



*Missouri Transparency Initiative*  
**PRICE AND QUALITY MEASURE  
TECHNICAL MANUAL**



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## INTRODUCTION

The Price and Quality Measure Technical Manual provides specifications for Missouri price and quality measures that are included in the Missouri Hospital Association's transparency initiative. This set of indicators tracks outcomes related to the cost and quality of patient care throughout the health care continuum. The price measures were chosen by the MHA Price Transparency Workgroup. The quality measures were selected by MHA's Strategic Quality Initiatives Advisory Council after a comprehensive review of criteria, such as financial implications, regulatory impact and current state-aggregate performance.

The majority of quality measures presented in this manual are synchronized with national stewards, such as the Centers for Medicare & Medicaid Services, the National Healthcare Surveillance Network and the Agency for Healthcare Research and Quality. To ensure your facility has the most current information, refer to the national steward's website or resources; live links are provided on each measure page.

## PRICE

Price data included in this manual represent inpatient emergency department and outpatient procedure codes based on a clinical classification system. On the Focus on Hospitals website, [www.focusonhospitals.com](http://www.focusonhospitals.com), diagnosis-related groups are translated into layman's language and grouped into categories similar to medical diagnosis categories.

Questions related to pricing should be directed to Mary Becker, Senior Vice President of Strategic Partnerships and Communications at MHA, at [mbecker@mhanet.com](mailto:mbecker@mhanet.com) or 573/893-3700, ext. 1303.

## QUALITY

Hospitals transitioned to using ICD-10 diagnosis and procedure codes for all administrative claims effective Oct. 1, 2015. AHRQ has not yet released ICD-10-compliant software programs used to produce risk-adjusted quality measures. To continue providing risk-adjusted data, MHA is using Hospital Industry Data Institute data that have been "backmapped" using the GEM ICD-10 to ICD-9 crosswalk provided by CMS. ICD-10-coded discharges were "backmapped" to comparable ICD-9 codes to the extent necessary to enable use of available software to produce risk-adjusted rates.

Questions about quality should be directed to Stephen Njenga, Director of Performance Measurement Compliance at MHA, at [snjenga@mhanet.com](mailto:snjenga@mhanet.com) or 573/893-3700, ext. 1314. To learn more about the GEM ICD-10 process, please read the HIDI [ICD-10 Transitional Strategy](#).

# Managing Chronic Diseases

## MANAGEMENT OF DIABETES: SHORT-TERM COMPLICATIONS

### Data Steward

[Agency for Healthcare Research and Quality](#)

### Measure Description

Admissions for principal diagnosis with short-term complications per 100,000 population, ages 18 and older. All payors.

### Measure Specifications

[Prevention Quality Indicators #1 \(PQI 1\)](#)

### Data Source

Discharge claims data

### Risk Adjustment

Age group and sex

## MANAGEMENT OF DIABETES: LONG-TERM COMPLICATIONS

### Data Steward

[Agency for Healthcare Research and Quality](#)

### Measure Description

Admissions for a principal diagnosis of diabetes with long-term complications (renal, eye, neurological, circulatory or complications not otherwise specified) per 100,000 population, ages 18 years and older. Excludes obstetric admissions and transfers from other institutions. All payors.

### Measure Specifications

[Prevention Quality Indicators #3 \(PQI 3\)](#)

### Data Source

Discharge claims data

### Risk Adjustment

Age group and sex

## MANAGEMENT OF DIABETES: UNCONTROLLED

### Data Steward

[Agency for Healthcare Research and Quality](#)

### Measure Description

Admissions for principal diagnosis without mention of short- or long-term complications per 100,000 population, ages 18 and older. All payors.

### Measure Specifications

[Prevention Quality Indicators #14 \(PQI 14\)](#)

### Data Source

Discharge claims data

### Risk Adjustment

Age group and sex

## MANAGEMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE

### Data Steward

[Agency for Healthcare Research and Quality](#)

### Measure Description

Admissions for principal diagnosis of chronic obstructive pulmonary disease or asthma per 100,000 population, ages 40 and older. All payors.

### Measure Specifications

[Prevention Quality Indicators #5 \(PQI 5\)](#)

### Data Source

Discharge claims data

### Risk Adjustment

Age group and sex

## MANAGEMENT OF HYPERTENSION

### Data Steward

[Agency for Healthcare Research and Quality](#)

### Measure Description

Admissions with a principal diagnosis of hypertension per 100,000 population, ages 18 and older. Excludes kidney disease combined with dialysis access procedure admissions, cardiac procedure admissions, obstetric admissions and transfers from other institutions. All payors.

### Measure Specifications

[Prevention Quality Indicators #7 \(PQI 7\)](#)

### Data Source

Discharge claims data

### Risk Adjustment

Age group and sex

## MANAGEMENT OF CONGESTIVE HEART FAILURE

### Data Steward

[Agency for Healthcare Research and Quality](#)

### Measure Description

Admissions with a principal diagnosis of heart failure per 100,000 population, ages 18 and older. Excludes cardiac procedure admissions, obstetric admissions and transfers from other institutions. All payors.

### Measure Specifications

[Prevention Quality Indicators #8 \(PQI 8\)](#)

### Data Source

Discharge claims data

### Risk Adjustment

Age group and sex

# Preventing Infections

## CATHETER-ASSOCIATED URINARY TRACT INFECTION

### Data Steward

[CDC NHSN](#)

### Measure Description

Catheter-associated urinary tract standardized infection ratio (SIR). ICUs and other inpatient units.

### Measure Specifications

[NHSN Measure Specifications](#)

### Numerator Statement

Number of observed infections

### Denominator Statement

Number of predicted infections

### Exclusions

None noted

### Data Source

CDC NHSN. Hospital abstracted.

### Risk Adjustment

Type of patient care location, hospital affiliation with medical school, bed size of the patient care location.

## CENTRAL VENOUS CATHETER-RELATED BLOODSTREAM INFECTION

### Data Steward

[CDC NHSN](#)

### Measure Description

Central line-associated bloodstream infection standardized infection ratio (SIR). ICUs and other inpatient units.

### Measure Specifications

[NHSN Measure Specifications](#)

### Numerator Statement

Number of observed infections

### Denominator Statement

Number of predicted infections



**Exclusions**

None noted

**Data Source**

CDC NHSN. Hospital abstracted.

**Risk Adjustment**

Type of patient care location, hospital affiliation with medical school, bed size of the patient care location.

## POSTOPERATIVE SEPSIS

**Data Steward**

[Agency for Healthcare Research and Quality](#)

**Measure Description**

Postoperative sepsis cases (secondary diagnosis) per 1,000 elective surgical discharges for patients ages 18 and older. Excludes cases with a principal diagnosis of sepsis, cases with a secondary diagnosis of sepsis present on admission, cases with a principal diagnosis of infection, cases with a secondary diagnosis of infection present on admission (only if they also have a secondary diagnosis of sepsis), cases with an immunocompromised state, cases with cancer, obstetric discharges, and cases with stays less than four days. All payors.

**Measure Specifications**

[Patient Safety Indicators #13 \(PSI 13\)](#)

**Data Source**

Discharge claims data

**Risk Adjustment**

Age group, sex and medical condition

## SURGICAL SITE INFECTION: COLON SURGERY

**Data Steward**

[CDC NHSN](#)

**Measure Description**

Surgical site infection ratio - colon surgeries

**Measure Specifications**

[NHSN Measure Specifications](#)

**Numerator Statement**

Number of observed infections

**Denominator Statement**

Number of predicted infections

**Exclusions**

None noted

**Data Source**

CDC NHSN. Hospital abstracted

**Risk Adjustment**

Duration of surgery, surgical wound class, use of endoscopes, re-operation status, patient age, patient assessment at time of anesthesiology.

**SURGICAL SITE INFECTION: ABDOMINAL HYSTERECTOMY**

**Data Steward**

[CDC NHSN](#)

**Measure Description**

Surgical site infection standardized infection ratio - abdominal hysterectomies

**Measure Specifications**

[NHSN Measure Specifications](#)

**Numerator Statement**

Number of observed infections

**Denominator Statement**

Number of predicted infections

**Exclusions**

None noted

**Data Source**

CDC NHSN. Hospital abstracted.

**Risk Adjustment**

Duration of surgery, surgical wound class, use of endoscopes, re-operation status, patient age, patient assessment at time of anesthesiology.

**CLOSTRIDIUM DIFFICILE**

**Data Steward**

[CDC NHSN](#)

**Measure Description**

*C. Diff* standardized infection ratio

**Measure Specifications**

[NHSN Measure Specifications](#)

**Numerator Statement**

Number of observed infections

**Denominator Statement**

Number of predicted infections

**Exclusions**

None noted

**Data Source**

CDC NHSN. Hospital abstracted.

**Risk Adjustment**

Medical school affiliation, facility bedsize, CDI test type, facility type and state.

**METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS INFECTION****Data Steward**

[CDC NHSN](#)

**Measure Description**

MRSA standardized infection ratio

**Measure Specifications**

[NHSN Measure Specifications](#)

**Numerator Statement**

Number of observed infections

**Denominator Statement**

Number of predicted infections

**Exclusions**

None noted

**Data Source**

CDC NHSN. Hospital abstracted.

**Risk Adjustment**

Medical school affiliation, facility bedsize, facility type and state.

## *Preventing Infections Using Rates - only applies to critical access hospitals*

### **CATHETER-ASSOCIATED URINARY TRACT INFECTION**

**Data Steward**

[CDC NHSN](#)

**Measure Description**

An infection of the bladder caused by germs that enter through a patient's urine tube, used to drain their bladder. Rate per 1,000 urinary catheter days.

**Measure Specifications**

[NHSN Measure Specifications](#)

**Numerator Statement**

Total number of observed healthcare-associated CAUTI among patients in bedded inpatient care locations.

**Denominator Statement**

Total number of indwelling urinary catheter days for each location under surveillance for CAUTI during the data period.

**Exclusions**

None noted

**Data Source**

CDC NHSN. Hospital abstracted.

**Risk Adjustment**

None

### **CENTRAL VENOUS CATHETER-RELATED BLOODSTREAM INFECTION**

**Data Steward**

[CDC NHSN](#)

**Measure Description**

Central line bloodstream infections are an infection in the blood caused by germs that entered the body through a line placed in a vein. Rate per 1,000 patient days.

**Measure Specifications**

[NHSN Measure Specifications](#)

**Numerator Statement**

Total number of observed healthcare-associated CLABSI among patients in bedded inpatient care locations.

**Denominator Statement**

Total number of central line days for each location under surveillance for CLABSI during the data period.

**Exclusions**

None noted

**Data Source**

CDC NHSN. Hospital abstracted.

**Risk Adjustment**

None

## POSTOPERATIVE SEPSIS

**Data Steward**

[Agency for Healthcare Research and Quality](#)

**Measure Description**

Postoperative sepsis cases (secondary diagnosis) per 1,000 elective surgical discharges for patients ages 18 and older. All payors.

**Measure Specifications**

[Patient Safety Indicators #13 \(PSI 13\)](#)

**Exclusions**

Excludes cases with a principal diagnosis of sepsis, cases with a secondary diagnosis of sepsis present on admission, cases with a principal diagnosis of infection, cases with a secondary diagnosis of infection present on admission (only if they also have a secondary diagnosis of sepsis), cases with an immunocompromised state, cases with cancer, obstetric discharges, and cases with stays less than four days.

**Data Source**

Discharge claims data

**Risk Adjustment**

Age group, sex and medical condition

## CLOSTRIDIUM DIFFICILE

**Data Steward**

[CDC NHSN](#)

**Measure Description**

Clostridium difficile is a bacterium that causes symptoms such as diarrhea. Rate of healthcare-associated CDI as the number of cases per 10,000 patient days.

**Measure Specifications**

[NHSN Measure Specifications](#)

**Numerator Statement**

Total number of observed hospital-onset C. Difficile lab identified events among all inpatients in the facility.

**Denominator Statement**

Patient days (facility-wide)

**Exclusions**

Exclude well-baby nurseries and NICU's

**Data Source**

CDC NHSN. Hospital abstracted.

**Risk Adjustment**

None

**METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS INFECTION**

**Data Steward**

[CDC NHSN](#)

**Measure Description**

Methicillin-resistant Staphylococcus aureus (MRSA) infection is caused by a bacteria that lives on the skin. Rate of healthcare-associated MRSA bacteremia events per 1,000 patient days

**Measure Specifications**

[NHSN Measure Specifications](#)

**Numerator Statement**

MRSA Bacteremia events

**Denominator Statement**

Patient days (facility-wide)

**Exclusions**

None noted

**Data Source**

CDC NHSN. Hospital abstracted.

**Risk Adjustment**

None

# Preventing Harm

## FALLS (INJURIES FROM FALLS AND TRAUMA)

### Data Steward

[Hospital Acquired Condition. The Centers for Medicare & Medicaid Services](#)

### Measure Description

All inpatients who had an injury from a fall or trauma. All payors.

### Numerator Statement

Patients with an occurrence of the following corresponding complication or comorbidity diagnosis codes as a secondary diagnosis (2-25 on the claim) with a POA code of “N” or “U.”

CC/MCC DIAGNOSIS CODE	DESCRIPTION
800-829	FRACTURE
830-839	DISLOCATION
850-854	INTRACRANIAL INJURY
925-929	CRUSHING INJURY
940-949	BURN
991-994	OTHER INJURIES

### Denominator Statement

All acute inpatient discharges

### Exclusions

- diagnosis was present at time of inpatient admission
- clinically undetermined (provider unable to clinically determine whether the condition was present at the time of inpatient admission)

### Data Source

Discharge claims data

## VENOUS THROMBOEMBOLISM (POST-OP PE OR DVT)

### Data Steward

[Agency for Healthcare Research and Quality](#)

### Measure Description

Perioperative pulmonary embolism or deep vein thrombosis (secondary diagnosis) per 1,000 surgical discharges for patients ages 18 and older. All payors.

### Measure Specifications

[Patient Safety Indicator #12 \(PSI 12\)](#)

**Data Source**

Discharge claims data

**Risk Adjustment**

Age group, sex and medical condition

**MORTALITY: ALL CONDITIONS COMPOSITE**

**Data Steward**

[Agency for Healthcare Research and Quality](#)

**Measure Description**

In-hospital deaths per 1,000 discharges for low mortality (less than 0.5%) DRG among patients ages 18 and older, or obstetric patients. Excludes cases with trauma, cases with cancer, cases with an immunocompromised state and transfers to an acute care facility.

**Measure Specifications**

[Patient Safety Indicator #2 \(PSI 02\)](#)

**Data Source**

Discharge claims data

**Risk Adjustment**

Age group, sex and medical condition

**PRESSURE ULCERS**

**Data Steward**

[Agency for Healthcare Research and Quality](#)

**Measure Description**

Stage III or IV pressure ulcers (secondary diagnosis) per 1,000 discharges among patients ages 18 and older. All payors.

**Measure Specifications**

[Patient Safety Indicator #3 \(PSI 03\)](#)

**Data Source**

Discharge claims data

**Risk Adjustment**

Age group, sex and medical condition



## Managing Readmissions

For readmission technical specifications, including measure description, numerator and denominator statements, and specific ICD-9 and ICD-10 codes, please see the [HIDI Readmission Measure Specifications](#).

## Price

Hospital pricing and medical billing can be complicated. The Focus on Hospitals website, [www.focusonhospitals.com](http://www.focusonhospitals.com), allows health care consumers to compare information about the most common inpatient medical procedures and emergency department services at Missouri hospitals.

The selected pricing data categories and methodology were researched, discussed and piloted before approval by the MHA Price Transparency Work Group. The price measures are separated into two categories — Inpatient and Emergency — and include common medical procedures and services. The Inpatient data includes the 100 most prevalent statewide diagnosis related groups and is categorized using consumer-friendly terminology. Because each patient and case is unique, pricing data is displayed in ranges.

### Inpatient Categories

- Nervous System
- Ear, Nose, Mouth and Throat
- Respiratory System
- Circulatory System
- Digestive System
- Hepatobiliary System/Pancreas
- Musculoskeletal/Connective Tissue
- Skin/Subcutaneous Tissue/Breast
- Endocrine/Nutritional/Metabolic
- Kidney/Urinary Tract
- Female Reproductive
- Pregnancy/Childbirth/  
Newborn and Other Neonates
- Blood/Related
- Neoplasms/Related
- Infection/Parasites
- Mental Disorders
- Substance Abuse
- Injury/Poisoning
- Other Factors

### Median/Maximum/Minimum Charges

Charges, calculated after removing outliers from the data set

### Discharge Statement

Number of discharges, calculated prior to removing outliers from the data set

### Exclusions

Outliers, identified as records that fall outside of the state minimum and maximum charges, are removed from the hospital-specific data set.

### Data Source

HIDI Discharge Claims Data



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