




The greatest risk factor for SSI  
is a patient's skin<sup>1,2</sup>

Create a sterile surface

# Every surgical patient risks Surgical Site Infection (SSI)

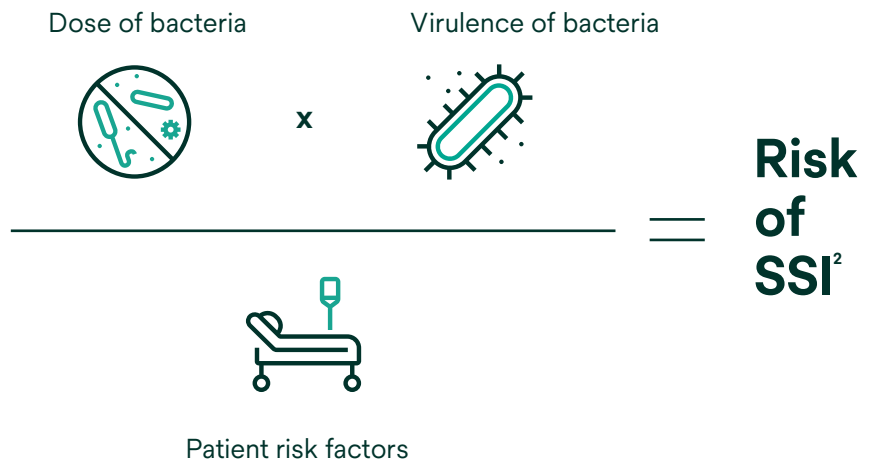
The skin can contain over **1 million** bacteria per square centimeter.<sup>3</sup>

It takes only **10**  1 cm<sup>2</sup> actual size microbes per square centimeter\* to cause a surgical site infection (SSI).<sup>4</sup>

\*When implant is present



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.<sup>5</sup> The variable we can most affect: the dose of bacteria on the skin.



# A human and financial cost

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.



Occur in  
**2-5%**  
of all patients  
undergoing  
inpatient surgery<sup>6</sup>



Cost on average  
**\$20,785**  
per patient<sup>7</sup>



**Affect**  
quality of life<sup>8</sup>



Result in  
**2-11X**  
increased  
risk of mortality<sup>6</sup>

Increase length  
of stay by  
**7-11**  
**days**<sup>6</sup>



**Increase**  
nursing care<sup>9</sup>



**Lower**  
patient  
satisfaction<sup>9</sup>



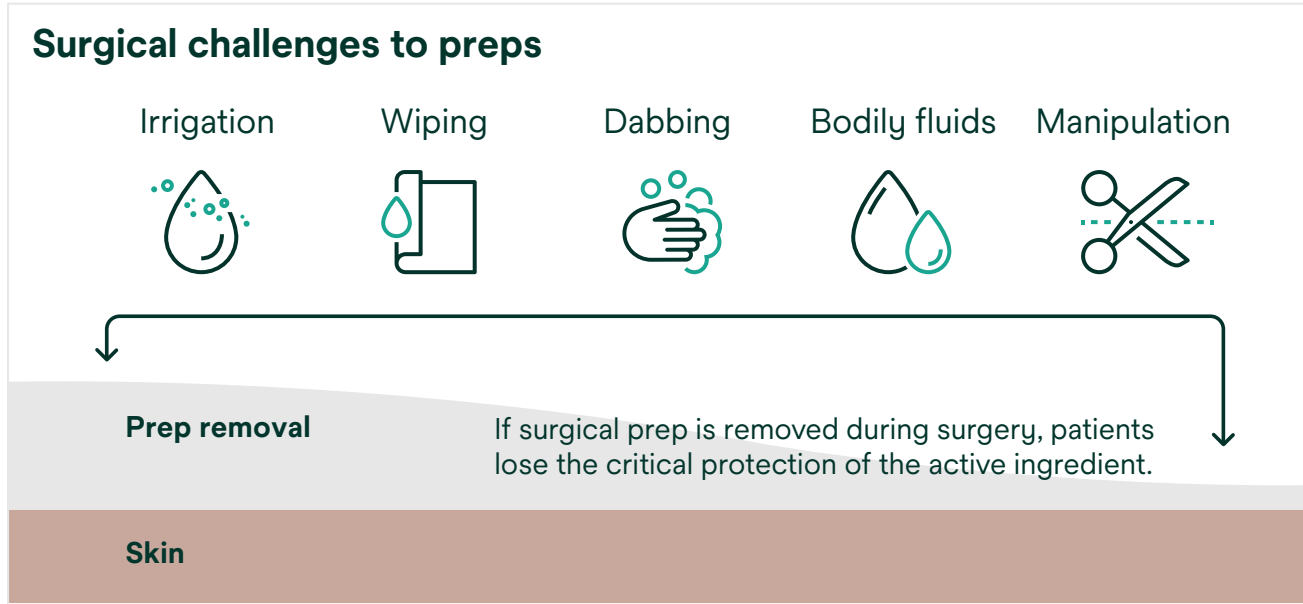
**Increase**  
litigation<sup>9</sup>



Approximately  
**5X** as likely  
to result in  
readmission<sup>10</sup>

# 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.

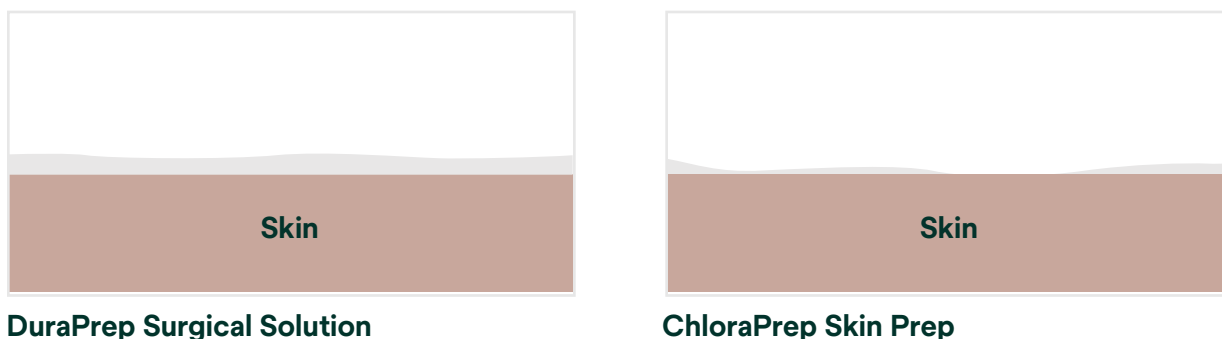


## Resisting removal during surgery

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.<sup>11</sup>



As a result, a study showed that DuraPrep Surgical Solution is more resistant to removal by saline-soaked gauze than Chloraprep™ Skin Prep. In fact, the same study showed that DuraPrep Surgical Solution had significantly greater bacterial reduction than Chloraprep Skin Prep after challenge by saline-soaked gauze in simulated surgery.<sup>12</sup>

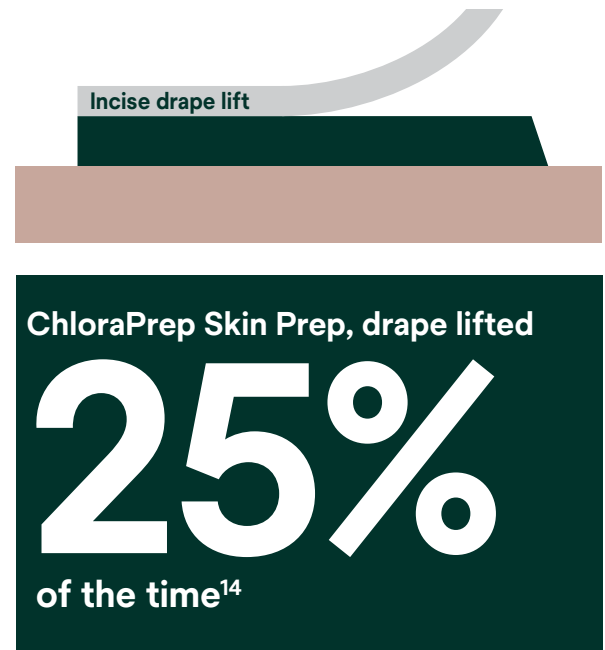
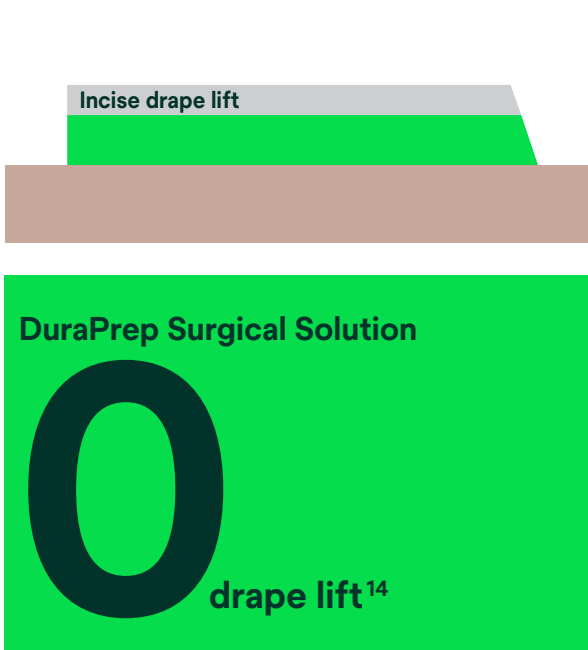


\*For illustrative purposes only; not meant to represent specific results. See study for details.



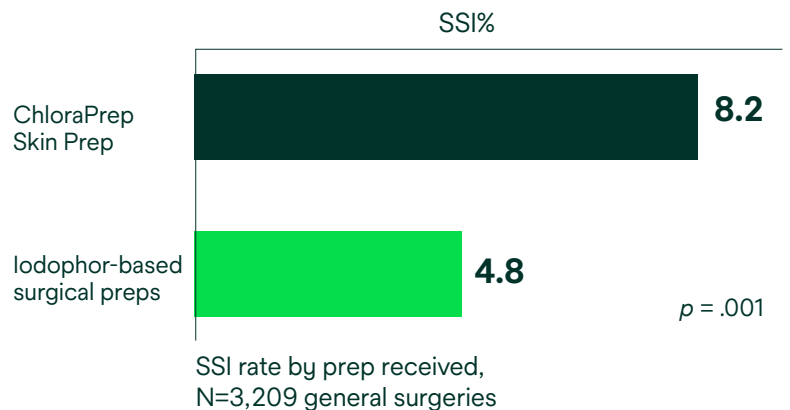
## Reducing incise drape lift

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.<sup>13</sup> Some skin preps, such as ChloroPrep™ Skin Prep, can lead to increased drape lift. The 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.



## Help lower the risk of infection

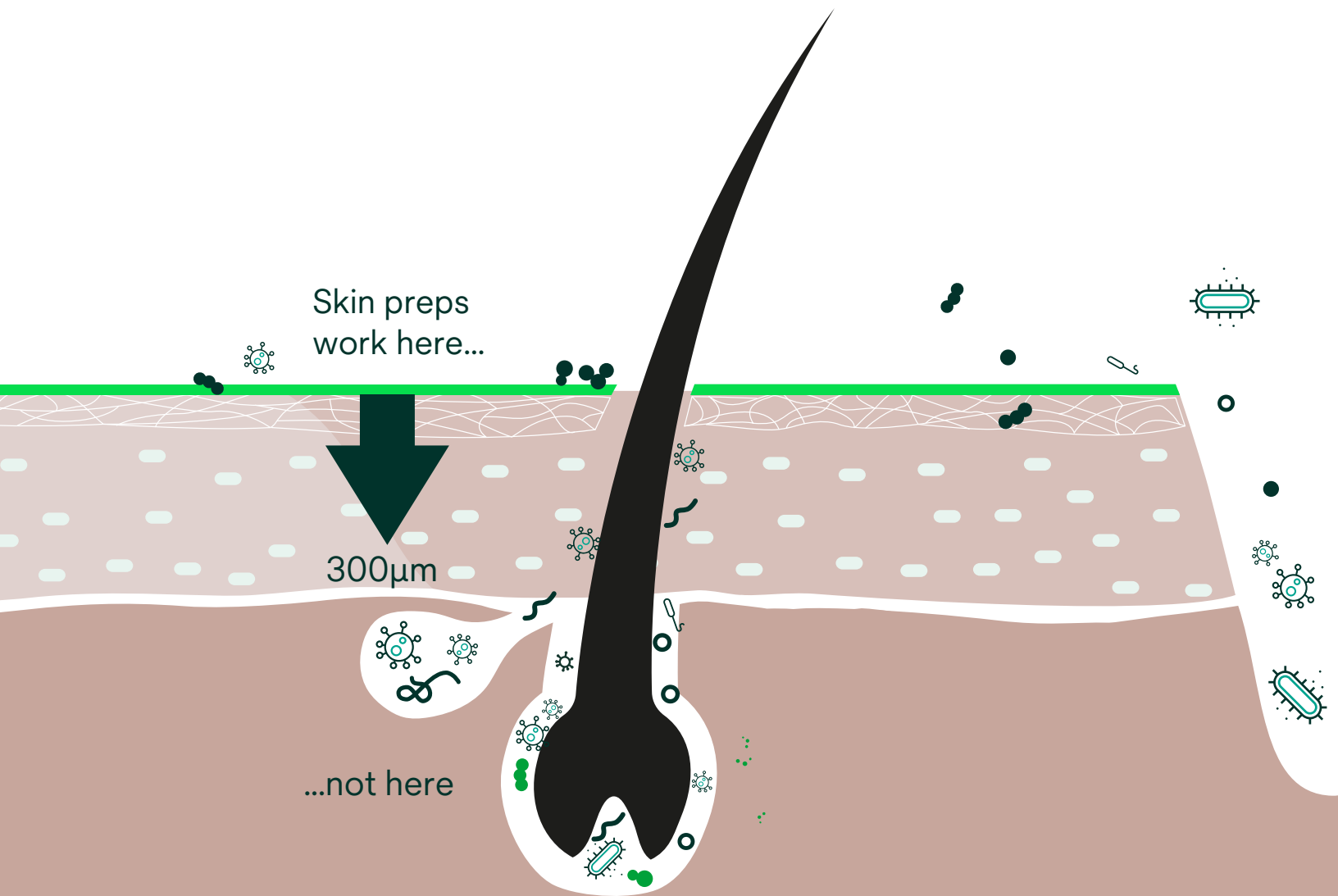
In a sequential implementation study on the effect of preoperative preps on infection rate, it was observed that surgeries using iodophor-based surgical preps (including DuraPrep Surgical Solution) had a significantly lower SSI rate than surgeries using ChoraPrep Skin Prep.<sup>15</sup>



# 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.<sup>16</sup>

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.

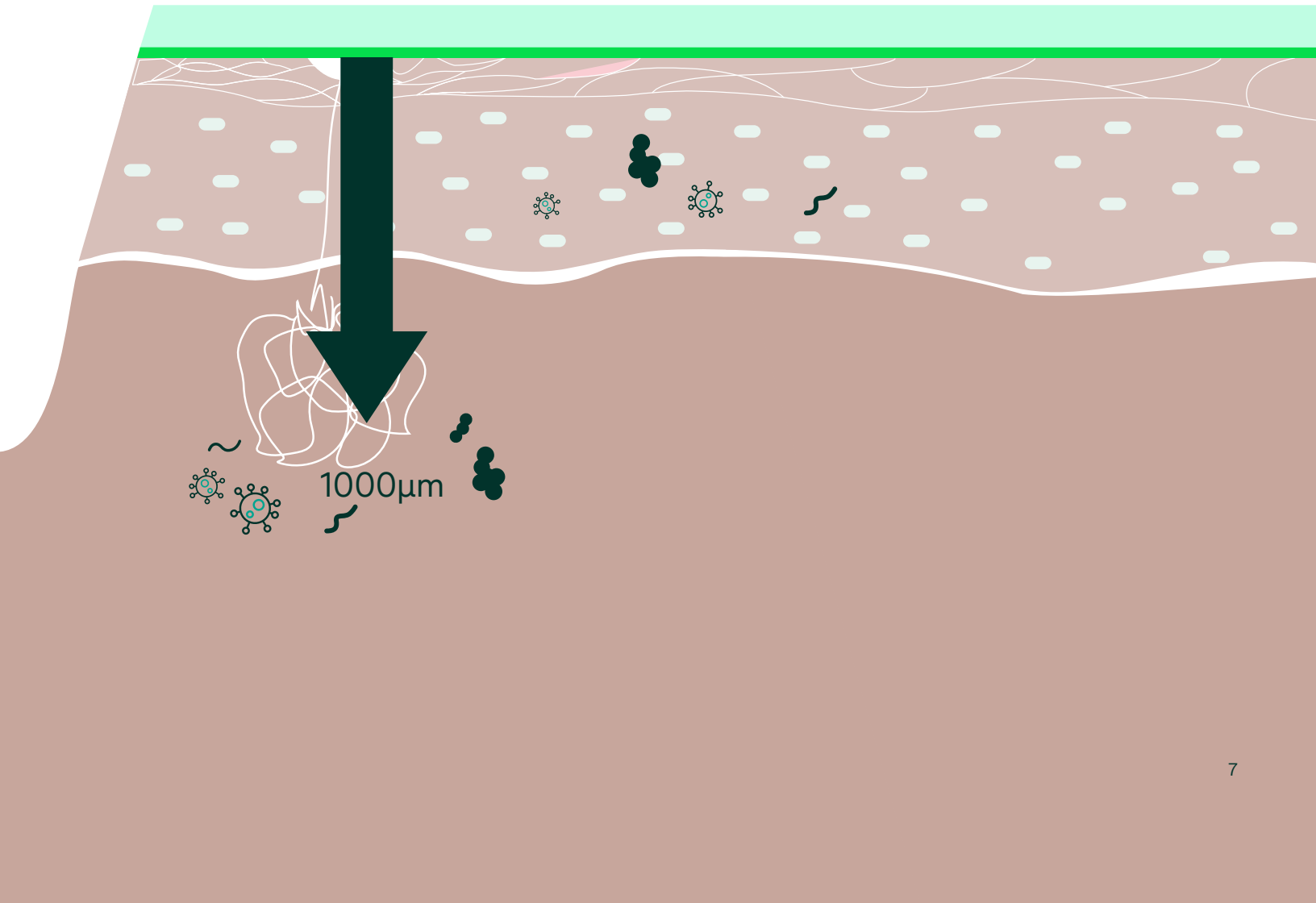


Skin preps are antimicrobial and reduce the number of microbes on the skin surface, but bacteria in the deeper layers may remain.

# 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.<sup>17</sup>

**Ioban 2 Antimicrobial Incise Drape creates a sterile barrier, and iodine from the drape has been shown to be present in the deeper skin layers.<sup>17</sup>**



# Help lower SSI risk and costs

## Bejko study results<sup>18</sup>

In a study published in 2015, loban 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 loban 2 Antimicrobial Incise Drape. Examined the efficacy of loban 2 antimicrobial incise drape versus a standard clear incise drape and evaluated cost-effectiveness of each.

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.



### 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 loban 2 Antimicrobial Incise Drapes (p=0.001).



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

# Reduce wound infection rates

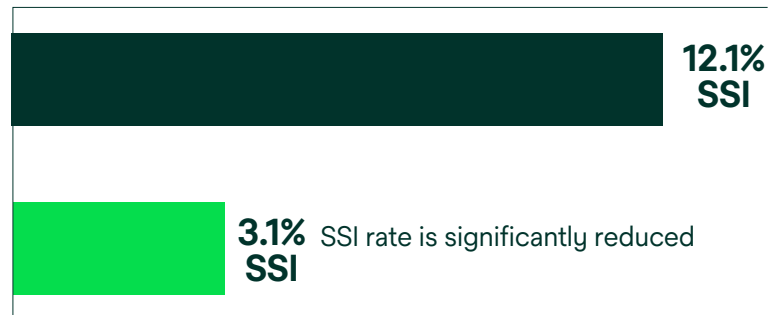
## Yoshimura study results<sup>19</sup>

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

No incise drape

Ioban 2 Antimicrobial Incise Drape

% 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 Ioban 2 Antimicrobial Incise Drape.



## 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/w) Patient Preoperative Skin Preparation

Solventum cat no.	Product	Coverage	Size	Items/box	Boxes/case
8630	3M™ DuraPrep™ Surgical Solution 	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.	26 mL	20	1
8635	3M™ DuraPrep™ Surgical Solution 	Application covers 80 sq. in. (8 in. x 10 in.); ideal for mid-size procedures — biopsies, foot and hand, angiography, head and neck procedures.	6 mL	50	1

### 3M™ Ioban™ 2 Antimicrobial Incise Drapes with paper liner

Solventum cat no.	Product	Adhesive area	Items/box	Boxes/case
6635	3M™ Ioban™ 2 Antimicrobial Incise Drape 	3.875" x 7.875" 10 cm x 20 cm	10	4
6640	3M™ Ioban™ 2 Antimicrobial Incise Drape 	13" x 13" 34 cm x 35 cm	10	4
6650	3M™ Ioban™ 2 Antimicrobial Incise Drape 	22" x 17" 56 cm x 45 cm	10	4
6648	3M™ Ioban™ 2 Antimicrobial Incise Drape 	22" x 23" 56 cm x 60 cm	10	4
6651	3M™ Ioban™ 2 Antimicrobial Incise Drape 	22" x 33" 56 cm x 85 cm	10	4

### 3M™ Ioban™ 2 Antimicrobial Incise Drapes EZ with plastic liner

Solventum cat no.	Product	Adhesive area	Items/box	Boxes/case
6661EZ	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ 	10.5" x 8" 26 cm x 20 cm	50	4
6640EZ	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ 	13" x 13" 35 cm x 35 cm	10	4
6650EZ	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ 	23" x 17" 60 cm x 45 cm	10	4
6648EZ	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ 	23" x 23" 60 cm x 60 cm	10	4
6651EZ	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ 	23" x 33" 60 cm x 85 cm	10	4

### 3M™ Drapes With loban™ 2 Incise Area (Specialty Drapes)

Solventum cat no.	Product		Overall size	Adhesive area	Items/box	Boxes/case
6665	Abdominal-Perineal Drape - Lithotomy Position		78" x 107" 200 cm x 274 cm	13" x 17" 33 cm x 45 cm	5	1
6677	Cardiovascular Sheet with loban 2 Incise Film		100" x 150" 254 cm x 381 cm	16" x 38" 41 cm x 97 cm	6	1
6681	Cardiovascular Drape with loban 2 Incise Film		100" x 151" 254 cm x 384 cm	16" x 61" 41 cm x 154 cm	8	1
6682	Cardiovascular Drape		330 cm x 254 cm	78 cm x 43 cm	8	1
6657	Pouch with loban 2 Incise Film		35" x 30" 89 cm x 76 cm	12" x 12" 30 cm x 30 cm	10	4
6658	Pouch with loban 2 Incise Film, Large		30" x 30" 76 cm x 76 cm	13" x 17"	5	4
6659	Pouch with loban 2 Incise Film, Extra Large		29" x 34" 74 cm x 87 cm	16" x 20" 42 cm x 52 cm	5	4
6697	Cesarean Section Sheet with loban 2 Incise Pouch		100" x 115" 254 cm x 292 cm	12" x 12" 30 cm x 30 cm	5	1
6697CA	Steri-Drape™ Cesarean Section Sheet with loban™ 2 Incise Pouch and Clear Screen		100" x 118" 254 cm x 300 cm	12" x 12" 30 cm x 30 cm	5	1
6617	Isolation Drape with loban 2 Incise Film and Pouch		125" x 83" 320 cm x 213 cm	19" x 9.37" 50 cm x 24 cm	5	4
6619	Large Isolation Drape with loban 2 Incise Film and Pouch		129" x 100" 378 cm x 254 cm	27" x 12" 70 cm x 32 cm	5	1
6687	Craniotomy Drape with loban 2 Incise Pouch		77" x 160" 196 cm x 406 cm	14.5" x 8.43" 36.8 cm x 21.4 cm	10	1

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

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#### References

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