

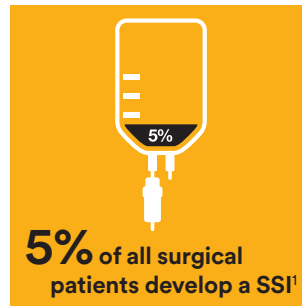


**3M** Science.  
Applied to Life.™

# Reducing the risk of Surgical Site Infections

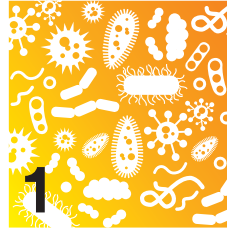
3M™ Ioban™ 2 Antimicrobial Incise Drapes

# Impact of Surgical Site Infections.



# Risk of SSI is linked to number of skin microbes.

The Centers for Disease Control and Prevention (CDC) states that the risk of surgical site infection (SSI) can be measured according to three distinct variables:<sup>8</sup>



**1**  
**The dose  
of microbial  
contamination**  
i.e. how many  
microbes there are.



**2**  
**The virulence  
of contaminating  
microbes**  
i.e. how infectious  
the microbes are.



**3**  
**The resistance  
of the host**  
i.e. how good the  
patient's immune  
system is.

This relationship can be represented as:

$$\text{Risk of SSI} = \frac{\text{Number of microbes} \times \text{Virulence of microbes}}{\text{Host's immune system}}$$

Human skin contains up to 100,000 microbes per sq cm.

**Just 100 microbes per sq cm can result in an SSI.<sup>9</sup>**

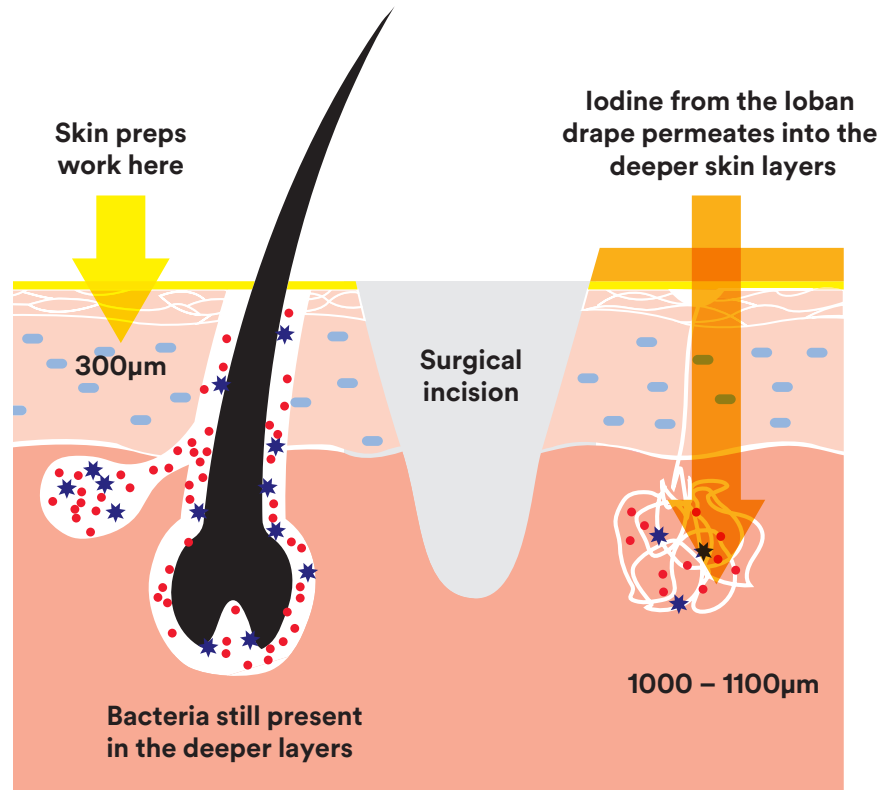
# New evidence in the fight against SSI.

We know that most surgical site infections (SSI) are caused by the contamination of a surgical incision with microbes from the patient's own body during surgery. Infection caused by microorganisms from an outside source following surgery is less common.<sup>6</sup>

Whilst skin preps reduce microbes on the skin surface, bacteria in the deeper skin layers will remain. Over time these microbes can recolonise the skin surface.

New evidence now demonstrates that iodine released from 3M™ Ioban™ 2 Antimicrobial Incise Drapes is able to penetrate these deeper skin layers at a concentration required for microbial death.<sup>10</sup>

**Helping to prevent skin recolonisation and defend against SSIs.**



# Works in the deeper skin layers.

In 2015, a study by Elliott et al<sup>10</sup> measured the permeation of iodine from 3M™ Ioban™ Drapes by inoculating samples of human skin with MRSA epidemic strain EMRSA-15 and applying Ioban to the skin surface for six hours. The drape material was then removed from the skin surface and the skin samples were immediately cryogenically frozen. Samples of skin 100µm in diameter (to a depth of 1500µm) were then sectioned. Iodine was then extracted from each section and the concentration of iodine measured.

Iodine from the Ioban drapes was found to be present at levels required for microbial death at a depth of 1000 to 1100µm – **thereby reaching the deeper skin layers.**

Chlorhexidine gluconate (CHG) skin prep by contrast is able to permeate skin at a concentration required for microbial death to a depth of only 300µm.

# Reducing the risk of SSIs. The proof.

**Yoshimura et al.<sup>11</sup>**

**Plastic iodophor drape during liver surgery operative use of the iodophor impregnated adhesive drape to prevent wound infection during high risk surgery. World J. Surgery. 2003; 27:685-688**

The objective of this study was to investigate the risk factors associated with wound infection, with special reference to the use of 3M™ Ioban™ 2 Antimicrobial Incise Drapes.

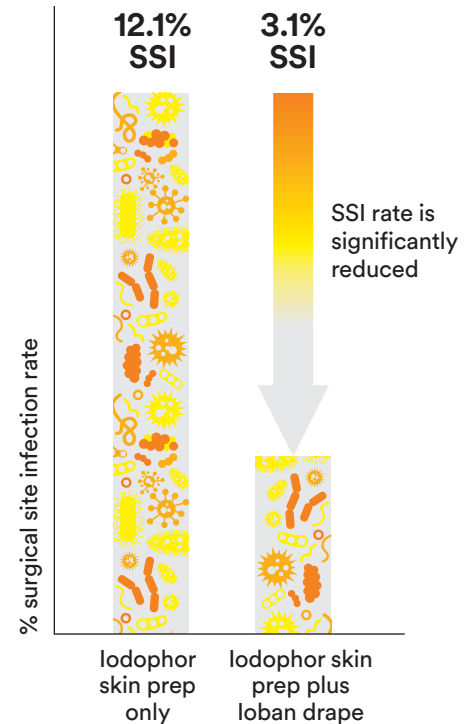
## Methodology

A retrospective study on 296 patients undergoing high risk liver surgery. Of these patients, 122 were treated using an iodophor skin prep and Ioban incise drape; the other 174 patients were treated with the iodophor skin prep alone. Wound infection (SSI) rates were then measured.

## Results

The SSI rates of patients treated with iodophor skin prep alone was 12.1%. In contrast the SSI rates of patients who were treated with iodophor skin prep and an Ioban incise drape was 3.1%. This result was statistically significant ( $p=0.001$ ).

**The author concluded:**  
**“The non-use of Ioban is a possible risk factor for wound infection after liver surgery.”**



**Bejko et al.**<sup>12</sup>

**Comparison of efficacy and cost of iodine impregnated drape vs. standard drape in cardiac surgery: Study in 5100 patients. J Cardiovasc Trans. Res. 2015; 8:431-437**

The objective of this study was to compare the efficacy and cost of 3M™ loban™ 2 Antimicrobial Incise Drapes versus standard incise drapes.

## Methodology

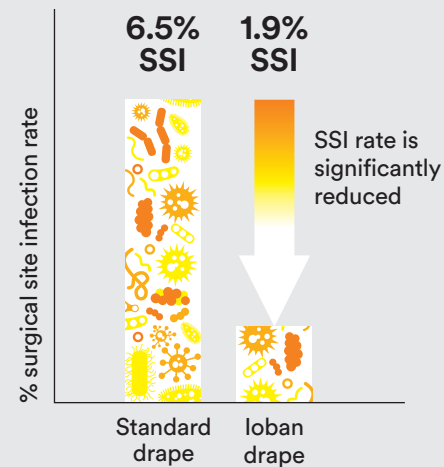
A prospective randomised study of 5100 patients undergoing cardiac surgery. Of these patients, 1016 were matched in terms of risk factors. One group consisting of 808 patients received iodine based skin prep and a standard incise drape; the other group of 808 patients received iodine based skin prep and an loban incise drape.

The overall costs for each group were then measured, taking into consideration the cost of drapes, antibiotics, VAC therapy, sternal wound revision, staff salaries and extended hospital stay.

## Results

The SSI rate for each group of patients was measured. The group which received a standard drape reported a SSI rate of 6.5%. The group of patients which received loban drapes reported a SSI rate of 1.9%. This difference is considered significantly different ( $p= 0.001$ ).

A cost analysis demonstrated that although the upfront cost of an loban incise drape was greater than a standard incise drape, once the additional costs associated with SSI were accounted for, the use of the loban incise drapes offered cost savings of €957 per patient.





# Product information.

3M™ Ioban™ 2 Antimicrobial Incise Drapes offer the following clinical benefits for you and your patients:

- ▶ Creates a barrier, reducing the risk of bacteria transferring into the surgical wound
- ▶ Antimicrobial impregnated film ensures constant contact with a patient's skin – even during irrigation
- ▶ Provides continuous broad-spectrum antimicrobial activity all the way to the incision edge
- ▶ Adheres securely to the skin to help prevent drape lift and prep wash-off
- ▶ Low memory stretch allows limb mobilisation or heavy retraction with reduced tension to the skin
- ▶ Made from a breathable, latex-free film



# NICE recommendations.<sup>14</sup>

**If an incise drape is required for surgery, use an iodophor-impregnated drape unless the patient has an iodine allergy.**

## Did you know...

Around 30% of infections can be prevented through application of existing knowledge and tools.<sup>11</sup> 3M™ Ioban™ Incise Drapes are one of the most underused tools across the surgical pathway.

# What clinicians say...

**“Ioban is a part of our golden standard of care that we provide to all of our patients. It is quick, easy and efficient to use.”**






Frank McDermot  
Head of Neurosurgery  
Edinburgh Western General Hospital

**“You can never fully sterilise skin, but you can clean skin to give a sterile field by using a sterile impregnated incise drape... where nothing can grow. The site is then sealed under plastic in a sterile environment.”**






Mr Phillip Roberts  
Consultant Orthopaedic Surgeon  
University Hospital of North Staffordshire

# Product codes: 3M™ Ioban™ Incise Drapes.

## 3M™ Ioban™ 2 Antimicrobial Incise Drapes








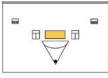
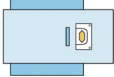
3M Cat No.	Product	Overall size	Adhesive area	Items/box	Boxes/case	Recommended application
6635	Treatment incise 	15cm x 20cm	10cm x 20cm	10	4	For small limb surgery i.e. fingers and toes
6640EU	Small incise 	44cm x 35cm	34cm x 35cm	10	4	Small limb surgery, ankles, wrists
6650EU	Medium incise 	66cm x 45cm	56cm x 45cm	10	4	Hernia repair, paediatrics
6648EU	Large incise 	66cm x 60cm	56cm x 60cm	10	4	Knees, shoulders, abdominal procedures
6651EU	Extra large incise 	66cm x 85cm	56cm x 85cm	10	4	Hips, cardiac surgery, major abdominal surgery

## 3M™ Ioban™ 2 Antimicrobial Incise Drapes EZ

3M Cat No.	Product	Overall size	Adhesive area	Items/box	Boxes/case	Recommended application
6661EZ	Frame delivery 	30cm x 20cm	26cm x 20cm	50	2	Paediatric surgery, ankles, wrists
6640EZE	Small incise 	60cm x 35cm	35cm x 35cm	10	4	Small limb surgery, ankles, wrists
6650EZE	Medium incise 	90cm x 45cm	60cm x 45cm	10	4	Hernia repair, paediatrics
6648EZE	Large incise 	90cm x 60cm	60cm x 60cm	10	4	Knees, shoulders, abdominal procedures
6651EZE	Extra large incise 	90cm x 85cm	60cm x 85cm	10	4	Hips, cardiac surgery, major abdominal surgery

# Product codes: 3M™ Ioban™ Speciality Drapes.

## 3M Drapes with Ioban 2 Incise Area (Specialty Drapes)

3M Cat No.	Product	Overall size	Adhesive area	Items/box	Boxes/case	Recommended application
6665	Abdomino-perineal drape 	200cm x 270cm	35cm x 46cm	10	1	General surgery
6677	Cardiovascular sheet 	274cm x 338cm	41cm x 92cm	6	1	Cardiac surgery
6681	Cardiovascular drape 	230cm x 230cm	30cm x 152cm	8	1	Cardiac surgery
6682	Cardiovascular drape 	330cm x 254cm	78cm x 43cm	8	1	Cardiac surgery
6657	Pouch with 3M™ Ioban™ 2 Incise Film 	87cm x 74cm	30cm x 30cm	10	1	Obstetrics, gynaecology
6697	Caesarean section drape 	196cm x 292cm	30cm x 30cm	5	1	Obstetrics, gynaecology
6617	Isolation drape 	320cm x 213cm	50cm x 24cm	5	4	Orthopaedic
6619	Large isolation drape 	328cm x 254cm	70cm x 32cm	5	1	Orthopaedic
6687	Craniotomy drape 	196cm x 432cm	36.8cm x 21.4cm	10	1	Neurosurgery

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# www.3Mae.ae/Medical

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