HOW TO BEAT SURGICAL SITE INFECTIONS

Partner up with B. Braun to have the right solutions to fight surgical site infections.
FACTS ABOUT SURGICAL SITE INFECTIONS (SSI)

- 17% of all nosocomial infections in Europe are SSI
- SSI are the 2nd most common type of adverse events occurring in hospitalized patients
- 5% of all patients undergoing a surgery develop an SSI
- Real Data are much higher than reported
- SSI increases the patients length of stay in the hospital by an average of 7.5 days
- AMR would lead to 10 million people dying by 2050
- 38% of all post-OP death are due to SSI
- Treatment Cost are 2.9 times higher than standard treatments
- 10 – 70% can be prevented
### EXCERPT OF GUIDELINES

#### WHO GLOBAL GUIDELINES FOR THE PREVENTION OF SURGICAL SITE INFECTION NOV 2016

<table>
<thead>
<tr>
<th>Topic</th>
<th>Preoperative bathing</th>
<th>SAP (surgical antibiotic prophylaxis)</th>
<th>Hair removal</th>
<th>Surgical site preparation</th>
<th>Surgical hand preparation</th>
<th>Perioperativ oxygenation</th>
</tr>
</thead>
<tbody>
<tr>
<td>KPI (Key Performance Indicator)</td>
<td>all patients prior to surgery</td>
<td>120 minutes before incision</td>
<td>no hair removal</td>
<td>patients undergoing surgical procedures</td>
<td>ABHR (alcohol based hand rub) no-touch or elbow-operated dispenser</td>
<td>adults with endotracheal intubation</td>
</tr>
<tr>
<td>Strength</td>
<td>conditional</td>
<td>strong</td>
<td>strong</td>
<td>strong</td>
<td>strong</td>
<td>strong</td>
</tr>
<tr>
<td>Quality of evidence</td>
<td>moderate</td>
<td>moderate/low</td>
<td>moderate</td>
<td>low to moderate</td>
<td>moderate</td>
<td>moderate</td>
</tr>
<tr>
<td>Recommendation</td>
<td>plain soap or antimicrobial soap</td>
<td>when indicated</td>
<td>no shaving, clipping only if necessary</td>
<td>alcohol based antiseptic solutions based on CHG better than aqueous PVP-I</td>
<td>scrubbing with antimicrobial soap and water OR alcohol-based handrub</td>
<td>80% fraction of inspired oxygen intra OP + 2 – 6 hours post op if feasible</td>
</tr>
</tbody>
</table>

#### CDC GUIDELINE FOR THE PREVENTION OF SURGICAL SITE INFECTION MAY 2017

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>soap or antiseptic agent at least the night before surgery</th>
<th>• only when indicated</th>
<th>• prophylactic in all cesarean section procedures</th>
<th>no shaving - clipping if necessary</th>
<th>alcohol-based antiseptic agent according exposure time</th>
<th>perform preoperative surgical hand/forearm antisepsis according to manufacturer’s recommendations for the product being used</th>
<th>normal pulmonary function with general anesthesia with endotracheal intubation: increased FIO2 during surgery and after extubation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendation level</td>
<td>IB</td>
<td>IB</td>
<td>supplement</td>
<td>IA</td>
<td>supplement</td>
<td>IA</td>
<td></td>
</tr>
</tbody>
</table>

### B. BRAUN SUGGESTION

- use an antimicrobial/antiseptic (non-antibiotic) formulation for body washing once a day 3 – 5 days prior to surgery
- consider the use of SAP according to risk categories for complications after surgical treatment
- use an alcohol based formulation with or without residual antimicrobial effect
- perform preoperative surgical hand/forearm disinfection according to manufacturer’s recommendations

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Category IA: A strong recommendation supported by high to moderate-quality evidence suggesting net clinical benefits or harms.

Category IB: A strong recommendation supported by low-quality evidence suggesting net clinical benefits or harms or an accepted practice (eg, aseptic technique) supported by low to very low-quality evidence.

Category II: A weak recommendation supported by any quality evidence suggesting a trade-off between clinical benefits and harms.
### PRE- AND/OR INTRAOPERATIVE MEASURES

<table>
<thead>
<tr>
<th>Normothermia</th>
<th>Protocols for intensive peri-operative blood glucose control</th>
<th>Sterile surgical equipment</th>
<th>Incisional wound irrigation</th>
<th>Coated sutures</th>
<th>SAP prolongation</th>
<th>Advanced dressings</th>
</tr>
</thead>
<tbody>
<tr>
<td>temperature &gt; 36°C</td>
<td>≤110 mg/dL (6.1 mmol/L), upper limit 110–150 mg/dL (6.1-8.3 mmol/L)</td>
<td>conditional</td>
<td>conditional</td>
<td>conditional</td>
<td>strong</td>
<td>primarily closed surgical wounds</td>
</tr>
<tr>
<td>moderate</td>
<td>low</td>
<td>moderate to very low</td>
<td>low</td>
<td>moderate</td>
<td>moderate</td>
<td>low</td>
</tr>
<tr>
<td>in OR during surgery</td>
<td>use of protocol for all patients</td>
<td>use of either sterile, disposable, non-woven or sterile, reusable woven drapes and gowns // no use of plastic adhesive incise drapes</td>
<td>use aqueous PVP-I solution in clean and clean-contaminated wounds // NO use of antibiotic irrigation</td>
<td>use of triclosan-coated sutures</td>
<td>NO prolongation of SAP</td>
<td>no use of advanced dressings over a standard dressing</td>
</tr>
</tbody>
</table>

### PREOPERATIVE MEASURES

- Maintain peri-operative normothermia: Implement peri-operative glycemic control and use blood glucose target levels less than 200 mg/dL in patients with and without diabetes.

### INCISIONAL WOUND IRRIGATION

- Deep or subcutaneous tissue with aqueous iodophor solution, not intraperitoneal.

### COATED SUTURES

- Consider use of triclosan-coated sutures.

### SAP PROLONGATION

- Prolongation of SAP.

### ADVANCED DRESSINGS

- Use a sterile dressing not sticking to the wound.

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WHO AND CDC PUBLISHED NEW GUIDELINES FOR THE PREVENTION OF SSI
Both agreed on recommendations. Underlying studies and level of recommendations differ to some extent, leading partly to deviations.
PRODUCT INFORMATION

PREOPERATIVE BATHING / BODY WASHING

Prontoderm™
- Reduction of bacterial load
- Body washing (incl. nasal and mouth rinse)
- Decolonization of MDRO (MRSA, ESBL, VRE)
- Containing polyhexanide
- Leave on product

Lifo-Scrubs™
- Containing chlorhexidine (CHG)

STERILE SURGICAL EQUIPMENT

Vasco® OP
- Dark colored undergloves for double gloving
- Surgical glove to be worn above dark-colored gloves

INCISIONAL WOUND IRRIGATION

Lifo-Scrub®
- Containing chlorhexidine

LavaSurge™
- Sterile, ready-to-use solution for surgical irrigation
- Containing polyhexanide

SURGICAL SITE PREPARATION COATED SUTURES

Braunoderm™
- Alcoholic solution containing povidone-iodine combines high antimicrobial efficacy with fast and long-lasting effect.

Softasept® N
- Alcoholic solution

Novosyn®
- Braided and coated suture

SURGICAL HAND PREPARATION ADVANCED DRESSING

Promanum® pure, Softa-Man® Visco-Rub®, Softa-Man® pure
- Effective and caring products
- Hygienic and surgical hand-preparation tested according to the newest test methods

Askina® DresSil
- Foam dressing with silicone adhesive

ALSO TO BE PERFORMED
- Cleaning and disinfection of operating room
- Reprocess surgical instruments
EVERY INFECTION IS UNPROFITABLE
PARTNER UP WITH B. BRAUN

- Analysing hygienic process in OR
- Analysing hygienic gaps
- Finding hygienic gaps to reduce SSI rate
- Setting up calculation to find opportunities for cost savings
- Offering products going along with guidelines

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Mandatory Drug Information


MANDATORY DRUG INFORMATION

Softasept® N, Composition: 100 g solution contain: Active substances: 74.1 g ethanol and 10.0 g isopropyl alcohol. Other ingredients: Purified water, potassium iodide (0.4 g, stabilizer), sodium hydrosulphate phosphate dihydrosulfate, (Promanum® coloured also contains dyes C.I. 15985 (E 110) and C.I. 14720 (E 122)). Therapeutic Indications: Disinfectant hygienic hand scrub, disinfectant surgical hand scrub, antiseptic full body washing. Contraindications: Hypersensitivity to chlordioxide or any of the ingredients. Application to the eyes or the skin near to the eyes, the hair, the menses, and the middle ear. Possible Side Effects: Very rare: Cutaneous reactions due to hypersensitivity (allergy), e.g. contact allergy reactions of the late type in the form of itching, redness, blisters etc. Very rare: Acute reactions of the immune system (anaphylactic reactions) with the involvement of other organs (e.g. skin, respiratory tract, circulatory system). Uncommon: Local alcohol induced dryness and irritation symptoms of the skin (e.g. redness, tension, itching). Warnings: Flammable. Keep container tightly closed. Keep away from sources of ignition – No smoking! Avoid contact with eyes. Do not use on damaged skin or mucous membranes. For external use only. Flash point 21-22°C per DIN 51755. Marketing Authorisation Holder: B. Braun Melsungen AG, 34209 Melsungen, Germany, (02/2012)

Lifo-Scrub®: Active substance: Chlorhexidine diprophosphate: 1 ml solution contains: 40 mg chlorhexidine diprophosphate. Other ingredients: dextrose, aromatica, colour E 124, excipients ad solut. Therapeutic Indications: Disinfectant hygienic hand scrub, disinfectant surgical hand scrub, antiseptic full body washing. Contraindications: Hypersensitivity to chlorhexine or any of the ingredients. Application to the eyes or the skin near to the eyes, the hair, the menses, and the middle ear. Possible Side Effects: Very rare: generalised allergic reactions against chlorhexine. Photosensitation. Contact dermatitis after frequent application. Dry skin. Hypersensitive reactions of the skin (e.g. g. redness) and of the respiratory system, especially in patients with asthma or chronic urticaria or with allergy to nonsteroidal anti-inflammatory drugs. Chemical burns in newborns. Marketing Authorisation Holder: B. Braun Medical AG, 6204 Sempach, Switzerland, (03/2015)

Promanum® Pure, Composition: 100 ml solution contain: Active substances: 73.4 g ethanol (100%), 10.0 g isopropyl alcohol. Other ingredients: Purified Water, Isopropyl Myristate, Butanone, Sorbitol, Cetyltryglycerin, Disodium EDTA, Propylene Glycol, Benzyl Alcohol, Colloidal Anhydrous Silica. Therapeutic Indications: Skin disinfection before surgical procedures, injections, punctures, catheterisations, taking of blood samples, vaccinations. Contraindications: Hypersensitivity or other present thyroid diseases, skin disease dermatitis herpetiformis, planned or administered radioiodine therapy (until the end of treatment), hypersensitivity (allergy) to iodine, isopropyl alcohol or any of the other ingredients. Possible Side Effects: Contact allergy. Skin irritation symptoms (e.g. itching, redness), especially after frequent application. Warnings: Highly flammable. Keep container tightly closed. Keep away from sources of ignition – No smoking! Avoid contact with eyes. Do not use on damaged skin or mucous membranes. For external use only. Flash point 14°C per DIN 51755. Marketing Authorisation Holder: B. Braun Melsungen AG, 34209 Melsungen, Germany, (03/2012)

Softasept® N, Composition: 100 g solution contain: Active substances: 45 g ethanol (100%), 18 g propanol. Other ingredients: Softasept® N pure: purified water, isopropyl myristate, octyldodecanol, dipalmitaner, glycerol, bisabolol, allantoin, denatessen benzolate. Softasept® N viscous: purified water, butanone, glycerol, isopropyl myristate, cetanethylhexanoate, octyldodecanol, edetat, aqualiezC10-30 silic acid crosspolymer, bisabolol. Therapeutic Indications: Hygienic and surgical hand disinfection. Contraindications: Hypersensitivity (allergy) to ethanol, isopropyl alcohol or any of the other ingredients. Possible Side Effects: Contact allergy. Skin irritation symptoms (e.g. itching, redness), especially after frequent application. Warnings: Flammable. Keep container tightly closed. Keep away from sources of ignition – No smoking! Avoid contact with eyes. Do not use on damaged skin or mucous membranes. For external use only. Flash point 21°C per DIN 51755. Marketing Authorisation Holder: B. Braun Melsungen AG, 34209 Melsungen, Germany, (03/2012)

Scan the QR code to do our SSI quiz online and learn more about the prevention of SSI. Profit of the supportive material as processes, awareness posters, etc., B. Braun shares to the SSI topic. www.bbraun.com/ssi