

Reducing Surgical Site Infection (SSI)

SSI Total = Superficial, Deep, & Organ/Space

Superficial Incisional SSI

Denominator: All Cases

Numerator: Infection occurs within 30 days of the procedure and involves only skin and subcutaneous tissue of the incision and patient has at least 1 of the following:

- a. purulent drainage from the superficial incision
- b. organisms isolated from an aseptically-obtained culture of fluid or tissue from the superficial incision
- c. superficial incision that is deliberately opened by a surgeon and is culture-positive or not cultured and patient has at least one of the following signs or symptoms of infection: pain or tenderness; localized swelling; redness; or heat. A culture negative finding does not meet this criterion
- d. diagnosis of superficial incisional SSI by the surgeon or attending physician or other designee

Deep Incisional SSI

Denominator: All Cases

Numerator: Infection occurs within 30 days of the procedure *and* involves deep soft tissues of the incision (e.g., fascial and muscle layers) *and* patient has at least one of the following:

- a. purulent drainage from the deep incision
- b. a deep incision that spontaneously dehisces or is deliberately opened by a surgeon, attending physician or other designee and is culture-positive or not cultured *and* patient has at least one of the following signs or symptoms: fever (>38°C); localized pain or tenderness. A culture-negative finding does not meet this criterion.
- c. an abscess or other evidence of infection involving the deep incision is found on direct examination, during invasive procedure, or by histopathologic examination or imaging test.
- d. diagnosis of a deep incisional SSI by a surgeon or attending physician or other designee

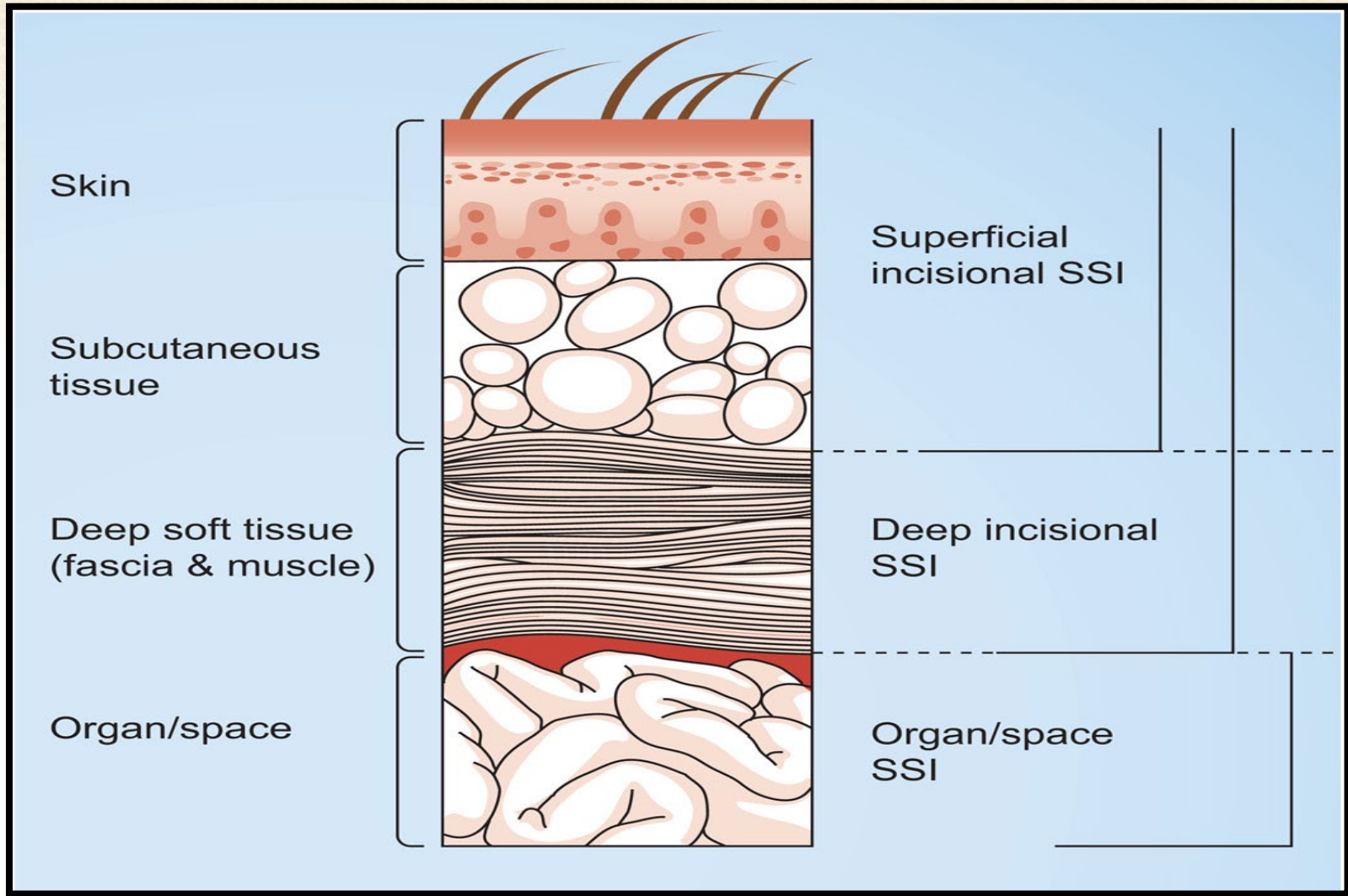
Organ/Space SSI

Denominator: All Cases

Numerator: Infection occurs within 30 days of the procedure *and* infection involves any part of the body, excluding the skin incision, fascia, or muscle layers, that is opened or manipulated during the operative procedure *and* patient has at least 1 of the following:

- a. purulent drainage from a drain that is placed into the organ/space
- b. organisms isolated from an aseptically-obtained culture of fluid or tissue in the organ/space
- c. an abscess or other evidence of infection involving the organ/space that is found on direct examination, during invasive procedure, or by histopathologic examination or imaging test
- d. diagnosis of an organ/space SSI by a surgeon or attending physician or other designee *and* meets at least one criterion for a specific organ/space infection site listed in *Table 1 - See MSQC Operational Manual*

Diagram of SSIs



MSQC QI NEWS THE WORLD'S FAVORITE NEWSPAPER

- Since 2005

Surgical Site Infections

- **Between 2% - 5% surgical patients acquire SSI (between \$160,000 and \$300,000/year)**
- **60% of SSIs have been estimated to be preventable**
- **Account for 20% of the HAIs in hospitalized patients**
- **Each SSI is associated with an additional 7-11 post-operative hospital days**
- **Patients with SSIs have a 2-11 times higher risk of death**
- **Accounts for \$3.5 Billion to \$10 billion annually in healthcare expenditures**
- **Most estimates do not account for re-hospitalization, outpatient treatment, post-discharge expenses, quality of life for the patient, or any long term disability costs**

Anderson, et al

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4267723/>

Who Knows Your Data?

Hospital Compare (medicare.gov)

The Official U.S. Government Site for Medicare

Hospital Compare Home About Hospital Compare About the data Resources Help

Home → Hospital Results → Compare Hospitals

Compare Hospitals

Back to Results

General information Survey of patients' experiences Timely & effective care Complications Readmissions & deaths Use of medical imaging Payment & value of care

Complications

Patients who are admitted to the hospital for treatment of medical problems sometimes get other serious injuries, complications, or conditions, and may even die. Some patients may experience problems soon after they are discharged and need to be admitted to the hospital again. These events can often be prevented if hospitals follow best practices for treating patients.

- Surgical complications
- Healthcare-associated infections

If footnotes appear in the table, hover over the number to get more details. View more footnote details.

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CDC/NHSN (National Healthcare Safety Network)

MICHIGAN

HEALTHCARE ASSOCIATED INFECTIONS (HAIs) are infections patients can get while receiving medical treatment in a healthcare facility. Working toward the elimination of HAIs is a CDC priority. The standardized infection ratio (SIR) is a summary statistic that can be used to track HAI prevention progress over time; lower SIRs are better. The infection data are collected through CDC's National Healthcare Safety Network (NHSN). HAI data for nearly all U.S. hospitals are published on the Hospital Compare website.

CLABSI

56% LOWER COMPARED TO NATION'S BASELINE

CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTIONS

When a tube is placed in a large vein and not put in correctly or kept clean, it can become a way for germs to enter the body and cause deadly infections in the blood.

- Michigan hospitals reported no significant change in CLABSI between 2012 and 2013.
- Among the 59 hospitals in Michigan with enough data to calculate an SIR, 0% had an SIR significantly worse than the national SIR of 0.54.

CAUTI

25% HIGHER COMPARED TO NATION'S BASELINE

CATHETER-ASSOCIATED URINARY TRACT INFECTIONS

When a urinary catheter is not put in correctly, not kept clean, or left in a patient for too long, germs can travel through the catheter and infect the bladder and kidneys.

- Michigan hospitals reported a significant increase in CAUTI between 2012 and 2013.
- Among the 73 hospitals in Michigan with enough data to calculate an SIR, 20% had an SIR significantly worse than the national SIR of 0.66.

MRSA Bacteremia

1% LOWER COMPARED TO NATION'S BASELINE

LABORATORY IDENTIFIED HOSPITAL-ONSET BLOODSTREAM INFECTIONS

Methicillin-resistant Staphylococcus aureus (MRSA) is bacteria usually spread by contaminated hands. In a healthcare setting, such as a hospital, MRSA can cause serious bloodstream infections.

- Among the 57 hospitals in Michigan with enough data to calculate an SIR, 14% had an SIR significantly worse than the national SIR of 0.92.

SSI

SURGICAL SITE INFECTIONS

When germs get into an area where surgery is or was performed, patients can get a surgical site infection. Sometimes these infections involve only the skin. Other SSIs can involve tissues under the skin, organs, or implanted material.

- SSIs: Abdominal Hysterectomy 24% HIGHER COMPARED TO NATION'S BASELINE
 - Michigan hospitals reported no significant change in SSIs related to abdominal hysterectomy surgery between 2012 and 2013.
 - Among the 24 hospitals in Michigan with enough data to calculate an SIR, 23% had an SIR significantly worse than the national SIR of 0.86.
- SSIs: Colon Surgery 5% HIGHER COMPARED TO NATION'S BASELINE
 - Michigan hospitals reported a significant increase in SSIs related to colon surgery between 2012 and 2013.
 - Several changes to the NHSN 2013 SSI protocol likely contributed to an increase in the national and some state-specific colon surgery SSIs compared to 2012.
 - Among the 57 hospitals in Michigan with enough data to calculate an SIR, 14% had an SIR significantly worse than the national SIR of 0.92.

C. difficile Infections

9% LOWER COMPARED TO NATION'S BASELINE

LABORATORY IDENTIFIED HOSPITAL-ONSET C. DIFFICILE INFECTIONS

When a person takes antibiotics, good bacteria that protect against infection are destroyed for several months. During this time, patients can get sick from Clostridium difficile (C. difficile), bacteria that cause potentially deadly diarrhea, which can be spread in healthcare settings.

- Among the 500 hospitals in Michigan with enough data to calculate an SIR, 7% had an SIR significantly worse than the national SIR of 0.90.

* Statistically significant.

THIS REPORT IS BASED ON 2013 DATA, PUBLISHED JANUARY 2015.

Accountable Care Organizations (ACO)

HAC Understanding the Hospital-Acquired Condition Reduction Program

Beginning in FY 2015, the Hospital-Acquired Condition (HAC) Reduction Program, mandated by the Affordable Care Act, requires the Centers for Medicare & Medicaid (CMS) to reduce hospital payments by 1 percent for hospitals that rank among the lowest-performing 25 percent with regard to HACs.

Hospital-Acquired Conditions are defined as: Conditions that patients acquire while receiving treatment for another condition in an acute care health setting.

Patients

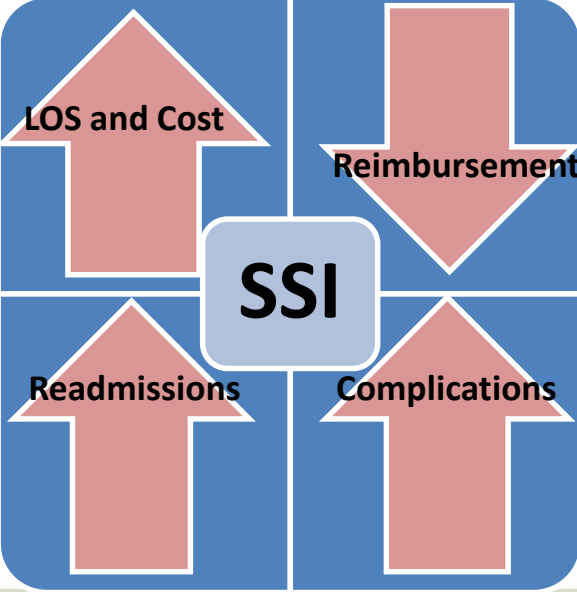


SOURCE: <http://www.cdc.gov/hai/pdfs/stateplans/factsheets/mi.pdf>

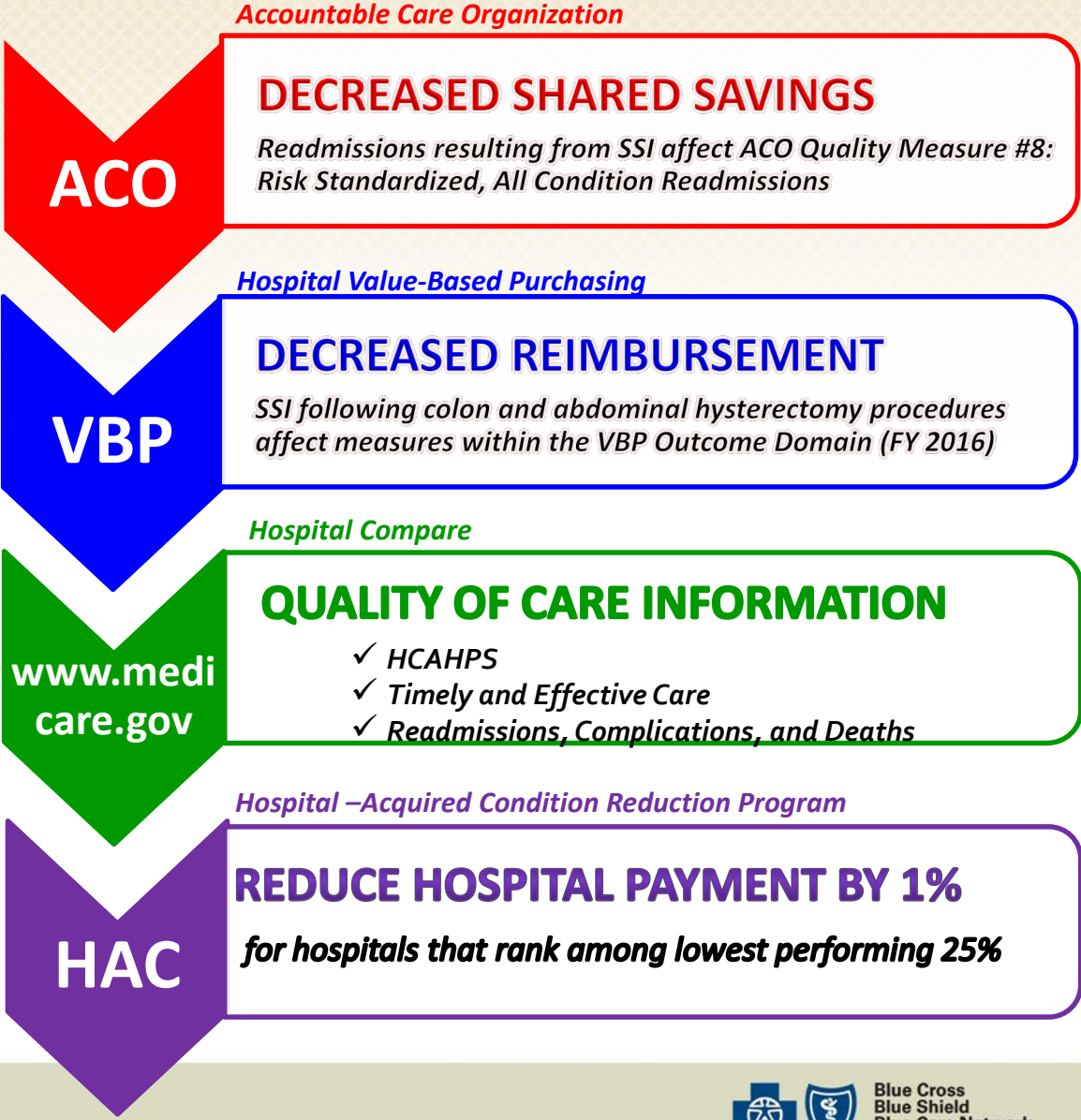


Impact of Increased SSI Occurrence

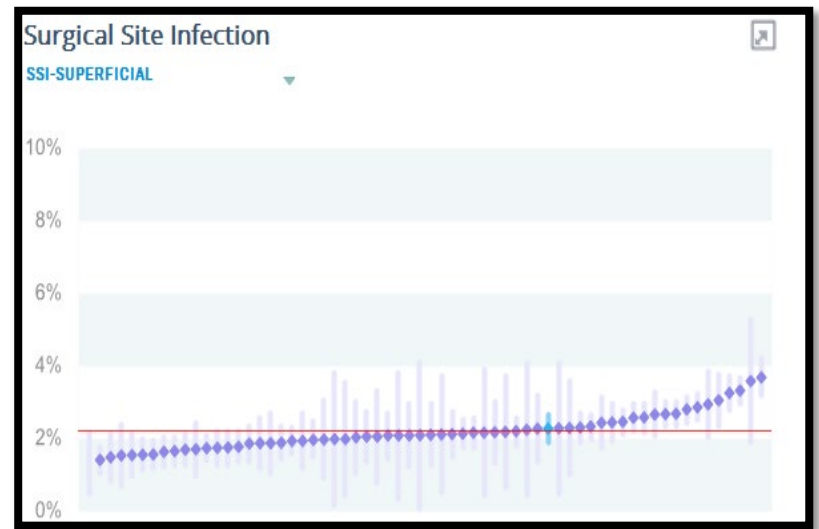
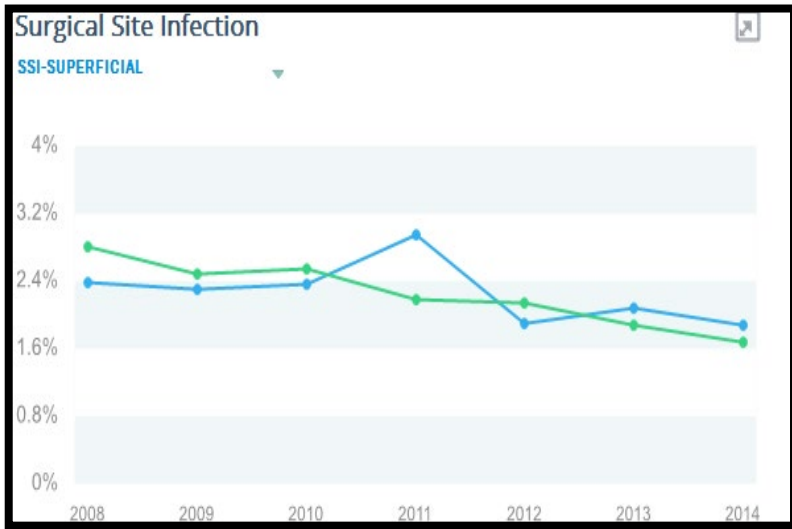
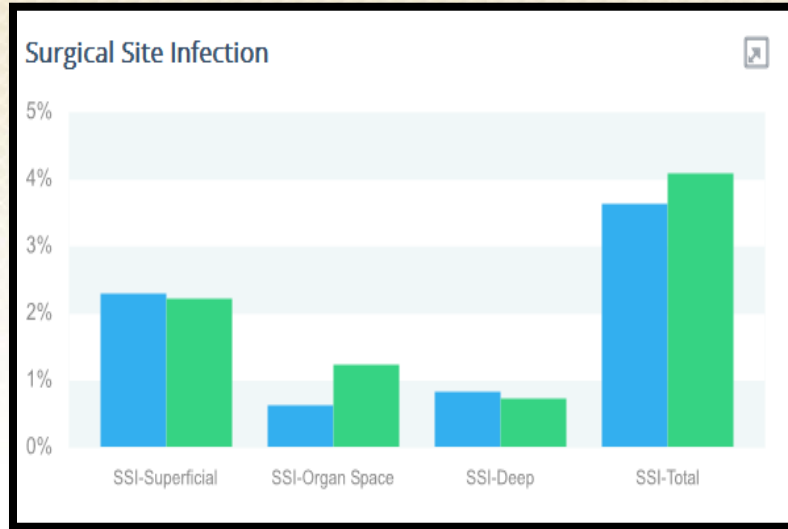
On average, a single **Surgical Site Infection (SSI)** costs **\$18,902 - \$22,667***, making this the **3rd most expensive Health Care-Associated Infection**



*Zimlichman et al (2013)



Your Hospital's SSI Rates (Insert Here)



Commitment from Leadership

*Formation of Steering
Committee*

*Action Plan
with clear expectations*

*Effective
communication
of plan*

*Protocol,
integrated
into order sets*

*Education of
staff*

*Mechanisms
to hold staff
accountable*

*Continuous
evaluation of
efforts and
outcomes*

Assess Culture

Safety Culture is **the way safety is perceived, valued and prioritized in an organization. It reflects the real commitment to safety at all levels in the organization.** It has also been described as "how an organization behaves when no one is watching".

Source: http://www.skybrary.aero/index.php/Safety_Culture

Engage Physicians

Make physicians partners not customers

Identify what is important to them:

- ❖ Improved patient outcomes (evidence based: data-driven)
- ❖ Reduced difficulties & wasted time

Understand the existing culture (beliefs, norms, values)

Understand legal barriers & opportunities

Surgeon Champion/Project Lead

Respected as a physician

Excellent Communication skills

Strong social & leadership skills

Committed to the project (shows courage)

Use “Engaging” Improvement Methods

Standardize what is “standardizable” - no more

Generate light, not heat with data (use data sensibly)

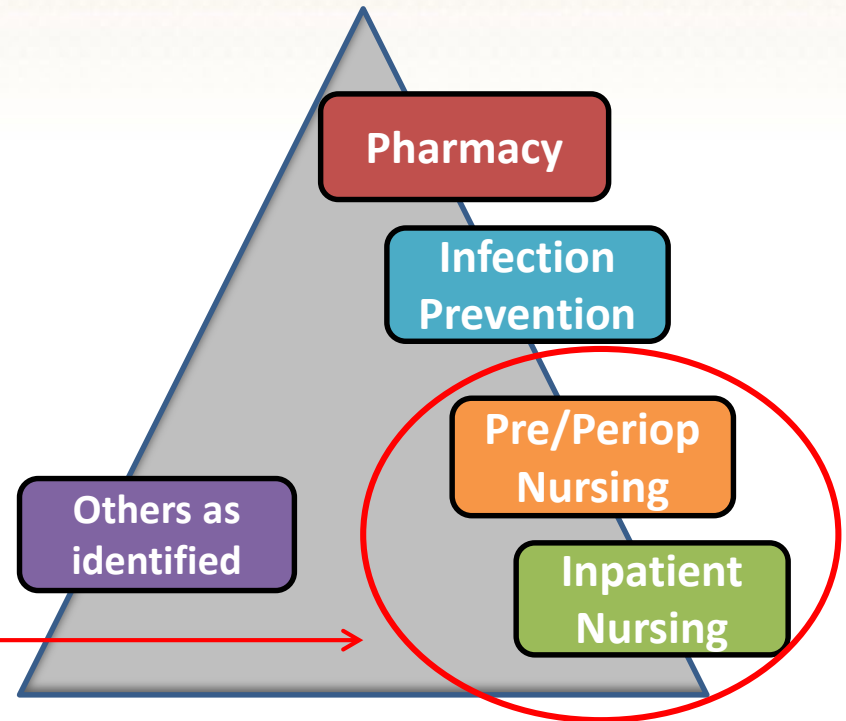
Make the right thing easy to do

Form an SSI Team

Core Membership (Leadership)



Integral Members (Managers & Staff)



Establish SSI Team Goals

State the Problem/ Purpose

- * Provide data to support the problem or purpose.

- * Why is a team necessary?

Define the Scope of the Project

- * Define inclusions (a specific procedure i.e. colectomy, or ALL surgical cases)
- * Set time frame

Define the Goal Statement

Must be:

- * Specific
- * Measurable
- * Realistic

Develop the Action Plan

- * Establish priorities- what are you going to do & how are you going to do it?

- * Identify the steps in the process

- * Identify process owners /key team members

- * Develop Timeline

Assign Team Roles

- * Champion(s)
- * Facilitator
- * Recorder
- * Timekeeper

Enhanced Recovery Program

Optimal Preparation for Surgery:

Patient Education

- Smoking cessation
- Incentive spirometry
- Progressive ambulation
- Nutrition
- Glycemic Control

Advances in Anesthesia Management

Specific Quality Improvement protocols



Prevention of post operative complications *

- Pneumonia (\$40,184)
- Wound infection (\$20,785)
- Sepsis (\$38,900)

MISSION: IMPOSSIBLE?

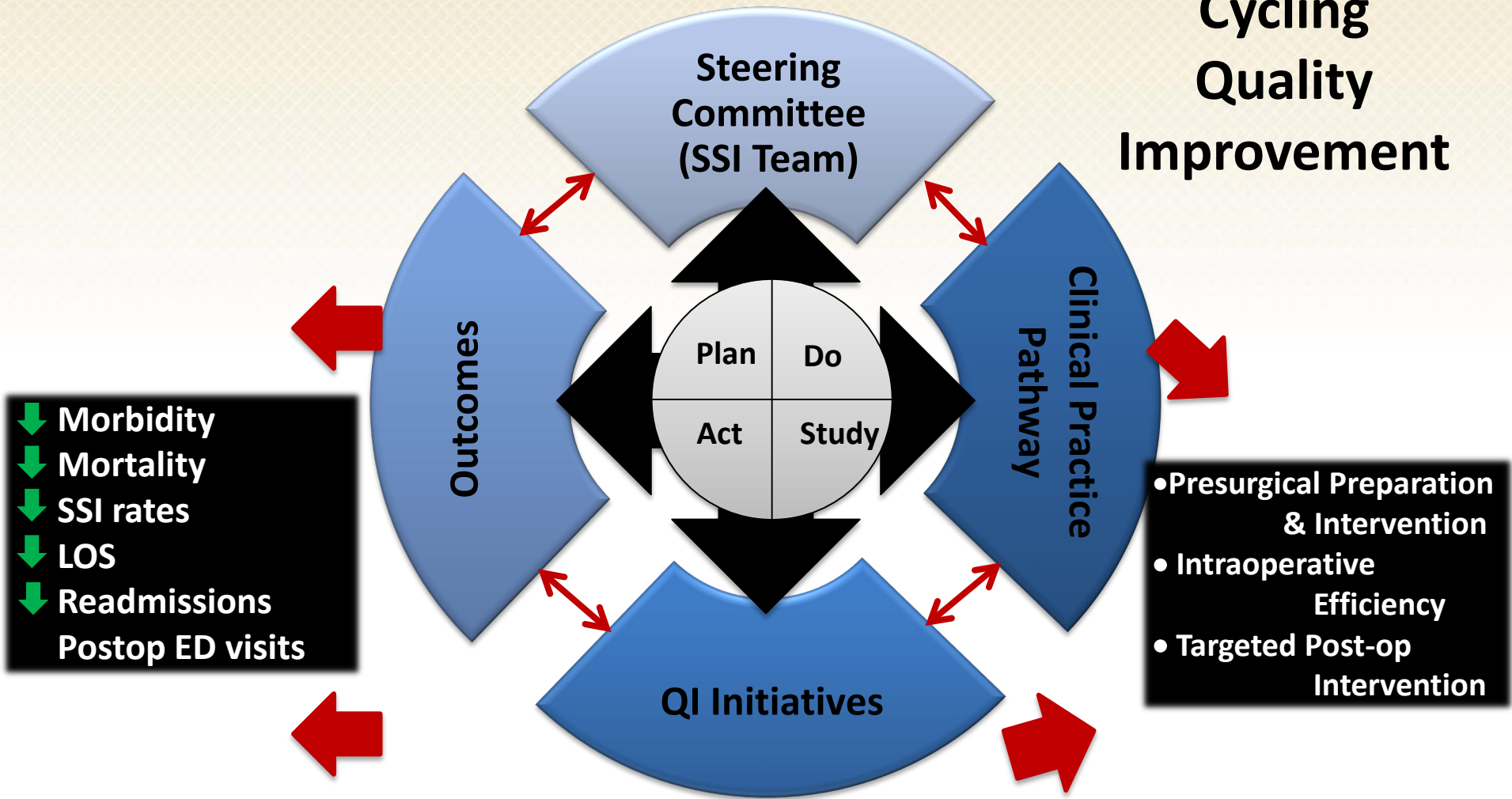


- SURGICAL**
Initiatives
- ANESTHESIA**
Initiatives
- HOSPITAL**
Initiatives

↓ **SSI**

Evaluate Progress

Cycling Quality Improvement



*Change is a process,
not an event*