Using alcohol handrubs

AUTHOR Annette Jeanes, MSc, RGN, DipN IC, is consultant infection control nurse, University College Hospitals, London.

Handwashing can be time consuming and may not be possible in all circumstances. The application of alcohol rubs to the hands is a fast, simple and effective method of reducing micro-organisms present on the hands.

The use of alcohol handrubs can improve hand hygiene compliance in health care workers (Pittet, 2000). This reduces the risk of transmission of infection in health care.

When to apply alcohol handrub
Alcohol handrubs should be used when hands are visibly clean. Some examples of when their use is appropriate include:

- Before and after patient contact;
- Before an aseptic or sterile procedure;
- Before and after contact with any piece of patient equipment;
- When staff believe they may have contaminated their hands.

Hands should be washed if they are visibly soiled or feel sticky and prior to any surgical procedure.

Relevant anatomy and physiology
All humans have both transient and resident bacterial flora on their skin. The quantities present vary from one individual to another (Price, 1938).

Resident bacteria, such as Staphylococcus epidermidis, live and multiply on the skin of people’s hands. They are unlikely to cause infections on the skin surface but may be problematic if they are able to enter wounds or body cavities.

Transient flora, such as Staphylococcus aureus, may or may not colonise the hands and are acquired from contact with surfaces, substances or people. Transient flora may be pathogenic and can cause health care-associated infections.

The use of alcohol handrubs destroys the micro-organisms present on the surface of the skin by denaturing (changing the structure) of proteins; this prevents pathogenic organisms being transferred from the hands onto
patients during nursing interventions or other patient contact. However, alcohol handrubs do not remove dirt and debris from the skin – if these are present the hands should be washed thoroughly.

Many alcohol rubs contain emollients to reduce the drying effects on the skin that can occur with alcohol application.

**Preparation**

Training and education in the value of hand hygiene is a useful exercise for all health care workers. Alcohol handrubs should be widely available in clinical settings (NPSA, 2004).

Where possible, alcohol handrubs should be made available at the entrance to wards and other care facilities so that visitors and staff can use them before entering. They should also be placed near patients, for example at the end of beds or at bedside tables, and strategically to enable staff to use them during routine work. Individual portable containers should be made available for staff to carry with them.

Nails should be kept clean and short and should not have any varnish or other decoration. Any abrasions or cuts should be covered with a waterproof plaster.

Prior to cleaning hands all rings, bracelets and wristwatches should be removed and long sleeves rolled up.

**The procedure**

If a patient or relative is present explain that you are going to clean your hands with an alcohol handrub.

It is acceptable to use the same technique that is used for handwashing to apply alcohol handrubs (Ayliffe, 1988). However, since alcohol evaporates quickly a shorter technique has been developed by the Hand Hygiene Liaison Group (see www.handhygiene.co.uk):

- Pour 1–3ml of alcohol handrub onto the cupped palm of one hand (Fig 1).
- Press the fingertips and nails of the other hand into the pool of alcohol (Fig 2).
- Tip the remaining alcohol into the cupped palm of the other hand (Fig 3).
- Press fingertips and nails of the other hand into the alcohol (Fig 4).
- Quickly spread the remaining alcohol over the surfaces of the hands until the hands are dry (Figs 5 and 6).

This procedure normally takes between 10–15 seconds. The use of alcohol as a presurgical scrub will require more alcohol for a longer period of time, usually 15–25ml for five minutes (Rotter, 1999).

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**REFERENCES**
