Missouri Hospitals – Aiming for Excellence

Improving Care
Improving Health

2018 ANNUAL QUALITY REPORT
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Delivering high quality care in a safe environment is the core mission of hospitals and health systems. Improvement and safety are a multi-faceted, iterative journey requiring innovation and care redesign through evidence-based practices. Missouri hospitals continue to improve quality outcomes by reducing hospital-acquired infections, patient harm and preventable readmissions.

The Missouri Hospital Association’s 2018 Annual Quality Report summarizes performance data on 17 metrics currently tracked by Missouri hospitals. The period between baseline data and the comparison year is two years for infection and safety measures, and three years for readmission measures.

The MHA Clinical Immersion Projects, Hospital Improvement and Innovation Network, Medicare Rural Hospital Flexibility Program, and States Targeting Reduction of Infections via Engagement help hospitals improve clinical performance. These projects deliver improved results through advances in clinical pathways, protocols and processes.

In addition, social determinants of health are increasingly being recognized as influencing outcomes. Understanding the role of social determinants of health is helping care givers adopt a more holistic approach — contributing to enhanced well-being of patients and improved care as illustrated in this report. Understanding that health occurs where individuals live, learn, work and play requires hospitals to work more closely with local and state partners to improve community health factors through evidence- and community-based programs.

Creating a culture of quality and safety requires commitment at the executive level that extends throughout the health care organization and into the community. The result is safer, more coordinated care that leads to better clinical outcomes and reduced costs.

This progress report is based on data from January 2015 to December 2017 for infection and safety measures, and September 2014 to August 2017 for readmission measures. The sources are claims and National Healthcare Safety Network data that is processed by the Hospital Industry Data Institute, the data company of the Missouri Hospital Association.
The Complexity of Patients

Health care workers must consider a multitude of health factors when providing care for patients. Ultimately, these health factors also affect a patient’s health outcome.

Factors Affecting Patient Health

Source: http://www.countyhealthrankings.org
Healthcare-associated infections are acquired by patients while receiving medical treatment or surgical care. Modern medical care involves various invasive devices and procedures that increase the risk for infection and can complicate recovery. The HAIs reviewed in this report include central line-associated bloodstream infections, catheter-associated urinary tract infections, *Clostridium difficile* infections, methicillin-resistant *Staphylococcus aureus*, post-operative sepsis and two types of surgical site infections.

Evidence-based protocols, combined with clinicians’ thorough review of patients’ risk factors, can improve care and outcomes. Engaging patients and families on risk factors also can positively influence outcomes.
Central Line-Associated Bloodstream Infection (CLABSI)

What is it?
A central line-associated bloodstream infection is a blood infection caused by germs entering the body through a flexible line placed in the patient’s vein or artery to deliver medicine and provide other treatments. Patients with this device are at high risk for developing dangerous bloodstream infections.

How’s it measured?
The rate is per 1,000 central line days. Central line days are calculated by dividing the number of CLABSIs by the number of central line days and multiplying the result by 1,000.

What does this mean?
To put the rate in context, a CLABSI occurred once for every 1,149 encounters.

Examples of Improvement Strategies
- Hand hygiene; Chlorhexidine for skin preparation.
- Full barrier protection during central venous catheter insertion.
- Avoid using the femoral vein for central venous catheters in adults.
- Remove unnecessary central venous catheters; only use if medically necessary.
**Examples of Improvement Strategies**

- Adopt sterile and evidence-based urinary catheter insertion and removal techniques.
- Culture only when symptomatic.
- Conduct regular catheter rounds with targeted education.
- Remove unnecessary catheters; only use if medically necessary.

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**Catheter-Associated Urinary Tract Infection (CAUTI)**

**What is it?**

A urinary tract infection is an infection that involves any part of the urinary system, including urethra, bladder, ureters and kidney. Among UTIs acquired in the hospital, approximately 75 percent are associated with a urinary catheter, which is a tube inserted into the bladder through the urethra to drain urine. Between 15 and 25 percent of patients receive urinary catheters during an inpatient stay. The most common and most important risk factor for developing a catheter-associated UTI is prolonged use. Therefore, catheters only should be used for appropriate indications and removed as soon as they are no longer medically needed.

**How’s it measured?**

The rate is per 1,000 urinary catheter days. Urinary catheter days are calculated by dividing the number of CAUTIs by the number of catheter days and multiplying the result by 1,000.
**Clostridium Difficile Infection**

**What is it?**
Antibiotics can destroy bacteria within the body that protect against infection — often for several months. Most *Clostridium difficile* infections occur in patients taking prolonged antibiotics. *C. difficile* infection can be either community-acquired or hospital-acquired, and the bacteria can survive for an extended time outside of the body on hard surfaces, making risk for infection much higher.

Missouri hospitals are following the Centers for Disease Control and Prevention’s guidelines to optimize appropriate stewardship of antibiotics. This includes ensuring medical necessity of the antibiotics and optimizing treatment based on evidence-based criteria and recommendations.

**How’s it measured?**
The rate is per 10,000 patient days. A patient day is a unit in a system of accounting used by health care facilities and health care planners. Each day represents a unit of time during which the services of the institution or facility are used by a patient; thus, 50 patients in a hospital for one day would represent 50 patient days.

**Examples of Improvement Strategies**
- Optimize antibiotic use.
- Wear gloves; sanitizer does not kill this bacteria.
- Disinfect rooms and surfaces.
- Rapidly identify and isolate patients.

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**What does this mean?**
To put the rate in context, *C. diff.* occurred once for every 1,886 encounters.

**2015 Missouri Baseline:** 6.7 per 10,000 patient days  
**Current Trend:** Missouri Monthly Rate

**CY 2015 Rate:** 6.7 per 10,000 patient days  
**CY 2017 Rate:** 5.3 per 10,000 patient days

**LOWER IS BETTER**
Examples of Improvement Strategies

- Hand hygiene; gloves.
- Use of mouth, nose and eye protection; gown.
- Appropriate handling of patient care equipment and laundry.
- Consider home environment for sources of infection.

Methicillin-resistant *Staphylococcus Aureus*

**What is it?**

Methicillin-resistant *Staphylococcus aureus* bacteria are present on skin and in the nose of approximately 30 percent of the population. However, most individuals do not have symptoms of illness. Illness occurs when skin is broken and the bacteria enter the body through incisions, wounds or scratches. When MRSA enters the body, it is difficult to treat because the bacteria is resistant to commonly used antibiotics, including penicillin and methicillin. MRSA infections often appear around surgical wounds or through invasive devices, such as catheters or implanted feeding tubes. MRSA is common among individuals who have weak immune systems, including those in hospitals and nursing homes. Community-acquired MRSA often results in skin infections.

**How’s it measured?**

The rate is per 1,000 patient days. Patient days are a unit in a system of accounting used by health care facilities and health care planners. Each day represents a unit of time during which the services of the institution or facility are used by a patient; thus, 50 patients in a hospital for one day would represent 50 patient days.
Post-operative Sepsis

What is it?
Sepsis is a complication caused by the body’s overwhelming and life-threatening response to infection. Sepsis can lead to tissue damage, organ failure and death. Sepsis is difficult to identify, diagnose and treat. Increasing awareness about sepsis among the public, health care providers and health care facilities is an important strategy to reduce sepsis. This includes education about the need to prevent infections that lead to sepsis, early identification of signs and symptoms, and urgent treatment when sepsis is suspected.

Once in the hospital setting, patients should receive prompt assessment and treatment based upon three- and six-hour sepsis care bundles.

How’s it measured?
The rate is per 1,000 elective surgical discharges.

Examples of Improvement Strategies
- Preoperative antibiotics when applicable.
- As soon as possible, remove tubes or devices, and ambulate often.
- Deep breath and cough after surgery.
- Monitor wound sites for signs and symptoms of infection.
SURGICAL SITE INFECTIONS

The CDC defines an SSI as an infection that occurs within 30 days of a medical procedure in or on the part of the body where the surgery took place. SSIs can involve the skin, tissues under the skin, organs or implanted material, and can lead to serious complications, longer hospital stays, increased need for medical treatment and death. Most SSIs are treated with antibiotics given over a variable timeframe.
Surgical Site Infection — Abdominal Hysterectomy

**What is it?**
During an abdominal hysterectomy, a physician surgically removes the uterus and reproductive organs by making an opening in the lower abdomen. Patients undergoing an abdominal hysterectomy have increased risk of exposure to bowel- and urinary tract-related bacteria and face an even higher risk if an underlying infection exists.

**How’s it measured?**
The rate is per 100 procedures.

**What does this mean?**
To put the rate in context, SSI – Ab. Hysterectomy occurred once for every 80 encounters.

**Example of Improvement Strategies**
- Presurgical precautions, including preoperative antibiotics.
- Ensure preoperative skin antisepsis.
- Develop and follow standardized order sets.
- Utilize a safe surgery checklist.
Readmission is defined as patients returning to the hospital within 30 days of discharge. It can be the result of patients not getting appropriate care and support after they leave the hospital. The causes of readmission are complex. Hospitals are using patient and family engagement strategies to understand and mitigate readmissions. Multidisciplinary care teams, including patients and family, hospital staff, and post-discharge providers and caregivers, can reduce the risk of readmission.
Hospitalwide Readmissions

What is it?
Hospitalwide readmission measurement provides a broad sense of the quality of care at hospitals and reflects coordinated efforts throughout, and outside of, the hospital to improve care with patient transitions. Readmissions are related to complex and critical aspects of care, such as communication between providers, prevention of, and response to, complications, patient safety and coordinated transitions to the outpatient environment.

How’s it measured?
Measured as a percent of adult patients discharged from the hospital who were readmitted to an acute care hospital within 30 days for any reason.

Examples of Improvement Strategies

- Provide clear patient communication regarding follow-up care.
- Make appointment with the primary care provider or specialist following discharge.
- Ensure adequate support at home.
- Educate the patient, family or caregiver on self-management techniques.

What does this mean?
To put the rate in context, one in ten patients are readmitted.

Source: Claims and NHSN data processed by the Hospital Industry Data Institute
Coronary Artery Bypass Graft (CABG)

What is it?
Readmissions following open heart surgery to repair coronary arteries are termed CABG readmissions. During a three-year period utilizing a baseline year of 2014, CABG readmissions decreased from 11.5 percent to 10.5 percent.

How’s it measured?
Measured as a percent of readmissions for adult inpatient discharges within 30 days for acute coronary artery bypass graft.

Examples of Improvement Strategies

- Provide clear patient communication regarding follow-up care.
- Make appointment with the primary care provider or specialist following discharge.
- Ensure adequate support at home.
- Educate the patient, family or caregiver on self-management techniques.
Hip/Knee

Hip/Knee Readmissions

Missouri Monthly Rate

Current Trend

2014 Missouri Baseline: 3%

What is it?
Readmission to the hospital following elective hip or knee replacement surgery. During a three-year period (September 2014 to August 2017), utilizing a baseline year of 2014, hip/knee readmissions remained stable at 3 percent.

How’s it measured?
Measured as a percent of readmissions within 30 days for adult inpatient discharges for acute hip/knee replacement.

What does this mean?
To put the rate in context, one in 33 patients are readmitted.

Examples of Improvement Strategies

Provide clear patient communication regarding follow-up care.

Make appointment with the primary care provider or specialist following discharge.

Ensure adequate support at home.

Educate the patient, family or caregiver on self-management techniques.
**Pneumonia**

**What is it?**

Readmission to the hospital for patients with a serious lung infection. During a three-year period (September 2014 to August 2017), utilizing a baseline year of 2014, pneumonia decreased from 14.2 percent to 13.5 percent.

**How’s it measured?**

Measured as a percent of patients readmitted to the hospital within 30 days of leaving the hospital for a serious lung infection.

**What does this mean?**

To put the rate in context, one in 10 patients are readmitted.

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**Examples of Improvement Strategies**

- Provide clear patient communication regarding follow-up care.
- Make appointment with the primary care provider or specialist following discharge.
- Ensure adequate support at home.
- Educate the patient, family or caregiver on self-management techniques.
Chronic Obstructive Pulmonary Disease (COPD)

What is it?
Readmission to the hospital for patients that have chronic obstructive lung disease. During a three-year period (September 2014 to August 2017), utilizing a baseline year of 2014, COPD readmissions decreased from 17.1 percent to 16.5 percent.

How’s it measured?
Measured as a percent of patients readmitted to the hospital within 30 days of leaving the hospital for chronic obstructive lung disease that causes obstructed airflow from the lungs.

Examples of Improvement Strategies
- Provide clear patient communication regarding follow-up care.
- Make appointment with the primary care provider or specialist following discharge.
- Ensure adequate support at home.
- Educate the patient, family or caregiver on self-management techniques.

What does this mean?
To put the rate in context, two in 10 patients are readmitted.

Source: Claims and NHSN data processed by the Hospital Industry Data Institute.
**Congestive Heart Failure**

**CY 2014 Rate**
- 19%

**CY 2017 Rate**
- 19%

**What does this mean?**
To put the rate in context, **two in 10** patients are readmitted.

**What is it?**
Readmission to the hospital within 30 days for a heart condition where the heart does not pump blood adequately to the body. During a three-year period (September 2014 to August 2017), utilizing a baseline year of 2014, CHF readmissions remained stable at 19 percent.

**How’s it measured?**
Measured as a percent of readmissions for adult inpatient discharges within 30 days for acute coronary artery bypass graft.

**Examples of Improvement Strategies**
- Provide clear patient communication regarding follow-up care.
- Make appointment with the primary care provider or specialist following discharge.
- Ensure adequate support at home.
- Educate the patient, family or caregiver on self-management techniques.

Source: Claims and NHSN data processed by the Hospital Industry Data Institute
Creating a culture of safety within hospitals can increase the quality of care delivered and reduce the risk of patient harm. Patient safety programs are designed to prevent errors, injuries, accidents and infections. Reducing harm of all kinds requires a collaborative approach among health care professionals, patients and families, where all stakeholders in care are empowered to ask questions and identify risks that could lead to patient harm. Missouri hospitals are addressing three main categories of safety: patient safety, worker safety and a safe hospital environment. This report focuses on four key patient safety measures: post-operative pulmonary embolism or deep vein thrombosis, pressure ulcers, falls with injury, and death in low mortality diagnosis-related groups.
Post-operative Pulmonary Embolism/Deep Vein Thrombosis

**What is it?**
A venous thromboembolism is a blood clot that starts in a vein. VTE is the third leading vascular diagnosis after heart attack and stroke. The following are the two types of VTEs.
- Deep vein thrombosis: A clot in a deep vein, usually in the leg, but sometimes in the arm or other veins.
- Pulmonary embolism: PEs occur when a DVT clot breaks free from a vein wall and travels to the lungs, blocking some or all of the blood supply.

**How’s it measured?**
The rate is per 1,000 discharges. Missouri hospitals are trending better than the baseline and the Agency for Healthcare Research and Quality 2014 benchmark, which is 8.02.

**What does this mean?**
To put the rate in context, a VTE occurred once for every 194 encounters.

**Examples of Improvement Strategies**
- Track and improve protocols using medications.
- Use compression stockings and compression devices to prevent blood clots.
- Promote early and frequent ambulation (walking) of patients regardless of the diagnosis.
Pressure Ulcers

What is it?
Pressure ulcers are skin lesions that bring pain, serious risk of infection and increased need for health care services. Although pressure ulcers are nearly always preventable, their prevalence in health care settings is increasing. Preventing pressure ulcers entails two major steps: identifying patients at risk and reliably implementing prevention strategies for all identified at-risk patients.

How’s it measured?
Measured as pressure ulcer rate per 1,000 discharges.

Examples of Improvement Strategies
- Use pressure-relieving surfaces to decrease pressure over bony body parts.
- Practice incontinence management and address toileting needs quickly.
- Use specialty skin, topical treatments.
- Turn patients every two hours; and ambulate when possible.

What does this mean?
To put the rate in context, pressure ulcers occurred once for every 1,785 encounters.

Source: Claims and NHSN data processed by the Hospital Industry Data Institute

Pressure Ulcers

CY 2015 Rate
.49 per 1,000 discharges

CY 2017 Rate
.56 per 1,000 discharges

What does this mean?
To put the rate in context, pressure ulcers occurred once for every 1,785 encounters.
Examples of Improvement Strategies

- Manage the patient’s underlying risk factors, such as walking problems, dizziness and confusion.
- Optimize the care environment for mobility of the patient.
- Utilize fall risk scales.
- Engage the patient and family to help prevent fall risks.

Falls With Injury

What is it?
A patient fall is defined as an unplanned descent to the floor with or without injury to the patient. A fall may result in fractures, lacerations or internal bleeding, leading to an increased need for health care services. Older adults are particularly at risk for falls in the hospital.

How’s it measured?
Measured as the number of falls or trauma per 1,000 inpatient discharges.

What does this mean?
To put the rate in context, falls occurred once for every 3,030 encounters.

Source: Claims and NHSN data processed by the Hospital Industry Data Institute
Death in Low Mortality DRGs

What is it?
A diagnosis related group is a statistical system of classifying any inpatient stay into groups for the purpose of payment. Hospitals should have very low rates of mortality for patients classified as low risk. This measure quantifies hospital deaths per 1,000 discharges for low mortality (< 0.5 percent) diagnosis related groups among obstetric patients, and patients 18 years and older.

How’s it measured?
Measured as rate per 1,000 discharges.

Examples of Improvement Strategies
- Timely recognition and management of complications.
- Multi-disciplinary rounds.
- Rapid response teams.
- Clear communication and handoffs.

Source: Claims and NHSN data processed by the Hospital Industry Data Institute

What does this mean?
To put the rate in context, death occurred once for every 5,555 encounters.