For more information on how to use a sterile surface to fight SSIs, or to request a free sample, contact your 3M account representative.

References

The greatest risk factor for SSI is a patient’s skin.1,2
Create a sterile surface.
Every surgical patient risks Surgical Site Infection (SSI)

SSIs can affect a patient’s quality of life and create stress for patients and their families. And they place a huge operational and financial burden on health care systems and providers. Using evidence-based practices to reduce skin microbes — before and during surgery — and creating a barrier to microbial migration can help reduce the risk of an SSI.

The skin can contain over 1 million bacteria per square centimeter.³

Reducing a patient’s microbial load is critical to avoiding an SSI. The Centers for Disease Control and Prevention (CDC) measures SSI risk using three distinct variables.⁵ The variable we can most affect: the dose of bacteria on the skin.

**RISK OF SSI**

\[
\text{RISK OF SSI} = \text{Dose of bacteria} \times \text{Virulence of bacteria} \times \text{Patient risk factors}^7
\]

Occur in 2-5% of all patients undergoing inpatient surgery⁶

Cost on average $20,785 per patient⁷

Affect quality of life⁸

Result in 2-11X increased risk of mortality⁶

Increase length of stay by 7-11 days⁶

Increase nursing care⁹

Lower patient satisfaction⁹

Increase litigation⁹

Cost on average $20,785 per patient⁷

Approximately 5X as likely to result in readmission¹⁰

A human and financial cost

It takes only 10 microbes per square centimeter* to cause a surgical site infection (SSI).⁴

*When implant is present

Reducing the number of microorganisms can reduce the risk of infection.

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Start with the proper prep

A proper skin prep reduces a patient’s bacterial load throughout the perioperative process, providing both immediate and lasting protection. But not all preps perform the same during surgery. Preps need to stay on the skin to remain effective. Preps can be removed during surgery by saline irrigation, dabbing with sponges or gauze, or contact with bodily fluids.

SURGICAL CHALLENGES TO PREPS

<table>
<thead>
<tr>
<th>Irrigation</th>
<th>Wiping</th>
<th>Dabbing</th>
<th>Bodily fluids</th>
<th>Manipulation</th>
</tr>
</thead>
</table>

If surgical prep is removed during surgery, patients lose the critical protection of the active ingredient.

Resisting removal during surgery

3M™ DuraPrep™ Surgical Solution (Iodine Povacrylex [0.7% available iodine] and Isopropyl Alcohol, 74% w/w) Patient Preoperative Skin Preparation was scientifically formulated to protect the prep from removal during surgery. It contains 3M™ Prep Protection Film, which dries to form a persistent and durable layer of protection on the patient’s skin. As a result, a study showed that 3M DuraPrep surgical solution is more resistant to removal by saline-soaked gauze than ChloraPrep™ Skin Prep. In fact, the same study showed that 3M DuraPrep surgical solution had significantly greater bacterial reduction than ChloraPrep™ Skin Prep after challenge by saline-soaked gauze in simulated surgery.

Help lower the risk of infection

In a sequential implementation study on the effect of preoperative preps on infection rate, it was observed that surgeries using iodophor-based surgical preps (including DuraPrep surgical solution) had a significantly lower SSI rate than surgeries using ChloraPrep™ Skin Prep.

Reducing incise drape lift

Incise drape lift at the edge of an incision can allow bacteria to migrate into the surgical wound. In fact, in one study drape lift was associated with a six-fold increase in SSI. Some skin preps, such as ChloraPrep™ Skin Prep, can lead to increased drape lift. The 3M Prep Protection Film in 3M DuraPrep surgical solution acts as a primer that helps a drape stick to the patient’s skin to protect against incise drape lift.
Preps alone are not enough

While skin prep antiseptics reduce microbes, they work primarily on the skin surface, not in the deeper layers of the skin. Chlorhexidine gluconate (CHG), in skin preps, for example, does not penetrate into the deeper layers of the skin. Below a depth of 300 microns, CHG concentration may not be effective for killing bacteria. Without additional protection, residual bacteria on the skin’s surface and bacteria that migrate from the hair follicles can be picked up by items that touch the skin and transferred into the incision, increasing the patient’s risk of infection.

Skin preps work here...

...not here

300μm

Use an incise drape

An incise drape creates a physical barrier to prevent objects like instruments, gloves and sponges from coming into contact with the patient’s skin, reducing the risk of contamination that could cause a costly and potentially devastating SSI. In a recent ex vivo study on human skin, the iodine in 3M™ Ioban™ 2 Antimicrobial Incise Drape was shown to be present at concentrations effective against MRSA at a depth of 1,000 microns, in the deeper layers of the skin, where hair follicles are present.

Skin preps are antimicrobial and reduce the number of microbes on the skin surface, but bacteria in the deeper layers may remain.

1000μm
Help lower SSI risk and costs

Bejko study results

In a study published in 2015, 3M™ Ioban™ 2 Antimicrobial Incise Drape was associated with lower SSI risk and reduced cost when compared to a non-antimicrobial incise drape in cardiac surgery.

Method and objective:
New prospective randomized study of patients undergoing cardiac surgery. 1,616 patients were matched based on risk factors. 808 patients with skin prep and a standard clear incise drape, and 808 patients with skin prep and 3M™ Ioban™ 2 Antimicrobial Incise Drape. Examined the efficacy of 3M Ioban 2 antimicrobial incise drape versus a standard clear incise drape and evaluated cost-effectiveness of each.

SSI rate reduction of 71%
At 6.5%, overall incidence of SSIs for patients who received a non-antimicrobial incise drape was significantly higher than the 1.9% of those who received 3M™ Ioban™ 2 Antimicrobial Incise Drapes (p=0.001).

Costs were calculated for each of the procedures as: cost of drape + daily cost of VAC + hourly cost of the operating room for wound debridement + daily cost in hospital ward + cost of ICU.

$828,000 (€773,495) = total cost savings or about $1,025 per patient with 3M Ioban 2 incise drapes.

Reduce wound infection rates

Yoshimura study results

In a retrospective study involving liver resection surgery, 3M Ioban 2 incise drape, compared with no incise drape, was associated with a significant reduction in postoperative wound infection rates, from 12.1% to 3.1% (p=0.01).

% surgical site infection rate

Method and objective:
Retrospective study from 1994 to 2001 looking at 296 patients undergoing liver surgery. Examined the impact on wound infection using just a skin prep vs. a skin prep and 3M Ioban 2 Incise Drapes.

Using a sterile surface to fight SSIs

The risk of SSI is a real — and devastating — possibility for every surgical patient. Using an effective prep along with an antimicrobial incise drape reduces bacterial load and creates a sterile surface to minimize wound contamination.
Ordering Information

3M™ DuraPrep™ Surgical Solution (Iodine Povacrylex [0.7% available iodine] and Isopropyl Alcohol, 74% w/v) Patient Preoperative Skin Preparation

<table>
<thead>
<tr>
<th>3M Cat No.</th>
<th>Product</th>
<th>Coverage</th>
<th>Size</th>
<th>Items/box</th>
<th>Boxes/case</th>
</tr>
</thead>
<tbody>
<tr>
<td>8630</td>
<td>3M DuraPrep surgical solution</td>
<td>Application covers 450 sq. in. (15 in. x 30 in.); ideal for large procedures — thoracic and CV, spine, total hip and knee, C-section, major abdominal.</td>
<td>26 mL</td>
<td>20</td>
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<tr>
<td>8635</td>
<td>3M DuraPrep surgical solution</td>
<td>Application covers 80 sq. in. (8 in. x 10 in.); ideal for mid-size procedures — biopsies, foot and hand, angiography, head and neck procedures.</td>
<td>6 mL</td>
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3M™ Ioban™ 2 Antimicrobial Incise Drapes EZ with paper liner

<table>
<thead>
<tr>
<th>3M Cat No.</th>
<th>Product</th>
<th>Adhesive area</th>
<th>Items/box</th>
<th>Boxes/case</th>
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<tbody>
<tr>
<td>6635</td>
<td>3M Ioban 2 Antimicrobial Incise Drape EZ</td>
<td>3.875” x 7.875” 10cm x 20cm</td>
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<tr>
<td>6640</td>
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<td>13” x 13” 34cm x 35cm</td>
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<tr>
<td>6650</td>
<td>3M Ioban 2 Antimicrobial Incise Drape EZ</td>
<td>22” x 19” 56cm x 45cm</td>
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<tr>
<td>6648</td>
<td>3M Ioban 2 Antimicrobial Incise Drape EZ</td>
<td>22” x 23” 56cm x 60cm</td>
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<tr>
<td>6651</td>
<td>3M Ioban 2 Antimicrobial Incise Drape EZ</td>
<td>22” x 33” 56cm x 85cm</td>
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3M™ Ioban™ 2 Antimicrobial Incise Drapes EZ with plastic liner

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<tr>
<th>3M Cat No.</th>
<th>Product</th>
<th>Adhesive area</th>
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<th>Boxes/case</th>
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<td>666EZ</td>
<td>3M Ioban 2 Antimicrobial Incise Drape EZ</td>
<td>10.5” x 8” 26cm x 20cm</td>
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<td>6640EZ</td>
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<td>13” x 13” 35cm x 35cm</td>
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<tr>
<td>6650EZ</td>
<td>3M Ioban 2 Antimicrobial Incise Drape EZ</td>
<td>23” x 17” 60cm x 45cm</td>
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<td>4</td>
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<tr>
<td>6648EZ</td>
<td>3M Ioban 2 Antimicrobial Incise Drape EZ</td>
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<td>4</td>
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<tr>
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<td>23” x 33” 60cm x 85cm</td>
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3M Drapes With Ioban™ 2 Incise Area (Specialty Drapes)

<table>
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<tr>
<th>3M Cat No.</th>
<th>Product</th>
<th>Overall size</th>
<th>Adhesive area</th>
<th>Items/box</th>
<th>Boxes/case</th>
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<tbody>
<tr>
<td>6655</td>
<td>Abdominal-Perineal Drape - Lithotomy Position</td>
<td>78” x 107” 200cm x 274cm</td>
<td>13” x 17” 33cm x 45cm</td>
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<tr>
<td>6657</td>
<td>Cardiovascular Sheet with Ioban 2 Incise Film</td>
<td>100” x 150” 254cm x 381cm</td>
<td>16” x 38” 41cm x 97cm</td>
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<tr>
<td>6658</td>
<td>Cardiovascular Drape with Ioban 2 Incise Film</td>
<td>100” x 150” 254cm x 384cm</td>
<td>16” x 61” 41cm x 154cm</td>
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<tr>
<td>6682</td>
<td>Cardiovascular Drape</td>
<td>330cm x 254cm</td>
<td>78cm x 43cm</td>
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<tr>
<td>6657</td>
<td>Pouch with Ioban 2 Incise Film</td>
<td>50” x 30” 127cm x 76cm</td>
<td>12” x 12” 30cm x 30cm</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>6658</td>
<td>Pouch with Ioban 2 Incise Film, Large</td>
<td>76cm x 76cm</td>
<td>13” x 17”</td>
<td>5</td>
<td>4</td>
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<tr>
<td>6659</td>
<td>Pouch with Ioban 2 Incise Film, Extra Large</td>
<td>23” x 34” 74cm x 87cm</td>
<td>16” x 20” 42cm x 52cm</td>
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<td>4</td>
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<tr>
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<td>Cesarean Section Sheet with Ioban 2 Incise Pouch</td>
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<td>Steri-Drape™ Cesarean Section Sheet with Ioban™ 2 Incise Pouch and Clear Screen</td>
<td>100” x 19” 254cm x 300cm</td>
<td>12” x 12” 30cm x 30cm</td>
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<td>6617</td>
<td>Isolation Drape with Ioban 2 Incise Film and Pouch</td>
<td>125” x 93” 320cm x 231cm</td>
<td>15” x 9.3” 50cm x 24cm</td>
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<tr>
<td>6619</td>
<td>Large Isolation Drape with Ioban 2 Incise Film and Pouch</td>
<td>129” x 100” 328cm x 254cm</td>
<td>27” x 12” 70cm x 32cm</td>
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<tr>
<td>6687</td>
<td>Craniotomy Drape with Ioban 2 Incise Pouch</td>
<td>77” x 160” 196cm x 406cm</td>
<td>14.5” x 8.4” 36.8cm x 21.4”</td>
<td>10</td>
<td>1</td>
</tr>
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