

Procedure for Hand Hygiene

CATEGORY:	Procedure
CLASSIFICATION:	All Staff
PURPOSE	To reduce the risk of cross infection to staff, patients and the general public
Controlled Document Number:	388
Version Number:	5
Controlled Document Sponsor:	Chief Nurse
Controlled Document Lead:	Lead Nurse, Infection Prevention & Control Team
Approved By:	Chief Nurse
On:	May 2016
Review Date:	April 2019
Distribution:	
<ul style="list-style-type: none"> • Essential Reading for: All Staff • Information for: All Staff 	

CONTENTS

		Page
1	Introduction	3
2	Microbiology of the Hands	3
3	Aim of Effective Hand Disinfection	4
4	Basic Rules of Hand washing	4
5	Correct Hand Washing Technique	5
6	Looking After Your Hands	6
7	Hand Cleansing Products	7
8	Easy Access to Hand Decontamination	9
9	Advantages of Cleaning Hands with Alcohol Based Hand Rubs	9
10	References	10

1. Introduction

- 1.1 The purpose of this procedure is to reduce the risk of cross-infection to staff, patients and the general public.
- 1.2 The procedure forms the essence of infection control practice. It informs Trust staff of the availability and appropriate use of hand decontamination agents in use throughout the Trust. Effective hand hygiene can only be achieved if nails remain short, jewellery and clothing does not interfere with hand decontamination and skin care is maintained.
- 1.1.1. Many studies have confirmed that health care workers can reduce hospital infection rates by decontaminating their hands between patients.
- 1.1.2. The terms 'Healthcare associated infection or 'nosocomial infection' are used to describe any infection that is known to be associated with healthcare facilities. The causative organism may have been acquired from another person either directly or indirectly (cross infection), or was one that the patient themselves was formerly carrying in another site (self-infection or auto infection).
- 1.1.3. Cross infection in hospitals is most commonly spread by contaminated hands and equipment. Some bacteria will inhabit and multiply on skin; these are known as resident flora or commensals. Others will be picked up by contact and passed on by contact; these are known as transient micro organisms.
- 1.1.4. The term 'hand hygiene' includes both hand washing with both soap and water or the use of alcohol based products containing emollients that do not require the use of water.
- 1.1.5. University Hospitals Birmingham NHS Foundation Trust (UHBFT) encourages patients to 'speak up'. Remember you may be challenged by patients if they do not see you wash/decontaminate your hands.

2. Microbiology of the Hands

- 2.1 There are two types of micro-organisms which make up the skin flora – resident (or colonising) flora and transient (or contaminating) flora. The differences between the two types of micro-organisms are:

Flora	Features
Resident	Live and grow on normal skin. Consist almost exclusively of coagulase-negative staphylococci, <i>Staphylococcus aureus</i> and micrococci together with smaller numbers of diphtheroid (or 'coryneform') bacilli. Protect skin from

	invasion by other harmful species. Difficult to remove. Minimal pathogenicity but can cause infection during associated with implants and other invasive procedures.
Transient	Do not normally colonise the skin. Acquired on hands through contact with other sites on the same individual, other people or the environment (cross-infection). Easy to remove by hand washing.

2.2 The most important way to minimise the risk of skin damage is to use hand creams with an oil/water base that should be applied regularly to the hands and forearms to protect the skin from the drying effects of regular hand decontamination. These are supplied by the Trust.

3. Aim of Effective Hand Disinfection

The aim of hand disinfection is to significantly reduce the carriage of potential pathogens on the hands. The extent of pathogen reduction required depends on the type of hand disinfection used.

4. Basic Rules of Hand Washing

4.1. Bare Below the Elbow

For clinical staff who do not wear a short sleeved uniform, sleeves of their own clothing must be either short or rolled up to the elbow or above.

4.2. Fingernails and Artificial Nails

- Natural nail tips should be kept short; they should not be visible when viewing the hand from the palm side.
- Nail varnish or false nails must not be worn by clinical staff or those dealing with food.

4.3 Nail Brushes

If used they must be soft bristled, single use (used once and disposed of). During the scrub process nail brushes must never be used on skin.

4.4 Jewellery

- When undertaking clinical work a plain metal band ring may be worn, no rings with stones or grooves are permitted.
- Wrist watches must be removed.
- Anyone wishing to wear particular types of clothing/jewellery for medical, religious, creed or cultural reasons will be asked to

discuss with their line manager, who will seek advice from the infection prevention and control team.

4.5 Skin Care

- Skin should be kept in good condition.
- Prevent excessive drying of skin by using emollient cream.
- Any break in the skin **MUST** be covered with an occlusive dressing.
- Cotton Liners - It is advised that staff who have to wear cotton liners should have their duties restricted. In particular clinical duties such as changing dressings, administering medicines and inserting IV lines are to be avoided if a person has to wear cotton liners.
- Frequent hand decontamination by healthcare workers may increase the risk of skin irritation, therefore, regular use of moisturisers should be undertaken to minimise the risk of skin damage and to maintain an intact barrier against water loss (Bissett, 2007).
- Damaged skin is associated with changes in the composition of microbial flora of the hands such as colonisation with more species and increased prevalence of certain significant micro-organisms (Gruendemann & Mangum, 2001).

4.6 Gloves

- Wash hands following glove removal.

5. Correct Hand Washing Technique

- Always wet hands under running water before applying any soap or antiseptic solution.
- Hands should be thoroughly rinsed to remove residual soap.
- Hands should be dried carefully, pat the skin dry, rather than rubbing it to avoid cracking the skin. Paying particular attention to the forearm and between the fingers.

HAND CLEANING TECHNIQUES

How to handrub? WITH ALCOHOL HANDRUB

1a

1b

Apply a small amount (about 3ml) of the product in a cupped hand, covering all surfaces

2

Rub hands palm to palm

3

Rub back of each hand with the palm of other hand with fingers interlaced

4

Rub palm to palm with fingers interlaced

5

Rub with backs of fingers to opposing palms with fingers interlocked

6

Rub each thumb clasped in opposite hand using rotational movement

7

Rub tips of fingers in opposite palm in a circular motion

8

Rub each wrist with opposite hand

9

Once dry, your hands are safe

20-30 sec

How to handwash? WITH SOAP AND WATER

1a

Wet hands with water

1b

Apply enough soap to cover all hand surfaces

9

Rinse hands with water

10

Use elbow to turn off tap

11

Dry thoroughly with a single-use towel

12

Your hands are now safe

40-60 sec

Adapted from WHO World Alliance for Patient Safety 2006

Hands must be cleaned before and after every patient contact

6. Looking After Your Hands

6.1. Hand Creams

- Hand creams with an oil/water base should be applied regularly to the hands to protect the skin from the drying effects of regular hand decontamination.
- Communal jars of hand cream **MUST NOT** be used due to the risks of cross-infection.
- Skin moisturiser should be wall mounted or pump dispensed to reduce the risk of product contamination.
- Tubes of hand cream should be for individual use only.
- Moisturisers increase skin hydration contributing to the barrier function of the skin.

6.2 Causes of Skin Irritation and Dryness

Frequent hand washing with soap and water may cause skin irritation and dryness for some individuals.

This can be caused by:-

- Applying liquid soap to dry hands.

- Failure to ensure soap is completely rinsed off.
- Failure to dry hands properly.
- Putting gloves on while hands are still wet from either hand washing / alcohol gel.
- Failure to look after hands out of work e.g. use a moisturiser.

6.3. Won't Frequent Use Alcohol Dry Out my Skin?

- Not if hands are looked after properly.
- In fact, studies have proven that health care staff who routinely cleaned their hands between patients by using a modern alcohol based hand rub had less skin irritation and dryness than staff who washed their hands with soap and water.
- Modern alcohol based hand rub contains skin conditioners (emollients) that help prevent the drying effects of alcohol.

7. **Hand Cleansing Products**

There are a range of products available for hand disinfection and the choice of product relates to the activity the healthcare worker intends to perform. The main products available can be split into three categories: soap and water, alcohol based preparations and aqueous antiseptic solutions.

7.1. Liquid Soap

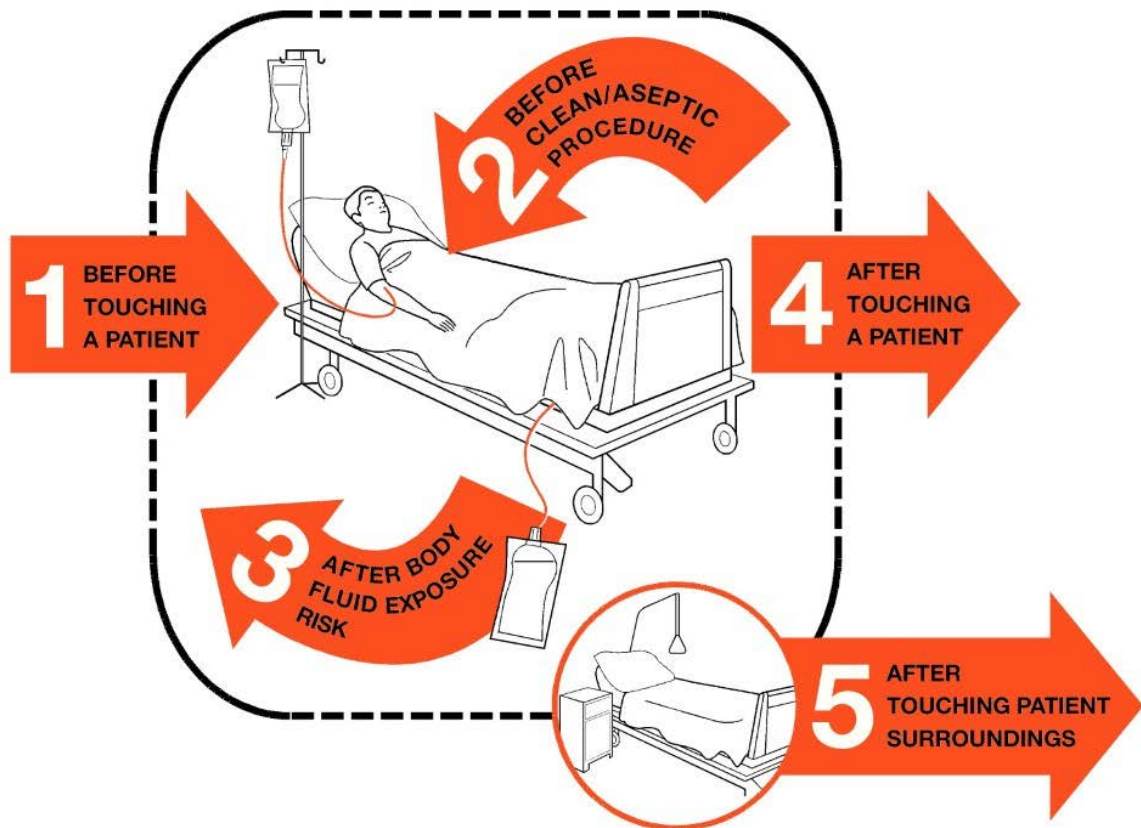
The primary action of plain liquid soap is the mechanical removal of viable transient micro-organisms (Larson, 1995).

- Available from the Domestic Department.
- Liquid soap is dispensed from a sealed container that does not require venting or topping up thereby preventing contamination of the product.

7.1.1. When should you decontaminate your hands with soap and water?

- After contact with a patient (environment) with a suspected or confirmed infection e.g. patients with *Clostridium Difficile* infection as the spores are resistant to alcohol gel.
- Before and after all patient contact.
- After removal of gloves.
- If your hands are likely to have been or are visibly contaminated with blood or body fluids.

- Before eating.
- After using the toilet.



7.2. Alcohol based Preparations

- Alcohol based hand rub is used as an alternative to hand washing. Alcohol gel is not a cleansing agent and can only be used when hands are not likely to be or are visibly soiled or contaminated.
- Alcohol based hand rub contains an emollient to reduce the drying effect on the skin.
- Apply 1 pump from the pump dispenser to the palm of one hand, and rub hands together, ensuring that there is enough of the hand rub to cover both hands.

Here are some tips on how to use an alcohol hand rub (**please see poster on page 6**)

- Cover all surfaces of your hand and fingers.
- Include areas around/under fingernails.
- Continue rubbing hands together until hand rub dries.

- If you have applied a sufficient amount of alcohol gel, it should take at least 10-15 seconds of rubbing before your hands feel dry.

7.3 Aqueous Antiseptic Solutions

These are used for decontaminating hands prior to surgical procedures.

8. **University Hospitals Birmingham NHS Foundation Trust is committed to enabling their staff easy access to hand decontamination by:**

- Regular use of hand inspection cabinets (Glo box) to encourage staff to take responsibility for improving their hand washing technique and demonstrating areas that are dry / damaged.
- All beds within the Trust must have alcohol based hand rub attached or positioned within the bed space.
- All clinical areas must have adequate wall mounted alcohol based hand rub to allow easy access during clinical procedures as advised by infection prevention and control team.
- Alcohol based hand rub must be available at the point of care.
- All staff who have patient contact or visit clinical areas must have individual toggles of alcohol hand rub.
- Keeping access to hand washing sinks clear, with adequate supplies of hand decontamination supplies.

9. **Advantages of Cleaning Hands with Alcohol based Hand Rubs**

When compared to traditional soap and water hand washing; alcohol hand rubs have the following advantages

- Take less time to use.
- Can be made more accessible than sinks.
- Cause less skin irritation and dryness.
- Are more effective in reducing the number of bacteria on hands.
- Makes alcohol based hand rubs readily available to personnel.
- Has led to improved hand hygiene practices.

10. References and Supporting Literature

- APIC (1995)** Guidelines for hand washing and antiseptics in healthcare settings. *American Journal of Infection Control*; 23(8)
- Ayliffe GAJ, Babb JR, Taylor LJ (2001)** In: Hospital-acquired infection principles and prevention. 3rd edition. Ayliffe GAJ et al, eds. Arnold, London
- Barbut F, Maury E, Goldwirt L, Boelle PY, Neyme D, Aman R et al. (2007)** Comparison of the antibacterial efficacy and acceptability of an alcohol-based hand rinse with two alcohol-based hand gels during routine patient care. *Journal of Hospital Infection*; 66(2):167-173
- Bissett Linda (2007)** Skin care: an essential component of hand hygiene and infection control. *British Journal of Nursing*, 2007, Vol 16, No 16
- Bisset L (2007)** Compliance with guidelines on effective Hand hygiene. *Nursing Times* 103(19): 28–30
- Emmerson AM, Enstone JE, Griffin M (1996)** The second national prevalence survey of infection in hospitals. *Journal of Hospital Infection* 32: 175-190.
- Gould DJ, Drey NS, Moralejo D, Grimshaw J, Chudleigh J. (2008)** Interventions to improve hand hygiene compliance in patient care; *Journal of Hospital Infection* 68(3):193-202.
- Gould D, Wilson-Barnett J, Ream E (1996)** Nurses Infection Control practice: hand decontamination, the use of gloves and sharp instruments. *International Journal of Nursing Studies*; 3(2): 143-160.
- Gruendemann BJ, Mangum SS (2001)** In: Infection prevention in surgical settings. Gruendemann BJ, Mangum SS, eds. EB Saunders Company, Philadelphia, USA 2001
- Gupta A, Della-Latta P, Todd B, et al (2004)** Outbreak of extended-spectrum betalactamase-producing *Klebsiella pneumoniae* in a neonatal intensive care unit linked to artificial nails. *Infection Control Hospital Epidemiology*; 25:210-5
- Hoffman PN et al (1985)** Micro-organisms isolated from skin under wedding rings worn by hospital staff. *BMJ*; 290:206-207

- Hoffman PN, Wilson K (1994)** Hands, hygiene and hospitals. *PHLS Microbiology Digest*; 11(4):211-216. (Available from HLS, Colindale)
- Holmes OW (1843);** The contagiousness of puerperal fever. *New England Quarterly Journal of Medicine and Surgery* 1:503-30
- Horton R (1995)** Hand washing: the fundamental infection control principle. *British Journal of Nursing*; 4(16):926-933
- Infection Control Nurses Association** Hand Decontamination Guidelines; London (2002)
- Jeanes A. (2003)** Improving hand hygiene compliance; *Nursing Times* 99(7):47-49.
- Maskerine C, Loeb M. (2006)** Improving adherence to hand hygiene among health care workers. *Journal of Continuing Education in the Health Professions* 2006; 26(3):244-251
- Parry MF, Grant B, Yukna M et al (2001)** Candida osteomyelitis and diskitis after spinal surgery: an outbreak that implicates artificial nail use. *Clinical Infectious Diseases*; 32:52-7
- Paulson DS, Fendler EJ, Dolan MJ et al (1999)** A close look at alcohol gel as an antimicrobial sanitising agent. *American Journal of Infection Control*; 27:332-8
- Pittet D, Hugonnet S, Harbart S et al (2000)** Effectiveness of a hospital wide programme to improve compliance with hand hygiene. *Lancet*; 356:1307-12
- Plowman R, Graves N, Griffin M et al (2000)** The socio-economic burden of hospital acquired infection. Public Health Laboratory Service, London.
- Reybrouck G (1983)** Role of the hands in the spread of nosocomial infections. *Journal of Hospital*; 4:103-110
- Salisbury DM et al (1997)** The effect of rings on microbial load of health care workers hands. *American Journal of Infection Control*; 25(1):24-27
- Sproat LJ, Inglis TJJ (1994)** A multi-centre survey of hand hygiene practice in intensive care units. *Journal of Hospital*; 26:137-148