitions

Intake period January 1 through December 31 of the measurement year.

Parenteral See Table 15-A for a list of acceptable antibiotics.
broad-spectrum antibiotic treatment

Fever Body temperature \geq 38 degrees C (100.4 degrees F).

Initial contact Child's first presentation to emergency department staff. Use the earliest time stamp in the medical record.

Table 15-A: Parenteral broad-spectrum antibiotics

Drug Class	Prescription
Aminoglycosides	Amikacin Sulfate Kanamycin A Sulfate Gentamicin Tobramycin Sulfate
beta Lactamase Inhibitor	Piperacillin and Tazobactam
beta Lactamase Inhibitor, Penicillins	Ticarcillin Disodium and Clavulanate Potassium
Cephalosporins	Cefazolin Cefotaxime Cefoxitin Ceftriaxone Cefepime Cefotetan And Dextrose Ceftazidime Cefuroxime
Decreased Sebaceous Gland Activity, Macrolide	Erythromycin Lactobionate
Glycopeptides	Vancomycin Hydrochloride
Macrolides	Azithromycin
Monobactams	Aztreonam
Oxazolidinones	Linezolid
Penicillins	Ampicillin Oxacillin Penicillin G Benzathine Penicillin G Sodium Nafcillin Penicillin G Penicillin G Procaine
Penicillins, beta Lactamase Inhibitor	Ampicillin And Sulbactam
Quinolones	Ciprofloxacin Moxifloxacin Hydrochloride Levofloxacin
Sulfonamides, Dihydrofolate Reductase Inhibitors	Sulfamethoxazole And Trimethoprim
Tetracyclines	Doxycycline Tigecycline Minocycline Hydrochloride

Eligible Population

The determination of eligible population for this measure requires medical record data.

Ages Younger than eighteen years of age during measurement year

Event/Diagnosis Diagnosed with sickle cell disease and presented to an emergency department with fever as documented in the medical record (see Table 15-B). All emergency department visits for fever during the measurement year qualify. Note: every eligible child should receive antibiotics, even if it is determined that the fever is not related to sickle cell disease, in less than 60 minutes.

NOTE: See exclusions noted below; there are several sickle cell variants that may be recorded under the 282.49 ICD-9 code that do not qualify for inclusion (see Table 4-D). Medical records for cases with ICD-9 code 282.49 should not be reviewed unless a diagnosis of Hb beta zero-thalassemia can be confirmed.

Table 15-B: Codes to Identify Sickle Cell Disease

Condition Name	Hemoglobin Screening Result	ICD-9 Code(s)
Hb beta zero-thalassemia	Hb F only	282.49
Hb S beta-thalassemia	Hb F,S,A	282.41, 282.42
Hb SC-disease	Hb F,S,C	282.63, 282.64
Hb SD-disease	Hb F,S,D	282.68, 282.69
Hb SS-disease (sickle cell anemia)	Hb F,S	282.6, 282.61, 282.62

Specification

Denominator The eligible population for the denominator is the number of children younger than 18 years of age with SCD who presented to an ED with fever during the measurement year.

Numerator The eligible population for the numerator is the number of children younger than 18 years of age with SCD who presented to an ED with fever during the measurement year and received parenteral broad-spectrum antibiotic treatment within 60 minutes following initial contact. Administration of oral antibiotics does not qualify as a numerator event.

Documentation in medical record must include, at a minimum, a note containing the time at which the antibiotics were provided.

Exclusions

Inpatient stays, outpatient visits, urgent care visits, acute care (evaluation and management) visits with primary care physician

Children with diagnosis in the sampled medical record indicating one of the sickle cell disease variants listed in Table 15-C should not be included in the eligible population *unless* there is also a diagnosis for a sickle cell variant listed in Table 15-B.

Table 15-C: Excluded Sickle Cell Disease Diagnosis Codes

Condition Name	Hemoglobin Screening Result	ICD-9 Code(s)
Hb C beta-thalassemia	Hb F,C,A	282.49
Hb D beta-thalassemia	Hb F,D,A	282.49
Hb E beta-thalassemia	Hb F,E,A	282.49
Hb C-disease	Hb F,C	282.7
Hb E-disease	Hb F,E	282.7
Hb H-disease	Hb F,H	282.49
Hb SE-disease	Hb F,S,E	282.68, 282.69
Hb C-carrier	Hb F,A,C	282.7
Hb D-carrier	Hb F,A,D	282.7
Hb E-carrier	Hb F,A,E	282.7
Hb S (sickle)-carrier	Hb F,A,S	282.5