SURGICAL SITE INFECTION POLICY BUNDLE : SURGICAL HAND ANTISEPSIS, GOWNING AND GLOVING

Department / Service:	SCSD
Originator:	Mat Trotman
Accountable Director:	Clinical Director SCSD
Approved by:	Anaesthetics, Critical Care, Theatres & Sterile Services Directorate Governance Meeting
Date of approval:	17th January 2024
Review Date This is the most current document and should be used until a revised version is in place :	17th January 2027
Target Organisation(s)	Worcestershire Acute Hospitals NHS Trust
Target Departments	Theatres
Target staff categories	All clinical staff involved in surgical care of patients

Policy Overview:
This policy sets out the expected best practise for all staff that take part in operative procedures and provides written detail on the best practise to scrub, gown and glove effectively to ensure asepsis is maintained in order to reduce the risk of cross infection to the patient.

Key amendments to this Document:

Date	Amendment	By:
June 2019	New document approved	Directorate Governance Meeting
Oct 2020	Re approved by SCSD Governance team	Directorate Governance Meeting

July 2023	Reviewed with no changes	AF/RB
28th Nov 2023	Document extended for 3 months whilst under review	Dr James Hutchinson
17.1.24	Review approved	TACCSS governance

Contents page:

1. Introduction

This policy aims to be used in conjunction with the other surgical site infection bundle policies to minimise the numbers of post-operative infections that may be accountable to the surgical phase of a patient's care. This particular section will focus on ensuring there is clear guidance and expectations on how scrub, gown and glove effectively to ensure asepsis is maintained in order to reduce the risk of cross infection to the patient.

2. Scope of this document

This document will cover all situations where a "scrubbed" practitioner will be required for a clinical intervention. It is acknowledged that under certain clinical emergencies this process maybe missed if there is a deemed threat to life.

3. Definitions

WAHNT – Worcestershire Acute Hospitals NHS Trust
Scrubbed Practitioner – This is the appropriately qualified healthcare professional that has washed their hands and directly assists the surgeon as their "scrub practitioner"

4. Responsibility and Duties

4.1. Role of the senior operating surgeon/clinician

The senior operating surgeon or clinician maintains responsibility for ensuring themselves and any of their medical team are following the handwashing, gloving and gowning procedure.

4.2. Role of the Divisional Managers & Divisional Directors of Nursing

Divisional Managers & Divisional Directors of Nursing maintain overall responsibility for compliance with this policy within their areas. This includes ensuring that Senior Managers have agreed and instigated a structure that ensures all staff have been informed, educated and trained appropriately for completion of the agreed task.

4.3. Role of the Theatre/Departmental Managers

Theatre or Departmental Managers assume responsibility for the implementation of this policy on a daily basis. To ensure the health, safety and risk management standards are met and maintained. Ensuring regular audits are carried out to monitor compliance with this policy

4.4. Role of Individual Staff

The Trust expects all staff, including temporary members, to adhere to the principles of this policy at all times

5. Policy Detail

Surgical Hand antisepsis

All staff should be in the appropriate theatre attire before commencing surgical hand antisepsis.

Fingernails must be short and free from polish or artificial (including acrylic and gel) nails.

Hands and forearms should be free from lesions or breaks in skin integrity. Minor lesions must be covered by a waterproof occlusive dressing. An individual with a major wound or infected wound must not scrub.

Using a systematic method of hand washing ensures an effective way of cleansing all areas of the hands and arms (Gould, 2000). Surgical hand antisepsis must be performed before donning sterile gloves for clinically invasive procedures

Surgical Hand Antisepsis Method:

1. For the first antisepsis of the day; hands must be washed with plain soap or an antiseptic solution and running water immediately before beginning of the surgical hand antisepsis.
2. Water should be at a comfortable temperature with a steady flow.
3. Hands and arms must be wet before applying the antiseptic solution.
4. The first wash should encompass both hands and arms to the elbows, utilising a systematic method to cover all areas.
5. The hands must remain above the level of the elbows and away from theatre attire to avoid contamination from a splashing.
6. The six steps of hand washing should be used for surgical antisepsis and social hand washing:

-Palm to palm
-Right palm over the left dorsum then left palm over right dorsum
-Palm to palm, fingers interlaced
-Backs of fingers to opposing palms with fingers interlocked
-Rotational rubbing of right thumb clasped in the left palm and vice versa
-Rotational rubbing backwards and forwards with clasped fingers of right hand in the left palm and vice versa.

1. Rinsing should be performed from the fingertips to the elbows using the water flow only.
2. Nails can be cleaned using a disposable nail pick under running water.

3. The use of a scrubbing brush is not necessary for reduction of bacterial counts and can lead to skin damage and an increase in skin cell shedding.
4. Subsequent washes should encompass 2/3 of the forearms to avoid compromising the cleanliness of the hands.
5. Hands must be rinsed thoroughly from the fingertips to the elbows, allowing excess water to drain from the elbows into the sink.
6. Splashing surgical attire should be avoided. If surgical attire becomes excessively wet this can compromise the protection afforded by the gown. It may be necessary to change attire before beginning the scrub-up procedure again.
7. Vigorous shaking of the hands to dispel water should be avoided.
8. Hands must be dried thoroughly – The skin should be blotted dry with sterile towels, as rubbing the skin in order to dry it will disturb skin cells. Adhering to the principle of working from the fingertips to the elbows and using one towel per hand is essential.
9. Hands are dried first by placing the opposite hand behind the towel and blotting the skin – and then using a corkscrew movement to dry from the hand to the elbow. The towel must not be returned to the hand once the arm has been dried and must be discarded immediately. The process is repeated for the opposite hand.
10. Hands should be held higher than elbows and away from surgical attire during the process of surgical scrubbing and upon completion.
11. There is no evidence that more than 2-minute wash (decontamination) using an aqueous disinfectant is required, before any sterile procedure can be undertaken (HIS, 2002).
12. Unless proceeding directly from one procedure to another, subsequent hand antisepsis should be the same as for initial scrubs. Although evidence shows a reduction in microorganisms on the skin over time with a cumulative effect, this depends on the solution used and the technique applied.
13. Advocating the same procedure for all hand antisepsis reduces confusion and increases compliance.
14. Alcohol hands rubs are an acceptable alternative to repeated washing. Alcohol hand rubs are not appropriate for use when hands are visibly contaminated, as these hand rubs do not remove soil or debris.
15. When proceeding directly from one procedure to another, cleaning nails with a pick can be omitted

Antiseptic hand washing solutions must be antiseptic or alcohol based, fast acting and have a broad spectrum of action and residual effect.

Alcohol based solutions provide the most rapid and greatest reduction in microbial count, but are not effective at removing debris and soiling.

Soap and water alone are not acceptable, as soap has no antiseptic properties. Personnel who are allergic to antiseptic solutions should be allowed to use soap but must combine this with an alcohol solution/gel following consultation with the infection prevention and control team and occupational health department.

Each antiseptic solution varies in the time needed for optimum effect and the manufacturer's instructions should be adhered to. Antiseptic solutions must be in adequate volume and contact with the skin to achieve their optimal effect. Manufacturer's instructions must be followed, but generally approximately 5mls of solution should be used at each application. Using copious amounts of antiseptic solution with quick application and rinsing is neither efficient in technique nor cost effective.

Alcohol based hand disinfectants have a higher efficacy against micro- organisms than antiseptic wash lotions. An antisepsis protocol with alcohol based antiseptic is no more damaging to skin than traditional methods. Selected products also have very good skin care properties. With hot water and wash lotion natural skin oils are rinsed away and this can try out the skin. Dry skin can harbour micro-organisms, especially Staphylococcus aureus and others. Healthy skin is essential for a successful hygienic and surgical hand disinfection procedure.

Alcohol Hand rubs

Alcohol hand rubs are not appropriate for use when hands are visibly contaminated as they do not remove soil or debris.

Alcohol rubs with additional active ingredients appear to be more effective than the traditional scrubs in reducing bacterial counts but there is no evidence of the impact on the surgical site infection.

When using an alcohol-based surgical hand rub product with sustained activity, follow the manufacturer's instructions for application times.

When using an alcohol-based surgical hand rub, use sufficient product to keep hands and forearms wet with the hand rub throughout the surgical hand preparation procedure.

After application of the alcohol-based hand rub as recommended, allow hands and forearms to dry thoroughly before donning sterile gloves.

Surgical Alcohol hand rub method

1. Dispense alcohol hand rub into palm of left hand.
2. Dip fingers of right hand to decontaminate nails for 5 seconds
3. Apply alcohol hand rub to right forearm up to elbow using circular movements to ensure skin is covered.
4. Continue until the alcohol gel has fully evaporated
5. Repeat 1 to 4 with left hand and forearm.
6. Dispense alcohol hand rub into palm of hands
7. Cover whole surface of hands up to wrists, rubbing palm to palm.
8. Spread alcohol hand rub over the back of each hand, including the wrists, with fingers interlaced.
9. Rub palms back and forth with interlaced fingers

10. Grip the fingers of each hand and rub in a sideways back and forth movement.
11. Clasp each thumb in the opposite hand and rotate
12. When the hands are dry, sterile surgical clothing and gloves can be donned

Face and eye protection

Although surgical face masks were originally developed to protect the patient from micro-organisms expelled from the mouth and nasopharynx of surgical staff during procedures, they also provide a protective barrier for the surgical team. (NICE 2019)

Given the anticipated risk of splash injuries from blood and body fluids, face and eye protection (that also covers the side of the face) must be used by scrub-up personnel. Face masks should be positioned and secured prior to hand antisepsis to cover the nose and mouth. Masks must be handled only by the ties. Spectacles or microscopic glasses must also protect the sides of the face/eyes.
Perioperative personnel should also note the following:

Specific face masks and/or eye protection are required when dealing with specific risks, for example surgical smoke plume or lasers.

Specific equipment must be donned for use within laminar flow enclosures, for example aspirators.

Additional protective clothing may be indicated, for example lead gowns, plastic aprons.

Gowning Procedures

On completion of surgical hand antisepsis, the folded gown should be lifted from the gown pack, and then allowed to unfold without contamination against any other surface, whilst retaining a grip on the shoulder and neck of the gown.

The arms should then be inserted into the gown but should not protrude through the cuff of the gown at this stage.

The back of the gown should be fastened by another person. The wraparound tie should be handed off to the circulator once gloves have been donned and not before.

Gloving procedures

Failure of surgical gloves from sutures, sharp instruments, bone fragments and natural wear and tear is a common source of contamination of the hands of surgical personnel with blood and body fluids.

Double gloving provides an extra layer of protection and significantly reduces the number of perforations to inner gloves in low risk surgery.

The decision to double glove should be based on the risk posed by the surgical procedure e.g. the exposure to sharps and not the risk posed by the patient, or personal preference.

Evidence supports the use of double gloving for all surgery including low risk surgery. Surgeons who are reluctant to double glove should consider double gloving on the non-dominant hand, which is more at risk of puncture.

Aqueous fluids can affect the integrity of the glove. This indicates that the outer glove should be changed after preparation of the patient's skin for surgery.
Latex free gloves are available for individuals who are sensitized.

The 'closed' method of gloving is the preferred option for donning sterile gloves.
When gloves require changing intraoperatively due to a puncture or inadvertent contamination, the glove must be removed in a way that avoids further contamination. A new glove may be donned with assistance from a member of the surgical team. If any action is taken it is preferable to don a second pair of gloves to protect the operating surgeon or individual undertaking the procedure.

Intraoperative and post-procedure protocol

When staff have performed hand antisepsis and are gowned and gloved, it is considered that the area of sterility includes:

- their gloved hands and forearms
- below nipple line to waist level. Hands must be kept at or above waist level and below shoulder level, and should be visible at all times in order to avoid inadvertent contamination

Scrubbed personnel must only touch items or areas which are sterile. When not involved in a sterile procedure, scrubbed personnel should stand with their hands within the area of the sterile field.

At the completion of the sterile procedure, gowns and gloves are treated as clinically contaminated or clinical waste. When removing the gown, contaminated hands should not undo the gown. Once released the gown should be pulled forward over the gloved hands, folding it onto itself. It should then be discarded appropriately.

To avoid contamination of the hand, gloves should be removed by ensuring that the glove surface comes into contact with the glove, and skin with skin.

Face masks and single used eye protection must be discarded after each procedure. Reusable eye protection must be cleaned between procedures in accordance with the manufacturer's instructions.

Personnel should inspect their hands post procedure for contamination.

Hands must be washed thoroughly once gown, gloves and face protection are removed.

6. Implementation and Dissemination

6.1 This policy will be implemented and disseminated through the theatre communication routes to include staff meetings and the 08.00AM huddle. The policies will be located and stored on the electronic document library and there will be links to them from the theatre intranet homepage.

6.2 All theatre staff involved in the surgical phase will have an initial set of competencies that will include the correct method for handwashing, gloving and gowning techniques

7. Monitoring and compliance

Regular infection control audits should be occurring to closely monitor post-operative infection rates.
Theatres should also conduct their own audit to monitor compliance with this policy and ensure strict adherence where appropriate

8. Policy Review

This Policy with be reviewed every two years.
Revisions can be made ahead of the review date when the procedural document requires updating. Where the revisions are significant and the overall policy is changed, the author must ensure the revised document is taken through the standard consultation, approval and dissemination processes.

9. References

References: Code:

AfPP Principles of Safe Practice in the Perioperative Environment (2015)	
NICE Guideline (2019) surgical site infection: prevention and treatment	

10. Background

10.1 Consultation

Key individuals involved in developing the document

Name	Designation
Susan Smith	
Mathew Trotman	
Andy Fryer	
Sally Ann Pickard	
Tracey Cooper	Deputy Director of Infection Prevention & Control

10.2 Approval process

This document has been circulated to the following individuals for comment/approval.

Name	Designation
Julian Berlet	Divisional Medical Director – Specialised Clinical Services
Tracy Pearson	Divisional Director of Operations – SCSD
Amanda Moore	Divisional Director of Nursing – SCSD
Paul Rajjayabun	Divisional Medical Director - Surgery

10.3 Equality requirements

Equality assessment Supporting Document 1

10.4 Financial risk assessment

Financial risk assessment Supporting Document 2

Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the policy/guidance affect one group less or more favourably than another on the basis of:**		
	• Race	No	
	• Ethnic origins (including gypsies and travellers)	No	
	• Nationality	No	
	• Gender	No	
	• Culture	No	
	• Religion or belief	No	
	• Sexual orientation including lesbian, gay and bisexual people	No	
	• Age	No	
2.	**Is there any evidence that some groups are affected differently?**	No	
3.	**If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?**	No	
4.	**Is the impact of the policy/guidance likely to be negative?**	No	
5.	**If so can the impact be avoided?**	No	
6.	**What alternatives are there to achieving the policy/guidance without the impact?**	No	
7.	**Can we reduce the impact by taking different action?**	No	

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval