
SHEA 2015: Pragmatic Lessons Learned in Surgical Infection Prevention Studies

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Disclosures: Conducting a trial (ABATE) in which participating hospitals are
Receiving CHG contribution from Sage and Molynecke

Objectives

- Define implementation strategies to prevent surgical infections from the STOP SSI AHRQ study experience
- Identify common barriers to adoption and resolutions
- Describe essential components for success in multicenter studies

STOP SSI Study Bundle and Surgical Populations

- Bundle elements were:
 - Screening patients' nares for *S. aureus*
 - Decolonizing carriers with intranasal mupirocin & chlorhexidine bathing
 - Using vancomycin & cefazolin for perioperative prophylaxis among MRSA carriers
 - AHRQ Contract #HHSA 29022006100021i (Task order 3)
- Study population
 - 20 Hospital Corp. of America (HCA) affiliated hospitals
 - Adult patients having primary hip or knee arthroplasty or primary cardiac operations through median sternotomies



Implementation

- Central coordination from corporate infection prevention team
- Webinars and coaching calls
- Launch of toolkit resources on corporate intranet site
 - Standard protocols
 - Instruction and education sheets to patients and caregivers
 - Electronic and paper ordersets
 - Compliance check tools
- Compliance from common EHR system

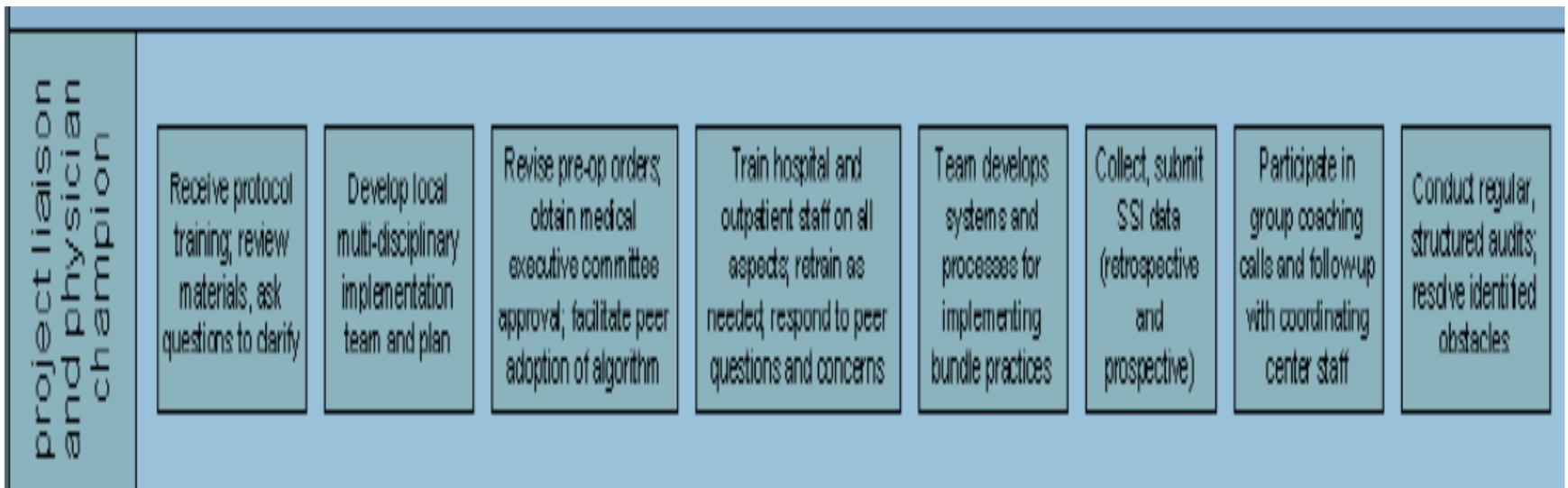
Key Stakeholders for Initiative

- Corporate leadership
- Hospital leadership
- Infection prevention
- Surgical Services directors and nursing
- Local study champion
- Information Technology & Systems
- Pharmacy
- Supply chain
- Marketing
- Quality

Coach Teams Routinely

- **Implementation Phase**
 - Communicate the goal / create the vision
 - Define each member's roles and responsibilities
 - Hospital protocol
 - Electronic order set
- **Deployment Phase**
 - Supply chain requests
 - Nursing education (CHG bathing, mupirocin, documentation)
 - Define process and outcome metrics (compliance, SSI)
 - Study champion reports status
- **Sustainment Phase**
 - Identify opportunities and refine the process
 - Monitor process metrics daily, then weekly, then monthly

Implementation Activities



Implementation Activities

<p>outpatient surgical office staff</p>	<p>Set up systems and processes to identify eligible outpatients</p>	<p>Obtain supplies, CHG liquid, mupirocin and equipment as needed</p>	<p>Set up processes for MSSA & MRSA screening 10 to 14 days before operation</p>	<p>Set up processes, for receiving lab results and communicating information to surgeons pre-op</p>	<p>Establish process and materials for educating pre-op patients on use of CHG and mupirocin when indicated</p>	<p>Followup, track, document patient adherence to CHG and mupirocin instructions</p>	<p>Communicate key information to inpatient pre-op health care personnel</p>	<p>Communicate best practices; coordinate across continuum of care</p>
<p>inpatient nursing and pre-op surgical staff</p>	<p>Set up systems and processes to identify eligible inpatients</p>	<p>Set up processes, equipment for MSSA and MRSA screening of urgent or emergent patients admitted through ED or in units</p>	<p>Obtain supplies, CHG cloths and warmers, mupirocin</p>	<p>Establish process to administer, document application of pre-op CHG and mupirocin as indicated</p>	<p>Ensure new, weekend and off-shift staff understand protocol and maintain adherence</p>	<p>Facilitate awareness and adoption of evidence based practices</p>		

Implementation Activities

information technology staff	Healthcare system IT staff create EHR screens document practices and run reports	Standardized screens, reports shared with IT staff at each site	Standardized screens shared with IT staff at each site; training	Local IT installs updates	Local IT analyst, nurse managers and educators train staff on new screens
pharmacy and laboratory staff	Obtain equipment and supplies as needed from supply chain management	Communicate lab results to pharmacy and other health care personnel	Pharmacy reviews new orders against protocol for eligible patient to ensure orders match up with screening results	As needed, assist with renewing or discontinuing mupirocin orders post-op	

Provide Routine Feedback to Stakeholders

- **Quality of CHG bathing**

- Random direct observation

- **Compliance with bundle elements**

- Nares Screening: standard lab test and report

- CHG: electronic reports from nursing documentation

- Mupirocin: electronic reports from medication administration

- Perioperative antibiotics administered

- **Surgical documentation**

- Use of standardized order sets

Identify Outliers and Address Individually

- **Are providers resistant of the combined protocol?**
 - Provide the evidence
 - Provide support through peer to peer conversations
- **Is the process optimal?**
 - Listen and understand the issue/s
 - Supplies out-of-stock or not being used?
 - Baths being missed the day of surgery?
 - Patients refuse CHG bath?
 - Mupirocin not purchased before surgical visit
- **Are nursing staff/techs unsupportive?**
 - Review the science and purpose
 - Ensure supplies are convenient to workflow

Institutional Context: **Healthcare Network**

■ *Facilitators:*

- ▲ Corporate physician champion (e.g., site visits, phone calls)
- ▲ Infrastructure & resources (e.g., centralized IRB & training, shared electronic health record [EHR], supply chain)
- ▲ Project team support

■ *Barriers:*

- Time necessary to resolve hospital-level barriers (e.g., development of order sets & reports in EHR)

Organizational Context: **Hospital Level**

■ *Facilitators:*

- ▲ Establishing order sets in local EHRs
- ▲ Educating & cross-training personnel

■ *Barriers:*

- ▲ Obtaining committee approval
- ▲ Developing processes for urgent/emergent operations
- ▲ Hardwiring practice across shifts
- ▲ Documenting bundle compliance
- ▲ Ensuring supplies were available

Individual Action: **Hospital staff & surgeons**

■ *Facilitators:*

- ▲ Strong local champion
- ▲ Personalized education/training

■ *Barriers:*

- ▲ Resistance & autonomous decision making
- ▲ Time constraints (e.g., documenting, auditing)

Patterns of Interaction:

■ *Facilitators:*

- ▲ Communication & partnerships among surgeons, clinics & hospitals
- ▲ Information technology used for alerting & documenting
- ▲ Solutions (e.g., patient education material & checklists) shared during coaching calls

■ *Barriers:*

- ▲ Priorities conflict
- ▲ Decentralized offices
- ▲ Complex communication channels among patients & providers, & among care sites
- ▲ Healthcare network or hospital demands

Conclusions

- Concordant with current SSI prevention guidelines.
- Implementation readiness varies:
 - Two sites ready within 2 months
 - Eleven sites ready within 3 months
 - Eight sites ready within 4 months
- Relatively simple to maintain because it does not require expensive technology or additional staff.
- Generalizability:
 - May be limited to apply within large academic health centers or to hospitals without strong infrastructures for quality improvement.