

RISK FACTORS

- Surgical site infection (SSI) is one of the most common healthcare associated infections (HAI), estimated to account for 15.9% of inpatient HAI in NHSScotland. SSIs have serious consequences for patients affected as they can result in pain, suffering and in some cases require additional surgical intervention
- Micro-organisms can originate from: the patient's skin, from healthcare workers and/or the environment; before, during or after surgery.
- SSI risk increases: when the patient is immuno-compromised (by drugs or disease) has a pre-existing site of infection, is malnourished or obese, or has an ASA score of ≥ 3 . The risk of SSI is also associated with longer than normal operation times, the surgical procedures, long pre-operation stays and smoking.

ENVIRONMENT

Theatre & Ward:

- The Ward and Theatre must be clean and dust free with surfaces also clutter free to aid cleaning.

Theatre:

- Maintain positive-pressure ventilation in operating room with respect to corridors and adjacent rooms.
- Ventilation is compliant with SHTM 2025.
- Keep operating room doors closed except for essential passage.
- Limit the number of HCWs in the theatre.
- In orthopaedic theatres consider laminar flow

EQUIPMENT

Theatre:

- Check available instruments and other equipment and ensure they are free from organic matter and function pre use.
- Use instruments sterilised by approved processes within expiry dates.
- Don't open packs too early in theatre and have personal protective equipment ready to don.
- Do not use packs if there are any signs of contamination.

Ward:

- Ensure equipment for MRSA screening is available.
- Avoid contamination of clean linen with dust/skin scales.
- Do not place razors where they may be picked up and used unnecessarily for pre op hair removal.

Theatre & Ward:

- Use only single-use sterile equipment, with intact non-stained, non-wet packaging that is within its expiry date.
- Avoid the use of multi-dose vials.

Preventing Surgical Site Infections

METHODS (Pre operative)

- Ensure that a clinical risk assessment (CRA) for Methicillin resistant *staphylococcus aureus* (MRSA) screening is undertaken.
- If indicated from the CRA, undertake MRSA screening.
- Decolonise patient if the patient is found to be positive for MRSA.
- Plan for short pre-op stays.
- Identify and treat all infections pre-operatively. Consider postponing elective surgery, if infection present.
- Ensure that hair is not removed if at all possible; if hair removal is necessary, do not use razors.
- Ensure patient showered (or bathed/washed if unable to shower) on day of or day before surgery, using soap.
- Ensure that prophylactic antibiotic is prescribed as per local/ SIGN guideline or antibiotic policy for the specific operation category.
- Ensure that the antibiotic is administered within 60 minutes prior to the operation (blade to skin).
- Promote smoking abstinence.

METHODS (Perioperative)

- Ensure that 2% chlorhexidine in 70% alcohol solution is used for skin preparation (if patient has sensitivity use povidone iodine).*
 - The skin preparation solution should be single use.
 - Ensure the patient's body temperature is maintained above 36°C in the perioperative period (excludes cardiac patients).
 - Ensure that the diabetic patient's blood glucose level is kept <11mmol/l throughout the operation.
 - Ensure that the patient's haemoglobin saturation is maintained above 95% (or as high as possible if respiratory insufficiency).
 - Ensure that the wound is covered with a sterile wound dressing at the end of surgery.
 - Use drapes as a sterile field.
- * <http://www.mhra.gov.uk/Publications/Safetywarnings/MedicalDeviceAlerts/CON197918>

METHODS (Postoperative)

- Ensure that the wound dressing is kept in place for 48 hours after surgery (unless clinically indicated).
- Ensure that aseptic technique is used if there is excessive wound leakage and need for a dressing change.
- Ensure hand hygiene is performed before every aseptic dressing change (WHO Moment 2).
- Check that the need for invasive devices in situ is reviewed and recorded on a daily basis.
- Ensure timely removal of invasive devices following review.

HEALTHCARE WORKERS (HCWs)

Theatre:

- Should not enter theatre with skin infections or exfoliative skin conditions
- Comply with national BBV screening regimens.
- Perform surgical scrub technique, dry hands with sterile towel and then don sterile gown/gloves (as per National Infection Prevention and Control Manual).

Ward & Theatre:

- Keep nails short (no artificial nails or nail products).
- Must be committed to, and competent in the prevention of SSIs and listening to, observing patients and providing clear documentation.
- Data on performance should be displayed openly for genuine, positive discussions on how to optimise the care provided in the wards and theatres.
- Participate in SSI surveillance programmes.