



A Guide to Cutan Hand Hygiene 'Best Practice' for Healthcare Workers



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An Overview of the Importance of Good Hand Hygiene

There are many studies and papers that have been written to investigate the need for good hand hygiene practices amongst healthcare workers. What may appear to be common sense has been remarkably well researched and today much of this work has culminated in national campaigns and guidelines on hand hygiene.

It is almost indisputable that healthcare workers do not clean or decontaminate their hands as often as they should, or indeed imagine they may have. This is not normally a result of a deliberate act of negligence, but is, or can be, as a result of many factors, such as inadequate provision of sinks, poor water temperature control, lack of soap or paper towels and inadequate staffing levels. What is also apparent is that generally there is too little awareness amongst healthcare workers of what can constitute poor hand hygiene practices and the threat this can pose to patients in their care.

The Cutan philosophy of hand hygiene 'best practice' does not just confine itself to the process of hand washing or sanitising. Retaining good skin condition for all healthcare workers is vital. Poor skin condition i.e. dry, sore or cracked skin, apart from being a discomfort to those staff affected, can significantly increase the risk of infections being spread, or the individual becoming infected themselves (Larson 1999). Staff with poor skin condition are more likely to adopt inadequate hand hygiene practices due to the discomfort felt when using even the mildest of products.

This booklet not only provides useful advice on the process of hand washing and sanitising, but also addresses the holistic requirements for hand hygiene 'best practice' in healthcare environments. It does not set out to be the definitive text on hand hygiene, but it does seek to put forward some clear and easily understood guidance that can be communicated to all those with responsibility for patient care, no matter what their level of skill, training or seniority.

We hope you find the information of interest, but more importantly of practical use

Micro-organisms

Before considering the processes involved in Cutan hand hygiene 'best practice' it is important to have a basic understanding of micro-organisms, which are invisible to our eyes, and yet we all carry around with us enormous numbers of them both on our skin and in our bodies.

We are colonised very soon after birth and mostly we co-exist quite happily. Indeed, there are many micro-organisms living in our guts that assist our bodies to function. But here we are concerned with those that live on our skin.

One micro-organism that has caused so much concern in healthcare environments is methicillin resistant *Staphylococcus aureus* (MRSA). It is estimated by the Department of Health 2005 that approximately 30% of the population carry *S.aureus*, either on their skin, or in their nose, ear or throat. For most people this is a harmless organism, but when it enters the blood-stream of sick people it can cause life threatening infections.

The skin is a fairly harsh environment for any living micro-organism to survive upon, yet evolution is remarkable in that despite our skin's acidity, relative lack of nutrients and frequent shedding, many micro-organisms will live here quite happily.

Our hands carry around two broad categories of micro-organisms:

- *Resident Micro-organisms* - as the name suggests, these are difficult to remove as they are usually fairly deep seated in the skin, but generally pose little threat.
- *Transient Micro-organisms* - in contrast, these organisms are those that we pick up as a result of interaction with our environment, such as people and objects we touch.

Generally good hand hygiene technique and 'best practice' will substantially reduce transient organisms; and surgical hand washing will remove both transient organisms and some resident organisms. For routine hand washing, a mild soap is perfectly adequate. For surgical hand washing, the use of an antiseptic soap is always advocated. To complement hand washing, the correct use of an alcohol-based skin sanitiser will kill many transient and some resident micro-organisms.

Why Should Hands Be Washed or Decontaminated?

This may seem an odd question, but none the less it is an important one to consider. Our hospitals are populated with sick people who not too many years ago may have had a very poor prognosis, but with tremendous advances in science and medicine, new treatments are now available. However, this means that there are now a great many patients who are susceptible to microbial infections that would otherwise not be able to take seat in healthy individuals.

Those at greatest risk are the very young, the elderly (i.e. those with underdeveloped immune systems or those whose immune systems no longer work as well as they once did), immunocompromised patients, such as those undergoing treatment for cancer, and of course, those who have undergone invasive surgical procedures. All of these types of patients are at heightened risk of infection.

As the hands are the principal route by which cross-infection occurs (Voss and Widmer 1997, Reybrouck 1983), it is vitally important that healthcare staff should regularly remove the transient organisms from their hands to protect their patients, and of course themselves, from potential infections.

The 3-Steps to Cutan Hand Hygiene ‘Best Practice’

As discussed earlier, Cutan hand hygiene ‘best practice’ is concerned with more than just the procedure of hand washing or sanitising. The purpose of Cutan hand hygiene ‘best practice’ is to ensure the risk of transmitting potentially harmful micro-organisms is reduced to safe levels through effective compliance.

The simple 3-Steps that should be followed by all healthcare staff to ensure Cutan hand hygiene ‘best practice’ are:

Cleanse ~ Sanitise ~ Condition

By following this 3-step routine, it will help staff to retain good skin condition and minimise the risk of spreading potentially harmful micro-organisms to others, thereby safeguarding their own health and the well being of patients in their care.

The role of hand washing or decontamination is generally well understood. However, retaining good skin condition is one subject often ignored and can be affected by the activity of frequent or aggressive hand washing.

Maintaining intact skin is vital if dry, sore or even cracked skin is to be avoided. If skin is in poor condition the likely result will be reduced levels of hand hygiene compliance and in extreme cases can even lead to individuals needing to seek alternative employment or lengthy time off work.

Either way, by adhering to the 3-Step process, the potential for this to happen can be minimised, if not prevented altogether.

Cleanse



Sanitise



Condition



Step 1: Cleanse

In terms of helping to reduce the potential for spreading micro-organisms this is the most important step.

Wherever possible, in the first instance staff should always be encouraged to wash their hands. Indeed, some of the micro-organisms faced in today's healthcare environments, for example spore forming organisms such as *Clostridium difficile*, which causes diarrhoea, are best dealt with by hand washing i.e. physically removing them from the skin. Using normal alcohol-based skin sanitisers, for example, will have little effect on these types of micro-organisms when on the skin, as in spore form they are protected from attack by the alcohol.

For non-surgical procedures there is no better way to remove potentially harmful transient micro-organisms from the skin than by applying good hand washing technique using a mild soap. For surgical procedures, the use of an antiseptic soap will be required to kill and remove transient and resident micro-organisms to a safe level. In UK healthcare environments, antiseptic surgical soaps are required to meet the European standard EN12791, which demonstrates their statistically greater effectiveness on normal (resident) skin flora compared with a reference alcohol.

All soaps should be conveniently located above sinks in clearly marked hygienic dispensers capable of delivering a sufficient amount for a hand wash with one push. The temperature of the water supplied to the hand basin should also be set before washing commences, to avoid the need to adjust for temperature part way through.

When Should Hands be Washed?

It is important here to distinguish between visibly soiled hands and physically clean hands that potentially may be heavily contaminated with micro-organisms. Hand washing should always be carried out when the hands have become visibly soiled. In addition, with good technique the physical action of washing hands will remove most micro-organisms present on the skin to safe levels.

The following are examples of when hands ideally should be washed. It is far from an exhaustive list, but should prove a useful guide.

- Before starting & after finishing work
- At any time when hands are visibly soiled
- Prior to all surgical procedures
- Before & after dressing wounds, handling catheters and IV lines etc.
- Before caring for susceptible patients, particularly those that are immunocompromised
- After handling dirty laundry or waste
- Before & after donning sterile gloves
- After using the toilet
- Before preparing or handling food

How to Wash Hands

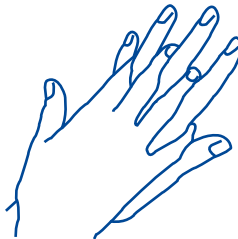
Numerous studies (Harding 1996, Nystrom 1994, Simmons et al 1990) continue to demonstrate how poorly the procedure of hand washing is adhered to. It is widely accepted that there is a correct technique to good hand washing. Ayliffe et al 1978 are credited with the 6-Step hand washing technique which is recommended.



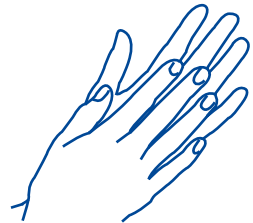
1. Wet hands, apply soap and rub palm to palm



4. Rub backs of fingers to opposing palm with fingers interlocked



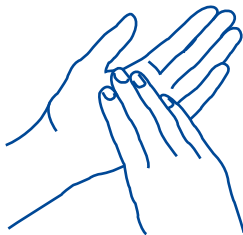
3. Rub palm to palm, fingers interlaced and round the wrists



2. Rub the right palm over the left dorsum and left palm over right dorsum



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



6. Rotational rubbing back and forwards with clasped fingers of right hand in left palm and vice versa

For effective routine hand washing, soap should be lathered and rubbed vigorously around the hands and wrists for at least 10-15 seconds (Larson et al 1995, Pratt et al 2001). Prior to surgical procedures, hands, wrists and forearms should be washed with an antiseptic soap for 3 to 5 minutes (Rotter 1999, Larson 1995).

Finally, hands should be rinsed with clean running water and taps turned off without hands touching them directly, before patting dry with paper towels. Rubbing skin with paper towels should be avoided as this may damage the skin and can cause some of the resident micro-organisms to come to the surface.

Step 2: Sanitise

In healthcare environments today, alcohol-based skin sanitisers are now widely recommended for use in certain circumstances to complement the use of soap and water. Where hands are visibly clean and there is no convenient access to washing facilities, then an alcohol sanitiser can be used. In contrast to soap and water, the use of an alcohol-based skin sanitiser kills a high proportion of the micro-organisms present on the hands, rather than physically removing them.

However, it must be remembered, using an alcohol-based skin sanitiser is no substitute for hand washing where hands are visibly soiled. In fact, visible soilings can indeed negate the efficacy of an alcohol-based skin sanitiser.

The benefits of alcohol-based skin sanitisers are the rapid reduction in the numbers of micro-organisms present on hands, their speed of use and when used frequently they can be less harmful to the skin than an equivalent number of hand washes (Winnefield et al 2000).

When using alcohol-based sanitisers, they should be conveniently located, usually at main ward entrances, at entry points into ward bays or treatment rooms and close to where patient care will be delivered e.g. at bed-ends or on notes trolleys etc. The product should be easily and hygienically dispensed and a sufficient amount used to keep wet all surfaces of the hands and wrists for around 15 to 30 seconds.

In UK healthcare environments, it is recommended that alcohol-based skin sanitisers meet the European standard EN1500 which demonstrates their statistically greater effectiveness against the test organism *Escherichia coli* compared with a reference alcohol.

The same 6-Step application technique as used in the hygienic hand wash procedure is recommended as this will ensure all surfaces of the hands have been exposed to the alcohol.

The following are examples of when hands should be sanitised. Again, it is far from an exhaustive list, but it should prove a useful guide.

- When entering and leaving a patient care environment e.g. a ward, a ward bay or treatment room
- Before & after dressing wounds, handling catheters and IV lines etc.
- Before & after caring for susceptible patients, particularly those that are immunocompromised
- Before and after administering medication
- Before & after touching notes, telephones & computer key boards
- Prior to all surgical procedures, after hand washing
- After handling dirty laundry or waste
- Before & after donning sterile gloves
- Before preparing or handling food

With the latest recommendations for alcohol-based skin sanitisers to be sited on patient bed-ends, in some of the above situations, use can be made of these products instead of washing with soap and water. But remember, these should only be used when hands are visibly clean.

Prior to surgical procedures, alcohol-based skin sanitisers should in fact be used in combination with antiseptic soaps. These should be applied for 3 minutes immediately after washing the hands (Rotter et al 1998). The hands should then be air dried before putting on surgical gloves.

When used appropriately, alcohol-based skin sanitisers can contribute greatly to the safety of patients and the condition of healthcare workers' skin. Studies (Boyce et al 2000, Newman and Seitz 1990) have shown that alcohol-based skin sanitisers can in fact be less damaging to the skin than the normal washing process. The physical process of frequent hand washing, even with the mildest soaps, can cause de-fatting of the skin compared to the lighter spreading action of alcohol-based skin sanitisers. Also, the reduced time it takes to decontaminate hands using alcohol-based skin sanitisers, compared with the process of hand washing, can be a significant benefit.

The cream should be rubbed in well over all surfaces of the hands.

The same 6-Step application technique as used in the hygienic hand wash procedure, as shown below, is recommended as this will ensure all surfaces of the hands have been exposed to the conditioning cream.

Step 3: Condition

This is the essential step in terms of helping to retain good skin condition, but one which all too often is neglected and can lead to unnecessary problems. A conditioning cream should always be applied to clean hands and used as frequently as possible during the day to keep skin supple and hydrated. Frequent washing and sanitising can defat the skin and leave it susceptible to becoming very dry, particularly in the warm environments often associated with healthcare provision.

At the very least cream should be applied when going for meal breaks and before finishing work for the day. The product should be provided in hygienic wall mounted dispensers rather than sharing communal tubs of cream. Again the product should be easily identifiable and be located somewhere convenient for use, such as in staff rooms or at nurses stations.



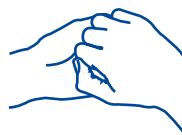
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Training & Support

In order to assist those with responsibility for infection control to help staff understand the requirements of Cutan hand hygiene 'best practice', a comprehensive Cutan support package is available.

1. The Cutan Product Application Technique Training Film



This short film is available as a CD for use on PC's. It shows the correct 6-Step technique for washing hands and applying skin sanitisers and conditioning

creams. It is designed for use with all healthcare staff.

2. The Glo-Germ® Hand Washing Demonstration Kit



This kit is for trainers to use and is a very visible method for demonstrating to staff the

correct method of washing hands. The kit includes the Glo-Germ® UV Simulated Germs Hand Cream, a portable UV light, a viewing box and an instruction booklet.

The cream is applied to the hands to simulate germs present on the skin. The hands are then placed into the viewing box where the UV light causes the cream to fluoresce. Hands are then washed and the results of the individual's hand washing technique can be visibly seen when placed back in the viewing box, with remaining simulated germs glowing brightly.

In addition, the kit also contains Glo-Germ® UV Simulated Germs Powder and an application brush for trainers to demonstrate to staff how easily germs can be transmitted. The instruction booklet contains useful hints on how the powder can be used during training exercises.

3. Awareness Signs

• Ward Entry Sign



This A4 durable plastic sign is designed for use at all ward entrances to remind staff and visitors to sanitise their hands on entering and leaving the ward.

• Nurses Station Sign

This A4 durable plastic sign is to be sited at the Nurses Station to remind staff of the Cutan 3-steps to hand hygiene.



• Hand Wash Sign



This A4 durable plastic sign is to be used at all wash basins to help remind users of the correct 6-Step technique for washing hands.

4. Compliance Posters



We are well aware that maintaining staff interest in good hand hygiene habits is an ongoing challenge and as a result we have an ever evolving range of literature and awareness posters to help maintain this focus. For the latest details of support material available visit our web-site (www.cutan.co.uk) or contact your Cutan Sales Consultant.

6. Staff Training



Our team of Sales Consultants are available to conduct formal training sessions for new members of staff, or even refresher training for existing staff. In addition, Cutan Sales Consultants attend many local and regional study days, giving staff the opportunity to have any queries or concerns answered.

5. Staff Pocket Guide



This small pocket-sized plastic card is for all members of staff and introduces the Cutan Hand Hygiene Programme, with information on the Cutan 3-Steps to hand hygiene.

Summary

Throughout this booklet we have tried to provide practical advice and information. This can be summarised as follows:

1. Hand hygiene 'best practice' can be applied by all healthcare staff who care for patients whatever their level.
2. Hand hygiene refers to the process of preventing the transmission of potentially harmful micro-organisms and keeping skin in good condition.
3. Poor skin condition reduces compliance and increases the risk of micro-organisms being transmitted.
4. 'Best practice' is concerned with achieving effective compliance i.e. appropriate frequency, occasions and technique for usage.
5. There are two types of micro-organisms: transient and resident; and it is transient organisms which cause the greatest concern in non-surgical environments.
6. Due to advances in medical treatments there are now more sick people in hospitals or community care who previously may have had a very poor prognosis. However, this increases the number of patients susceptible to infections (HAIs).
7. Hand hygiene 'best practice' consists of 3-Steps (Cleanse ~ Sanitise ~ Condition), whether in surgical or non-surgical environments, to wash and decontaminate hands and help ensure the skin stays in good condition.
8. Hand washing is the most important step in helping to reduce the potential for transmitting micro-organisms.
9. Hands should always be washed if physically soiled.
10. Good hand hygiene product application technique consists of a 6-Step procedure as developed by Ayliffe et al 1978.
11. Alcohol-based skin sanitisers are now recommended for use in many healthcare areas to kill transient micro-organisms present on the skin.
12. Alcohol-based skin sanitisers should always be used on physically clean skin.
13. Alcohol-based skin sanitisers work rapidly to help save time, without the need to use water.
14. Using skin conditioning cream is an essential step in terms of helping to retain good skin condition.
15. Conditioning creams should be non-ionic to ensure compatibility with chlorhexidine-based antiseptic hand wash products.
16. A full Cutan package of training and support is available.

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**For further information and advice on
Implementing Cutan Hand Hygiene
'Best Practice' for Healthcare Workers**

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