Maintaining a reduction in CAUTI rates in MSICU after implementing a CAUTI bundle
Saint Joseph Medical Center

Program/Project Description.
To improve patient outcomes, in 2008, Saint Joseph Medical Center’s MSICU, CSU, and Infection Control Department united in their determination to decrease the catheter associated UTI (CAUTI) rates for our ICU settings. Data collection began in 2007 to track our CAUTI rate in our MSICU. The CAUTI rate for 2007 was 4.7 which placed us above the National Healthcare Safety Network (NHSN) 75th percentile. The CAUTI rate for 2008, prior to implementation of the CAUTI bundle, was 6.0. Our CAUTI reduction program included implementing a bundle consisting of: catheterizing only when necessary, inserting using aseptic technique using sterile equipment, obtaining samples aseptically from the collection port only, securing Foley with a securement device, performing hand hygiene before and after touching urinary catheters, assessing the daily need, maintaining a closed sterile system, and judiciously using creams and powders. After implementation of the CAUTI bundle, CY 2009 CAUTI rate was 1.8, placing us below the NHSN 50th percentile. (See attachment 1) Sustaining our reduction was our ultimate goal.

Process.
Our multidisciplinary team researched current evidence based practice published in current peer reviewed journals. To help determine potential cause and effect relationships, a fishbone analysis was conducted. Our CAUTI bundle was formulated and staff were educated on the proper indications for a Foley catheter. Critical Care staff were required to sign a pledge stating that they read, reviewed, understood, and will take accountability for performing proper Foley Catheter insertion/maintenance. (See attachment 2)

Solution.
The CAUTI Bundle was implemented by our multidisciplinary team. Items implemented from the bundle include:
• Catheterize patient only when necessary
• Insert catheter using aseptic technique and sterile equipment and obtain samples aseptically from collection port only. (Reference protocols in Potter and Perry)
• Secure every catheter to leg with a securement device
• Perform hand hygiene before and after touching urinary catheters; Standard precautions and glove use apply
• Ask every day, “Do we need the Foley?”
• Maintain closed, sterile system
  o Maintain unobstructed urine flow
  o Ensure that drainage bag hangs below bladder level
  o Catheter bag must never touch the floor
• Judicious use of creams or powders on perineal area when Foley is present

CAUTI bundle was verbally communicated in staff meetings to raise awareness. Emails were sent to staff to communicate the bundle, remind staff of the bundle, and share infection rates. Clinical Education and Infection Prevention required staff to review proper aseptic procedure for insertion of Indwelling Foley Catheters, and proper management/maintenance of the Foley catheter. A goal sheet was created and shared with staff. (See attachment 4)
Infection rates were shared with critical care staff. Posters were placed in staff lounges, bathrooms, and nursing station informing staff of the initiative. Infection Prevention attended daily clinical multidisciplinary rounds to help instill the practice of assessing for the daily need of the Foley Catheter and what each patient’s indication was for insertion. A pocket guide was created so staff could reference the bundle and indications readily. (See attachment 3)
Measurable Outcomes.
Baseline data collection began in 2007 to track our CAUTI rate in our MSICU. The CAUTI rate for 2007 was 4.7 which placed us above the National Healthcare Safety Network (NHSN) 75th percentile of 4.3. The CAUTI rate for 2008, prior to implementation of the CAUTI bundle, was 6.0. With the introduction of our CAUTI bundle November 2008, the CAUTI rate for MSICU has decreased. We have met and exceeded our goal to decrease our CAUTI rate by 60%. First quarter CY2009 rate was 1.6. After implementation of the CAUTI bundle, CY 2009 CAUTI rate was 1.8, placing us below the NHSN 50th percentile of 2.6, with a 72% decrease in our CAUTIs. Subsequently, our Foley utilization rate did also decrease from 0.92 in 2008 CY to 0.76 in CY 2009. Our overall CY2010 MSICU CAUTI rate is 1.30, meaning we have continued to sustain our decrease in CAUTIs.

Sustainability.
Infection Prevention continues to attend clinical multidisciplinary rounds up to 3 times a week to help assess for the daily need of the Foley Catheter and what each patient’s indication was for insertion. The Center for Clinical Excellence continues to educate new hires housewide on our CAUTI bundle as well as requiring the signature of the CAUTI pledge.

Role of Collaboration and Leadership.
A multidisciplinary team, including Infection Prevention, Clinical Excellence, Nurse Managers, patient care coordinators, and a physician champion was formulated. Critical success factors included support from key executive leadership (VPCMO), whom helped drive our success with the physicians. Collaboration with the Center for Clinical Excellence was necessary in order to achieve department wide education of our nursing staff on our CAUTI bundle and obtain signatures on our pledge.

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Table 1: Saint Joseph Medical Center MSICU sustained CAUTI rates after the introduction of the CAUTI bundle November 1, 2008.
Attachment 2: Saint Joseph Medical Center’s CAUTI bundle pledge.

UTI Bundle Pledge

I am committed to practicing healthcare in the best interest of my patients and on the basis of the best available evidence.

I therefore pledge to:

**Take Accountability** for my nursing practice and make patient safety my utmost highest priority by adhering to and supporting infection prevention practices.

**Encourage** my coworkers to utilize the UTI bundle and make infection prevention a priority.

**Implement** into my nursing practice the UTI bundle, to avoid catheter associated urinary tract infections (CAUTI).

**Communicate** to my coworkers within our facility the importance of the UTI bundle and infection prevention.

**Read and Express Understanding** of the protocols outlined in Potter and Perry for insertion and obtaining urine samples.

**Prevention of CAUTI: UTI Bundle**

- **Stop... THINK First: Do I need a Foley?**
- Catheterize the patient only when necessary
- Insert catheter using aseptic technique and sterile equipment and obtain samples aseptically from collection port only. (Reference protocols in Potter and Perry)
- Secure every catheter to the leg with a securement device
- Perform hand hygiene before and after touching urinary catheters; Standard precautions and glove use apply
- **Ask every day, “Do we need the Foley?”**
- Maintain closed, sterile system
  - Maintain unobstructed urine flow
  - Ensure that drainage bag hangs below bladder level
  - Catheter bag must never touch the floor
- Use creams or powders on perineal area sparingly when a Foley is present

______________________________  ________________  ________________
Signature                      Unit                              Date
Remove that Foley Catheter!

**Foley Catheters are indicated for:**
- Obstruction/gross hematuria
- Urologic Studies
- Urologic Surgery
- During/immediately after prolonged surgical procedures with general or spinal anesthesia
- Neurogenic Bladder
- Stage 3 or 4 sacral decubiti, (in the incontinent patient)
- Hospice or Palliative Care
- Paralyzed or sedated patients
- Hemodynamically compromised patients
- Acute renal failure, specifically oliguric

**Foley Catheters are not indicated for:**
- Incontinence
- Immobility
- Obtaining urine specimens
- Pt. request/convenience

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Foley Catheter Campaign

Goal:
• Decrease Catheter Associated Urinary Tract Infections (CAUTI) rate 60% within a six month time period, which will therefore decrease our foley days.

Background:
• Our current average 2008 CAUTI rate is 6.05.
• Our current average Foley days are 635.
• 600,000 patients develop hospital-associated UTI per year.
• 80% of these are urinary catheter associated.
• Approximately half of the patients with a urinary catheter do not have a valid indication for placement.
• Each day the urinary catheter remains, the risk of the CAUTI increases 5%.
• NHSN 50th percentile is 2.4.

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For Any Questions Contact: Clinical Educator Representative or Infection Control Department at 1396
What is NHSN?
Integrated surveillance system from the CDC which compiles risk-adjusted data that can be used for local quality improvement initiatives.

- Collects data from healthcare facilities in the United States to permit valid estimation of the magnitude of adverse events among patients and healthcare personnel.
- Analyze and report collected data to permit recognition of trends.

Benchmark:
NHSN CAUTI rate for the 50th percentile is 2.4  (Which means, 50% of the Nations Hospitals perform better.)

Rate:
Our current average 2008 CAUTI rate is 6.05. A rate of 6.05 falls at the NHSN 90th percentile, which means 90% of the Nations Hospitals perform better than us. A 60% decrease will place us at the NHSN 50th percentile.

How we obtain data:
Infection Control monitors all urine culture results collected in the CCU’s and examines the patient’s record to see if they fit the NHSN definition of a CAUTI.

Symptomatic urinary tract infection (SUTI)

A symptomatic urinary tract infection must meet at least one of the following criteria:
Criterion 1: Patient has at least one of the following signs or symptoms with no other recognized cause: fever (>38°C), urgency, frequency, dysuria, or suprapubic tenderness and patient has a positive urine culture, that is, \( \geq 10^5 \) microorganisms per cc of urine with no more than two species of microorganisms.

Criterion 2: Patient has at least two of the following signs or symptoms with no other recognized cause: fever (>38°C), urgency, frequency, dysuria, or suprapubic tenderness and at least one of the following:

- positive dipstick for leukocyte esterase and/or nitrate
- pyuria (urine specimen with \( \geq 10 \) wbc/mm\(^3\) or \( \geq 3 \) wbc/high power field of unspun urine)
- organisms seen on Gram stain of unspun urine
- at least two urine cultures with repeated isolation of the same uropathogen (gramnegative bacteria or \( S. saprophyticus \)) with \( \geq 10 \) colonies/ml in nonvoided specimens
- \( \leq 10 \) colonies/ml of a single uropathogen (gram-negative bacteria or \( S. saprophyticus \)) in a patient being treated with an effective antimicrobial agent for a urinary tract infection
- physician diagnosis of a urinary tract infection
- physician institutes appropriate therapy for a urinary tract infection.

Asymptomatic Bacteriuria (ASB)

An asymptomatic bacteriuria must meet the following criterion:
Patient has had an indwelling urinary catheter within 7 days before the culture and
patient has a positive urine culture, that is, \( \geq 10^5 \) microorganisms per cc of urine with no more than two species of microorganisms and
patient has no fever (>38°C), urgency, frequency, dysuria, or suprapubic tenderness.