

# Preventing Surgical Site Infections - Past, Present & Future Strategies

Lorretta Litz Fauerbach, University of Florida, Shands  
A Webber Training Teleclass

**Preventing Surgical Site Infections:  
Past, Present & Future Strategies**

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**Objectives**

- To identify the components in the Surgical Care Improvement Project
- To list the risk factors for surgical site infections according to the NHSN including newer data
- To evaluate the role of newer technologies in preventing surgical site infections
- To identify key stake holders and reporting mechanisms for a strong surgical site infection prevention program.
- To identify challenges with data collection and strategies to improve communications related to identifying surgical site infections

**Surgical Site Infections (SSI's)  
General Background**

- 2.6% of 30 million operations complicated by SSI's
- SSI's Second most common healthcare associated infection accounting for 17% of all hospital acquired infections
- SSI's most common healthcare associated infection in surgical patients (38%)
- Consequences of SSI
  - Increased hospital stay by up to 10 days
  - Increased hospital costs
  - Increased readmission rates
  - Increased pain and suffering

CDC, 2003

**Impact of SSIs**

- ❑ Occur in 2%-5% of patients undergoing inpatient surgery in the United States.
- ❑ Approximately 500,000 SSIs occur each year
- ❑ 7-10 additional post operative hospital days
- ❑ 2-11 times higher risk of death compared to patients who do not have an SSI
- ❑ Patients with an SSI have a 2-11 times higher risk of death, compared with operative patients without an SSI.
- ❑ 77% of deaths in patients who have an SSI are directly attributable to SSI
- ❑ Attributable costs vary depending on procedure and organisms but range from \$3000 to \$29,000
- ❑ SSIs are believed to account for up to \$10 billion annually in healthcare expenditures.

**SSI Definitions**

- CDC/NNIS/NHSN
- Types
  - **Superficial incisional** (involving only skin or subcutaneous tissue of the incision)
  - **Deep incisional** (involving fascia and/or muscular layers)
  - **Organ/space**

**NPSG.07.05.01**  
Implement best practices for preventing surgical site infections.

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## Basic practices for prevention and monitoring of SSI:

1. Perform surveillance for SSI (A-II).
2. Provide ongoing feedback on SSI surveillance and process measures to surgical and perioperative personnel and leadership (A-II).
3. Increase the efficiency of surveillance through the use of automated data (A-II).

## SSI Surveillance Methods

- ❖ **Daily Direct Observation** by trained person starting 24-48 hours after surgery
  - *Considered to be the most accurate method of surveillance, but rarely used due to resource limitation*
- ❖ **Indirect SSI surveillance** using a combination of sources
  - *Microbiology and Patient Records*
  - *Survey of surgeons and patients*
  - *Re-admission tracking*
  - *Other information including coded dx, or op reports*
  - **Efficacy of Indirect Surveillance**
    - *Less time consuming, IP can perform during surveillance rounds*
    - *Reliable (sensitivity, 84%-89%) and specific (specificity, 99.8%) when compared to "gold standard" of direct surveillance.*

## Automated Surveillance

- **Expanded by using hospital databases**
  - data on administrative claims,
  - days of antimicrobial use,
  - readmission to the hospital,
  - return to the operating room
- **Automatically import data**
  - microbiologic culture data,
  - surgical procedure data, and
  - general demographic information
- **Improve the sensitivity of indirect surveillance for detection of SSI**
- **Improve IP efficiency in data collection**

## Special Approaches for SSI Prevention

1. Perform an SSI risk assessment.
  - a) Identify areas that surveillance data suggest lack of effective control.
  - b) Elements to Consider
    - High Risk -High Volume
    - Surveillance Data
      - Rates
      - Processes
      - Organisms
      - Strategies
2. Perform expanded SSI surveillance to determine the source, extent of the problem and to identify possible targets for intervention.
  - a) Case finding
  - b) Observational studies
  - c) Check adherence rates to best practice

## Perform Surveillance A-II

- High Risk - High Volume
- Identify, collect, store, and analyze data needed for the surveillance program.
- Implement a system for collecting data needed to identify SSIs.
- Develop a database for storing, managing, and accessing collected data on SSIs.
- Prepare periodic SSI reports (the time frame will depend on hospital needs and volume of targeted procedures).

## Perform Surveillance A-II

- Collect denominator data on all patients undergoing targeted procedures, to calculate SSI rates for each type of procedure
- Identify trends (eg, in rates of SSI and pathogens causing SSIs).
- Use CDC and NHSN definitions of SSI
- Perform indirect surveillance for targeted procedures.
- Perform postoperative surveillance for 30 days; if prosthetic material is implanted during surgery then follow for 12 months

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#### Post Discharge SSI Surveillance

- More Procedures are being done in outpatient setting
- Shorter Post OP stays for Inpatients
- No standard method for Post OP SSI surveillance
  - o Questionnaires to patients, surgeons, or clinics
  - o Shown to have poor sensitivity and specificity.
- Rates do increase after Post Op Surveillance implemented
- Superficial incisional infections usually managed as outpatient
- Deep incisional and organ/space infections typically require readmission to the hospital for management.

#### Infrastructure Requirements

Trained personnel

- Infection prevention and control personnel
  - SSI surveillance,
  - Able to apply CDC definitions of SSI,
  - Basic computer and mathematical skills, and
  - Good communication skills and adept at providing feedback and education to healthcare personnel when appropriate.

#### Computer assisted decision support and making and automatic reminders

- Use computer support to improve pre-op administration of antimicrobial prophylaxis
  - Initial and repeat doses
  - Stop orders
- Utilization of automated data
  - Tracking
  - Monitoring

#### Feedback

**Provide ongoing feedback on SSI surveillance and process measures to surgical and perioperative personnel and leadership (A-II).**

- Routinely provide feedback on SSI rates and process measures to individual surgeons and hospital leadership.
- For each type of procedure performed, provide risk adjusted rates of SSI.
- Anonymously benchmark procedure-specific risk adjusted rates of SSI among peer surgeons.
- Confidentially provide data to individual surgeons, the surgical division, and/or department chiefs.

#### Will this help?

30% of SSI are preventable with appropriate use of preoperative antibiotics\*

\*Dellinger EP 2005

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## Prevention of SSI: Process

- MD to treat any existing infection at remote site (urine, bloodstream, etc.)
- Remove hair only when necessary
  - » Do not shave
  - » When necessary, use clippers or depilatories
- Control hyperglycemia
- Implement preoperative showers--CHG preferred
- Administer surgical prophylaxis according to guidelines
- Maintain appropriate oxygenation control
- Maintain normothermia/control of hypothermia

CDC SSI Guideline 1999

## SSI Complexity

- Microbial characteristics (eg, degree of contamination and virulence of pathogen)
- Patient characteristics (eg, immune status and comorbid conditions)
- Surgical characteristics (eg, type of procedure, introduction of foreign material, and amount of damage to tissues)

## Extrinsic Procedure Related Perioperative: Patient Preparation

### Hair Removal

- Do not remove hair unless hair will interfere with the operation
- If hair removal is necessary remove by clipping.
- Do not use razor. A I

### Preoperative Infections

- Identify and treat remote infections prior to elective surgical procedures. A II

## SSI Prevention Guidelines Preparation of Patient

Category 1A: Do Not Remove Hair at the incision site, unless it will interfere with surgery itself. If the hair must be removed, do it directly beforehand, preferably with electric clippers.

Category 1B: Pre-surgical patients should perform an antiseptic shower at least the night before and preferably also the morning of the scheduled surgery. Wash and clean the incision site area, scrubbing lightly to remove any gross skin contamination prior to antiseptic surgical preparation.

CDC, 1999

## Hair Removal Method Shaving vs Clipping

Hair Removal Method	Clean Wound Infection Rate (%)
Shaved with razor	2.5
Clipped	1.7
Electric razor	1.4
Not shaved, not clipped	0.9
Depilatories	0.6

Cruce and Forde, 1981

The increased risk with shaving prior to the operation is associated with microscopic cuts and shaving immediately before seriously reduces the SSI risk (20% risk if shaved > 24hrs--CDC, 1999).

## Implement evidence based standards A-II

- Policies and practices should include but are not limited to the following:
  - Reducing modifiable patient risk factors
  - Optimal cleaning and disinfection of equipment and the environment
  - Optimal preparation and disinfection of the operative site and the hands of the surgical team members
  - Adherence to hand hygiene
  - Traffic control in operating rooms

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### Intrinsic Patient Related Perioperative

<p><b>Unmodifiable</b></p> <ul style="list-style-type: none"> <li>• <b>Age</b> <ul style="list-style-type: none"> <li>- No formal recommendation: relationship to increased SSI due to comorbidities or immune status.</li> </ul> </li> </ul> <p><b>Modifiable</b></p> <ul style="list-style-type: none"> <li>• <b>Glucose Control, diabetes</b> <ul style="list-style-type: none"> <li>- Control serum glucose levels</li> <li>- Reduce glycosylated hemoglobin A1c levels to &lt;7% before surgery, if possible. A-II</li> </ul> </li> </ul>	<p><b>Modifiable, continued</b></p> <ul style="list-style-type: none"> <li>• <b>Obesity</b> <ul style="list-style-type: none"> <li>- Increase dosing pre-op antimicrobial prophylaxis for morbidly obese patients. A-II</li> </ul> </li> <li>• <b>Smoking Cessation</b> <ul style="list-style-type: none"> <li>- Encourage within 30 days before procedure A-II</li> </ul> </li> <li>• <b>Immunosuppressive Meds</b> <ul style="list-style-type: none"> <li>- No formal recommendations</li> <li>- Avoid if possible in perioperative period if possible. C-II</li> </ul> </li> </ul>
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### Operative Characteristics

- **Surgical Scrub**
  - Use appropriate antiseptic agent to perform 2-5 minute preoperative surgical scrub or an alcohol-based surgical hand antiseptic product. A-II
- **Skin Preparation**
  - Wash and clean skin around incision site; use an appropriated antiseptic agent. A-II


### Operative Characteristics

- **Surgical skill/technique**
  - Handle tissue carefully and eradicate dead space A-III
- **Antisepsis**
  - Adhere to standard principles of operating room asepsis A-III
- **Operative Time**
  - No formal recommendation in most recent guidelines; minimize as much as possible A-III


### Operative Characteristics Operating Room

- **Ventilation**
  - Follow AIA recommendations C-I
- **Traffic**
  - Minimize operating room traffic B-II
- **Environmental Surfaces**
  - Use a US Environmental Protection Agency-approved hospital disinfectant to clean surfaces and equipment. B-III
- **Sterilization of surgical equipment**
  - Sterilize all surgical equipment according to published guidelines B-II
  - Minimize the use of flash sterilization

### Protective Apparel for OR Non-scrubbed Personnel

 <ul style="list-style-type: none"> <li>• <b>Mask</b> <ul style="list-style-type: none"> <li>- Cover mouth and nose, tie securely and so the mask is not loose under nose or chin</li> <li>- Do not lower mask to scratch nose while in OR</li> <li>- Remove mask when exiting OR and replace with new one upon return</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Cap</b> <ul style="list-style-type: none"> <li>- Remove mask when exiting OR</li> <li>- Contains hair</li> <li>- Cover beard by using hood in place of simple cap</li> </ul> </li> <li>• <b>Scrubs</b> - fresh clean scrubs           <ul style="list-style-type: none"> <li>- Warm up jackets or gowns for non-scrubbed staff can be used</li> </ul> </li> </ul>
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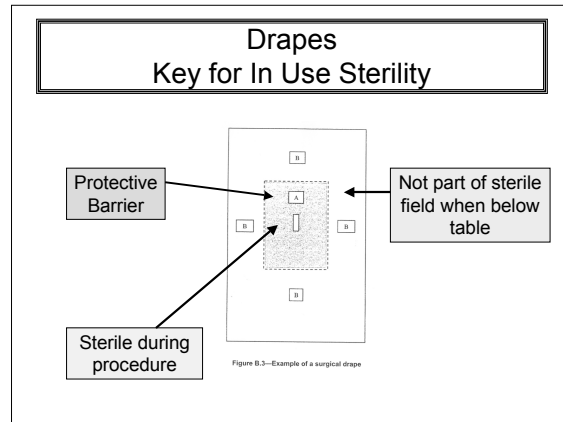
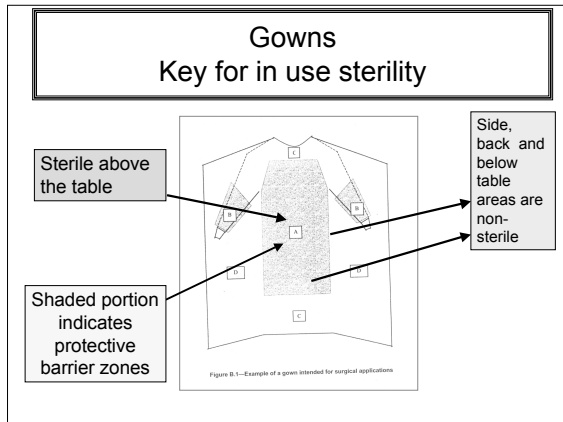
### Sterile Gowns



- **Select Sterile gowns**
  - When you will be at the sterile field
  - When you are inserting a central line
- **Select based on level of potential blood exposure**
  - Impervious
  - Fluid Resistant
- **Twirl for closure and Tie securely**
- **Maintain sterile area**
  - Sides and back are not considered sterile
  - Do not turn side or back to sterile field within 1'

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- Gowns for Non-scrubbed Personnel**
- Select gown for blood borne pathogen protection requirements
    - How likely are you to be splattered during a procedure?
    - How likely are you to contaminate yourself with potentially infectious material
    - Is the patient on isolation precautions?

- Lead Aprons**
- Establish cleaning procedure
    - After use
    - Inspect prior to procedure to make sure they are clean and ready to go
    - Hang and store to prevent contamination by splashing

- General Infection Control for Non-scrubbed Participants**
- Hand Hygiene
    - Prior to entry of OR
    - After touching patient or patient's equipment
    - During procedure as appropriate
  - Wear gloves if likely to be contaminated with blood or body fluids
  - Wear mask appropriately

- Hand Hygiene and changing gloves is critical for infection prevention**
- **Alcohol gel : Place on cart or desk for easy access and use**
    - Perform hand hygiene and don clean gloves before and after handling patient devices
      - IV, Foley, etc
    - Perform hand hygiene before and after positioning patient

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### General Infection Prevention for Non-scrubbed Participants

- Use appropriate technique to enter vials
  - Clean top with alcohol - do not just pop or access without cleaning
- Maintain distance from sterile field
  - Non-sterile participants must maintain at least a 12" distance from sterile field
- Minimize talking
- Minimize moving around in room
- Maintain all precautions until surgery is completed and surgical site is closed

### Room Set Up

• Make sure tables are clean before starting to set up the room  
• Set up using sterile technique  
• Evaluate the amount of items that are opened and on sterile table

Maintain sterility of equipment cover  
• Do not turn back to equipment

Anesthesia Cart

Patient

Sterile field tables  
• Set up so there is 1' clearance for staff to work between tables  
• Do not turn back to sterile field within 1'  
• All non-scrubbed staff must maintain distance

Below table tops are not sterile - do not bend down or turn to side

### OR Traffic Flow

- Personnel must enter by sub-sterile room
- Enter by larger corridor door only when
  1. Bringing patient into room
  2. Bringing large equipment into room
- Do not enter by larger doors during procedure
  - May enter if a piece of equipment is absolutely necessary for case
- Keep doors to corridor closed at all times except for above situations (1&2)

### Equipment & Product Reps

- Educate and require sign in prior to coming to OR
  - All reps must complete mandatory Infection Control Education
- Wear hospital provided scrubs
- Perform hand hygiene prior to entry and as appropriate during case
- Don and wear mask appropriately
- If going to be near sterile field to assist in equipment utilization, representative should:
  - Wear sterile attire
  - Scrub in
  - Use laser pointer
- Consider wearing long sleeve jacket or gown to decrease shedding
- Limit the number of observers to those who are essential to the case
- Limit movement and talking in OR suite during procedure

### Handling of Equipment from Outside Company

- Must be cleaned, inspected and sterilized by SUF OR staff
  - Staff should use appropriate lighting and magnification to inspect smaller pieces
  - OR techs must inspect for cleanliness and residual debris after restocking by representative prior to sterilization
- Equipment must be brought to OR the day before surgery to assure appropriate handling
- No routine flash sterilization of company equipment

### Safe Management of Fluids

- Set up fluid basins using sterile technique
- Label all fluid basins with content and dose
- Change all fluids every 4 hours for longer procedures
- Use single use products
  - Product vials must be maintained until the end of surgery as a patient safety measure
  - Discard at end of case
- When in doubt - throw it out!
  - Discard fluid from basin if any potential for contamination occurs

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## Maintain sterile fields and practices until site is completely closed

- Do not start to break down tables and remove hoses etc while suturing is being done

## Operating Room - Patient Advocacy

- Maintain watchful eye for any break in sterile technique
- Empower everyone to point out breaches
- Circulator should actively assist in observing practice and recognizing breaches
- Everyone is responsible for the patient's safety!

## SSI Prevention Practices

1. Administer antimicrobial prophylaxis in accordance with evidence-based standards and guidelines (A-I).
2. Do not remove hair at the operative site unless the presence of hair will interfere with the operation; do not use razors (A-II).
3. Control blood glucose level during the immediate postoperative period for patients undergoing cardiac surgery (A-I).

## Operative Characteristics SCIP Antimicrobial prophylaxis

### Administer antimicrobial prophylaxis only when indicated A-I

- **Timing**
  - o Administer within 1 hour before incision to maximize tissue concentration A-I
  - o Vancomycin and fluoroquinolones can be given 2 hours before incision.
- **Choice**
  - o Select appropriate agent on basis of surgical procedure, most common pathogens causing SSI for a procedure, and published recommendations. A-I
- **Duration of Therapy**
  - o Stop prophylaxis within 24 hours after the procedure for all procedures, except cardiac surgery; for cardiac surgery, antimicrobial prophylaxis should be stopped within 48 hours. A-I

## Do not use these strategies routinely to prevent SSIs

1. Do not routinely use vancomycin for antimicrobial prophylaxis;
  - a) vancomycin can, however, be an appropriate agent for specific clinical circumstances (B-II).
  - b) Reason for use must be documented
  - c) Does not cover gram negative bacteria
2. Do not routinely delay surgery to provide parenteral nutrition (A-I).

## SSI Prevention Measures

4. Measure and provide feedback to providers on the rates of compliance with process measures, including antimicrobial prophylaxis, proper hair removal, and glucose control (for cardiac surgery) (A-III).
5. Implement policies and practices aimed at reducing the risk of SSI that meet regulatory and accreditation requirements and that are aligned with evidence-based standards (eg, Centers for Disease Control and Prevention and professional organization guidelines) (A-II).



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#### SSI Prevention Education

Educate surgeons and perioperative personnel about SSI prevention (A-III).

- Teach strategies aimed at minimizing perioperative SSI risk through implementation of recommended process measures.
- Provide education regarding the outcomes associated with SSI, risks for SSI, and methods to reduce risk to all patients, patients' families, surgeons, and perioperative personnel.
- Local epidemiology including MDROs including MRSA
- Basic prevention strategies

#### SSI Prevention Education

Educate patients and their families about SSI prevention, as appropriate (A-III).

- Provide instructions and information to patients before surgery, describing strategies for reducing SSI risk.
- Specifically provide preprinted materials to patients in accordance with evidence-based standards and guidelines

#### Patient Safety Handout

##### Points Discussed / Questions asked in Handout:

- Will I receive and antibiotic prior to surgery?
- Should I take a shower with antibacterial soap prior to surgery?

##### Infection Control Tips:

- Keep your hands clean
- Do not hesitate to ask your healthcare provider if he/she has washed their hands
- Cover your mouth and nose when you cough or sneeze. Discard the tissue and then clean your hands
- Safely care for wounds and catheters by learning proper aseptic or clean techniques
- Handle needles and other sharp items safely and discard into a sharps container to prevent injury to you and others



#### Web Pages and materials for patients

- JAMA patient page: wound infections (from the *Journal of the American Medical Association*; available at: <http://jama.ama-assn.org/cgi/reprint/294/16/2122>)
- Surgical Care Improvement Project consumer info sheet (available at: [http://www.ofmq.com/Websites/ofmq/Images/FINALconsumer\\_tips2.pdf](http://www.ofmq.com/Websites/ofmq/Images/FINALconsumer_tips2.pdf))
- What you need to know about infections after surgery: a fact sheet for patients and their family members (available at: <http://www.ihj.org/NR/rdonlyres/0EE409F4-2F6A-4B55-AB01-16B6D6935EC5/0/SurgicalSiteInfectionsPtsandFam.pdf>)

#### IHI SSI Prevention Bundle

- Appropriate use of antibiotics
- Appropriate hair removal
- Maintenance of post operative glucose for major cardiac surgical patients
- Post operative normothermia for colorectal surgery patients



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## Unresolved Issues

- Routine screening for MRSA or routine attempts to decolonize surgical patients with an anti-staphylococcal agent in the preoperative setting
  - Timing
  - Opportunity
- Mupirocin in specific patient groups undergoing orthopedic or cardiac surgery may be effective
  - Not randomized controlled trials.
- Preoperative intranasal and pharyngeal chlorhexidine treatment for patients undergoing cardiothoracic procedures
  - Although data exist from a randomized, controlled trial to support its usage, chlorhexidine nasal cream is neither approved by the US Food and Drug Administration nor commercially available in the United States.

## Unresolved Issues

- Maintaining oxygenation with supplemental oxygen during and after colorectal procedures

## Unresolved Issues

- Maintaining normothermia (temperature higher than 36.0C) immediately after colorectal surgery

## Do the new Antimicrobial Products reduce SSIs?

### Product Types

- Sutures
- Dressings
- Skin Preps or Cleansers
  - Wipes
  - Other forms

### Future Needs

- Industry sponsored
- Multi-center trials needed
- Independent studies with enough cases
- Value Analysis

## Patient Preoperative Shower Packet

The packet given in the clinics or during preop testing should contain:

- Instruction sheet
- Patient Safety Handout
- Packet or container with CHG product

Other areas for pre-operative showering:

- Pre-op Admissions or Pre-Op Holding Area
- Pre-admission on a floor or ICU

Documentation of pre-operative showering:

- Pre-op nursing notes in holding area
- Clinic notes
- Transplant coordinator notes
- Unit nurse who assisted with bath

## CHG Showering Info




- Preoperative shower or bath with CHG reduces skin microbial counts more effectively than povidone-iodine or other antimicrobial soaps
- Bathing 2 times with CHG (once the evening before & then the morning of ) is recommended to increase effectiveness.
- Daily showering with CHG has been shown to reduce Catheter associated bacteremias and MRSA.

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**Pre-Operative Showering & No Shaving  
for the Prevention of Surgical Site Infections**

**Tips for SSI Prevention:**

- Showering with CHG soap both the night before and morning surgery
- Shaving is no longer recommended unless ordered specifically by the physician

Why Pre-op Shower, you ask? To reduce normal skin flora at the surgical site and minimize the risk of developing infections. Also, by not shaving any areas, you keep the skin intact and reduce micro tears that could become sources of infection.

**What do I tell the patient to do:**

- Shower both the night before and the morning of the surgery
- Use the CHG soap provided at time of the clinic visit
- Do not shave any areas of the body within 48 hours prior to surgery
- Scrub body from head to toe avoiding mucous membranes, eyes, ears, etc.
- Dry off with clean dry towel

**What do I Give to the Patient:**

- Written instructions and information sheet
- CHG soap (approximately 30 ccs)

**How do I document this information:**

- Please note in the progress / clinic note that info and product was given
- If in Pre-Op area, please note on peri-operative form if pt showered in pm and am

**Questions:**

Please call Infection Control

Thank you for your participation in this initiative to reduce Surgical Site Infections.

**Preoperative Chlorhexidine Bathing Instructions**

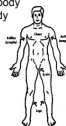
Once the decision to have surgery has been made, there are a few steps you can take to reduce your risk of acquiring an infection at the surgical site. Your skin is not sterile and contains germs that are present everyday. We are able to live with these germs because of our skin barrier. Once the barrier is broken, for example, with a surgical incision, you become more vulnerable to these germs. In an effort to protect yourself from these germs, a preoperative shower with a special soap is recommended. This soap contains a substance called chlorhexidine gluconate (CHG) and helps to reduce the numbers of bacteria on your skin. This soap will be given to you or it may be purchased at a local drug store. (Call ahead and ask if it is in stock).

\*Not to be used by people with known allergies to chlorhexidine. If an allergic reaction occurs, call your doctor immediately.

**Soap is for topical use only; DO NOT DRINK**

Bathing Instructions:

- 1) Shower or bathe with CHG both the night before and the morning of your surgery. Do **NOT** shave any body area.
- 2) Wash your hair in the usual fashion with your own shampoo and rinse your hair and body thoroughly.
- 3) **From the neck down**, apply the CHG to your entire body paying close attention to the areas where your surgery will be performed. (DO NOT put the CHG near your face, eyes, or ears as it can cause permanent damage).
- 4) Turn the water off to prevent rinsing prematurely and continue to lather and wash your body for 5 minutes. Do NOT scrub your skin too hard as you wash and do not wash your body with regular soap after the CHG.
- 5) Turn the water back on and rinse thoroughly, then pat yourself dry with a clean, fresh towel.



Pay particular attention to the circled areas

## References

- CDC Prevention of Surgical Site Infections, 1999 <http://www.cdc.gov/ncidod/dhqp/pdf/guidelines/SSI.pdf>
- Altemeir WA, Burke JF, Pruitt BA, Sandusky WR and the American College of Surgeons, Committee on Control of Surgical Infections of the Committee on Pre-and Postoperative Care. Manual on Control of Infection in Surgical Patients. Second Edition. JB Lippincott Company, Philadelphia, 1984.
- Janelle J, Howard, RJ, and Fry D. Chapter 23 Surgical Site Infections. APIC Text of Infection Control and Epidemiology, 2nd Edition, 2005.
- Mangram AJ, Horan TC, Person ML, Silver LC, Jarvis WR. The Hospital Infection Control Practices Advisory Committee. Guideline for prevention of surgical site infection. Infection Control and Hospital Epidemiology 1999;20:247-280.
- LeFrock, SHEA Annual Meeting, Philadelphia, 2004.
- Bratzler, DW. Surgical Infection Prevention and Surgical Care Improvement: National Initiatives to Improve Care for Medicare Patients. <http://www.medic.org/dcs/>
- Yokoe DS, Mermel LA, Anderson DJ, Arias KM, Burstin H, et al. Compendium of Strategies to prevent HAIS. Infection Control and Hospital Epidemiology October 2008, Vol. 29, supplement 1 [www.shea-online.org](http://www.shea-online.org)
- World Health Organization [www.who.org](http://www.who.org)
- IHI [www.ihl.org](http://www.ihl.org)

TABLE 2. Strength of Recommendation and Quality of Evidence

Category/grade	Definition
Strength of recommendation	
A	Good evidence to support a recommendation for use
B	Moderate evidence to support a recommendation for use
C	Poor evidence to support a recommendation
Quality of evidence	
I	Evidence from $\geq 1$ properly randomized, controlled trial
II	Evidence from $\geq 1$ well-designed clinical trial, without randomization; from cohort or case-control analytic studies (preferably from $>1$ center); from multiple time series; or from dramatic results from uncontrolled experiments
III	Evidence from opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees

NOTE. Adapted from the Canadian Task Force on the Periodic Health Examination.<sup>27</sup>

THE NEXT FEW TELECLASSES	
04 Jun. 09	Portal of Entry: The Missing Link? Speaker: Jim Gauthier, Providence Continuing Care, Kingston
24 Jun. 09	(South Pacific Teleclass) Tea Tree Oil and Staphylococcal Sepsis Speaker: Prof. Tom Riley, University of Western Australia
16 Jul. 09	(Free Teleclass) ProMED and the Use of Informal Information Sources for Emerging Disease Surveillance Speaker: Dr. Larry Madoff, ProMED Editor, Harvard Medical School
21 Jul. 09	(Free British Teleclass) Fitness for Purpose in Infection Control Speaker: Martin Kiernan, Southport and Ormskirk NHS Trust View
06 Aug. 09	(Free Teleclass) How Professional Associations Can Best Contribute to Infection Prevention Globally Speaker: Dr. Cathryn Murphy, Bond University
13 Aug. 09	(Free Teleclass) Safe Childbirth: What Can Infection Prevention Contribute? Speaker: Patricia Lynch, Chair, IFIC Safe Childbirth Special Interest Group

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