EQIC
EASTERN US QUALITY IMPROVEMENT COLLABORATIVE

Data Methodology Guide

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HQIC
Hospital Quality Improvement Contractors
CENTERS FOR MEDICARE & MEDICAID SERVICES iQUALITY IMPROVEMENT & INNOVATION GROUP

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EQIC Data Collection Methodology

All hospital departments and units can participate in EQIC quality improvement activities. However, CMS is only interested in data from acute care patients in medicine-surgery who are 18 years and older. Please do not submit data from PPS-exempt units such as mental health, substance abuse, subacute, long term care, swing beds or hospice care.

There are four primary sources of EQIC data: 1) National Healthcare Safety Network, 2) National Database of Nursing Quality Indicators®, 3) a hospital's inpatient claims and 4) lab and pharmacy data directly from the hospital. Not all hospitals will have all of these data sources set up to automatically feed information into the EQIC portal. If your hospital is not able to automate one or more of these data sources, you will need to submit those data by manually entering them into the EQIC data portal. Only measures with a data source that lists "data portal" can be manually entered into the EQIC data portal. The remaining measures must come from direct electronic feeds.

Data Collection Criteria

Inclusion Criteria:

- Inpatient
    - Medical/surgical units
    - Critical care units (ICU, CCU, NCCU)
    - Step-down/intermediate units

Exclusion Criteria:

- Outpatient
- Emergency department (not admitted)
- PPS-exempt units (psych, rehab, SNF/swing)
- Pediatric/neonatal units (exception of CLABSI neonatal)

Potential Adverse Drug Events

Potential ADE process measures

Exclusions for the following two measures: Any other blood glucose level within three hours of the index results.

Percent of hyperglycemic POCT blood glucose results > 180 mg/dL
Numerator: Number of episodes with POCT blood glucose results with values > 180 mg/dL
Denominator: Number of episodes where POCT blood glucose tests resulted
Data Source: Laboratory
Measure source: ADA measure
Data submission: Monthly

Percent of hyperglycemic POCT blood glucose results > 250 mg/dL
Numerator: Number of episodes with POCT blood glucose results with values > 250 mg/dL
Denominator: Number of episodes where POCT blood glucose tests resulted
Data Source: Laboratory
Measure source: ADA measure (American Diabetes Association)
Data submission: Monthly

Exclusions for the following two measures: Any other blood glucose level within an hour of the index results.

Percent of hypoglycemic POCT blood glucose results < 40 mg/dL
Numerator: Number of episodes with POCT blood glucose results < 40 mg/dL
Denominator: Number of episodes where POCT blood glucose tests resulted
Data Source: Laboratory
Measure source: ADA measure
Data submission: Monthly

Percent of hypoglycemic POCT blood glucose results < 70 mg/dL
Numerator: Number of episodes with POCT blood glucose results < 70 mg/dL
Denominator: Number of episodes where POCT blood glucose tests resulted
Data Source: Laboratory
Measure source: ADA measure
Data submission: Monthly

Percentage of subtherapeutic INR results below normal
Numerator: Number of episodes per calendar day with INR results with values ≤ 2
Denominator: Number of episodes per calendar day where INR tests resulted
Data Source: Laboratory
Measure Source: EQIC measure
Data submission: Monthly

Percentage of suprathrapeutic INR results above normal
Numerator: Number of episodes per calendar day with INR results with values ≥ 5
Denominator: Number of episodes per calendar day where INR tests resulted
Data Source: Laboratory
Measure Source: EQIC measure
Data submission: Monthly

Potential ADE outcome measures

ADE rate
Numerator: Number of discharges with ADEs
Denominator: Total number of patient discharges
Data Source: Claims
Measure specifications: EQIC measure
Data submission: Monthly

High-risk medications in the elderly
Numerator: High-risk medications prescribed in patients ≥ 65 y/o
Denominator: Total number of discharges for patients ≥ 65 y/o
Data Source: Pharmacy
Measure specifications: NQF 0022
Data submission: Monthly

Opioids

Opioid process measures

Exclusions: All procedural and perioperative areas (i.e. OR, PACU, radiology, cath lab, endoscopy, etc.)

Opioid reversal agent use
Numerator: Number of naloxone doses administered on inpatient care units
Denominator: Total number of patient discharges
Data Source: Pharmacy
Measure Source: EQIC measure
Data submission: Monthly

Concurrent opioid and benzodiazepine prescriptions
Numerator: Number of patients concurrently prescribed an opioid and benzodiazepine during hospitalization
Denominator: Total number of patient discharges
Data Source: Pharmacy
Measure Source: EQIC measure
Data submission: Monthly

Opioid outcome measures

Opioid mortality fee-for-service
Numerator: Number of Medicare FFS opioid-related deaths (include opioid toxicity in primary or secondary diagnosis)
Denominator: Total number of Medicare FFS patient discharges
Data Source: Claims
Measure Source: EQIC measure
Data submission: Monthly

Opioid mortality all payer
Numerator: Number of opioid-related deaths (include opioid toxicity in a primary or secondary diagnosis)
Denominator: Total number of patient discharges
Data Source: Claims
Measure Source: EQIC measure
Data submission: Monthly

Inpatient opioid dosing
Numerator: Number of inpatients with average daily opioid dosage of ≥ 90 MME dosing per day
Denominator: Total number of opioid prescriptions
Data Source: CMS data/pharmacy
Measure Source: EQIC measure
Data submission: Monthly

Opioid ADE
Numerator: Number of opioid-related ADEs, including deaths
Denominator: Total number of patient discharges
Data Source: Claims
Measure Source: EQIC measure
Data submission: Monthly

Catheter-associated Urinary Tract Infections

CAUTI process measure

Catheter utilization ratio
Numerator: Number of indwelling urinary catheter days
Denominator: Total number of patient days
Data Source: NHSN/data portal
Measure Source: NHSN
Data submission: Monthly

CAUTI outcome measures

CAUTI SIR
Numerator: Number of observed CAUTI infections
Denominator: Number of predicted CAUTI infections
Data Source: NHSN
Measure Source: NHSN
Data submission: Monthly

CAUTI SIR in ICU
Numerator: Number of observed CAUTI infections in ICU
Denominator: Number of predicted CAUTI infections in ICU
Data Source: NHSN
Measure Source: NHSN
Data submission: Monthly

CAUTI rate
Numerator: Number of observed CAUTI infections
Denominator: Number of indwelling urinary catheter days
Data Source: NHSN/data portal
Measure Source: NHSN
Data submission: Monthly

CAUTI population rate
Numerator: Number of observed CAUTI infections
Denominator: Total number of patient days
Data Source: NHSN
Measure Source: AHRQ
Data submission: Monthly

Central Line-associated Bloodstream Infection

CLABSI process measure

Central line utilization ratio
Numerator: Number of central line days
Denominator: Total number of patient days
Data Source: NHSN/ data portal
Measure Source: NHSN
Data submission: Monthly

CLABSI outcome measures

CLABSI SIR
Numerator: Number of observed CLABSI infections
Denominator: Number of predicted CLABSI infections
Data Source: NHSN
Measure Source: NHSN
Data submission: Monthly

CLABSI SIR for ICU
Numerator: Number of observed CLABSI infections in ICU
Denominator: Number of predicted CLABSI infections in ICU
Data Source: NHSN
Measure Source: NHSN
Data submission: Monthly

CLABSI rate
Numerator: Numbers of observed CLABSI infections
Denominator: Number of central line days
Data Source: NHSN/ data portal
Measure Source: NHSN
Data submission: Monthly

CLABSI population rate
Numerator: Numbers of observed CLABSI infections
Denominator: Total number of patient days
Data Source: NHSN
Measure Source: American Journal of Infection Control
Data submission: Monthly

C. Difficile Infection

CDI process measure

Percent of discharges with prescription of antibiotics with the highest risk of *C. difficile*
Numerator: Number of patients who were prescribed an antibiotic with the highest risk of *C. difficile*
Denominator: Number of discharges
Data Source: Pharmacy
Measure Source: EQIC measure
Data Submission: Monthly

CDI outcome measures

***C. difficile* SIR**
Numerator: Number of incident hospital-onset CDI LabID events
Denominator: Number of predicted hospital-onset CDI LabID events
Data Source: NHSN
Measure Source: NHSN
Data submission: Monthly

***C. difficile* rate**
Numerator: Number of incident hospital-onset CDI LabID events
Denominator: Total number of patient days
Data Source: NHSN/ data portal
Measure Source: NHSN
Data submission: Monthly

Building Culture and Leadership

Building culture and leadership process measures

Percent of hospitals that have implemented each of the five Patient and Family Engagement metrics
Numerator: Number of hospitals that have implemented each of the metrics
Denominator: Number of hospitals
Data Source: EQIC data portal
Measure Source: CMS
Data submission: Measured upon enrollment and updated as changes occur

The leadership assessment is a brief survey that measures each hospital's progress in implementation of four proven best practices, as provided by CMS
Numerator: Number of hospitals that have implemented each of the elements
Denominator: Number of hospitals
Data Source: EQIC data portal
Measure Source: CMS
Data submission: Measured upon enrollment and updated as changes occur

Injuries from Falls and Immobility

Falls definitions

A patient fall is an unplanned descent to the floor with or without injury to the patient and occurs on an eligible reporting nursing unit. All unassisted and assisted falls are to be included in the data set whether they result from physiological reasons (fainting) or environmental reasons (slippery floor). Hospitals should also include patients who roll off a low bed onto a mat in the data set as a fall.

Exclusions for falls:

- Visitors
- Students
- Staff members
- Falls on units not eligible for reporting
- If a patient from an eligible reporting unit was not on the unit at the time of the fall, then it should be excluded (e.g., patient falls in radiology department).

Injuries from falls and immobility process measure

Percent of falls in which the patient had a fall risk assessment performed and documented within 24 hours of the fall

Numerator: Number of fall events with any harm that received a risk assessment within 24 hours of the fall event
Denominator: Number with any harm
Data Source: NDNQI/data portal
Measure Source: NDNQI
Data submission: Monthly

Injuries from falls and immobility outcome measures

Falls with any harm rate

Numerator: Number of falls with any harm (minor and greater)
Denominator: Total number of patient days
Data Source: NDNQI/data portal
Measure Source: NQF 0202
Data submission: Monthly

Falls rate

Numerator: Number of falls
Denominator: Total number of patient days
Data Source: NDNQI/data portal
Measure Source: NQF 0141
Data submission: Monthly

Methicillin-resistant Staphylococcus aureus

MRSA process measure

Percent of discharges for hip prosthesis, abdominal hysterectomy or colon surgery with a MRSA diagnosis

Numerator: Number of discharges for hip prosthesis, abdominal hysterectomy or colon surgery with a MRSA diagnosis
Denominator: Number of discharges for hip prosthesis, abdominal hysterectomy or colon surgery
Data Source: Claims
Measure Source: EQIC measure
Data submission: Monthly

MRSA outcome measures

MRSA bloodstream infection hospital-onset incidence rate

Numerator: Number of incident hospital-onset MRSA LabID events
Denominator: Total number of patient days
Data Source: NHSN/data portal
Measure Source: NHSN
Data submission: Monthly

MRSA bloodstream infection SIR

Numerator: Number of incident hospital-onset MRSA LabID events
Denominator: Number of predicted hospital-onset MRSA LabID events
Data Source: NHSN
Measure Source: NHSN
Data submission: Monthly
NHSN Notes: The SIR is calculated by dividing the number of observed events by the number of predicted events.

Pressure Injuries

Pressure injuries definitions

A pressure injury is a localized injury to the skin and/or underlying tissue, usually over a bony prominence, as a result of pressure or pressure in combination with shear.

- Pressure: The force that is applied vertically or perpendicularly to the skin's surface. Pressure compresses underlying tissue and small blood vessels, hindering blood flow and nutrient supply. Tissues become ischemic and are damaged or die.
- Shear: Occurs when one layer of tissue slides horizontally over another, deforming adipose and muscle tissue, and disrupting blood flow (e.g., when the head of the bed is raised > 30 degrees). Both require pressure exerted by the body against a bed/chair surface to create the tissue injury.
- Other locations: Pressure injuries can develop on any skin surface subject to excess pressure, such as under oxygen tubing, drainage tubing, casts, cervical collars or other medical devices.

Patients with the following stages/categories of facility-acquired pressure injury should be included in the numerator:

- Category/stage I: Non-blanchable erythema
- Category/stage II: Partial thickness
- Category/stage III: Full thickness skin loss
- Category/stage IV: Full thickness tissue loss
- Unstageable/unclassified: Full thickness skin or tissue loss - depth unknown
- Suspected deep tissue injury - depth unknown

Prevalence Study: A prevalence study, or a cross-sectional count of the number of cases in a population, measures the total number of persons with a pressure injury in a hospital/hospital unit on the day of the pressure injury survey. Choose one day every month or every quarter to sample your population.

Pressure injuries process measure

Percent of patients with documentation of a pressure injury risk assessment within 24 hours of admission

Numerator: Number of patients identified in the prevalence study with a stage 2 or higher facility-acquired pressure injury who had a risk assessment within 24 hours of admission
Denominator: Number of patients with a facility-acquired Stage 2 or higher pressure injury identified in the prevalence study (should match numerator of the pressure injury prevalence rate)
Data Source: NDNQI/data portal
Measure Source: AHRQ NDNQI
Data submission: Review of cases identified on the monthly or quarterly prevalence study

Pressure injuries outcome measures

AHRQ Patient Safety Indicator 3 - Stage III or IV pressure injuries
Numerator: Number of discharged patients with a facility-acquired pressure injury of stage III or IV (or unstageable)
Denominator: Number of medical and surgical discharges
Data Source: Claims
Measure Source: AHRQ specifications using ICD-10 codes
Data submission: Quarterly

Prevalence rate of facility-acquired pressure injuries of Stage 2 or higher
Numerator: Number of patients with a facility-acquired Stage 2 or higher pressure injury at a particular point in time
Denominator: Number of patients on units being studied at a particular point in time
Data Source: NDNQI/ data portal
Measure Source: NQF 0201
Data submission: Monthly prevalence study preferred; EQIC will accept quarterly prevalence study rates based on NDNQI guideline.

Preventable Readmissions

Preventable readmissions process measure

Diagnosis or issue-driven readmission rate (e.g., health disparities, diagnosis, skilled nursing facility admission)
Numerator: Number of readmissions within 30 days of discharge
Denominator: Number of eligible discharges for specific conditions (i.e., sepsis, health disparities, SNF, COPD, etc.)
Data Source: Claims
Measure Source: EQIC measure
Data submission: Monthly, quarterly, ad hoc

Preventable readmissions outcome measures

All-cause readmission rate
Numerator: Number of readmissions within 30 days of discharge
Denominator: Number of eligible discharges
Data Source: Claims
Measure Source: EQIC measure
Data Submission: Monthly

All-cause readmission rate, Medicare FFS
Numerator: Number of readmissions within 30 days of discharge
Denominator: Number of eligible Medicare FFS discharges
Data Source: Claims
Measure Source: EQIC measure
Data Submission: Monthly

Sepsis

Sepsis process measure

AHRQ Patient Safety Indictor 13: Post-operative sepsis rate
Numerator: Number of hospital-acquired sepsis cases in the defined surgical populations
Denominator: Elective surgical discharges
Data Source: Claims
Measure Source: AHRQ specifications using ICD-10 codes
Data submission: Quarterly

Sepsis outcome measure

Sepsis Mortality
Numerator: Number of deaths among patients diagnosed with sepsis or septic shock
Denominator: Patients with diagnosis of sepsis or septic shock
Data Source: Claims
Measure Source: EQIC measure
Data submission: Monthly

Surgical Site Infections

SSI process measure

AHRQ Patient Safety Indictor 13: Post-operative sepsis rate
Numerator: Number of hospital-acquired sepsis cases in the defined surgical populations
Denominator: Elective surgical discharges
Data Source: Claims
Measure Source: AHRQ specifications using ICD-10 codes
Data submission: Quarterly

SSI outcome measures

SSI SIR: Abdominal hysterectomy
Numerator: Number of observed SSIs
Denominator: Number of predicted SSIs
Data Source: NHSN
Measure Source: CDC Guidelines
Data submission: Monthly

SSI SIR: Hip prosthesis
Numerator: Number of observed SSIs
Denominator: Number of predicted SSIs
Data Source: NHSN
Measure Source: CDC Guidelines
Data submission: Monthly

SSI SIR: Colon surgery
Numerator: Number of observed SSIs
Denominator: Number of predicted SSIs
Data Source: NHSN
Measure Source: CDC Guidelines
Data submission: Monthly

SSI rate: Abdominal hysterectomy
Numerator: Number of observed SSIs
Denominator: Number of operative events
Data Source: NHSN
Measure Source: CDC Guidelines
Data submission: Monthly

SSI rate: Hip prosthesis
Numerator: Number of observed SSIs
Denominator: Number of operative events
Data Source: NHSN
Measure Source: CDC Guidelines
Data submission: Monthly

SSI rate: Colon surgery
Numerator: Number of observed SSIs
Denominator: Number of operative events
Data Source: NHSN
Measure Source: CDC Guidelines
Data submission: Monthly

Venous Thromboembolism

VTE process measure

Percentage of subtherapeutic INR results below normal
Numerator: Number of episodes per calendar day with INR results with values ≤ 2
Denominator: Number of episodes per calendar day where INR tests resulted
Data Source: Laboratory
Measure Source: EQIC measure
Data submission: Monthly

VTE outcome measures

VTE rate
Numerator: Number of discharges with facility-acquired VTEs
Denominator: Number of discharges
Data Source: Claims
Measure Source: Joint Commission Specifications Manual for National Hospital Inpatient Quality Measures
Data submission: Monthly

VTE surgical rate
Numerator: Number of surgical discharges with facility-acquired VTEs
Denominator: Number of surgical discharges
Data Source: Claims
Measure Source: Joint Commission Specifications Manual for National Hospital Inpatient Quality Measures
Data submission: Monthly

VTE medical rate
Numerator: Number of medical discharges with facility-acquired VTEs
Denominator: Number of medical discharges
Data Source: Claims
Measure Source: Joint Commission Specifications Manual for National Hospital Inpatient Quality Measures
Data submission: Monthly

AHRQ PSI 12 – Perioperative pulmonary embolism or deep vein thrombosis
Numerator: Number of surgical patients with hospital-acquired deep vein thrombosis or pulmonary embolism
Denominator: Number of surgical discharges
Data Source: Claims
Measure Source: AHRQ specifications using ICD-10 codes
Data submission: Monthly

Glossary

ADA - American Diabetes Association
ADE - Adverse Drug Event
AHRQ - Agency for Healthcare Research and Quality
CAUTI - Catheter-associated Urinary Tract Infection
CDC - Centers for Disease Control and Prevention
CDI - *C. Difficile* Infection
CLABSI - Central Line-associated Bloodstream Infection
CMS - Centers for Medicare and Medicaid Services
COPD - Chronic obstructive pulmonary disease
FFS - Fee-for-service
HAI - healthcare-associated infection
INR - International normalized ratio
LabID - Laboratory Identified Events
MME - Morphine milligram equivalents
MRSA - Methicillin-resistant Staphylococcus aureus
NDNQI - National Database of Nursing Quality Indicators
NHSN - The CDC's National Healthcare Safety Network
NQF - National Quality Forum
PFE - Patient and Family Engagement
POCT - Point of Care Testing
PSI - Patient Safety Indicator
SIR - Standardized Infection Ratio, which is a summary statistic used in NHSN to track HAIs
SNF - Skilled nursing facility
SSI - Surgical site infections
SUR - Standardized utilization ratio, which is a summary measure used to track device use at a national, state, local or facility level over time. The SUR adjusts for various facility and/or location-level factors that contribute to device use.
VTE - Venous Thromboembolism