A Guide to Surgical Hand Antisepsis

There is a standardised procedure for surgical hand antisepsis, gowning and gloving which minimises bacterial contamination of the operator and operative field.

The fundamental principles of aseptic technique must be adhered to when performing surgical hand antisepsis, gowning and gloving prior to surgical intervention.

Surgical hand antisepsis should be undertaken immediately prior to donning sterile gowns and gloves before participating in surgical and invasive procedures, in order to reduce the risk of cross infection in event of glove perforations.

It is necessary to have a standardised procedure and to practise to a high level of competence (AfPP 2016).

This poster presents a guide to surgical hand antisepsis.

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A Guide to Surgical Hand A

The aim of the surgical hand antisepsis is to remove or destroy transient microorga

Preliminary wash

The hands of the surgical team should be clean before entering the operating room by washing with a non-medicated soap and running water. If hands are visibly soiled, use pick to gently remove debris from underneath tips of nails on each hand, and then discard.

WHO (2016) guidelines recommend washing hands and removing debris from underneath fingernails using a nail cleaner (not brushes) under running water (sinks should be designed to reduce the risk of splashes). Rinse hands and forearms up to elbows.

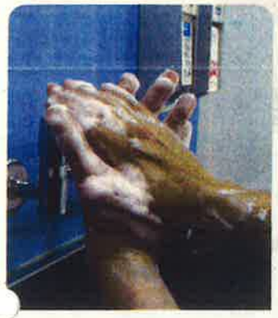
Preparation of pe

All staff should be in the appropri
surgical hand antisepsis. Keep nai
nails or nail polish before surgical

Surgical hand antisepsis

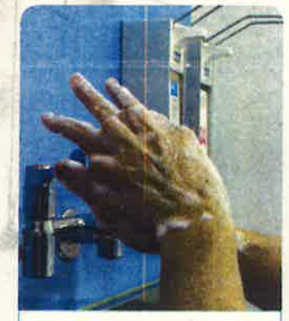
Surgical hand antisepsis should be performed using either (but not combined) alcohol-based hand rub (ABHR) or a suitable antimic
recommended by the manufacturer, usually 2–5 minutes (WHO 2009, 2016). If using an antimicrobial solution, the temperature and

Ensuring that no part of the sink or taps is touched wet the hands and arms up to the elbow working from the fingertips towards th
the elbows (dirty area) allowing water to drain away; avoid splashing surgical attire.



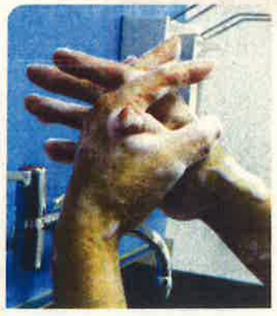
Step One

Wet hands and forearms. Apply the specified amount of appropriate solution, according to the manufacturer's recommendations, from dispenser (one downward stroke action). Work into hands palm to palm, and then encompass all areas of the hands and arms to just below the elbows as shown in steps 2-9. Perform the same manoeuvres if using ABHR but without water and rinsing.



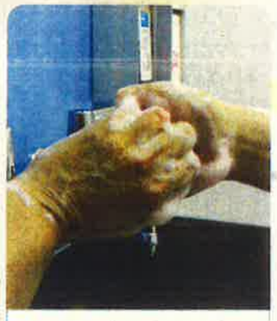
Step Two

Right palm over back of left and vice versa with fingers interlaced.



Step Three

Rub palm to palm, fingers interlaced.



Step Four

Rotational rubbing backwards and forwards with clasped fingers of right hand into left palm and vice versa.

Step Nine - Ending Scrub

If using a solution, rinse hands under running water - clean to dirty area. Turn off tap using elbows if
clean surface and take a hand towel. Hands are dried first by placing the opposite hand behind the to
a corkscrew movement, to dry from hand to elbow - do not move back down towards wrist. Discard t
process on other hand and forearm before discarding.
If using ABHR, allow hands and forearms to dry completely before donning sterile gloves (WHO 200

ntisepsis

anisms and inhibit the growth of resident microorganisms (AfPP 2016).

ersonnel

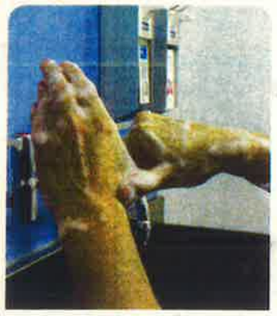
iate theatre attire before commencing
ils short and remove all jewellery, artificial
l hand preparation.

Process

Each step of surgical 'scrubbing' consists of five strokes rubbing backwards and forwards and adapts Ayliffe's six step technique (Ayliffe et al 2000) into nine steps. Sources of evidence drawn on include AfPP's Standards and Recommendations for Safe Perioperative Practice (AfPP 2016), AORN's recommended practices (Paulson 2004), Ayliffe's six step hand washing technique (Ayliffe et al 2000) and WHO guidelines (2016).

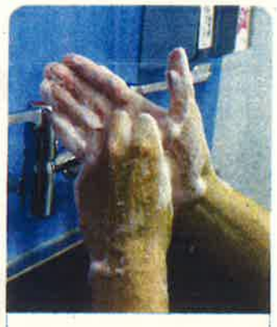
crobial antiseptic solution before donning sterile gloves (WHO 2009, 2016). Hands and forearms should be washed for the length of time
l flow of the water must be adjusted before the procedure is started to achieve comfort and avoid getting the scrub suit wet.

ıe elbow in one direction only, keeping the hands higher than the elbows. During each of the following steps keep hands (clean area) above



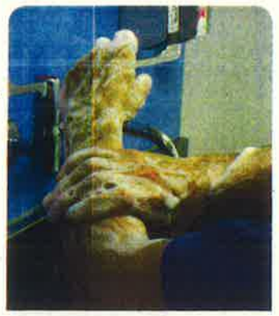
Step Five

Rotational rubbing of right thumb clasped in left hand and vice versa.



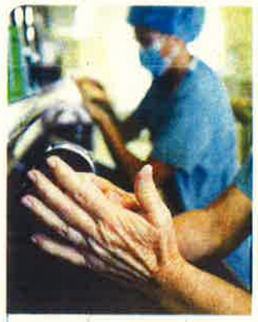
Step Six

Rub finger tips on palms for both hands.



Step Seven

Continue with rotating action down opposing arms, working to just below the elbows - do not move back towards wrist. If using ABHR an additional dose may be required here, one for each arm.



Step Eight

Rinse and repeat steps 1-7 keeping hands raised above elbows at all times.
This wash should now only cover two thirds of the forearms to avoid compromising cleanliness of hands.
Local policy may include repeating these steps a third time but to wrists only.

necessary. Open gown pack onto a
wel and blotting the skin, then, using
owel. Using a second towel, repeat the

), 2016).

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Accountable items

swab, instrument and sharps count

Although UK statute law does not dictate what system or method of accountable items, swab, instrument and sharps counts should be performed within a perioperative environment, as healthcare practitioners, the law is quite clear in that we all have a 'duty of care' to the patient.

We are accountable to our patients for the nursing care we deliver and, as such, we must ensure that we do not cause any harm to our patients by negligently leaving foreign objects within patient cavities during clinically invasive procedures.

Unintended retained objects are considered a preventable occurrence, and careful counting and documentation can significantly reduce, if not eliminate these incidents. A count must be undertaken for all procedures in which swabs, instruments, sharps or other items could be retained. Reconciliation must be the default expectation during and at the end of all surgical/invasive interventions and a process must be in place to address any variance.

These recommendations for inclusion in local policy are designed to assist perioperative practitioners performing accountable items, swab, instrument and needle counts within any perioperative setting.

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CENTRAL MEDICAL SUPPLIES
swab

Accountable items

swab, instrument and sharps count

Unintended retained objects are considered a preventable occurrence, and many factors, including communication, situational awareness and consistent compliance with standardised processes has been shown to reduce the risk of an item being retained unintentionally (AORN 2014,). A count must be undertaken for all procedures where countable objects (e.g. swabs, instruments, sharps) are used (AfPP 2016).

Although it is the responsibility of the user to return all items, the scrub practitioner implements and manages the checking procedure in order to be able to state categorically to the operating surgeon that all items are accounted for at appropriate points.

The count must be audible to those present and must be conducted by two members of staff, one of whom must be an appropriately qualified member of the perioperative team (i.e. a Registered Nurse or Operating Department Practitioner). The other staff member may be a non-registered practitioner who has attained a validated count assessment through national or locally validated training. There should be standardisation of how countable items are named/referred to across one organisation and referenced into the local policy – this minimises the risk of confusion. The list below includes common names of items and can be used as a benchmark.

Countable items - Countable items may include, but are not limited to:

Blades • Bulldogs • Cotton wool balls • Diathermy tip cleaners • Instruments including screws or detachable parts • Lahey swabs (peanuts, pledgets) • Liga-reels • Local infiltration needles • Laparoscopic retrieval bag • Other isolation bags • Needles • Ophthalmic micro sponges • Patties • Red ties from swab packs (also acts as an additional check with the count board for swab number accuracy) • Slings/sloops • Shods • Sponges • Tapes • X-ray detectable gauze swabs, mops or packs – names vary according to local requirements.

Plus anything additional procured during surgery that has the potential to be retained within a body cavity (e.g. tips of surgical instruments, drill bits etc.).

Education/training

Where an organisation supports students in the perioperative environment, preregistered nursing students, student ODPs or those training to assist with the scrub should have supernumerary status until they have been deemed competent to assist with the count by an appropriately qualified member of the perioperative team. It is recommended that this should be the designated registered student mentor/assessor. The count must additionally be signed and validated by an appropriately registered practitioner, RN or ODP as previously stated.

An introduction to the local count policy must be included in the new staff orientation programme. Documentary evidence of the assessment should be available and updated as defined by local policy and CPD requirements.

Packaging

Checking procedure

Provision should be made in the theatre to visually record the count either on a dry wipe board or smart screen which states all relevant items used. This board should be permanently fixed to the theatre wall and be at a height and in a position that facilitates access and visibility during the procedure.

Pharyngeal packs should contain a radio opaque marker. The anaesthetist is responsible for pharyngeal (throat) packs placed in the patient prior to or during an operation (AfPP 2016).The insertion and removal of the pharyngeal (throat) pack should be documented on the anaesthetic record and the theatre dry wipe count board/smart screen. The National Patient Safety Agency recommend one visual and one documented method to identify placement and removal of the pack (NPSA 2009a).

The initial full swab, instrument and sharps count must be performed immediately prior to the commencement

Packaging

All swabs, including lahey swabs (peanuts, pledgets), neuro patties and packs that are used during invasive procedures must have an X-ray detectable marker fixed securely across the width of each swab. All swabs and packs must be packed in bundles of five and be of a uniform size and weight. Any package containing fewer or more than five should be removed from the procedure area immediately. Checks should be made based on multiples of five and recorded on the dry wipe board/smart screen in multiples of five. This includes the use of cotton wool balls utilised in ear, nose and throat surgery.

Responsibility for counts

The same two perioperative personnel should perform all the counts that are done during a surgical procedure.

The team brief should discuss the staff allocation to scrub and count which should remain consistent throughout the procedure. Where it is known that the operative procedure may take longer than six hours to complete, a risk assessment should be undertaken to ensure that the scrub and circulating practitioner are able to practice for the duration of the case and to plan for the case continuance if circumstances require.

Should it be necessary to replace the scrub practitioner during the procedure, a complete count should be performed, including a full instrument check, recorded and signed by the incoming and outgoing practitioners. The name of the replacement practitioner/s must be recorded on the intraoperative record.

Should it be necessary to replace either person temporarily, the relieving practitioner should follow the standard procedure and note and sign any additions on the intraoperative record. The name of the replacement or relieving practitioner must be recorded on the intraoperative record.

If a scrub practitioner is not required during procedures such as dilatation and curettage the circulating practitioner should be competent to undertake the count with the operating surgeon as per local policy. Items which are to remain in the patient by intention (e.g. packing gauze, drain tubes, catheters) must be recorded in the intraoperative record and documentation that will be accessed by staff in the area that will be responsible for the removal of the item. The removal must also be recorded, including the time, date, name and designation of the practitioner removing the item.

All items must remain in the operating theatre until the procedure has been completed and all counts have been performed, including laundry and clinical waste containers/bags. Clinical waste bags should be labelled with the patient's number, date of operation and theatre identity.

Swabs that are used as surface dressing must not be X-ray detectable. The packaging for these swabs should only be opened at skin closure. It is recommended that surface dressings are a different colour from white raytec gauze (e.g. blue) so that they are easily distinguishable. X-ray detectable gauze should not have the raytec removed by a member of the operating team in order to use as a surface dressing as this will affect product liability.

Instruments

The staff involved in the counting procedure must be able to recognise and identify the instruments and medical devices in use. Tray lists should be available providing an accurate record of instruments. Instruments should be counted audibly, singularly and viewed by the scrub practitioner and allocated circulator. Instrument trays should be standardised to assist with the count.

Documentation

A copy of the count record should be retained in the patient's notes indicating the names of the scrub and circulating staff responsible for the final count. Where electronic records are utilised the record should indicate the names of the scrub and circulating staff responsible for the final count.

Count discrepancy

If any discrepancy in the count is identified, the operating surgeon must be informed immediately and a thorough search implemented at once. If a thorough search does not locate the item, an X-ray will need to be taken. A plain X-ray is recommended (MHRA 2005). Fluoroscopy/image intensifier should not be used in such circumstances as they may fail to locate radio opaque swabs.

Missing micro items (e.g. needles which cannot be detected on X-ray) should be recorded on the intraoperative record and theatre register or electronic record. X-rays should be performed at the discretion of the surgeon. It may be necessary to utilise a microscope to locate the needle within the operative field.

Any investigations that need to be done for an unaccounted item must be undertaken before the end of surgical intervention (i.e. before the patient leaves the operating theatre). All missing items must be documented in the patient's notes. Any formal investigation that may follow must be in accordance with local policy. Intentionally retained items must be documented where subsequent care teams will be responsible for recording the ongoing care and removal of the item.

The initial full swab, instrument and sharps count must be performed immediately prior to the commencement of surgery. A second count should occur before closure of a cavity within a cavity, including implant replacement (i.e. femoral component into femur) before wound closure begins, and finally at skin closure or at the end of the procedure giving a total of a minimum of three counts. X-ray detectable swabs used for catheterisation procedures should remain in theatre and be part of the count.

When additional items are added to the field, they should be counted at the time and recorded on the count documentation.

In the event of a NCEPOD 1 immediate life-threatening emergency (NCEPOD 2004) it is recognised that it is not always feasible to perform an initial swab and instrument count and delay intervention. In these circumstances all packaging must be retained to facilitate a count being undertaken at the earliest and most appropriate opportunity and documented in the patient's records.

If a pack is used, any recognition method (e.g. artery clip on abdominal pack tie) must be risk assessed as appropriate according to the surgical site and safest method.

If a blade, needle or instrument breaks during use, the scrub practitioner should ensure that all pieces have been returned to them and are accounted for. Any instrument found to be damaged, and therefore a potential risk, must be taken out of use and labelled for repair. It may be necessary to inform the sterile supplies department, the manufacturers and/or the Medical and Healthcare products Regulatory Agency (MHRA).

When checking swabs the scrub practitioner should ensure that the item is fully opened to check its integrity. Instruments and items with screws and/or removable parts should also be included in the count.

On completion of the final count a verbal statement to the operating surgeon (or delegated member of the surgical team (e.g. surgical care practitioner) should be made by the scrub practitioner to the effect that all swabs, instruments and sharps are accounted for. The scrub practitioner should verify with the circulating practitioner that the operating surgeon acknowledged the verbal statement. The circulating and scrub persons must record in the relevant documentation that satisfactory checks have been completed.

Checking techniques

Both practitioners must count aloud and in unison. Items should be completely separated during the checking procedure. The counting sequence should be in a logical progression, for example, from small to large. The recommended sequence of surgical counts is: swabs, sharps, instruments, and should be performed uninterrupted. If an interruption occurs, the count should be resumed at the end of the last recorded item.

The integrity of the X-ray detectable markers in swabs, packs, peanuts etc., as well as the integrity of tapes on abdominal swabs/packs, must be checked during the count.

At the initial count, and when added during the procedure, swabs and packs should be counted into groups of five. These should not be added to those already counted until the number in the packet has been verified. The additions should be in multiples of five. In the event of an incorrect number of swabs or packs (i.e. not five) the entire packet must be removed from the procedure area and appropriately reported.

Hypodermic and suture needles should be recorded as a total amount at the commencement of the procedure and additional items should be added individually on the dry wipe board/smart screen according to the number marked on the outer package. Suture packs may be retained and used for a check-back procedure if required.

Opening all packages during the initial needle count is not recommended. Used needles on the sterile field should be retained in a disposable, puncture-resistant needle container. Swabs should be in full view of the operating surgeon and anaesthetist, where applicable, throughout the procedure. Used swabs and packs should be counted off the sterile field. The technique used should be safe and should incorporate infection control measures in conjunction with standard precautions.

All items should be fully opened by the circulating practitioner and placed into an appropriate contained disposal system as risk assessed and determined locally. If a counted item is inadvertently dropped off the sterile field, the circulating staff member should retrieve it, show it to the scrub practitioner and place it in the appropriate contained disposal system to be included in the final count.

Items should not be cut or altered unless specifically intended for the purpose. If alteration of any item is requested by the person performing the procedure this must be documented in the patient's records, highlighted on the dry wipe board/smart screen and included in the count.