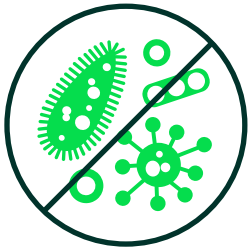

solventum
3M™ Ioban™ 2
Antimicrobial Incise Drape →

Reducing healthcare-associated infections (HAIs) is now more critical than ever

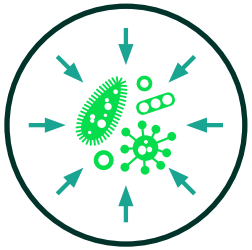
3M™ Ioban™ 2 Antimicrobial Incise Drape provides a powerful barrier to help reduce microbial wound contamination

To help guard against surgical site infections (SSIs), Ioban 2 Antimicrobial Incise Drape creates an optimized wound incision environment through continuous antimicrobial activity, immobilizing bacteria and conformable adhesion that helps the drape stay in place throughout the surgical procedure.



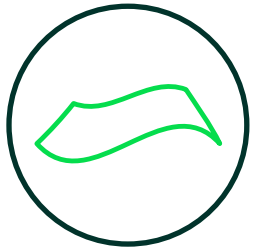
Continuous antimicrobial activity

Ioban 2 Antimicrobial Incise Drape provides continuous broad-spectrum antimicrobial activity to help reduce the risk of surgical site contamination



Immobilizes bacteria

Ioban 2 Antimicrobial Incise Drape immobilizes and isolates residual bacteria on the skin, helping to prevent migration into the surgical incision area



Conformable adhesion

Ioban 2 Antimicrobial Incise Drape adheres and conforms to the operative site, allowing for limb manipulation during surgery

3M™ Ioban™ 2 Antimicrobial Incise Drapes: a powerful barrier against contamination

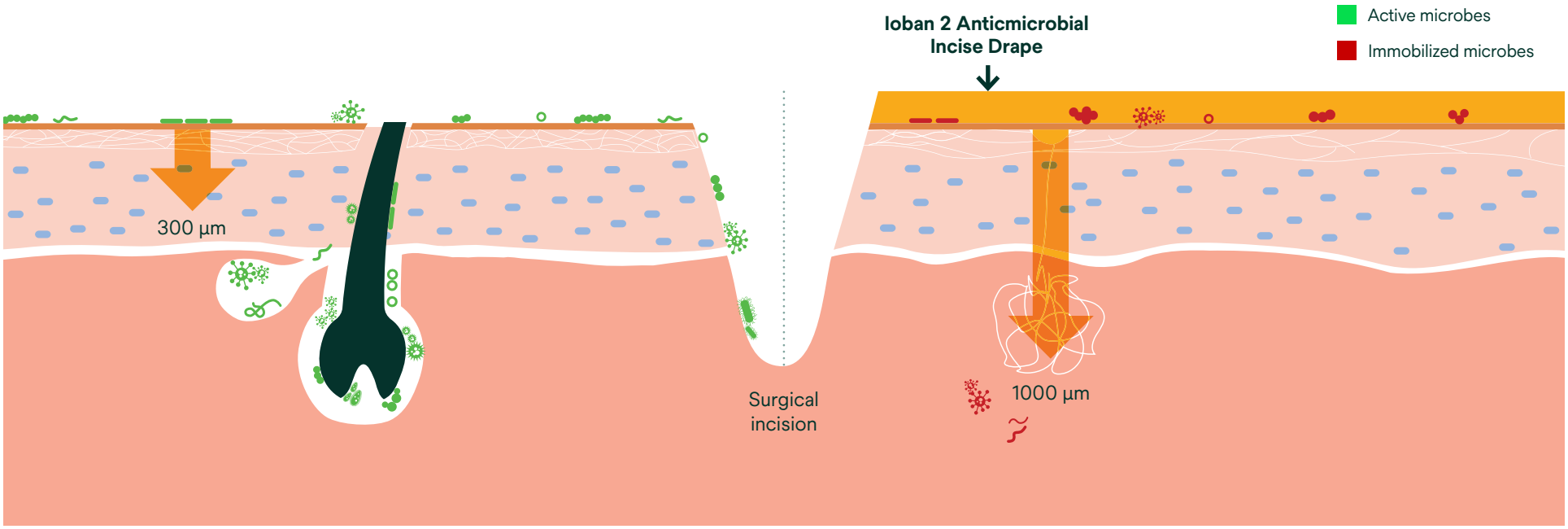
Skin is never sterile; however, with 3M™ Ioban™ 2 Antimicrobial Incise Drapes you can create a sterile surface at the beginning of surgery and provide continuous broad-spectrum antimicrobial activity throughout the surgical procedure.

Skin preps alone are not enough

While skin prep antiseptics help reduce microbes on the skin, they can be inadvertently removed during surgery by saline irrigations, dabbing with sponges or gauze or contact with bodily fluids — diminishing patient protection.

Use Ioban 2 Antimicrobial Incise Drape

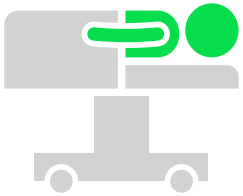
Ioban 2 Antimicrobial Incise Drape creates a physical barrier to prevent objects like instruments, gloves and sponges from coming into contact with the patient's skin, reducing the risk of contamination that could cause an SSI.[1]



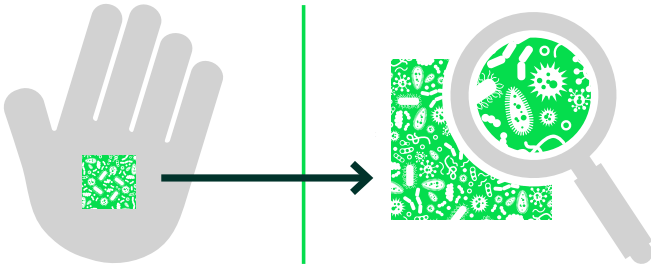
A major source of surgical site infections is microorganisms on a patient's own skin

Healthcare professionals take great care to create a sterile field in order to prevent intraoperative contamination from skin bacteria. However, the surgical site is commonly left exposed. **Even with optimal skin preparation, total sterilization of the skin is impossible**. You need more than a surgical prep to help prevent microbial regrowth or residual microbes from migrating into the wound or incision site.

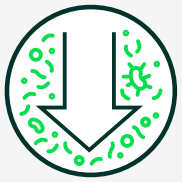
The greatest risk factor for SSI is the patient's skin.



The skin can contain **over 1 million bacteria** per sq. cm.[2]



As few as **10 microbes** per sq. cm* **can cause an SSI.**[3]



Reducing a patient's microbial load is critical to avoiding an SSI

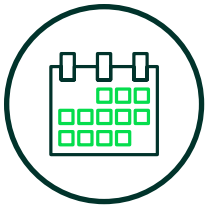
SSIs can affect a patient's quality of life in many ways

Not only do surgical site infections create undo stress for patients and their families, they also place a huge operational and financial burden on health care systems and providers. Solventum can help you solve some of these challenges with evidence-based practices and products to help reduce the risk of SSIs — before, during and after surgery.

Surgical site infections (SSIs)

A single SSI can cost up to **$60,000** per patient[4]

SSI patients are approximately **5X as likely to be readmitted**[4]



SSIs can **increase hospital length of stay by 7-11 days**[4]

SSIs result in **2-11X increased risk of mortality**[4]

Wound contamination

Non-healing wounds left untreated and unmanaged can result in significant medical issues including infection,[5] which can lead to higher costs and longer hospital stays.[6]

Calculated savings on hospital costs using Ioban™ 2 Antimicrobial Incise Drape

In a calculated scenario with 100 cardiac patients, the reduction of risk of bacterial wound contamination with Ioban Antimicrobial Incise Drape versus a non-antimicrobial drape, when used in conjunction with good clinical practices (antibiotics, infection prevention protocols and standard surgical technique), suggests the potential to be associated with:

Surgical Site Infection (SSI) **rate reduction**

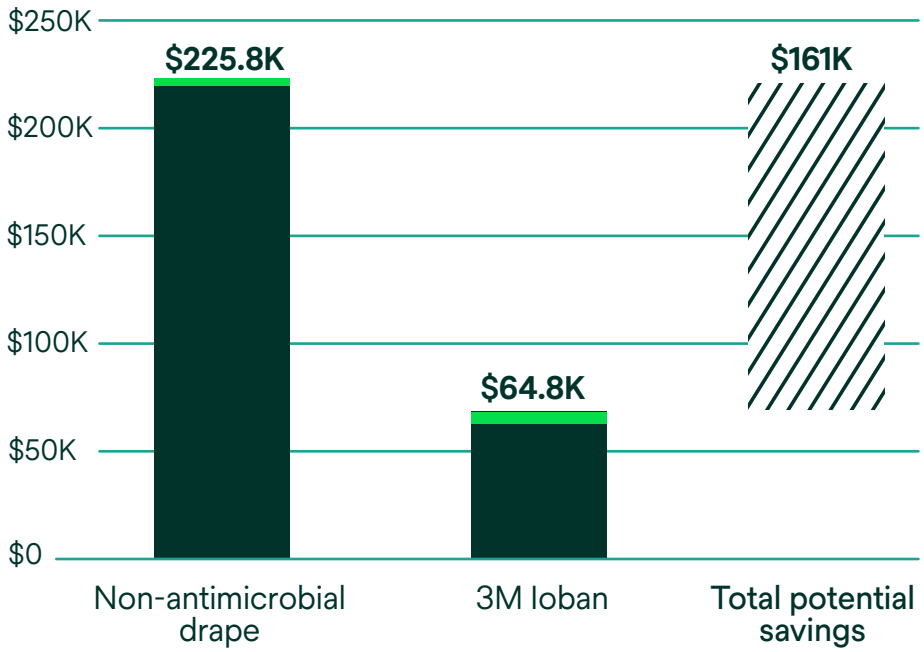
5 fewer SSIs

Cost **reduction**

$161,061

Total cost **savings**

71.3%



All model inputs and calculations are based on a published budget impact model that estimates: Therapy: Product cost and usage frequency, Operating Room: OR debridement events and associated OR costs, Hospital: Length of therapy and associated costs[7]:

- Product costs
- Costs associated with SSI

The results are calculated by the Solventum Budget Impact Calculator, based on health economic modeling and information provided by scientific studies.[7,8]

We can help you calculate your potential customized savings

This is an illustration and not a guarantee of actual individual costs, savings or outcomes. It gives suggestions about budgetary relationships for the purpose of optimization. The calculations are conducted with reasonable care using the instruments/parameters specified in the references. Solventum shall not be liable for the results of calculation and these results shall be seen as an indication only of the potential cost, savings and outcomes based on the information given and is no way binding. Other factors which might also have an influence on the results may not have been taken into account.

40 years of strong clinical evidence

40+

supporting pieces of published evidence

(As of February 2023)

Extensively researched and peer-reviewed

3M™ Ioban™ 2 Antimicrobial Incise Drape has been extensively researched and has more published peer-reviewed studies than any other antimicrobial incise drape competitor.

(As of February 2023)

Breadth of evidence

Ioban 2 Antimicrobial Incise Drape study publications have shown both clinical and economic results across a broad range of evidence ranging from poster presentations to randomized controlled clinical trials and global meta-analysis.

Strength of outcomes

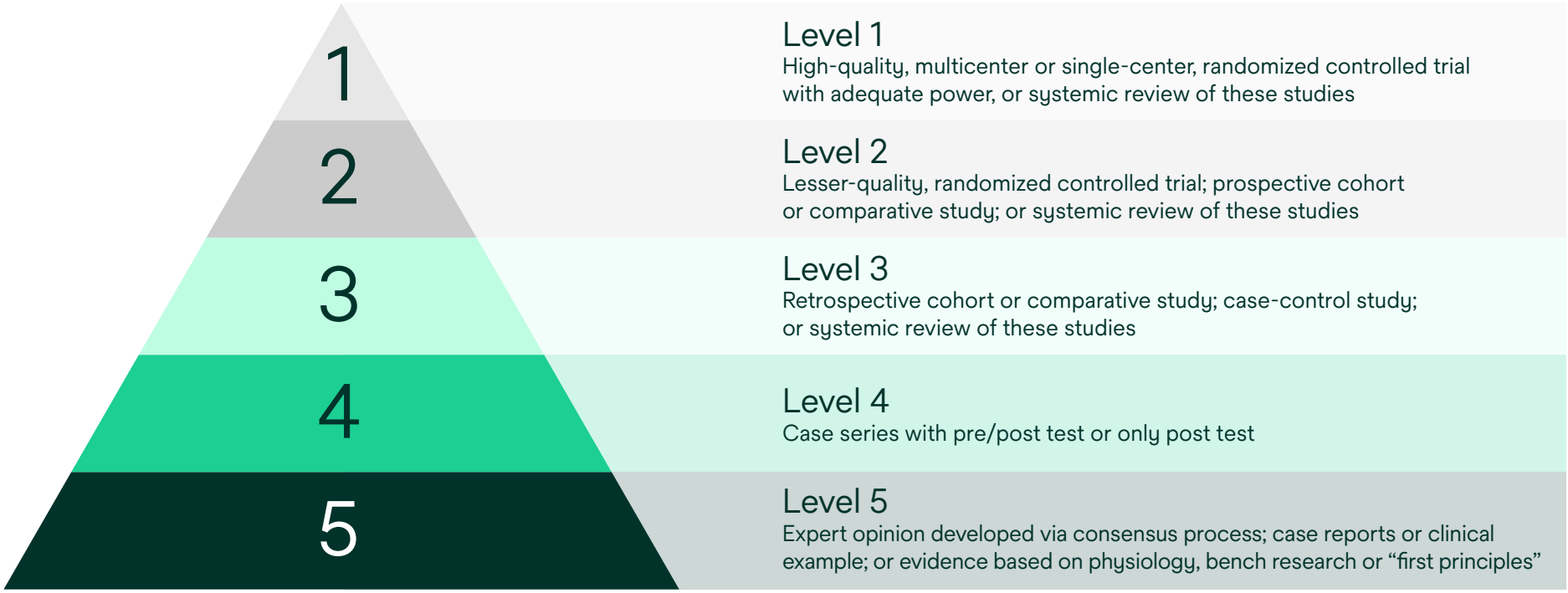
Ioban 2 Antimicrobial Incise Drape is supported by evidence that met or exceeded the hypotheses across multiple endpoints including microbiological impacts that were associated with infection risk reduction outcomes as well as economic success when used as part of a comprehensive perioperative solution.[8,9,10]

Study	Study design	Comparators	Measured end points	Population	Evidence level
Bejko J, et al (2015)	Retrospective study	Antimicrobial (iodine impregnated) incise drape vs. non-antimicrobial incise drape	Microbiological, Infection Risk Reduction, Economic Impacts	Cardiac	Level 3
Yoshimura Y, et al (2003)	Retrospective study	Antimicrobial (iodophor impregnated) incise drape vs no incise drape	Microbiological, Infection Risk Reduction	Liver transplant	Level 3
Rezapoor M, et al (2018)	Randomized controlled trial	Antimicrobial (iodophor impregnated) incise drape vs. no incise drape	Microbiological	Total hip arthroplasty	Level 1
Hesselvig AB, (2020)	Randomized controlled trial	Antimicrobial incise drape vs. no incise drape	Microbiological	Total knee arthroplasty	Level 1
Casey AL, et al (2015)	Lab study	3M™ Ioban™ 2 Antimicrobial Incise Drape (no other comparator)	Microbiological	Human cadaver skin	Level 5
Gencer, A et al (2023)	Retrospective study	Antimicrobial incise drape (iodophor impregnated) vs. non-antimicrobial incise drape	Microbiological, Infection Risk Reduction	Spine	Level 3
Karapinar K, et al (2019)	Retrospective study	Antimicrobial (iodophor impregnated) incise drape vs. no incise drape	Infection Risk Reduction, Economic Impacts	Thoracic	Level 3

Evaluating the research: a guide to levels of evidence

Levels of Evidence,[11] sometimes referred to as Levels of Hierarchy, refer to a ranking system that evaluates the quality and strength of scientific studies. The higher the level of evidence, the more reliable the findings are considered to be, and the more weight they carry in informing clinical practice and decision-making.

It's important to note that this system is a general guideline, and the quality of individual studies within levels can vary.



Proof that an antimicrobial incise drape can help reduce contamination compared to using no incise drape

Why use 3M™ Ioban™ 2 Antimicrobial Incise Drape in place of using no incise drape?

Studies have shown that using an antimicrobial incise drape during surgery is not just an extra step — it's a significant step toward reducing the risk of wound contamination that can lead to SSI's.

Significant reduction in wound infection rates

In a retrospective study involving liver resection surgery, use of Ioban 2 Antimicrobial Incise Drapes, compared with no incise drapes, was associated with a significant reduction in postoperative wound infection rates from 12.1% to 3.1% (p=0.01).[12]

Lower rate of intraoperative contamination

In a trial involving patients undergoing primary knee arthroplasty surgeries, the use of Ioban 2 Antimicrobial Incise Drapes, compared to the use of no incise drape, resulted in lower intraoperative contamination.[9]

Reduced organisms on the skin

Ioban 2 Antimicrobial Incise Drapes reduced bacterial wound contamination compared to the use of no incise drape. Ioban 2 Antimicrobial Incise Drapes reduced "wound contamination in those operations in which the dominant source of organisms is from the skin, namely, clean and clean-contaminated procedures."[13]

3M™ Ioban™ 2 Antimicrobial Incise Drape, together with a skin prep, adheres better and provides increased protection over other types of drapes

Why use 3M™ Ioban™ 2 Antimicrobial Incise Drape together with a skin prep?

Studies have shown that using 3M™ DuraPrep™ Surgical Solution Patient Preoperative Skin Preparation and 3M™ SoluPrep™ S Sterile Antiseptic Solution along with an antimicrobial incise drape helps keep it in place during the surgical procedure. In addition, the iodine inherent in the Ioban 2 adhesive means it provides a layer of antimicrobial protection that cannot be washed away during surgery.[13]

Better adherence than other antimicrobial drapes

In a prospective, randomized clinical study, the results showed Ioban 2 Antimicrobial Incise Drape adhered significantly better than ACTI-Gard drape to skin prepped with either 3M™ DuraPrep™ surgical solution or BD ChloraPrep™ ($p < .001$).[14]

Protection that cannot be washed away

Relying on skin preps alone can leave patients open to the risk of SSIs because it's possible that the prep can be compromised or washed away by irrigation or other fluids.

With Ioban 2 Antimicrobial Incise Drape, iodine is inherent to the adhesive formulation and presence of plastic film so the iodine cannot be washed away.[15]

Less drape lift

A prospective, randomized clinical study showed there was less drape lift when Ioban Antimicrobial Incise drapes were used with 3M™ DuraPrep™ surgical solution than when used with povidone iodine (PVP-I) skin preparation during total joint replacement surgery.[16]

When used with an incise drape, 3M™ SoluPrep™ S Sterile Antiseptic Solution can enhance drape adhesion to the skin to help ensure it adheres throughout the surgical procedure. Ioban 2 Antimicrobial Incise Drape lifted 52% less frequently over skin prepped with SoluPrep S Sterile Antiseptic Solution. Reducing incise drape lift can prevent bacteria from migrating into the surgical wound.*[17]

*Compared to skin prepped with ChloraPrep® with 3M™ Ioban™ 2 Antimicrobial Incise Drapes in a simulated knee surgery model, 2019.

3M™ Ioban™ 2 Antimicrobial Incise Drape adheres better and protects patients from SSIs more than non-antimicrobial incise drapes

Separate studies have shown that the use of antimicrobial incise drape significantly reduced SSI incidence in spine and cardiac surgeries compared with the use of non-antimicrobial incise drapes.

A cost-effective solution to help prevent SSIs

In a study that examined the efficacy in preventing surgical site infections (SSIs) in cardiac surgery, using two different incise drapes (non-antimicrobial incise drape and antimicrobial incise drape), a cost analysis was also considered. Between January 2008 and March 2015, data was collected on 5,100 consecutive cardiac surgery patients.

Use of the Ioban 2 Antimicrobial Incise Drape resulted in a significantly lower incidence of SSIs (down by 71%), and also offered **€773,495 in cost savings** compared to a standard steri-drape.[8]

See details here.

A significant reduction in the rate of SSIs

In a retrospective study analysis of 2,279 patients done in a German high volume, university spine center between January 2018 and December 2021, analyses showed that use of an antimicrobial incise drape was the factor that was significantly associated with a lower risk of SSIs when compared to non-antimicrobial incise drape adhesive incision drapes. In fact, the study showed a **75% reduction in surgical site infection rates.**[18]

See details here.

Better drape adherence

In a prospective, randomized clinical study, the results showed Ioban 2 Antimicrobial Incise Drape adhered significantly better to skin than 3M™ Steri-Drape™ 2 clear, non-antimicrobial incise drape when prepped with either DuraPrep solution or ChloraPrep ($p < .001$).[14]

Comparison of efficacy and cost of iodine impregnated drape vs. standard drape in cardiac surgery: study in 5,100 patients[8]

▲ Level 3

Jonida Bejko, Vincenzo Tarzia, Massimiliano Carrozzini, Michele Gallo, et al. Comparison of Efficacy and Cost of Iodine Impregnated Drape vs. Standard Drape in Cardiac Surgery: Study in 5100 Patients. *J Cardiovasc Transl Res* 2015, 8:431-7.

Study design

Retrospective study considered prospectively collected data from 5,100 cardiac surgery patients between January 2008 and March 2015.

Study purpose

- To evaluate the impact of the use of two incise drapes (antimicrobial and non-antimicrobial) on incidence of surgical site infection in cardiac surgery.
- A detailed cost analysis was also completed.

Methods

Using a propensity-matched analysis, 808 patients from each group were matched for available risk factors.

Results

Surgical Site Infection (SSI) rate reduction

71%

SSI reduction

1.9% SSI rate (15/808) for patients receiving 3M™ Ioban™ 2 Antimicrobial Incise Drape vs. 6.5% (53/808) for the non-iodine-impregnated incise drape (p=0.001).*

Cost reduction

€773,495

The reason for this difference is the cost related to the treatment of the complications, such as negative pressure wound therapy, hospitalization days, sternal wound revision, antibiotic therapy and antiseptics.

*Percentage calculation(s) is/are derived based on relative patient group incident rate reported in this study.

Key points

Summary

Ioban 2 Antimicrobial Incise Drape is a cost-effective intervention associated with a significantly lower incidence of SSI.

Plastic iodophor drape during liver surgery operative use of the iodophor-impregnated adhesive drape to prevent wound infection during high risk surgery[12]

▲ Level 3

Yasuko Yoshimura, Shoji Kubo, Kazuhiro Hiroshashi, Masao Ogawa, et al. Plastic iodophor drape during liver surgery operative use of the iodophor-impregnated adhesive drape to prevent wound infection during high risk surgery. *World J Surg*. 2003, 27:685-8.

Study design

Retrospective study of 296 patients undergoing liver resection for hepatocellular carcinoma (HCC).

Study purpose

To assess risk factors for wound infection after liver resection for HCC, with special attention to plastic adhesive drapes impregnated with iodophor.

Methods

- Retrospective regression analysis to assess risk factors for wound infection after liver resection surgery.
- The presence or absence of wound infection was recorded up to 30 days after operation.
- Variables examined included age, gender, BMI, alcohol abuse, smoking, systemic steroid use, DM, liver cirrhosis, laboratory test results, duration of preoperative hospital stay, preoperative transcatheter arterial embolization, preoperative portal vein embolization, type of skin incision, type of liver resection, operating time, intraoperative blood loss, autologous blood transfusion, and use of the plastic iodophor drape.

Results

Wound infection rate reduction

74%

wound infection reduction

Wound infections developed in 21 of 174 patients (12.1%) without the drapes and in 4 of 122 patients with the drapes (3.1%) (p=0.0096).

- Multivariate regression analysis showed that a low body mass index (BMI), smoking, and nonuse of the iodophor drapes were independent risk factors for wound infections.
- Separation of the iodophor drape from the skin did not occur in any of the patients during the operation.
- None of the patients showed evidence of an allergic reaction to iodophor.
- Most wound infections were caused by skin organisms, including Staphylococcus aureus and Staphylococcus epidermidis.

Key points

Summary

Plastic adhesive drapes impregnated with iodophor appear to be useful for decreasing intraoperative contamination with skin bacteria, which may decrease the rate of wound infection, although a prospective study is necessary to obtain any definitive conclusions.

Incise draping reduces the rate of contamination of the surgical site during hip surgery: a prospective, randomized trial[10]

▲ Level 1

Maryam Rezapoor, Timothy Tan, Mitchell Maltenfort, Javad Parvizi. Incise Draping Reduces the Rate of Contamination of the Surgical Site During Hip Surgery: A Prospective, Randomized Trial. *J Arthroplasty 2018*, 33:1891-5.

Study design

Prospective, randomized clinical trial, studying 101 patients undergoing open joint preservation procedure of the hip.

Study purpose

To evaluate the efficacy of iodophor-impregnated adhesive drapes for reducing bacterial count at the incision site.

Methods

- Patients without adhesive drapes were significantly more likely to have bacteria present at the time of skin closure, and at all time points when swab cultures were taken.
- Half the patients had the adhesive drape applied to the skin prior to incision, while the remainder underwent the same surgery without a drape.
- Culture swabs were taken from the surgical site at 5 points (pre-skin preparation, after skin preparation, post-incision, before subcutaneous closure, prior to dressing application) and sent for culture and colony counts.
- Mixed-effects logistic regressions were used to estimate effects of time and drape application on contamination rate.

Results

Bacterial contamination risk reduction

55%

reduction of risk of bacterial colonization of incision site

12% of incisions with iodophor-impregnated adhesive drape and 27% without adhesive drapes were positive for bacterial colonization at closure of surgery (OR=2.38; 95% CI, 1.05–5.26; *p*=0.031).*

- Patients without an iodophor-impregnated drape were more likely to demonstrate a positive culture (adjusted OR 2.38; 95% CI, 1.053–5.263; *p*=0.031).*
- Patients without adhesive drapes were significantly more likely to have bacteria present at the time of skin closure, and at all time points when swab cultures were taken.
- Patients with no drape have increased odds (adjusted OR 5.89; 95% CI, 1.19–33.33; *p*=0.030) of bacterial contamination compared to those with drapes that demonstrated no lift off, whereas odds (adjusted OR 2.94; 95% CI, 0.24–33.33; *p*=0.397) seem to be reduced for patients with drape lift.*

*Percentage calculation(s) is/are derived based on relative patient group incident rate reported in this study.

Key points

Summary

- Iodophor-impregnated adhesive draping significantly reduces bacterial colonization of the incision, specifically hip surgery.
- Bacterial count at the skin was extremely high in some patients in whom adhesive drapes were not used, raising the possibility that a subsequent surgical site infection or peri-prosthetic joint infection could arise had an implant been utilized.
- This study found that baseline bacterial colonization predisposes the patient to an increased likelihood of colonization at later time periods. However, the use of iodophor-impregnated drapes appears to mitigate this risk of colonization. Furthermore, this study found that operative time was independently associated with culture positivity.

Antimicrobial activity and skin permeation of iodine present in an iodine-impregnated surgical incise drape[1]

▲ Level 5

Casey AL, Karpanen TJ, Nightingale P, et al. Antimicrobial activity and skin permeation of iodine present in an iodine-impregnated surgical incise drape. *J Antimicrob Chemother*. 2015, 70:2255-60.

Study design

Ex vivo study on full-thickness human skin from 20 patients.

Study purpose

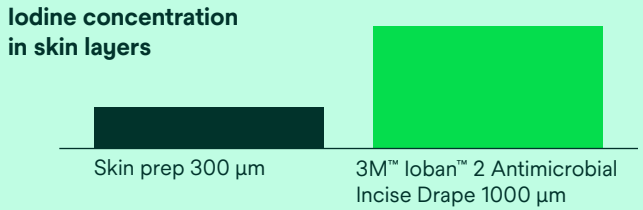
- To evaluate the antimicrobial efficacy of 3M™ Ioban™ 2 Antimicrobial Incise Drape against MRSA in a human skin model.
- To assess the presence of iodine from Ioban 2 Antimicrobial Incise Drape in the deeper skin.

Methods

- Donor skin was inoculated with either 1×10^3 or 1×10^6 cfu MRSA/cm^2 skin and mounted on Franz diffusion cells.
- Skin was incubated at room temperature for 5 minutes or 18 hours.
- The antimicrobial activity was assessed at 5 minutes, 2 hours and 6 hours after drape application, no additional skin antiseptic protocol done.
- Permeation of iodine into the skin was determined by assessing iodine concentration in different skin layers by mass spectroscopy (ICP-MS) following application of the incise drape for 6 hours.

Results

Antimicrobial activity



- 1×10^3 EMRSA-15 and incubation for 18h: Application of the iodine-impregnated drape resulted in the recovery of significantly fewer cfu compared with the non-use of a drape (p=0.014).
- 1×10^6 EMRSA-15 and incubation for 18h: No significant difference in the number of cfu recovered when an iodine-impregnated or non-antimicrobial-impregnated drape was used or when no drape was used (p=0.935).
- 1×10^6 EMRSA-15 and incubation for 5m: Cfu counts were significantly lower for the iodine-impregnated drape than for the non-antimicrobial drape (p=0.001) and nonuse of a drape (p=0.002) skin permeation.
- Iodine concentration in skin layers up to 1000 µm are above MIC and MBC values.

Key points

Summary

Iodine-impregnated adhesive incise drapes show antimicrobial activity on the skin surface as well as in deeper skin layers and may help to suppress microbial re-colonization around the surgical site. The use of iodine-impregnated incise drapes is preferable over the use of a standard incise drape or nonuse of a drape.

Does an antimicrobial incision drape prevent intraoperative contamination? A randomized controlled trial of 1,187 patients[9]

▲ Level 1

Anne Brun Hesselvig, Magnus Arpi, Frank Madsen, Thomas Bjarnsholt, et al. ICON Study Group. Does an Antimicrobial Incision Drape Prevent Intraoperative Contamination? A Randomized Controlled Trial of 1187 Patients. *Clin Orthop Relat Res*. 2020;478(5):1007-1015.

Study design

Prospective, multicenter, randomized clinical trial, of 1,187 patients undergoing primary knee arthroplasty between March 1, 2016 and April 13, 2018.

Study purpose

- To evaluate the effectiveness of antimicrobial surgical drapes reducing the risk of intraoperative microbial contamination in patients undergoing primary knee arthroplasty.
- To determine if other factors, such as sex, season, age and type of arthroplasty are associated with an increased risk of contamination.
- To determine if antimicrobial drape lift increases risk of contamination.
- A detailed cost analysis was also completed.

Methods

- Participants were patients older than 18 years undergoing primary knee arthroplasty.
- Patients were randomly assigned to operation with an antimicrobial drape (intervention group) or operation without (control group).

Results

Bacterial contamination risk reduction

33%

reduction of risk of bacterial colonization of incision site*

- 10% contamination detected when iodinated drapes were used vs. 15% when they were not used (OR 0.61; 95% CI, 0.43–0.87, *p*=0.005).*

Drape lift

Antimicrobial drape lift of more than 10 mm separation from the skin had higher odds of contamination (OR 3.54; 95% CI, 1.64–11.05; *p*=0.0013).*

*Percentage calculation(s) is/are derived based on relative patient group incident rate reported in this study.

Key points

Summary

- The use of antimicrobial drape resulted in lower contamination risk than operating without an antimicrobial drape.
- Procedures in females (OR=0.55; 95% CI, 0.39–0.80; *p*=0.002) and those performed in the central region were less likely to show contamination (OR=0.45; 95% CI, 0.25–0.78; *p*=0.006). No other factors were associated with the risk of contamination.*

Reducing the rate of surgical site infection using iodophor-impregnated adhesive incision draping in spine surgery compared with standard adhesive incision draping: a study in 2279 patients[18]

▲ Level 3

Aylin Gencer, Christian Schichor, Joerg-Christian Tonn, Sebastian Siller. *Neurosurg Spine*. Nov 10 2023:1-7. doi:10.3171/2023.9.SPINE23764

Study design

Retrospective analysis of 2,279 patients in German high volume, tertiary care university spine centre.

Study purpose

Investigation of effect of iodophor-impregnated adhesive incision drape on Surgical Site Infection (SSI) rates and pathogen pattern compared to non-impregnated incision drape in patients undergoing spinal surgery.

Methods

- Retrospective analysis of all patients that underwent instrumental and non-instrumental spine surgery for non-septic spine disease between January 2018 and December 2021.
- With introduction of iodophor-impregnated incise drapes in Sep 2019 the total population was divided into a control cohort using non-impregnated incise drapes and a study cohort using iodophor-impregnated incise drapes.
- Epidemiological aspects, baseline characteristics, operative records and rates and characteristics of postoperative SSIs have been analysed.
- Patient surveillance was done for six months after surgery. SSI have been classified according to CDC criteria.

Results

Surgical Site Infection Rates

75%

SSI Risk Reduction

- Surgical Site Infection occurred in 2/1154 (0.2%) in the study group vs 9/1125 (0.8%) in the control group (p=0.036).
- Use of iodophor-impregnated incise drape was the only significant risk factor in uni- and multivariate analysis (Univariate: OR 0.22; 95% CI 0.05-0.99, p=0.049; multivariate: 0.19; 95% CI 0.04-0.9; p=0.04).
- Most SSIs were classified as “deep incisional” (45.5%) or “organ space” (45.5%).

Microbiological Findings

Staph aureus and *Staph epidemidis* were predominantly prevalent in both cohorts. Fecal germs such as *Enterococcus* or *Enterobacter* species were only found in the control group.

Key points

Summary

The study suggests that the use of iodophor-impregnated drapes significantly reduced SSI incidence in non-septic disease spine surgery compared with the use of non-impregnated incise drapes.

The Effectiveness of Sterile Wound Drapes in the Prevention of Surgical Site Infection in Thoracic Surgery[19]

▲ Level 3

Kemal Karapinar, Celalettin Ibrahim Kocaturk. The Effectiveness of Sterile Wound Drapes in the Prevention of Surgical Site Infection in Thoracic Surgery. *Biomed Res Int*. 2019;2019:1438793. doi:10.1155/2019/1438793

Study design

Retrospective analysis of 654 patients undergoing resection via thoracotomy with and without an iodophor-impregnated incise drape.

Study purpose

Evaluate the effectiveness of iodophor-impregnated drape to prevent surgical site infection (SSI) and the effect on hospitalisation costs.

Methods

- Retrospective analysis of a control group without an iodophor-impregnated drape between Jan 2013 and Dec 2014 and a study group with an antimicrobial incise drape after introduction of incise drapes between Jan 2015 and Dec 2016.
- Patients were stratified according to presence of risk factors and univariate analysis was performed.
- Hospital costs have been defined as data reported to social security institution and are including medication, materials and personnel cost throughout hospitalisation period.

Results

Surgical Site Infection Rates

68%

SSI Risk Reduction

Surgical Site Infection occurred in 11/380 (2.90%) in the study group vs 25/274 (9.12%) in the control group (OR 0.3 95% CI 0.14-0.61, p=0.001).

Hospital Cost

Hospital cost have been significantly lower in the study group (5942±2740) than in the control group (4813±1996) (OR 0.83;95% CI 0.78-0.98; p=0.0001).

Key points

Summary

The use of iodophor-impregnated drapes can be recommended to reduce SSI in lengthy thoracic surgical procedures.

Many international guidelines recommend using antimicrobial drapes over non-antimicrobial drapes

Guidelines are shifting to distinguish between the benefits of antimicrobial and non-antimicrobial incise drapes

	Recommended by global organizations
KRINKO (2018)[20]	1. Iodine-impregnated incise drapes are antimicrobial effective and penetrate deeper skin layers, helping to reduce wound contamination and risk of SSI. 2. The use of non-impregnated incise drapes is not recommended.
APSIC (2019)[21]	When using adhesive incise drapes, do not use non-iodophor-impregnated drapes for surgery as they may increase the risk of surgical site infection. In orthopedic and cardiac surgical procedures where adhesive drapes are used, consider using an iodophor-impregnated incise drape, unless the patient has an iodine allergy or other contraindication.
NICE (2019)[22]	Do not use non-iodophor-impregnated incise drapes routinely for surgery, as they may increase the risk of SSIs. If an incise drape is required, use an iodophor-impregnated drape unless the patient has an iodine allergy.
AORN (2023)[23]	Do not use adhesive incise drapes without antimicrobial properties. Iodophor-impregnated adhesive incise drapes may be used in accordance with the manufacturer's IFU, unless contraindicated by a patient's allergy to iodine.
ICM (2018)[24]	Evidence indicates antimicrobial-impregnated incise drapes result in reduction in bacterial colonization of the surgical site. "While bacterial colonization of the incision may predispose to subsequent SSIs/PJIs, there is no literature to demonstrate that the use of incise drapes results in clinical differences in the rates of subsequent PJIs. Many surgeons prefer to utilize draping for physical isolation of sterile from nonsterile regions and to prevent migration of drapes during the procedure."

Solving our customer's toughest challenges throughout the surgical journey

Solventum offers inventive solutions, developed for surgical needs, to help protect patients and care providers while helping to restore lives. **Every patient, every time.**

Patient preparation

- Nasal decolonization
- Preoperative patient warming
- Hair removal
- Vascular access

Surgical intervention

- Sterilization assurance
- Temperature monitoring
- Surgical hand antisepsis
- Surgical skin antisepsis
- Antimicrobial incise draping
- Intraoperative patient warming

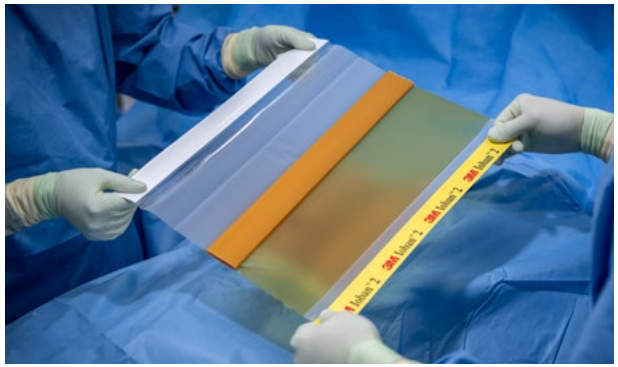
Patient recovery

- Negative pressure wound therapy with and without instillation
- Postoperative incision management
- Closed-incision negative pressure therapy
- Postoperative patient warming

A broad portfolio of antimicrobial incise drapes for your surgical protocol

3M™ Ioban™ 2 Antimicrobial Incise Drape

- Designed with continuous broad-spectrum antimicrobial activity built into the drape adhesive where the iodine can't be washed away
- Clinically proven to help reduce the risk of surgical site contamination and immobilize bacteria on the skin[13,25]



3M™ Ioban™ 2 Antimicrobial Incise Drape with Easy Delivery (EZ)

- Polyethylene liner comes off with no tearing, allowing for easy drape application
- Drape and liner feature a full-width handle for control of liner release and drape application

3M™ Ioban™ 2 Antimicrobial Incise Drape Specialty Drapes

- Specialty drapes with integrated Ioban antimicrobial incise film
- One step drape for special procedures such as c-section, craniotomy, or cardiovascular procedures

Orthopedic surgical procedures

Use this chart to see which 3M™ Ioban™ 2 Antimicrobial Incise Drape may be appropriate for your surgical application based on product features and dimensions.

	3M Cat No.	Product	Adhesive area	Items/ box	Boxes/ case	ACL	Arthros-copy	ORIF small ex-tremity	Hip pinning (prox. or distal)	Hip pinning (interlock-ing nail)	Pediatrics	Podiatry (including ankle)	Spine	Total hip	Total hip (anterior)	Total knee	Total shoulder
	6635	3M™ Ioban™ 2 Antimicrobial Incise Drape	3.875" x 7.875" 10cm x 20cm	10	4			■			■	■					
	6640	3M™ Ioban™ 2 Antimicrobial Incise Drape	13" x 13" 34cm x 35cm	10	4			■			■	■	■		■		■
	6640EZ	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	13" x 13" 35cm x 35cm	10	4			■			■	■	■		■		■
	6650	3M™ Ioban™ 2 Antimicrobial Incise Drape	22" x 17" 56cm x 45cm	10	4	■	■		■	■	■		■	■		■	■
	6650EZ	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	23" x 17" 60cm x 45cm	10	4	■	■		■	■	■		■	■		■	■
	6648	3M™ Ioban™ 2 Antimicrobial Incise Drape	22" x 23" 56cm x 60cm	10	4	■							■	■		■	
	6648EZ	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	23" x 23" 60cm x 60cm	10	4	■							■	■		■	
	6651	3M™ Ioban™ 2 Antimicrobial Incise Drape	22" x 33" 56cm x 85cm	10	4	■							■	■		■	
	6651EZ	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	23" x 33" 60cm x 85cm	10	4	■							■	■			
	6617	Isolation Drape with 3M™ Ioban™ 2 Antimicrobial Incise Film and Pouch	Overall size: 125" x 83" 320cm x 213cm Adhesive size: 19" x 9.37" 50cm x 24cm	5	4				■	■							
	6619	Large Isolation Drape with 3M™ Ioban™ 2 Antimicrobial Incise Film and Pouch	Overall size: 129" x 100" 378cm x 254cm Adhesive size: 27" x 12" 70cm x 32cm	5	1				■	■							

■ Incise drape for your application

■ Secondary option

■ Specialty incise drape

OB/GYN surgical procedures

Use this chart to see which 3M™ Ioban™ 2 Antimicrobial Incise Drape may be appropriate for your surgical application based on product features and dimensions.

	3M Cat No.	Product	Adhesive area	Items/ box	Boxes/ case	Open abdominal/ pelvic surgery	C-section
	**6650**	3M™ Ioban™ 2 Antimicrobial Incise Drape	22" x 17" 56cm x 45cm	10	4	■	■
	**6650EZ**	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	23" x 17" 60cm x 45cm	10	4	■	■
	**6648**	3M™ Ioban™ 2 Antimicrobial Incise Drape	22" x 23" 56cm x 60cm	10	4	■	
	**6648EZ**	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	23" x 23" 60cm x 60cm	10	4	■	
	**6657**	3M™ Steri-Drape™ Pouch with Ioban™ 2 Incise Film	Overall size: 34" x 29" 89cm x 76cm Incise area: 11" x 11" 30cm x 30cm	10	4	■	■
	**6658**	3M™ Steri-Drape™ Pouch with Ioban™ 2 Incise Film	Overall size: 30" x 30" 76cm x 76cm Incise area: 13" x 17" 33cm x 43cm	5	4	■	■
	**6659**	3M™ Steri-Drape™ Pouch with Ioban™ 2 Incise Film	Overall size: 29" x 34" 74cm x 87cm Incise area: 16" x 20" 43cm x 52cm	5	4	■	■
	**6697**	Cesarean Section Sheet with 3M™ Ioban™ 2 Antimicrobial Incise Pouch	Overall size: 100" x 115" 254cm x 292cm Adhesive size: 12" x 12" 30cm x 30cm	5	1		■
	6697CA	Steri-Drape™ Cesarean Section Sheet with 3M™ Ioban™ 2 Antimicrobial Incise Pouch and Clear Screen	Overall size: 100" x 118" 254cm x 300cm Adhesive size: 12" x 12" 30cm x 30cm	5	1		■

■ Incise drape for your application

■ Secondary option

■ Specialty incise drape

General surgical procedures

Use this chart to see which 3M™ Ioban™ 2 Antimicrobial Incise Drape may be appropriate for your surgical application based on product features and dimensions.

	3M Cat No.	Product	Adhesive area	Items/ box	Boxes/ case	Abdominal-perineal resection	Open appendectomy	Open colon resection	Open hernia repair	Laparotomy	Liver transplant	Kidney transplant
	**6661EZ**	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	10.5" x 8" 26cm x 20cm	50	2		■		■			
	**6640**	3M™ Ioban™ 2 Antimicrobial Incise Drape	13" x 13" 34cm x 35cm	10	4	■	■		■			
	**6640EZ**	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	13" x 13" 35cm x 35cm	10	4	■	■		■			
	**6650**	3M™ Ioban™ 2 Antimicrobial Incise Drape	22" x 17" 56cm x 45cm	10	4	■		■		■	■	■
	**6650EZ**	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	23" x 17" 60cm x 45cm	10	4	■		■		■	■	■
	**6648**	3M™ Ioban™ 2 Antimicrobial Incise Drape	22" x 23" 56cm x 60cm	10	4	■		■		■	■	■
	**6648EZ**	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	23" x 23" 60cm x 60cm	10	4	■		■		■	■	■

■ Incise drape for your application

■ Secondary option

Vascular/Cardiovascular/Thoracic surgical procedures

Use this chart to see which 3M™ Ioban™ 2 Antimicrobial Incise Drape may be appropriate for your surgical application based on product features and dimensions.

	3M Cat No.	Product	Adhesive area	Items/ box	Boxes/ case	Open abdominal aortic aneurysm (AAA)	AV fistula	Coronary artery bypass (CAB)	Coronary artery bypass with graft (CABG)	Carotid endarterectomy	Embolectomy	Femoropopliteal bypass	Lobectomy	Valve replacement	Pacemaker
	6635	3M™ Ioban™ 2 Antimicrobial Incise Drape	3.875" x 7.875" 10cm x 20cm	10	4		■			■	■				
	6640	3M™ Ioban™ 2 Antimicrobial Incise Drape	13" x 13" 34cm x 35cm	10	4										■
	6640EZ	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	13" x 13" 35cm x 35cm	10	4										■
	6661EZ	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	10.5" x 8" 26cm x 20cm	50	4		■			■	■				■
	6650	3M™ Ioban™ 2 Antimicrobial Incise Drape	22" x 17" 56cm x 45cm	10	4	■	■				■		■		
	6650EZ	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	23" x 17" 60cm x 45cm	10	4	■	■				■		■		
	6648	3M™ Ioban™ 2 Antimicrobial Incise Drape	22" x 23" 56cm x 60cm	10	4	■		■	■				■	■	
	6648EZ	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	23" x 23" 60cm x 60cm	10	4	■		■	■				■	■	
	6651	3M™ Ioban™ 2 Antimicrobial Incise Drape	22" x 33" 56cm x 85cm	10	4	■		■	■			■			
	6651EZ	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	23" x 33" 60cm x 85cm	10	4	■		■	■			■			
	6677	Cardiovascular Sheet with 3M™ Ioban™ 2 Antimicrobial Incise Film	Overall area: 100" x 150" 254cm x 381cm Adhesive area: 16" x 38" 41cm x 97cm	6	1			■	■					■	
	6681	Cardiovascular Drape with 3M™ Ioban™ 2 Antimicrobial Incise Film	Overall area: 100" x 151" 254cm x 384cm Adhesive area: 16" x 61" 41cm x 154cm	8	1				■						
	6682	Cardiovascular Drape	Overall area: 130" x 39" 330cm x 100cm Adhesive area: 30" x 17" 78cm x 43cm	8	1			■	■					■	

■ Incise drape for your application ■ Secondary option ■ If not using the 3M™ Steri-Drape™ Cardiovascular Sheet with 3M™ Ioban™ 2 Antimicrobial Incise Film 6681, you could use the 3M™ Steri-Drape™ Cardiovascular Sheet with 3M™ Ioban™ 2 Antimicrobial Incise Film 6677 in combination with either the large 3M™ Ioban™ 2 Antimicrobial Incise Drape 6648/6648EZ or extra-large 3M™ Ioban™ 2 Antimicrobial Incise Drape 6651/6651EZ.

Neurologic/Spinal surgical procedures

Use this chart to see which 3M™ Ioban™ 2 Antimicrobial Incise Drape may be appropriate for your surgical application based on product features and dimensions.

	3M Cat No.	Product	Adhesive area	Items/ box	Boxes/ case	Craniotomy	VP shunt	Spine
	**6640**	3M™ Ioban™ 2 Antimicrobial Incise Drape	13" x 13" 34cm x 35cm	10	4	■	■	■
	**6640EZ**	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	13" x 13" 35cm x 35cm	10	4	■	■	■
	**6650**	3M™ Ioban™ 2 Antimicrobial Incise Drape	22" x 17" 56cm x 45cm	10	4			■
	**6650EZ**	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	23" x 17" 60cm x 45cm	10	4			■
	**6648**	3M™ Ioban™ 2 Antimicrobial Incise Drape	22" x 23" 56cm x 60cm	10	4			■
	**6648EZ**	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	23" x 23" 60cm x 60cm	10	4			■
	**6651**	3M™ Ioban™ 2 Antimicrobial Incise Drape	22" x 33" 56cm x 85cm	10	4			■
	**6651EZ**	3M™ Ioban™ 2 Antimicrobial Incise Drape EZ	23" x 33" 60cm x 85cm	10	4			■
	**6687**	Craniotomy Drape with 3M™ Ioban™ 2 Antimicrobial Incise Pouch	Overall area: 77" x 160" 196cm x 406cm Adhesive area: 14.5" x 8.43" 36.8cm x 21.4cm	10	1	■		

■ Incise drape for your application

■ Secondary option

■ Specialty incise drape

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For more information about how 3M™ Ioban™ 2 Antimicrobial Incise Drapes can help you fight SSIs, contact your Solventum account representative or visit go.solventum.com/IobanPDF.

solventum

2510 Conway Ave.
St. Paul, MN 55144 U.S.A.

Phone 800-228-3957
Web Solventum.com

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