

Implementation of TSS and SUSP Leads to a 60 Percent Reduction in Surgical Site Infections



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I have nothing to disclose

Thank you for staying this long!
There will be a quiz at the end!



Background

- Saint Mary's Hospital is a 349 bed teaching hospital in Waterbury serving an area of 300,000 people, and is a founding member hospital of the Connecticut Surgical Quality Collaborative (CtSQC)
- Baseline NSQIP dataset from first SAR: March 2011 through December 2011
- Overall SSI observed rate **3.76%** (43 / 1,162)
- Expected NSQIP SSI rate was **1.79%**
- Saint Mary's SSI rate was in the top decile and a statistical outlier compared to the NSQIP dataset

TSS / SUSP Team Members

Targeting Safe Surgery & Surgical Unit-based Safety Program

- Mary Bartolomeo
- Robert Brenes
- Amber Brown
- Linda Brown
- Betty Bozzuto
- Mary Champion
- Dana Chateauneuf
- Philip Corvo
- Karen Curley
- Chris Emerton
- Urszula Frankowski
- Linda Gullotta
- Vesel Haxhillary
- Lynne Hoden
- Jessica Lambert
- Ro Murphy
- Kim O'Meara
- Alexander Palesty
- Ellen Polokoff
- Aziz Richi
- Madeline Rinaldi
- Chris Seeley
- Sheila Staib
- Sumanth Suresh
- Ann Smith
- Jim Tucker

SUSP: Surgical Unit-based Safety Program

Goals

- Reduction in SSI rate & surgical complications
 - Improvement in the safety culture in the perioperative areas

Steps

1) Conduct Culture Survey

Review survey results and recommend actions

Train the SUSP Team on Science of Safety

2) Identify local defects

3) Identify and implement Improvement Projects

4) Evaluate ongoing performance

Culture Survey Participants

- Sites
 - Hospital campus
 - Outpatient surgery campus
- Areas involved
 - OR
 - PACU
 - PAS
 - SDS
- Participants
 - Anesthesiologists/CRNAs
 - Clerical personnel
 - Environmental Service Staff
 - Management/Administration
 - Nurses (LPN, RN)
 - PAs
 - Periop Assistants, PCAs
 - Residents
 - Surgeons, Podiatrists
 - Techs (Surgical, Radiology)



Questions Asked

- How might the next patient be harmed?
- How to prevent or minimize harm?
- How might next patient get SSI?
- How to prevent SSI?

Dealing with Defects

- Established teams with staff and management to develop tactics for improvement
- Initial focus on three areas:
 - Hand hygiene
 - Room cleaning
 - Standardization of techniques
- Learning from surgical site infection (SSIs) cases
- Continuing to monitor and report SSIs

Specific Improvement Activities I

- OR leadership
 - Focused on issues to maintain sterile technique
 - Improved accountability for proper sterile processing
 - Enforced proper surgical prep
- Launched “SUSP” Team
 - National collaborative with Johns Hopkins to reduce SSIs
 - Adopt science of safety principles

Specific Improvement Activities II

- Prehospital chlorhexidine scrub. Performed preop for pts who were not compliant.
- Pt education about effort to decrease infection and their role
- Pt education about importance of staff handwashing and encouraging pts to question staff if they washed or not.

Specific Improvement Activities III

- Room standardization – within reason, the layout of equipment in all rooms identical, and frequently used equipment (sutures) available in all rooms (historically moved to central core as a cost saving inventory measure)
- Decrease Traffic in Rooms
 - Only enter through center core
 - Masks must be worn in center core
 - Better planning of breaks for staff (e.g. no staff change with 5 minutes left to go on case)

Specific Improvement Activities IV

- Decrease Traffic in Rooms (cont'd)
 - Anesthesia involved as monitors as well as participants
 - “Texts” to ask for breaks, instead of room to room rounds
- Everything being reassessed on an ongoing basis
- Time-Outs done *properly*
- Signs warning against unnecessary traffic, updates, etc, were rotated / changed regularly to avoid “sign fatigue”
- *SPIES!*

NSQIP Surgical Site Infections

Pre-SUSP

- Goal set from baseline data: March 2011 through December 2011
- SSI observed rate **3.76%**
- Expected NSQIP SSI rate was 1.79%

Post SUSP: Jan 2012 to Dec 2012 and ongoing

- In 2012, SSI observed rate was **1.33%** (21/1,583) in the 3rd decile, and a 64% absolute decrease from baseline
- X^2 and Fisher's Exact test $p < .001$
- At \$25,546 estimated cost per SSI the reduction has yielded a \$562,012 annual benefit

Hawthorne Effect?

- 1920-1930s at Hawthorne Electric
- Did changing light conditions increase productivity?
 - Yes – but so did changing anything else
- Has been criticized as a “glorified anecdote”
 - “People did better because they were watched”
- BUT- That’s the whole point!
- Ask people to do something, then make sure they do it.

Conclusions & Next Steps

- Participation with NSQIP raised awareness of our SSI problem
- Implementation of Targeting Safe Surgery and Surgical Unit-based Safety Program lead to a significant change in OR culture, decrease in SSI, AND other unexpected improvements
- *Ongoing* hospital wide team effort
 - Masks worn at all times while in the operating ROOMS
 - Closing trays separated at the beginning of the case
 - There will be bumps in the road as other issues compete for attention – you must stay focused

i – Clicker Question 1

Q: How did we achieve our overall infection rate reduction?

- a) Strict adherence to SCIP measures
- b) Valiant multifaceted effort to improve the overall culture
- c) Utilization of all the newest antibiotics that bacteria have not had time to build resistance against
- d) All of the above

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