

Trust Hand Washing Policy

This document emphasises the role of effective hand decontamination programmes and protocols in the management of infection.

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Pennine Acute Hospitals NHS Trust**Trust Hand Washing Policy**

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1. Purpose

Hands are the principal route by which cross-infection occurs.

This policy sets out clear guidance and procedures to prevent the transmission of infection by hand. It emphasizes the Trust's commitment to infection control and details the accountabilities for implementing and supporting the policy.

2. Scope of This Policy

This document emphasises the role of effective hand decontamination programmes and protocols in the management of infection. It sets out the standard for hand hygiene and decontamination for all healthcare personnel, including Trust employees, contractors, students and agency staff.

This standard will enable all staff to comply with the requirement to carry out hand hygiene at appropriate times during patient care.

3. Roles and Responsibilities

Each individual has a clinical and ethical responsibility to carry out effective hand hygiene and to act in a way, which minimises risk to the patient.

Divisional Managers/ clinical leads must ensure that resources are available for health care workers to undertake effective hand hygiene.

Divisional Managers / clinical leads should ensure that all patients and visitors in the hospital setting have access to products and facilities to perform effective hand hygiene (e.g. alcohol gel suitably placed on entry/exit to wards/clinics with appropriate notices). Patients and visitors to wards should be actively encouraged to undertake effective hand hygiene.

Senior staff must act as excellent role models for junior grade staff. Line managers must ensure that appropriate staff has had hand hygiene training and regular updates.

The working environment must support excellent hand decontamination through the provision of conveniently located and designed sinks, supplies of liquid soap, conveniently sized alcohol gel dispensers, paper towels and "hands free" waste bins.

Each clinical area should display appropriate posters/education material to promote good hand hygiene practice for both healthcare staff and patients/visitors for ward areas

4. Background

Many clinical activities carried out during healthcare exposes patients to an increased risk of infection. Studies in the UK suggest that between 6% (Glenister et al 1992) and 8% (Plowman et al 1999) of patients acquire an infection during their stay in hospital and at any one time 9 in every 100 patients is likely to have a hospital acquired infection (Emerson et al 1996).

Since hands are frequently implicated in transmitting infection from patient to patient, effective hand hygiene is of key importance to infection control.

4.1. Costs of Hospital Acquired Infection

The acquisition of health care associated infection (HCAI) increases the cost of care by three times due to increased length of stay in hospital, drug therapy, tests and specialist care (Plowman et al 1999). This study estimated that HCAI cost the NHS nearly one billion

pounds annually. An infection also has an intangible cost to the patient and their family. It may affect the patient physically and emotionally, delay their return to health and increase the burden of care to other family members.

It has been estimated that 10% of patients who acquire an infection in hospitals will die as a result and for many others the infection is a major contributory factor in their death (Haley 1986).

5. The role of handwashing in preventing Health Care Associated Infection

Hands are considered to play a major role in the transmission of infection between patients (Reybrouck, 1983). Infections may occur because micro-organisms on the hands are introduced directly into a susceptible site such as a wound or vascular catheter, or they colonise the patients' skin and subsequently cause infection. Handwashing is the single most important measure for preventing the transmission of infection.

On admission to the Trust, Patients and their relatives are given written information in the Trust welcome literature highlighting the importance and necessity of hand hygiene for staff, visitors and patients. Hand Hygiene posters are distributed to every clinical area of the Trust and alcohol gel is by every bed, hand wash basin and ward entrance.

5.1. Why we don't wash our hands

Many studies have shown that healthcare workers frequently do not wash their hands after contact with patients' even after dirty procedures (Ward et al 1997, Pittet et al 1999). Several factors have been found to discourage handwashing such as poor staffing levels, inadequate sinks, lack of soap, hand towels or water temperature controls (Wilson 2001). Healthcare workers seem to have a poor understanding of the risks to patients of not washing their hands. Changing both their understanding and behaviour is essential to ensure that handwashing becomes of part of a routine high standard of care for all healthcare workers. (Hand Hygiene Liaison Group 1999).

5.2. The microbiology of hands

Micro-organisms are invisible to the naked eye. This may result in the failure of healthcare workers to recognise that their hands can be responsible for cross infection (Horton, 1995). The microbial flora of the skin consists of **resident** and **transient** micro-organisms.

5.2.1 Resident skin flora (e.g. coagulase-negative staphylococci, diphtheroids, micrococci) survive and multiply in the superficial skin layers. Resident micro-organisms are low grade pathogens and are not easily dislodged. Therefore, they are not usually implicated in infections. However, during surgery or other invasive procedures they may enter deep tissues and establish an infection (Garner and Favoro, 1986)

5.2.2 Transient skin flora represents recent contaminants, which usually survive only for a limited period of time. They can be pathogens (e.g. *E.coli*, *S. aureus*) acquired from colonised or infected patients or the inanimate hospital environment and may cause nosocomial infection. The ability of transient micro-organisms to transfer to and from hands with ease results in hands being extremely efficient vectors of infection. Transient micro-organisms can easily be removed with handwashing and the risk from cross infection immediately reduced.



Before Handwashing



After Handwashing

6. The aims of hand decontamination

Hand decontamination has a dual role to protect both the patient and the healthcare worker from acquiring micro-organisms which may cause them harm.

Hands may be contaminated by direct contact with patients, indirectly by handling equipment or through contact with the general environment. Patients with invasive devices or undergoing invasive procedures are particularly vulnerable to infection from micro-organisms transferred on hands.

Expert consensus groups agree that effective hand decontamination results in significant reduction in the carriage of potential pathogens on hands (Rotter et al 1986, Larson et al 1987, Ehrenkranz and Alfonso 1991, Doebbeling et al 1992).

6.1 When to decontaminate your hands

To prevent the transfer of micro-organisms it is essential to decontaminate hands **before** contact with any susceptible patient or site on a patient and **after** hands may have become contaminated with micro-organisms.

There is not a set frequency for hand decontamination as it is determined by clinical actions; those completed and those intended to be performed.

A risk assessment of the activity intended or performed will determine the appropriate decontamination process and the choice of agent e.g. soap, alcohol or antiseptic preparation.

RISK ASSESSMENT IN HAND DECONTAMINATION

Consider:

- Do you need to decontaminate your hands **before** this activity /contact?
- Do you need to decontaminate your hands **after** this activity/contact?
- Are your hands visibly soiled?
- Is this a high risk procedure or a vulnerable patient?

In the majority of clinical situations, soap and water or alcohol hand rub will suffice.

Higher level disinfection using a surgical scrub is required prior to all surgical procedures

6.2 Types of decontamination

6.2.1 Routine hand decontamination

The aim of routine hand decontamination is to remove **transient** micro-organisms acquired on the hands before they can be transferred. This activity is sometimes called “social” hand decontamination when soap is used or “hygienic” hand decontamination if an antiseptic or alcohol based preparation is used. Hands that are visibly soiled with dirt or organic material, or potentially contaminated with micro-organisms should be washed using liquid soap and water. Antiseptic hand cleansing solutions are not usually recommended for routine hand decontamination. However, if hands are visibly clean they can be decontaminated using an alcohol hand rub.

6.2.2 Surgical hand decontamination

Surgical hand decontamination is used prior to surgical or other highly invasive procedures where extra care must be taken to prevent micro-organisms being introduced into tissues should gloves be damaged. **Surgical** hand decontamination aims to substantially reduce **resident** micro-organisms and remove or destroy **transient** micro-organisms. This process is achieved by using an antiseptic hand cleansing preparation.

7. Choice of cleaning agents

There are ranges of cleaning products available for hand decontamination and the selection of the correct agent will depend on whether the removal of transient or resident micro-organisms is required

7.1 Soap and water

For most routine daily activities handwashing with plain liquid soap and water is sufficient (Russell et al 2000). Handwashing with soap suspends transient micro-organisms in solution and allows them to be rinsed off; this process is referred to as **mechanical removal** of micro-organisms.

Liquid soap dispensers are the preferred option for use in clinical settings. The soap dispenser should be wall mounted, maintained regularly and operated by elbow, wrist or foot. The dispensers should have individual replacement cartridges that are discarded when empty. This will reduce the chance of accidental contamination of the soap (Ayliffe et al 2000).

7.2 Alcohol –based preparations

Alcohol hand rub offers a practical and acceptable alternative to handwashing in most situations, provided hands are **not dirty** (Pratt et al 2001). Alcohol is not a cleansing agent and visible contaminants must be removed with soap and water. In addition, build up of emollients means that hands need to be washed with soap and water after 2 – 3 applications of alcohol hand rub.

7.3 Aqueous antiseptic solutions

Antiseptic handwash solutions used with water will both remove and destroy micro-organisms on the hands. This process is referred to as **chemical removal** of micro-organisms (Garner and Favero 1985).

Hand disinfection will reduce counts of colonizing resident flora as well as removing or destroying transient micro-organisms contaminating the hands. Some antiseptic agents have a residual activity so provide continual anti-microbial activity (Larson 1995). This on-going activity is of benefit during surgical procedures and helps to minimize the risk of

contaminating the surgical field if glove punctures occur. The antiseptic of choice in this Trust is Chlorhexidine gluconate (Hibiscrub).

8. Hand decontamination technique

A good technique covering all surfaces of the hands at the right time is more important than the agent used or the length of time taken to perform it (Ayliffe et al 2000).

The ideal technique should be quick, reduce hand contamination to the lowest possible level and be free from notable side-effects to the skin (Pittet and Boyce 2001).

8.1 Preparation of hands prior to decontamination

The efficacy of hand decontamination is improved if the following principles are adhered to:

- Keep nails short and pay attention to them when washing hands – most microbes on the hands come from beneath the finger nails (Larson 1989).
- Do not wear rings with ridges or stones - total bacterial counts, particularly of Gram negative bacteria, are higher when rings are worn (Larson 1985, Jacobson et al 1985).
- Do not wear artificial nails or nail polish as they discourage vigorous hand washing (Larson 1989). Nail polish can flake and itself become a source of contamination.
- Remove wrist watches, bracelets and roll up long sleeves prior to handwashing (Gould 1994)
- Cuts and abrasions must be covered with waterproof dressings.

8.2 Routine hand decontamination using soap and water

The correct technique for routine hand washing involves:

- Wetting the hands under running water
- Applying the liquid soap and covering all surfaces of the hands.
- Vigorously rubbing all surfaces of lathered hands for 10 – 15 seconds
- Rinsing hands under running water to remove residual soap
- Thoroughly drying hands

Ayliffe et al (1978) devised a “six step technique” for handwashing that can be used to ensure that all parts of the hands are covered. Each step consists of five strokes forward and five strokes backwards.



During handwashing, particular attention should be paid to those areas of the hands that are most frequently missed (Taylor 1978).



8.3 Routine hand decontamination using alcohol hand gel

- When decontaminating hands using an alcohol hand rub, hands should be free of dirt and organic material. The handrub solution must come into contact with all surfaces of the hand. The hands must be **rubbed** together vigorously using the 6 stage technique, paying particular attention to the tips of the fingers, the thumbs and the areas between the fingers, and until the solution has evaporated and the hands are dry.
- Alcohol is an effective alternative when there is no water or towels readily available and there is need for rapid hand disinfection.

8.4 Surgical hand decontamination

There are a number of alternative methods for preparing the hands, nails and forearms prior to undertaking a surgical procedure:

- Wash hands with an aqueous antiseptic solution for 3 to 5 minutes (Rotter 1999, Larson 1995).
- Apply an alcohol - based product to clean hands for 3 minutes (Rotter et al 1998).
- Wash hands with an aqueous antiseptic solution for 3 minutes, followed by an alcohol based product for 4 to 5 minutes (Rotter and Koller 1990).

Since the number of bacteria on the skin gradually increase over time handwashing with antiseptic solution or alcohol should be repeated every few hours.

Surgical hand decontamination has traditionally included scrubbing with a brush or sponge to further decrease bacterial counts on the hands. However, it has been suggested that this is not necessary, especially when alcohol based products are used (Hand Hygiene Task Force 2001).

8.5 Hand drying

Wet surfaces transfer micro-organisms more effectively than dry ones (Hoffman & Wilson 1994). Consequently, the methods of hand drying is also important in the maintenance of hand hygiene (Blackmore, 1987).

Drying with paper towels is quicker and more thorough – 7-9 seconds compared with 25.4 seconds with dryers (Redway et al. 1994). It has been suggested that paper towels operate effectively by two mechanisms. They rub away transient organisms and old, dead skin cells loosely attached to the surface of the hands. Paper towels should be conveniently placed in relation to handwashing facilities, preferably in a wall-mounted dispenser, where they will not

be contaminated by splashing water (Garner and Favero 1985). Care should be taken when disposing of paper towels.

The foot operated pedals on bins must be used rather than using the hands to open and close bins as the bin lid may cause hands to become recontaminated (Gidley, 1987).

9. Skin Care

9.1 Caring for your skin

People in occupations such as healthcare, where frequent handwashing is required, are susceptible to long-term changes in the skin. These can result in chronic damage, irritant contact dermatitis and eczema as well as changes in the bacterial flora of the skin. The prevalence of irritant contact dermatitis in healthcare professionals has been shown to be 10-45% (Larson 2001)

Moreover, washing damaged skin may cause skin shedding or greater numbers of micro-organisms and washing is less effective at removing them (Larson 2001). Failure to remove jewellery may predispose to skin problems, and eczema can begin under a ring and spread over the hand (Field 1994). Damaged skin caused by harsh handwashing agents, has been cited as a reason why staff fail to decontaminate their hands (Gould and Ream 1994).

9.2 Prevention of skin damage

Skin damage is generally associated with the detergent base and/or poor handwashing technique (Pratt et al 2001). To minimize the risk hands should always be wetted under running water before applying any soap or detergent. After washing, hands should be thoroughly rinsed to remove residual soap and then dried carefully, paying particular attention to drying the area between the finger webs (Field 1994, Larson 1995). If a particular hand hygiene preparation causes skin irritation, advice should be sought from Occupational Health. When the hands are not visibly soiled, alcohol gel can be used instead of soap and water as it is associated with less skin damage (Pittet and Boyce 2001, Pittet et al 2000, Girard et al 2001).

9.3 Hand creams

Hand cream should be applied regularly to the hands to protect the skin from the drying effects of regular hand decontamination (Pratt et al 2001). Communal jars of hand cream are not to be used as the contents may become contaminated and subsequently become a source of cross infection (Gould 1994). Hand creams with a non-ionic base are recommended (Larson 1995). The use of emulsions for hand care has been documented (Kolari et al 1989) and found to improve the conditions of the hands.

9.4 Gloves

Increased awareness of the need to wear gloves as part of standard precautions has resulted in a significant increase in their use. Natural rubber latex (NRL) remains the material of choice for user protection against blood- borne viruses because of its resealable properties, flexibility and barrier protection. Risks relating to the wearing of NRL gloves have become increasingly apparent and range from immunological responses, Type I and Type IV sensitivity, to an irritant response. These responses can range in severity from chapped, itchy hands to anaphylaxis. Appropriate synthetic gloves must be available for use by staff that are known to be sensitized to NRL proteins (Infection Control Nurses Association 2002).

Important points to note

- The use of bar soap is discouraged.
- Gloves should **not** be regarded as a substitute for hand washing. A glove is not always a complete impermeable barrier (20 -30% of surgical gloves are punctured during surgery) but they reduce the transfer of micro-organisms.
- In an epidemic situation, hand washing and the use of gloves are important protective measures to prevent the transmission of the infectious agents to other susceptible patients, or staff, providing the same glove is **not** worn from one patient to another patient, or between dirty and clean procedures on the same patient.
- Hands should **always** be washed after removing gloves, and also before sterile gloves are worn.

10. Implementation

The Trust will demonstrate that this document has been issued, read and implemented as follows:

10.2 Dissemination

12.2.1 A variety of dissemination methods are in place to make sure that all staff are aware of, have access to and comply with the Trust's Controlled Documents. These are:

- Summary list of all new documents published in the monthly core brief including a brief description of the document and its intended core audience
- Inclusion in the Weekly Bulletin
- Inclusion in the monthly Medical Director/Nursing Director Bulletin
- Inclusion in the Document Management System on the Trust's Intranet, which all staff are encouraged to use to gain access to Controlled Documents.
- Distribution to relevant Ward and Departmental Managers

10.3 Education and training

It is the expectation of the Trust that all staff coming into contact with patients, working in clinical areas, high risk areas, (such as food preparation), receive hand hygiene training.

All Health care workers must undertake annual mandatory training provided by the Infection Control Team. Hand hygiene and decontamination is covered on the training programme. Divisional Managers /clinical leads must ensure that all newly appointed healthcare workers within Christie hospital NHS foundation trust, including students on clinical placements, receive hand hygiene education in their induction programme. It is vital all staff are aware of the reasons for hand hygiene and decontamination and the consequences of non-compliance in terms of adverse patient outcome and professional accountability.

The Infection Control team is responsible for ensuring that hand hygiene education is provided to all Trust staff. The induction and mandatory training policy describes the systems in place to ensure that all staff receive hand hygiene education and that centrally held training records are kept up to date.

It is essential that any volunteers that have patient contact or are in clinical areas attend the hand hygiene session of mandatory training. (If this is not feasible then the ICT will deliver session's particular to that group)

Patients and/or carers are increasingly encouraged to play active roles in their own treatment/care plans. In such cases, the health care worker must ensure that the care plan indicates appropriate hand hygiene education for the carer/patient to minimise any risk of cross infection.

10.4 Monitoring Systems

Monitoring the compliance with this policy forms part of the annual audit programme of infection prevention and control and key findings are reported to the Trust Infection Control Committee and within the Trust annual report for infection prevention and control.

The 'Saving Lives' High Impact Intervention audits, patient survey results and 'CleanYourHands' campaign observational audits will also form part of the monitoring process for compliance with this policy.

Each Ward and department has a hand Hygiene Champion that ensures hand hygiene facilities, posters and education needs are continuously reviewed.

Monitoring of attendance at infection control training is undertaken by the Learning and Development Unit in line with the arrangements described in the induction and mandatory training policy.

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