



Implementation of 3M™ Ioban™ 2 Antimicrobial Incise Drape for the prevention of surgical site infection (SSI) in cardiac sternotomy procedures.

Health-economic illustration

A retrospective study of 5,100 cardiac sternotomy patients¹ reports an efficacy of Ioban 2 Antimicrobial Incise Drape in reducing the incidence of SSI by over 71% compared with the standard of care use clear incise drapes.¹ Efficacy data [1.9% SSI rate (15/808) for patients receiving Ioban 2 Antimicrobial Incise Drape vs. 6.5% (53/808) for the non-iodine-impregnated incise drape ($p=0.001$)].

A recent systematic literature review and cost consequence study² reported the cost effectiveness of Ioban 2 Antimicrobial Incise Drape from a UK payer perspective. A deterministic cost consequence analysis suggested the use of an iodine-impregnated drape may result in cost savings of £549 per patient compared to the use of a standard drape. The results were also robust to sensitivity analyses performed on the baseline SSI risks and unit cost of SSI in a probabilistic sensitivity analysis (PSA) which reported an average cost saving of £554 per patient compared to a standard drape.

International guidelines recommend the use of Iodophor based surgical drapes for the Intraoperative phase of surgical management for the prevention of SSI.^{3,4,5,6,7}

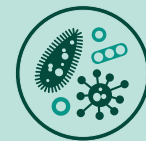
NICE guideline [NG125, April 2019] recommendation is:

Do not use non-iodophor-impregnated incise drapes routinely for surgery, as they may increase the risk of surgical site infection. If an incise drape is required, use an iodophor-impregnated drape unless the patient has an iodine allergy.⁸

The following calculated scenario is based on 100 cardiac sternotomy patients and presents the clinical and system cost benefits which may result from use of Ioban 2 Antimicrobial Incise Drapes vs a non-antimicrobial drape (based on the reported efficacy^{1,2} to reduce the risk of surgical site infection (SSI)) and when used in conjunction with good clinical practice (antibiotics, infection prevention protocols, and standard surgical technique).

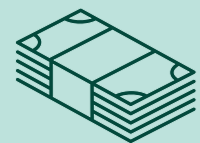
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Number of SSI's prevented in 100 patients



£56,111

SSI cost saving



71%

SSI cost saving



£55,839

Overall cost saving (69.6%)



£59

Acquisition cost per prevented SSI¹¹



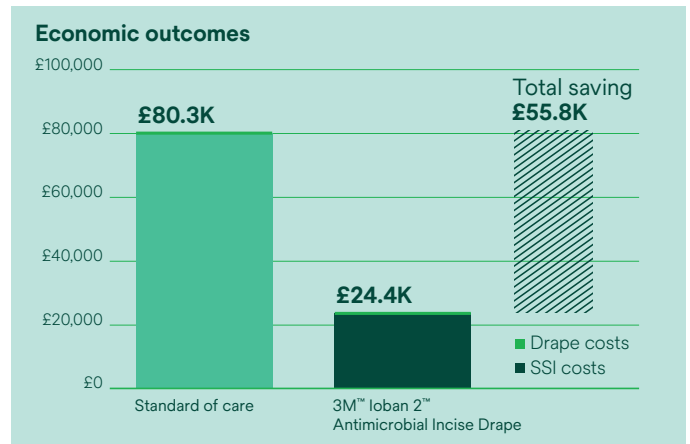
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NNT¹²



An increase in material costs is offset by a decrease in medical costs, yielding a total cost savings of £55,839.

Outcome for 100 patients		Standard drape	3M™ Ioban™ 2 Antimicrobial Incise Drape	Difference
Clinical outcomes	Number of SSI	6.5	1.9	4.6
Health economic outcomes	Drape costs	£970.00	£1,242.00	-£272.00
	SSI costs	£79,287.00	£23,176.20	£56,110.80
Total costs		£80,257.00	£24,418.20	£55,838.80



Solventum would be pleased to produce a bespoke illustration based upon your organisation's specific surgical activity.

Assumptions

- Baseline SSI rate **6.5%**¹
- Ioban SSI rate **1.9%**¹
- Cost of Ioban drape **£12.42**¹⁰
- Cost of Standard of Care drape **£9.70**¹⁰
- Cost of SSI **£12,198**^{8,9}

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

References

- 1 Bejko J, Tarzia V, Carrozzini M, 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(7):431-437.
- 2 Sworn K, Poku E, Thokala P, et al. Effectiveness of iodine-impregnated incise drapes for preventing surgical site infection in patients with clean or clean contaminated wounds: A systematic literature review and cost-consequence analysis. *J Perioper Pract* 2023;17504589221139603.
- 3 National Institute of Health and Care Excellence (NICE). Surgical site infections: prevention and treatment. (NG125) Published April 11, 2019. Accessed May 3, 2022.
- 4 Cowperthwaite L. AORN Guidelines for Perioperative Practice 2022. Denver, CO: Association for Perioperative Registered Nurses, 2022.
- 5 Asia Pacific Society of Infection Control Guidelines for the Prevention of Surgical Site Infections, 2019.
- 6 KRINKO Surgical Site Infection Prevention Guidelines, 2018.
- 7 NICE NG125 Aug 2020 sections 1.3.3; 1.3.4 <https://www.nice.org.uk/guidance/ng125/chapter/Recommendations>.
- 8 Jenks PJ, Laurent M, McQuarry S, Watkins R 2014 Clinical and economic burden of surgical site infection (SSI) and predicted financial consequences of elimination of SSI from an English hospital *The Journal of Hospital Infection* 86 (1) 24-3.
- 9 Curtis L and Burns A 2018 Unit costs of health and social care 2018, Personal Social Services Research Unit, University of Kent, Canterbury. Available at <https://doi.org/10.22024/UniKent/01.02.70995>.
- 10 3M Drape average selling prices UK. 3M™ Steri-Drape™ 2 Incise Drape, 2051, Incise Area 60 cm x 85 cm and 3M™ Ioban™ 2 Antimicrobial Incise Drape 6651EZ 56cm x 85cm.
- 11 Acquisition cost per prevented SSI = (Cost of 3M Ioban - Cost of standard of care) / (No of SSI's prevented) = (£1242 - £970) / 4.6 = £59.13.
- 12 NNT (numbers needed to treat) is the inverse of the absolute risk reduction (ARR): NNT = 1/ARR where ARR = CER (control event rate) - EER (Experimental Event rate) = 1 / (0.065 - 0.019) = 21.7.

*value expressed to 1 significant figure

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