

# Infection Prevention and Control

## Cleaning of Equipment and the Environment

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## **1. Introduction**

The risk of hospital acquired infection (HAI) from the care environment is ever-present within the clinical environment. Sites close to the patient (the patient zone) and frequently touched surfaces have been identified as areas where there is increased contamination.

Cleaning of the environment is of the utmost importance if spread of infection is to be minimised. All health care workers (HCW's) involved in cleaning, must be aware of their role and responsibilities towards patient safety in respect of infection prevention and control.

This policy highlights the actions necessary to sustain a clean environment and the appropriate use of disinfectants in NHS Lothian to minimise the risk of healthcare associated infection.

## **2. Aim of the guidance**

The aim of this document is to provide a reference document for staff regarding the cleaning of the environment and equipment. It is developed in line with statutory requirements.

## **3. Key objectives**

This document supports maintenance of high standards of cleanliness and the effective delivery of patient care. It will:

- Ensure consistency across NHS Lothian
- Minimises the risk of cross infection
- Describes best practice
- Ensures safety
- Minimises adverse events

## **4. Guidance scope**

This policy applies to all staff employed by NHS Lothian and includes locum staff on fixed term contracts. It also includes volunteer staff.

All HCW's must follow this policy and report any problems to their supervisor regarding equipment or implementing the policy. If unable to follow this policy the Infection Prevention and Control Team (IPCT) should be consulted for further advice.

Managers should support clinical/ward managers in implementing this policy. This policy is published by NHS Lothian Infection Prevention and Control Service (IPCS). Infection Prevention & Control Nurses (IPCNs) will carry out audit on the implementation of this policy and keep the policy up to date. Facilities managers will audit the implementation of this policy within their areas.

## 5. Cleaning of equipment and environment, including blood spillages

### 5.1. Overview

The risk of HAI from the care environment is ever-present. Within the clinical environment, sites close to the patient (the patient zone) and frequently touched surfaces have been identified as areas of increased contamination.

To ensure patient safety staff must clean the environment and all equipment effectively.

If cleaning electrical equipment please refer to manufacturer's instructions. If they recommend soap and water then for safety reasons detergent wipes should be used rather than a cloth with detergent in a basin of water.

Detergent wipes should be used for external surfaces of electrical equipment. Internal surfaces should be cleaned by estates personnel/ Medical Physics. Equipment must be decontaminated before being repaired and be accompanied by certificate LOT 055.

Medical devices should be supplied with their own set of cleaning instructions which staff should follow. Faulty medical devices require to be cleaned prior to being sent for repair.

**Table 1: Summary Overview**

<p><b>Cleaning and decontamination of Equipment and the Environment</b></p>	<ul style="list-style-type: none"><li>• Patients with known or suspected infective agents should have environment and equipment cleaned routinely with Chlor-clean at least once per shift. <a href="#">See Appendix 7</a> of the National Manual; <i>Decontamination of non-invasive Patient Care Equipment</i>. (Also see appropriate organism policy; if no policy available contact IPCT).</li><li>• Use a fresh solution of neutral Ph detergent in hand hot water for routine cleaning of environment and for non-electrical equipment.</li><li>• Water to be changed when dirty; at least every 15 minutes and before changing tasks /items of equipment.</li><li>• Items <b>MUST</b> be dry before use or storing.</li><li>• Routine disinfection of the environment with Chlor-clean is not recommended.</li><li>• Commodes and sanitary fittings <b>MUST</b> always be cleaned and disinfected with Chlor-clean and dried after contact time is achieved.</li><li>• When purchasing new equipment staff should ensure it meets Infection Prevention &amp; Control requirements for cleaning.</li></ul>
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<b>Blood and Body Fluid Spillage</b>	<ul style="list-style-type: none"> <li>• Small blood spills should be cleaned using biohazard wipe pack (blood spill pack) following manufacturer instructions. Larger blood spills should be managed using granules or Haz-tabs® and following the manufacturer instructions.</li> <li>• For body fluid spills the cleaning and decontamination depends on the body fluid therefore, please refer to <a href="#">Appendix 9</a> of the National Manual for specific guidance.</li> </ul>
<b>Period of Infectivity</b>	Variable depending the nature of the contaminant and if the environment or equipment was adequately cleaned. If not cleaned adequately seek advice from the IPC Team
<b>Mode of Transmission</b>	Direct & indirect contact, droplet or airborne dependant on the environment or equipment and whether it was cleaned adequately.
<b>Reservoirs</b>	Equipment or environment not adequately cleaned
<b>Population at Risk</b>	All patients and staff who are exposed to equipment or environment that is not adequately cleaned
<b>Vaccine Preventable</b>	Not applicable
<b>Notifiable Disease</b>	Variable depending on organism

## 5.2. Definitions

<b>Cleaning</b>	The process, which physically removes large numbers of micro-organisms, and the organic matter on which they thrive.
<b>Disinfection</b>	<p>Disinfectants are chemicals that are subject to the Control of Substances Hazard to Health (COSHH) Regulations (1999).</p> <p>They reduce the number of viable micro-organisms on a device to a level previously specified as appropriate for its intended further handling or use.</p>
<b>Decontamination</b>	The combination of processes, including cleaning, disinfection and or sterilization, used to render a reusable item safe for further use.
<b>Sterilisation</b>	A process, which, if specified conditions are met, renders a device sterile, i.e. free from all micro-organisms

### 5.3. Risk assessment

The risk of HAI from the care environment is ever-present although within the clinical environment, sites close to the patient (the patient zone) and frequently touched surfaces have been identified as areas of increased contamination and are consequentially a higher risk of transmission of organisms.

Cleaning of the environment is therefore of the utmost importance if spread of infection is to be minimised. All HCW's involved in cleaning and decontamination, must be aware of their role and responsibilities towards infection prevention and control to preserve patient safety.

Staff purchasing new equipment should ensure it is made of wipe-able material and is easily cleaned, e.g. no ridges or difficult to clean parts. If equipment does not meet these standards the Infection Prevention & Control Service should be consulted prior to purchasing equipment so that a joint risk assessment can be drawn up.

### 5.4. Cleaning and decontamination of communal (non-invasive) equipment

Equipment which is not intended for single-use or single-patient use is defined as 'communal equipment'. Examples of items which come into this category are:

- Beds and mattresses and lockers
- Stethoscopes and blood pressure cuffs
- Commodes/ hoists/ glide sheets
- Drip stands & trolleys
- Infusion pumps

This list is not definitive and is provided to illustrate examples of non-invasive, communal patient care equipment.

Guidance for cleaning of communal equipment and the environment can be found in the National Infection Prevention and Control Manual (NIPCM) [Appendix 7](#) *Decontamination of reusable non-invasive care equipment*. For a complete list of equipment and frequency of cleaning please consult the [Cleaning Matrix](#).

A fresh solution of general purpose detergent and water should be used for routine cleaning of the environment and non-electrical equipment.

When using general purpose detergent the water should be hand hot and should be changed when dirty, or at least every 15 minutes and before changing tasks / changed between items of equipment. Items **MUST** be dry before storing or use. This is important to inhibit mould growth.


Detergent wipes should be used for external surfaces of electrical equipment. Internal surfaces should be cleaned by estates personnel or medical physics. Equipment must be cleaned/ decontaminated before being repaired and must be accompanied by certificate LOT 055, which can be ordered from procurement.

Routine disinfection of the environment with 1:1000ppm available chlorine (Chlor-clean) is not recommended. However, Chlor-clean should always be used to clean sanitary fittings and commodes and only dried after contact time is achieved. Drying is important to prohibit mould growth, which can occur in a short time period.

Single patient use equipment is for use only by the patient that first uses it. The equipment should be kept clean at all times and cleaned between each use. The equipment can stay with the patient throughout their hospital journey and if appropriate go with them to the community.

Single use equipment is used once on a patient and discarded. It must never be reused even on the same patient. Further information on single use items can be found in the decontamination policy in the Infection Prevention & Control Manual.

### **5.5. Cleaning for known or suspected infective agents**

Patients with known or suspected infection should have their immediate environment and any equipment used, cleaned routinely with Chlorine releasing agent 1:1,000ppm (Chlor-Clean) at least once in each shift. See NIPCM [Appendix 7](#) (also see appropriate organism policy. Information on organism can be found in alert triangle on Trak ). If appropriate policy not available on intranet, contact IPC Team.

Always follow manufacturer's instructions for dilution, application and contact time. Clean the equipment from top or furthest away point; discard cloths/ paper roll immediately into clinical waste stream. Discard the detergent/disinfectant solution in the designated area (never hand wash sink). Apron and gloves can be worn to take items to the designated area for disposal. Remove and discard PPE, perform hand hygiene.

### **5.6. Personal protective equipment (PPE) for cleaning**

PPE should be worn for any cleaning duties. Prior to any cleaning duties the healthcare worker must undertake a risk assessment where any chemicals including disinfectants and/or detergents are used.

Use safe work practices to protect your-self and to limit the spread of infection

- Eye / face protection (including full face visor) must be worn if blood and/or body fluid contamination to the eyes/face is anticipated/likely - Regular corrective spectacles are not considered eye protection.
- Keep hands away from the face and the PPE worn.
- Change gloves when torn or heavily contaminated – wash hands before donning clean gloves
- Perform hand hygiene immediately on removal of PPE.
- All PPE should be removed before leaving the area and disposed of as clinical waste



Domestic services have a separate national cleaning specification which domestic staff should follow.

## **6. Cleaning of Medical Devices**

The term medical devices cover a range of medical equipment from small individual surgical instruments, endoscopes (reprocessed or single use items) to blood pressure machines.

The policy for medical device decontamination and adverse incidents involving medical devices (single use or reprocessed) should be consulted for further information and can be found in the Infection Prevention & Control Manual.

Surgical instrument management for patients with [Transmissible Spongiform Encephalopathy \(CJD & Variant CJD\)](#) can be found within Organism Specific Guidance.

Faulty medical devices require decontamination prior to repair or return to manufacturer. Please refer to the Medical devices policy within the Infection Prevention & Control manual.

## **7. Disinfectants for cleaning and decontamination**

When using disinfectants it is of the utmost importance that the approved procedure and dilutions be followed – this is to ensure that the disinfectant works effectively i.e. decontaminates, and also does not cause harm to HCWs, the equipment or the environment.

To comply with COSHH regulations, all disinfectants must be kept in locked cupboards and instructions for use must be displayed close to the cupboard.

Instructions state once the disinfectant (ChlorClean) has been mixed with water, it must not be stored in a closed space, as it needs ventilation. It is also not practical to lock disinfectants away in the clinical setting.

Therefore the Risk Assessment/ Safe System of work established by each department must include how children and vulnerable adults will be protected from exposure to these hazardous substances.

When Chlor-clean bottles are made up in the morning, they must be marked with date and time and kept either in the Sluice (by a vented window), or, on domestic trolleys etc for use. Not left unattended. There must be a COSHH assessment with up to date Safety Data Sheet which has been shared with all staff working in the area.

## **8. Hazard Warning – Urine Spillages**

Never use chlorine-releasing agents (e.g. HAZ TABS /Chlor-Clean) directly on to urine.

Acidic solutions such as urine may react with Chlorine releasing agents (e.g. Chlor-clean) and cause the release of chlorine vapour. Chlorine releasing solutions should therefore not be used directly on urine spills (DOH 1990). Spillages of urine can be soaked up using an absorbent paper towel/ pad prior to the area being cleaned with the chlorine releasing agent.

## **9. Blood and Body Fluid Spillage Procedure**

Spillages of blood and other body fluids may transmit blood borne viruses and must be decontaminated immediately by staff trained to undertake this safely. Responsibilities for the decontamination of blood and body fluid spillages should be clear within each area/care setting.

For management of blood and body fluid spillages see Appendix 9 [Management of blood and body fluid spillages](#).

Managers should consider the use of granules, Haz-tabs or biohazard wipe kits within their area, more than one choice can be made for varying size of spill. Areas should decide on whichever one most suits the area needs. Advice can be sought from Infection Prevention & Control Team if required.

It is important to ensure all HCW's in the area are familiar with which products are available to them and how to use the product(s). HCW's must also know where to locate the product and the instructions for use posters within their department.

## **10. Spillages on Carpets**

Carpets are not recommended for clinical areas. Carpets in healthcare premises should be able to withstand 10,000 ppm available chlorine (e.g. Haz-tab solution) (SHFN 30). If the carpet does not meet this standard then decolouration will occur during decontamination. If the carpet is heavily contaminated it may need to be destroyed.

**Quick Reference Guide: Cleaning and decontamination**

<b>Organism:</b>	<i>Various</i>
<b>Signs &amp; symptoms:</b>	Various - depending on organism of contamination
<b>Transmission (spread):</b>	Direct & Indirect Contact, Droplet and Airborne depending on equipment or environment contamination
<b>Person to person spread possible?</b>	Yes - depending on organism
<b>Incubation period:</b>	Varies - depending on organism
<b>People most at risk:</b>	Patients and staff exposed to environment or equipment which is not adequately cleaned
<b>Treatment:</b>	Varies - depending on organism
<b>Key management &amp; control measures (MUST DO'S):</b>	Staff must comply with decontamination of reusable non - invasive care equipment (Appendix 7) and the Management of blood and body fluid spillage (Appendix 9).

## References & Further Reading

- CEL (43) 2009: Safety Of Health Social Care Estates and Facilities Equipment: NHS
- Department of Health (1990) Spills of urine: potential risk of misuse of chlorine-releasing disinfecting agents. *Safety Advice Bulletin* 59 (90): 41
- Health Service Guidelines. HSG (93) Decontamination of equipment prior to inspection, service or repair
- Rutala WA Webber DJ Centres for Disease Control (2008). Guidelines for disinfection and Sterilisation in Healthcare Facilities 2008 Centres for Disease Control (US)
- The Royal Marsden Hospital (1999) 4<sup>th</sup> Edition Manual of Clinical Nursing Procedures
- Safety Action Notice Reporting of Adverse Incidents in NHS Scotland SAN (SC) 01/01
- NIPCM (2017). National Infection Prevention & Control Manual available at <http://www.nipcm.hps.scot.nhs.uk>