Clinical Safety & Effectiveness
Cohort #16
Increasing Utilization of the Chlorhexidine Gluconate (CHG) Preoperative Antiseptic Bath at University Hospital in Total Hip Arthroplasty Patients
The Team
A UTHSCSA-sponsored multidisciplinary Quality Improvement Project by the Departments of Orthopaedics and Infectious Disease

- Jessica Coleman, MSN, RN, CIC, Team Leader, CSE Participant
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Sponsor Department:
- John Toohey, M.D. – Orthopaedic Surgery Residency Program Director
- Robert Quinn, MD, Orthopaedic Surgery Chairman
- UHS Department of Infection Control
- University Hospital Surgical Floor Unit
Project Milestones

- Team Created: December 2014
- AIM statement created: January 30, 2015
- Weekly Team Meetings: January-May 2015
- Background Data, Brainstorm Sessions: February-May 2015
- Workflow and Fishbone Analyses: February 2015
- Interventions Implemented: February-May 2015
- Data Analysis: May 06, 2015
- CS&E Presentation: June 5, 2015
Background

- Surgical Site Infections are responsible for significant morbidity, mortality and excess use of health care resources ($1.6 billion/year).
- Preadmission antiseptic shower is an effective strategy for reducing the risk of SSIs.
- CHG application decreases skin surface levels of bacteria.
- CHG bactericidal activity is rapid against vegetative gram-positive and gram-negative bacteria.
- Studies showed that CHG showers/baths pre-op protocol lowers incidence in periprosthetic hip arthroplasty infections.

Why Implement this protocol?

- UHS Surgical floors and trauma units have not used CHG products according to the Revenue and Usage data of 2014.

- Chart Review of total hip surgery patients did not indicate the use of CHG pre op or 24 hours before surgery.

- University Hospital had 3 THA SSI in 2014 & 1 in first quarter of 2015.

- Goal is ZERO healthcare acquired infections (HAIs).
University Hospital Total Hip Anthroplasty Patients
Who Received CHG Bath

Baseline

Mar-14 Apr-14 May-14 Jun-14 Jul-14 Aug-14 Sep-14 Oct-14 Nov-14 Dec-14 Jan-15

Percent

0.0% 10.0% 20.0% 30.0% 40.0% 50.0% 60.0%

Baseline

CL

UCL

0.024

0.252
Process Analysis Tools

Patient Characteristics
- Cultural preference
- Lack of knowledge on their risks for SSI
- Immobilization
- Compliance
- Perception of pain
- Allergies
- Supplies unavailable
- Limited research on the effectiveness of CHG in hip surgeries
- Lack of education on recommended technique for CHG bathing
- No SSI bundle

Nursing Staff
- Lack of training in CHG bathing the preferred surgical site
- No standing order for pre op CHG bath
- Lack of awareness of an SSI Bundle
- Low Prioritization
- Inconvenience
- Staffing Levels
- Perception of discomfort for patients
- Lack of SSI bundle awareness
- No standing order for pre op CHG bath
- Lack of role modeling
- Differences on surgical site preferences by provider

Environment

Providers

Low utilization of Pre op CHG bath

Process Analysis Tools - Ishikawa/Fishbone Diagram
PLAN: Intervention

• All orthopaedic consultants, residents, nursing directors and PCCs in the surgical floors will be made aware and will be asked to participate.

• All orthopaedic consultants and residents will order pre op CHG bath to all inpatients who will undergo total hip arthroplasty surgery.

• A nurse (PCC) in the surgical floor will be recruited to be a part of the team.

• The nursing staff will bathe the patient preoperatively at least 24 hours before surgery.

• An infection control practitioner will review the patient’s charts to ensure that pre op CHG baths were ordered by providers and performed by the nursing staff.
DO: Implementing the Change

- Signs on the wall in the physician’s rooms/ call rooms.
- Emails and verbal reminders sent out to all orthopaedic consultants and residents.
- Project discussion during lectures with orthopaedic residents and with the Chief of Orthopaedics.
- Emails and verbal discussion with the nursing directors, patient care coordinator in the surgical floor.
- Standing Order set was implemented on May 1, 2015.
DO: Implementing the Change

[Image of medical form and computer interface]
Inpatient Pre-op CHG Shower Implementation
Flow Chart

1. Patient sustains a fracture
2. Patient admitted seen & evaluated by orthopedic surgery
3. Patient cleared for surgery by anesthesia or medicine
   - Yes
     - Order received for Pre OP CHG Shower/Bath by Primary Care RN
       - Yes
         - Primary Care RN utilizes CHG to Bath/Shower Patient 24 hours PRE OP
         - Yes
           - PT to OR for HIP FIXATION
        - No
          - Surgery postponed or cancelled
   - No
     - Order written for PRE OP CHG Shower/Bath by Ortho M.D.
       - Yes
         - Patient medically optimized and cleared for OR
       - No
         - Surgery postponed or cancelled

Process Analysis Tools - Flowchart
University Hospital Total Hip Arthroplasty Patients
Who Received CHG Bath

Percent

Pre and Post Intervention
ACT: Sustaining the Results

- Continue with implementation of the project until data can be analyzed and observed if there is a decrease in THA SSI (6 months)

- Our team will continue to meet monthly and send updates to the stakeholders

- If a concomitant decrease in SSI is noted, will discuss adopting the protocol of CHG bathing from General Surgery Surgical Site Infection Task Force
Return on Investment

- CHG soap 4 oz. = $1.98/btl
- CHG soap 16 oz. = $5.78/btl
- CHG Sage 2% cloth = $2.33/pack
- UH Average THA’s per month = 3
- Hospital cost for readmitted pt. for SSI March, 2015 = $19,000.00

ROI = \( \frac{19,000 \text{ (savings)}}{2.33 \text{ (CHG cloth)}} \) = 8,154.51 for one patient

Potential savings in one year if even one SSI prevented monthly = $228,000
Conclusion/What’s Next

- Continue to monitor and track the utilization of CHG pre-op
- Continue to work with stakeholders to implement an SSI bundle for all surgeries at University Hospital
- Introduce the order set for CHG bath/shower to the medical team
- Continue promoting the pre op use of CHG to the Ortho team (new residents, medical students)


The Team

Eva  Jessica  Jacquelyn

Eva  Jessica  Jacquelyn

Antonio
Thank you!