Probe Decontamination

ULTRASOUND

HOW, WHY AND WHEN

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Previous Life

- Lead Sonographer
  - Introduced automated decontamination
  - Member of the local decontamination committee

Decontamination workflow involving cleaning & disinfection of probes in ultrasound environment

Risks to patients from infections associated with ultrasound procedures; including when adverse events happen and outcomes

High-level disinfection across different disciplines/procedures; broken skin/biopsies/percutaneous procedures.

APPENDIX 7: NHSScotland Semi-critical Ultrasound Probe (semi-invasive and non-invasive) Decontamination Algorithm

Probe used on Mucous membranes or broken skin?

No

Non- invasive procedure
i.e. Intact skin (No blood or body fluid exposure anticipated)
- Abdo U/S
- Pelvic U/S

If required ensure recommended sheath is correct size for probe required

Blood or body fluids noted during procedure?

Yes

No

Follow cleaning guidance in the NIPCM

Pre – clean
- Following U/S scan remove & dispose sheath in clinical waste stream.
- Inspect probe and cable
- Remove U/S gel residue by wiping with a non-linting cloth
- Dispose of probe accessories in clinical waste stream
- Disconnect probe (if possible) and take to area approved for probe decontamination
- Inspect probe & cable for damage

Cleaning procedure
- Clean probe & cable with a compatible detergent wipe
- Rinse and dry probe and cable
- Inspect probe & cable for damage
- Clean probe holder with a compatible detergent wipe
- Rinse and dry probe holder

- Replace cleaned probe in probe holder
- Dispose of waste in clinical waste stream

Yes

Semi-critical procedure (semi –invasive and non-invasive)
i.e. Mucous membranes
- TOE/TV/TR probes

i.e. Non intact skin
- Venepuncture/Cannulation
- Wound/cavity assessment

If required ensure recommended sheath is correct size for probe

High Level Disinfection (HDL) Procedure

Following one of the HLD methods set out in NHSScotland Guidance for decontamination of Semi-critical (semi-invasive and non-invasive) Ultrasound Probes
- **Ultra-violet light**
- **Hydrogen Peroxide**
- **Manual wipe (chlorine dioxide)**

TOE probes where **pre arranged** can be transferred to an endoscopy decontamination unit (EDU) for decontamination
***Pre arranged requires the Decontamination Lead and the IPCT to approve local procedures.**

The procedures set out in this algorithm should be undertaken following;

- **Standard Infection Control Precautions (SICP) within the National Infection Prevention and Control Manual (NIPCM)** http://www.nipcm.hps.scot.nhs.uk/
- **The NHSScotland Guidance for decontamination of Semi-critical (semi-invasive and non-invasive) Ultrasound Probes**
- **SOPS: Decontamination procedure for HLD of semi-critical Ultrasound Probes (semi-invasive and non-invasive) using;**
  - **Ultra-violet light [add link]**
  - **Hydrogen Peroxide [add link]**
  - **Manual wipe (chlorine dioxide) [add link]**

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Health Protection Scotland

NHS National Services Scotland

NHSScotland Guidance for Decontamination of Semi-Critical Ultrasound Probes; Semi-invasive and Non-invasive Ultrasound Probes

January 2017

Health Facilities Scotland
Decontamination Services

NHS Greater Glasgow and Clyde

TRANSDUCER DECONTAMINATION

Best practice summary

This summary has been developed from national and international standards. This is intended to provide information and principles to promote, ensure and evidence safe and effective decontamination of ultrasound machines and probe/transducers.

If a patient asks whether the ultrasound transducer is cleaned effectively prior to their scan, can you reassure them that it is?

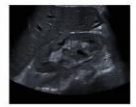
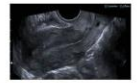
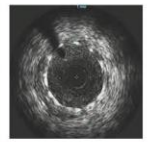
If not, this best practice summary is for you

Five steps to decontamination:

1. Remove gel/visible soiled material from transducer
2. Visually inspect the transducer, cable and machine. Report any damage and remove the piece of equipment from use
3. Determine the level of decontamination required
4. Follow decontamination process depending upon the cleaning product or device used
5. Record actions where required

Essential information:

- Training should be provided and recorded for all staff involved in any level of decontamination
- Transducer covers must be used but they are not a replacement for decontamination of transducers
- Manufacturers' guidelines should be followed when selecting appropriate methods of decontamination for both the machine and each individual transducer.
  [NOTE: these may be different for each transducer and the machine]
- Involve local infection control teams in the decisions
- Take care when cleaning. Avoid bending or trapping cables, knocking transducer heads or damaging connecting pins
- Ensure clear, current local protocols are in place
- Identify clean and dirty transducers

Type of decontamination	Cleaning	Cleaning and disinfection	Cleaning and sterilisation
WHEN TO USE	• Intact skin *e.g. transabdominal examinations, superficial structures, vascular* 	• Broken skin • Infected skin • Contact with known pathogenic microbes • Intracavity examinations with mucous membrane contact *e.g. transvaginal or transrectal examinations* 	• Use in a sterile area of the body *e.g. intraoperative or intracranial examination* 
WHAT TO USE	• Manufacturer approved wipes	• An automated decontamination system is best practice. Where this is not possible manufacturer approved wipes and cleaning system	• Manufacturer approved sterilisation device or process
WARNINGS	Check approved options for each type of transducer • Gentle use • Training is needed	Audit trail of decontamination for every patient • Handle with care and where relevant, use personal protective equipment. • Training is needed	Audit trail of decontamination for every patient • Handle with care and where relevant, use personal protective equipment • Training is needed

More detailed information and a full list of references can be found in the SCoR and BMUS ***'Guidelines for professional ultrasound practice'.***

BMUS

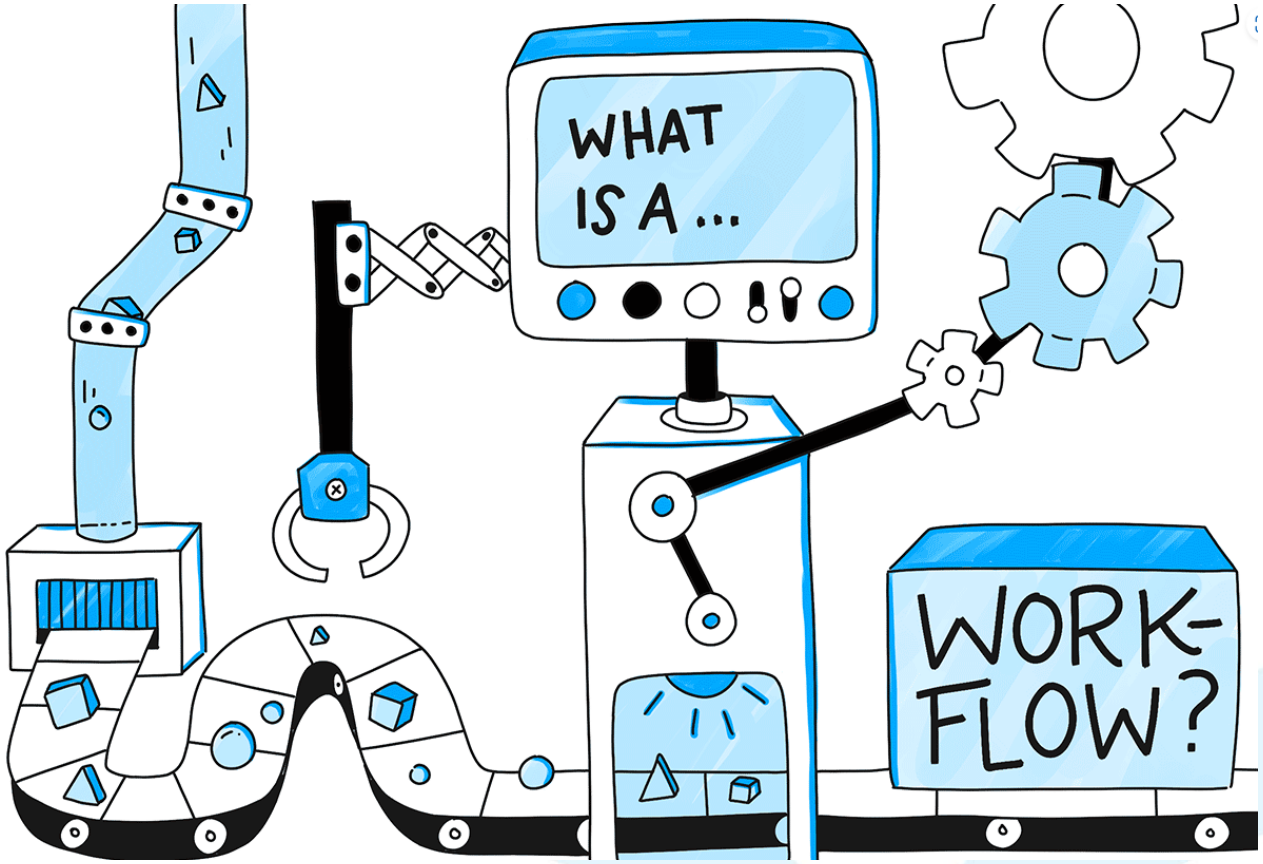
AXREM ASSOCIATION OF HEALTHCARE TECHNOLOGY PROVIDERS FOR IMAGING, RADIOTHERAPY & CARE

SCoR THE SOCIETY & COLLEGE OF RADIOGRAPHERS

How

How do we
perform decontamination in the Ultrasound setting?

Workflow!



How?

- The workflow for decontamination should be a pathway from "dirty" to "clean".
- A system should be in place to identify what is "dirty" and what is "clean".
- A defined pathway made clear to all.
- Must facilitate the changing of PPE to eliminate being a vector of indirect contamination.
- Staff training is mandatory.

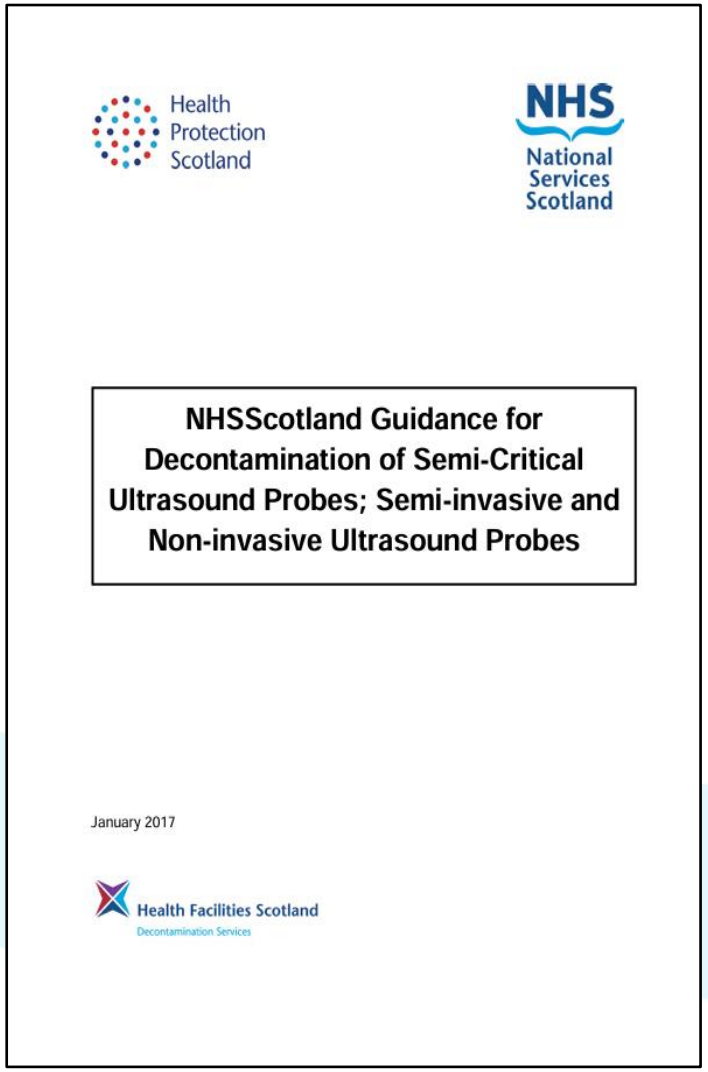
How?

- Clean probe before any decontamination.
- First Rule is to remove the gel!

How?

High level decontamination (HLD) - four methods;

1. Ultraviolet light
2. Hydrogen peroxide
3. Manual cleaning wipes
4. Endoscope washer disinfectors



Why

National Guidance from HPS released in January 2017, its purpose

"This guidance sets out the operational procedures covering decontamination of Semi-critical probes using High Level Disinfection (HLD). This covers specifically; Semi-Invasive Ultrasound Probes (SIUPs) and non-invasive ultrasound probes used in semi-critical procedures."

Why?

Original Research

ULTRASOUND

Ultrasound
2018, Vol. 26(3) 168–177

DOI: 10.1177/1742271X18774594
journals.sagepub.com/home/ult
SAGE

Risk of infection following semi-invasive ultrasound procedures in Scotland, 2010 to 2016: A retrospective cohort study using linked national datasets

David Scott[1], Eilidh Fletcher[2], Hayley Kane[3], William Malcolm[3], Kimberley Kavanagh[4], A-Lan Banks[3] and Annette Rankin[3]

Why?

- Staphylococcus aureus (including MRSA)
- Vancomycin-Resistant Enterococci (VRE)
- Multi-resistant gram-negative organisms (MRGN)
- Carbapenem-resistant enterobacteraciae (CRE)
- Mycobacterium tuberculosis complex (MBTC)
- Clostridium difficile
- Neisseria gonorrhoeae, Chlamydia trachomatis, Treponema pallidum (syphilis), Mycoplasma genitallium
- Human herpes virus 1 (HHV1) and human herpes virus 2 (HHV2)
- Human papilloma viruses (HPVs)
- BBVs

Fail to HLD

- What happens when we don’t decontaminate?
- If process in place and we don’t follow, what do we do?

Fail to HLD

www.rcr.ac.uk

Clinical Radiology
The Royal College of Radiologists

Every healthcare professional must be open and honest with patients when something that goes wrong with their treatment or care causes, or has the potential to cause, harm or distress. They must also be open and honest with their colleagues, employers, and relevant organisations, taking part in reviews when required. This is our professional duty of candour. In addition, we should support and encourage each other to be open and honest, and not prevent others from raising concerns.

Professional duty of candour
Guidance for radiologists

Fail to HLD

NHS Greater Glasgow and Clyde

hcpc health & care professions council

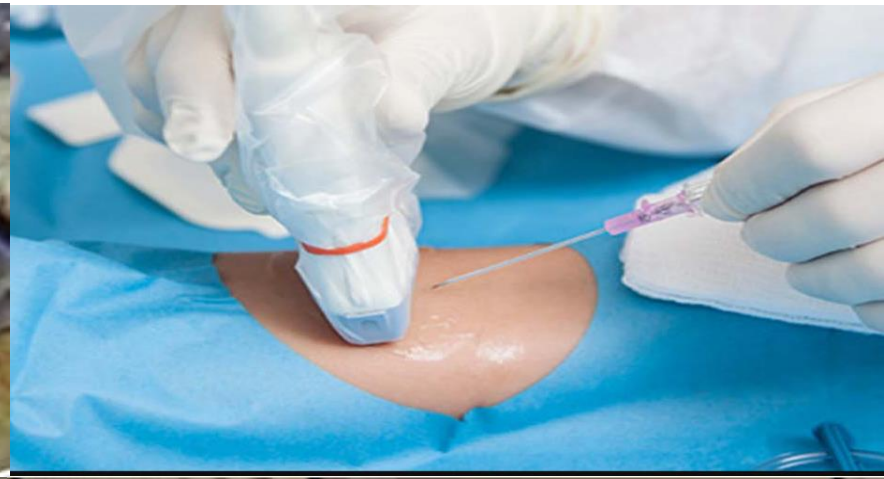
8.1. You must be open and honest when something has gone wrong with the care, treatment or other services that you provide by:

- informing service users or, where appropriate, their carers, that something has gone wrong;
- apologising;
- taking action to put matters right if possible; and
- making sure that service users or, where appropriate, their carers, receive a full and prompt explanation of what has happened and any likely side effects.

SAE?

- There is no single, all-encompassing description of a SAE.
- The following prompts, are useful in considering if an event requires review as a SAE:
  - Is this an organisational Duty of Candour event?
  - Was there a problem with any equipment involved in this case?
  - Has there been a breach of policy or procedure?
  - Is there something you think should have been done differently in this case that may have prevented the event?
  - Do you feel there is any learning to be gained from investigating this event? (Would something be done differently next time)?
  - Are there any patient / family concerns regarding the treatment / care / outcome?
  - Are there any management concerns related to the event or individuals involved?
  - Is there currently any interest from the Procurator Fiscal?
  - Do you believe this event was avoidable?

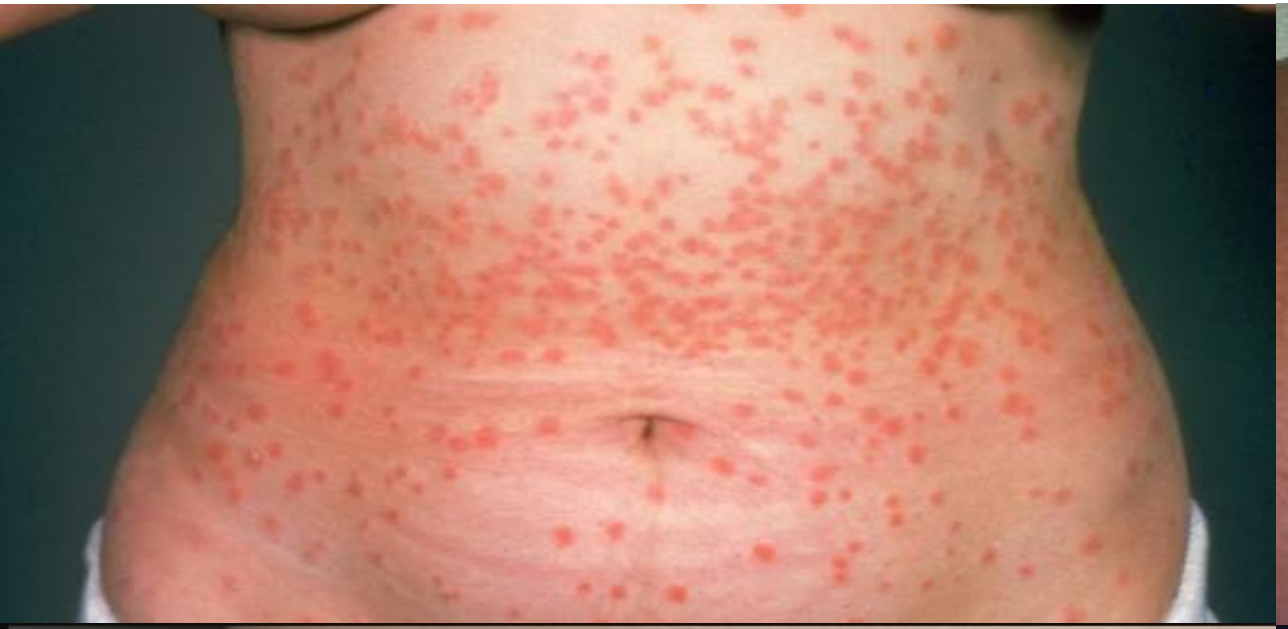
When?

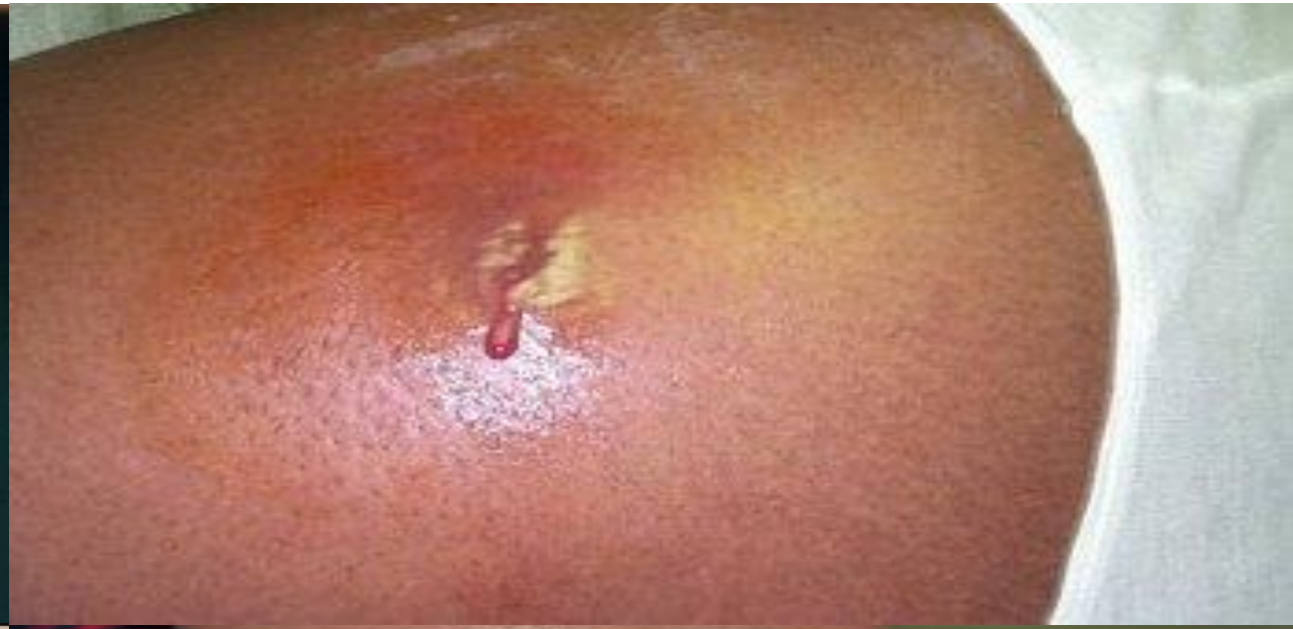


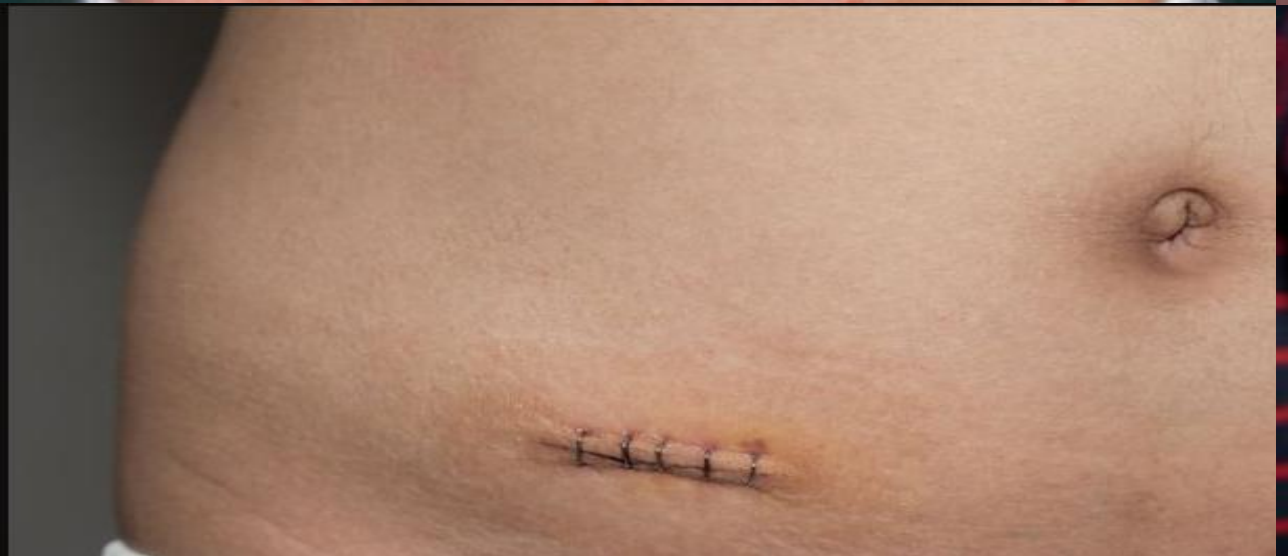
When?

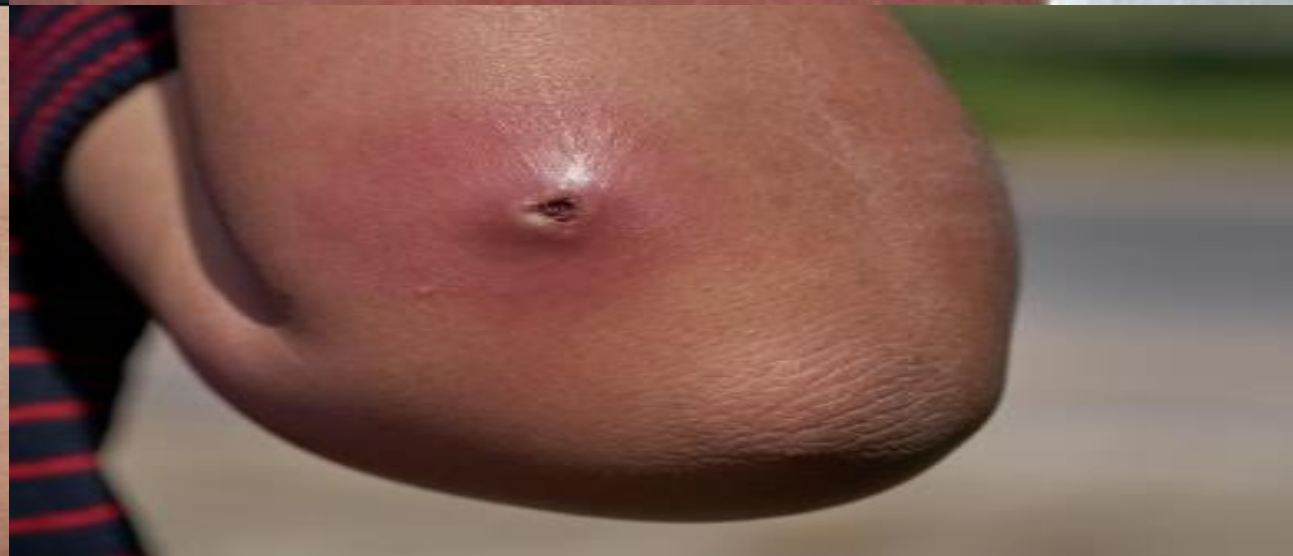
There should be High Level decontamination after every use regardless of the use of a cover.

When?









How, Why & When

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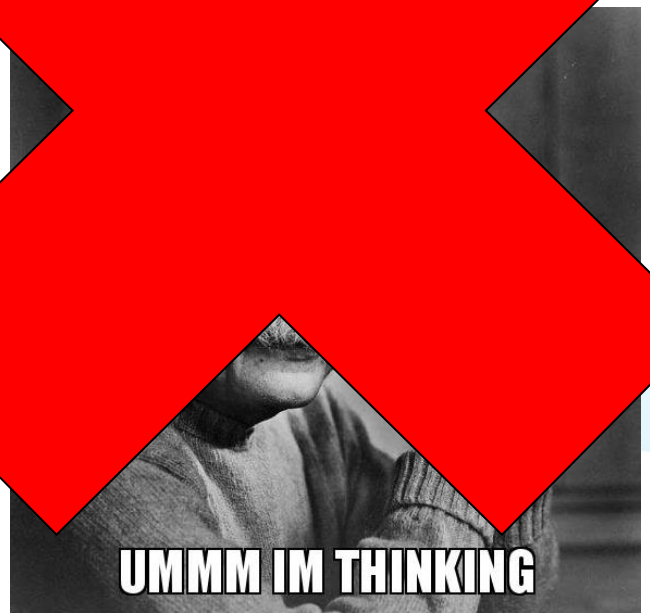

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- 2._Probe_Care.pdf (bmus.org)