

Various Bodies' Official Recommendations On Hand Drying: Paper Towels, Cloth Towels and Electric Hand Dryers

WHO

- **2009 WHO Guidelines on Hand Hygiene in Health Care**
 - Published for the First Global Patient Safety Challenge (“Clean Care is Safer Care”)
 - From the introduction: “The WHO Guidelines on Hand Hygiene in Health Care provide health-care workers (HCWs), hospital administrators and health authorities with a thorough review of evidence on hand hygiene in health care and specific recommendations to improve practices and reduce transmission of pathogenic microorganisms to patients and HCWs.”

“Paper towels, cloth towels, and warm air dryers are commonly used to dry washed hands. One study compared four methods of hand drying: cloth towels from a roller; paper towels left on a sink; warm air dryer; and letting hands dry by evaporation; 256 no significant difference in the efficacy of the methods was reported. Reusing or sharing towels should be avoided because of the risk of cross-infection. 257 In a comparison of methods to test the efficiency of hand drying for the removal of bacteria from washed hands, warm air drying performed worse than drying with paper towels. 258 This is in contrast to another study, which found warm air dryers to be the most efficient when compared with paper and cloth towels. 257 However, air dryers may be less practical because of the longer time needed to achieve dry hands, 258 with a possible negative impact on hand hygiene compliance. Furthermore, one study suggested that some air driers may lead to the aerosolization of waterborne pathogens. 259 Further studies are needed to issue recommendations on this aspect. Ideally, hands should be dried using either individual paper towels or hand driers which can dry hands effectively and as quickly as it can be done with paper towels, and have been proven not to be associated with the aerosolization of pathogens.”

http://whqlibdoc.who.int/publications/2009/9789241597906_eng.pdf

- **2007 WHO Cinq clefs pour des aliments plus sûrs : Manuel**
 - Published by the WHO, Département sécurité sanitaire des aliments, zoonoses et maladies d'origine alimentaire
 - From the introduction: “La sécurité sanitaire des aliments est un enjeu important de santé publique ... L'Organisation mondiale de la Santé (OMS) se préoccupe depuis longtemps de donner à ceux qui manipulent les aliments les connaissances nécessaires et de leur faire prendre conscience de leurs responsabilités en matière de sécurité sanitaire des aliments.”

“Comment rester propre : se laver les mains

Pour se laver les mains :

- se mouiller les mains à l'eau courante;
- se les frotter pendant 20 secondes avec du savon;
- se les rincer à l'eau courante ;

- se sécher complètement les mains à l'aide d'un chiffon propre et sec, de préférence en papier.”

http://whqlibdoc.who.int/publications/2006/9789242594638_fre.pdf

EUROPEAN UNION

EC-ASEAN Economic Cooperation Programme on Standards, Quality and Conformity Assessment

- **2005 Guidelines on HACCP, GMP and GHP for ASEAN Food SMEs**
 - These guidelines are based on the results of a study of food safety in Thailand, Indonesia and the Philippines. It is described as “a guide of good practices for the production of food that is safe for human consumption”

“Hand wash sinks

Hand wash sinks shall conform to the following principles:

[...]

- The device devoted to hand drying must be of single use (paper towels being practically the only possible solution).”

http://ec.europa.eu/food/training/haccp_en.pdf

BELGIUM

SPF Santé publique, Sécurité de la Chaîne alimentaire et Environnement

- **2010 Règles d'hygiène à respecter lors de l'opération de piercing et du tatouage**
 - From the ‘My Health/Healthy Life’ portion of health.belgium.be: “Outre les aliments et les médicaments, de nombreux autres produits sont réglementés et contrôlés par le Service public fédéral Santé publique. Citons notamment les produits du tabac, les cosmétiques, les tatouages et les piercings. ... Les tatouages et les piercings doivent satisfaire à certaines exigences de sécurité.”

« Procédures d'hygiène

La zone cutanée ou muqueuse sur laquelle le tatouage ou le piercing va être effectué doit être propre, sans lésion. Elle doit être nettoyée et désinfectée.

Il est renvoyé aux recommandations du Conseil Supérieur d'Hygiène en matière d'hygiène des mains :

- Mouiller les mains (sans bijoux, ongles courts sans vernis) sous l'eau courante tiède
- Prendre une dose de savon liquide antibactérien, le faire mousser généreusement sur les mains ainsi que le dessus des poignets pendant 45 à 60 secondes. Insister sur les ongles et les espaces interdigitaux. Les ongles doivent être nettoyés avec une brosse. Ne pas oublier les avant-bras;

- Rincer abondamment sous l'eau courante et laisser couler l'eau afin de faire disparaître toute la mousse du lavabo
- Se sécher les mains avec une serviette absorbante en papier à usage unique
- Jeter la serviette
- Après s'être lavé les mains, utiliser éventuellement un peu de gel alcoolisé ou un peu de solution hydro-alcoolique afin de mieux désinfecter encore les mains.

Locaux et Mobilier

[...] Les mobiliers et aménagements : le mobilier sur lequel est installé le client possède un revêtement nettoyable protégé par un champ à usage unique changé entre deux clients. [...] Il comprend au minimum un lavabo, un distributeur de savon liquide, un distributeur de serviettes à usage unique.

Le revêtement de l'espace de nettoyage / décontamination / stérilisation doit répondre aux mêmes caractéristiques que l'espace de travail."

<http://www.health.belgium.be/eportal/Myhealth/Healthylife/Tattoosandbodypiercing/Regleshygieniquesarespecter/?fodnlang=fr>

- **2008 Newsletter: Association Belge pour l'Hygiène Hospitalière, Belgian Antibiotic Association Control Committee, Belgian Infection Control Society**
 - These associations publish a newsletter regarding control of infection and various diseases. The following guideline was taken from a newsletter concerned with MRSA, an infection now emerging on pig farms.

“Recommandations à l'intention du responsable de l'élevage porcin

Evitez que les germes ne soient transmis des porcs à l'être humain.

Les bonnes pratiques suivantes seront mises en oeuvre :

1. Ne pas fumer dans la porcherie.
2. Porter des vêtements et chaussures propres qui ne seront utilisés que dans l'exploitation ou la porcherie.
3. Il est conseillé de porter un masque et une coiffe jetables.
4. A la sortie de la porcherie, se laver les mains avec un savon désinfectant et les sécher avec un essuie propre ou un essuie jetable.
5. Ne pas laisser les jeunes enfants pénétrer dans la porcherie.”

http://www.health.belgium.be/internet2Prd/groups/public/@public/@dg1/@acutecare/documents/ie2divers/14816542_fr.pdf

FRANCE

ANSES (formerly AFSSA) - French Agency for food, environmental and occupational health and safety

- **2005 Hygiene recommendations for the preparation, handling and storage of feeding bottles**
 - ANSES is concerned with the safety standards of bottles and formula for infants in areas such as maternity wards, neonatal units and early childcare centers. In the study's justification, it states, “[Formula] products are sterile

when they are in ready-to-use liquid form but they are not when they are in powder form. The conditions for preparing, handling and storing these formulae are crucial in order to prevent microbial contamination and multiplication, which can cause serious infection or even death in newborns and young infants. The theme of preparation and storage of feeding bottles had been identified as a priority area for study by the “Human Nutrition” specialised expert committee (CES) of Afssa when it determined its objectives for the 2003-2006 period.”

“2.1.1. A general sector

This neutral sector includes:

- spacious changing areas; these are reserved for staff and include bathrooms located outside the protected sector. At the exit from the lavatories, handwashing facilities are installed. These consist of handbasins with non-manual command, supplied with hot and cold running water and fitted with liquid soap distributors and disposable paper towels, [...]
- an airlock providing access to the protected sector, including:
- a water distribution point with non-manual command,
- mild liquid soap (containing a bacteriostatic agent), with non-contaminable packaging,
- a disposable paper towel distributor,
- disposable clothing.

<http://www.anses.fr/Documents/MIC-Ra-BIB.pdf>

- **2006 Descriptive datasheet for microbiological hazards transmissible by foodstuffs: Domestic hygiene**
 - This data sheet outlines good practice for limiting the transmission of food borne illness in domestic settings.

“ Good habits to prevent contamination transfer

Like hands, sponges, dishcloths and other cleaning utensils must be frequently washed and disinfected or heat treated. Drying a surface with a dishcloth that has already been used can contaminate the surface. It is better to allow surfaces or dishes to dry in the air or to use a clean dishcloth or disposable paper towels.”

<http://www.anses.fr/Documents/MIC-Fi-HygienedomestiqueEN.pdf>

- **2007 Évaluation de la connaissance et de l’application de la circulaire du 25 juin 2001 relative à la composition des repas servis en restauration scolaire et à la sécurité des aliments dans les établissements publics au second degré (2005-2006)**
 - This excerpt is taken from an extensive study concerning food safety and handwashing practices in schools across France. The study points out hand dryers and disposable paper towels as better methods than the “less hygienic method” of cloth towels.

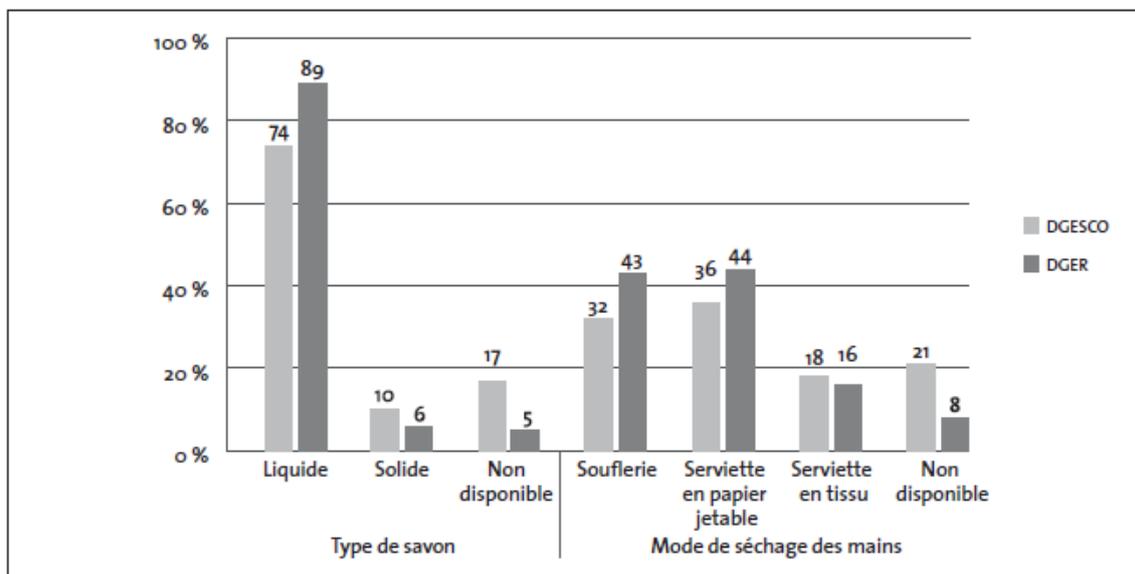
“Lavage des mains des élèves

Plus de 90 % des établissements possèdent au moins un point d’eau à proximité du restaurant scolaire, dont un tiers est alimenté en eau chaude pour les établissements de l’Éducation nationale contre deux tiers pour les établissements agricoles. La majorité des établissements propose du savon liquide ainsi qu’une soufflerie ou des serviettes en papier jetable. Les

moyens moins hygiéniques (savon sous forme solide, serviette en tissu) concernent moins d'un établissement sur cinq.[...]

Figure 23 : Type de savon et de mode de séchage des mains mis à disposition des élèves, dans les établissements ayant au moins un point d'eau destiné au lavage des mains à proximité du restaurant

Figure 23 : Type de savon et de mode de séchage des mains mis à disposition des élèves, dans les établissements ayant au moins un point d'eau destiné au lavage des mains à proximité du restaurant



Au niveau des équipements à disposition des élèves, on retrouve la présence de savon dans plus de 83 % des établissements de l'Education nationale et dans 74 % des cas sous forme liquide. La forme solide, moins hygiénique, ne concerne que 10 % des établissements. Il reste toutefois 17 % d'établissements qui n'ont pas de savon dans les sanitaires, ce qu'ils expliquent généralement par la dégradation systématique des équipements mis à disposition. L'absence de savon est plus fréquente dans les collèges, et dans les établissements possédant un internat. De la même manière, 21 % des établissements ne proposent aucun mode de séchage pour leurs élèves (il s'agit en général des établissements qui ne proposent pas de savon). Sinon, il s'effectue le plus souvent grâce à une soufflerie ou à des serviettes en papier jetables. Le mode le moins hygiénique, la serviette en tissu, concerne 18 % des établissements.

Dans les établissements agricoles, seulement 5 % ne proposent pas de savon et 8 % aucun mode de séchage. Près de 90 % fournissent du savon liquide à leurs élèves et utilisent une soufflerie ou des serviettes en papier jetable pour le séchage des mains.

...

<http://www.anses.fr/Documents/PASER-Ra-RestoScol2007.pdf>

UNITED KINGDOM

Health Protection Agency

- **1992 HPA Guideline: Handwashing in Primary Schools**

- Excerpt from a guideline of the ‘recommended technique’ of handwashing in primary schools. Based on Ayliffe GAJ et al. *Control of hospital infection; a practical handbook*. 3rd ed. Chapman and Hall, London, 1992.

“Handwashing is one of the most important ways of controlling the spread of infections, especially those that cause diarrhoea and vomiting, and respiratory disease. **The recommended method is the use of liquid soap, water, and paper towels.**”

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/Handwashing/>

- **2009 HPA Guideline: Farm visits**

- A guideline regarding safety around farm animals, with particular emphasis on handwashing after touching the animals. Slated towards teachers and parents bringing children to farms.

“*E.coli* O157, another risk from contact with animals, can be particularly serious for younger children.

The HPA North West advice to parents and teachers taking children on farm visits is:

- **Check that there are good hand-washing facilities at the farm with hot water, soap and paper towels.**”

<http://www.hpa.org.uk/ProductsServices/LocalServices/NorthWest/NorthWestNewsArchive/nwest090527ReissuesAdviceonFarmVisits/>

- **2011 HPA Guideline: Farm visits**

- Further guidelines regarding touching farm animals, in light of a seasonal upswing in cases of gastro-intestinal infection in Britain.

During and after farm visits:

- Do not eat or drink or put your fingers in your mouth while you are near animals or before you have washed your hands.
- **Ensure small children are supervised when washing their hands with hot water, soap and paper towels - there should be hand washing facilities on site.**
- Clean your shoes and pushchair wheels before leaving the farm and before you enter your car and home.

<http://www.hpa.org.uk/ProductsServices/LocalServices/EastMidlands/EastMidlandsPressReleases/emids110413easter/>

- **2009 HPA Hospital infection control guidance**

- From the introduction: “This document intends to give infection control and other general guidance to those personnel who may be involved in receiving

and caring for patients who may have SARS, primarily within acute healthcare settings, and should be used in conjunction with local policies.”

“Hand hygiene supplies - supplies of liquid soap, antiseptic hand wash solutions and also alcohol hand solutions in case of lack of water supply or access to this. Disposable paper hand towels, readily available.”

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SevereAcuteRespiratorySyndrome/Guidelines/sars010HospitalinfectioncontrolguidanceSARS/>

- **2011 Health Protection Agency Northwest: Infection Prevention and Communicable Disease Control Guidance for Early Years and School Settings**
 - From the introduction: “Nurseries and schools are an ideal environment for the spread of infection and infectious diseases. Young children, in particular those who attend nurseries and pre-school facilities, may be more susceptible to infection and infectious diseases... This guidance document provides you with information on the prevention and control of infection within a nursery, pre-school or school setting.”

“Dry hands thoroughly on disposable paper towels. Cotton (terry) towels are not recommended for general hand hygiene. Children will share towels (even if they are instructed not to do so) and this can be an excellent way of spreading infection. Even if each child has their own towel with their name on it, the risk of sharing is high, increasing the risk of cross-infection. Hot air hand dryers are not suitable for nurseries and schools. In a nursery, pre-school or school or school setting the only satisfactory method of drying hands is with good quality disposable paper towels.”

http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1194947365864

- **2008 Essex Health Protection Unit Community Infection Control Guidelines**
 - This document establishes what Essex calls “Standard Principles of Infection Control (or Universal Precautions).” From the introduction: “The recommendations on standard principles provide guidance on infection control precautions that should be applied by all healthcare personnel, and other carers, to the care of patients in community and primary care settings. Everyone involved in providing health and social care should know, and have a duty to apply the standard principles of hand decontamination, the use of protective clothing and the safe disposal of sharps.”

[Note: the same guidelines are also outlined in Essex HPU’s guidelines on dental practice, funeral home services, tattooing practice, ambulatory service, chiropody & podiatry practice, and prison practice]

“(c) Drying

This is an essential part of hand hygiene. Dry hands thoroughly using good quality paper towels. In clinical settings, disposable paper towels are the method of choice because

communal towels are a source of crosscontamination. Store paper towels in a wall-mounted dispenser next to the washbasin, and throw them away in a pedal operated fire-retardant domestic waste bin. Do not use your hands to lift the lid or they will become recontaminated. Hot air dryers are not recommended in clinical settings. However if they are used in other areas, they must be regularly serviced and users must dry hands completely before moving away.”

http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1194947408486

- **2000 UK Health Protection Agency’s Newsletter for Schools**
 - An update sent to schools following an outbreak of infections among children of ‘itchy skin infections.’

“Impetigo.

[...] Schools can also help prevent the spread of infection by ensuring that children do not share personal items such as towels, and roller towels in wash areas are replaced by driers or paper towels. The single most effective method for controlling the spread of infection is by frequent and thorough hand washing. A supply of hot and cold water, soap and single-use hand-drying facilities (such as paper towels or hot air dryers) should be provided for children and staff.”

http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1194947368853

- **2010 Guidelines for the Control of Infection and Communicable Disease in School and Early Years Settings**
 - From the South West London Health Protection Unit

“Drying hands

Disposable paper towels are recommended for drying hands, as re-usable towels are often damp and can harbour germs and re-contaminate hands. Drying hands thoroughly after washing is important as wet surfaces transfer micro-organisms more effectively than dry ones. It is suggested that paper towels rub away more germs that are loosely attached to hands. Ineffective drying may also lead to skin damage. Warm air hand dryers are generally not recommended as they blow germs back onto the hands, they take longer to dry hands than paper towels, people often do not spend long enough using the dryer and they can only serve one person at a time. However, if roller towels or air dryers are used, then they must be maintained regularly. Roller towels must be replaced frequently. Cloth/cotton towels/tea towels should not be used as they allow recontamination of the hands.”

http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1279618216326

- **2006 Control of communicable disease in schools and nurseries**
 - From the Surrey and Sussex Health Protection Unit

“School and nursery hygiene

Staff should encourage children to learn basic principles of good hygiene. One of the most important is hand washing.

Box 1: Hand-washing

[...] Rinse hands together under warm running water and dry hands with a hand dryer or clean towel (preferably paper). Ideally hot air dryers should not be used.”

http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1194947354312

AUSTRALIA

- **2011 - From the “Better Health Channel.” Produced in association with the State Government of Victoria Department of Health**
 - A fact sheet under the ‘Preventing Infection’ section of a site with content that “has been prepared for Victorian residents and wider Australian audiences.”

“How to wash your hands properly

To wash hands properly:

- Wet your hands with warm water.
- Apply one dose of liquid soap and lather (wash) well for 15–20 seconds (or longer if the dirt is ingrained).
- Rub hands together rapidly across all surfaces of your hands and wrists to help remove dirt and germs.
- Don’t forget the backs of your hands, your wrists, between your fingers and under your fingernails.
- If possible, remove rings and watches before you wash your hands, or ensure you move the rings to wash under them, as microorganisms can exist under them.
- Rinse well under running water and make sure all traces of soap are removed, as residues may cause irritation.
- Pat your hands dry using paper towels (or single-use cloth towels). Make sure your hands are thoroughly dry.
- Dry under any rings you wear, as they can be a source of future contamination if they remain moist.
- Hot air driers can be used but, again, you should ensure your hands are thoroughly dry.
- At home, give each family member their own towel and wash the towels often.”

http://www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/handwashing_why_it's_important?open

CANADA

Ontario Agency for Health Protection and Promotion

- **2010 Provincial Infectious Diseases Advisory Committee (PIDAC)**
 - Describes “Best Practices for Hand Hygiene In All Health Care Settings”

“B. Hand Drying (paper towel, air dryers)

Effective hand drying is important for maintaining hand health. 109 Considerations include:

- a) disposable paper hand-towels provide the lowest risk of cross-contamination and should be used for drying hands in clinical practice areas 109, 113;
- b) Cloth drying towels must not be used 41;

c) towel dispensers must be mounted such that access to them is unobstructed and splashing or

dripping onto adjacent wall and floor surfaces is minimized. 109, 113

d) towel dispenser design should be such that only the towel is touched during removal of towel for use.

e) hot-air dryers must not be used in clinical areas as warm air currents dry hands slowly and can be used by only one individual at a time. This results in queues and the temptation to dry hands on clothing. 109

f) where hot-air dryers are used in non-clinical areas, hands-free taps are required.

g) If hot-air dryers are used in non-clinical areas, there must be a contingency for power interruptions.”

<http://www.oahpp.ca/resources/documents/pidac/2010-12%20BP%20Hand%20Hygiene.pdf>

Community and Hospital Infection Control Association-Canada

- **2008 Position Statement: Hand Hygiene**

“Hand Washing

To wash your hands, use warm, running water, soap, and friction for at least 15 seconds. Wet hands, then lather and clean all surfaces of the hands concentrating on fingertips, between fingers, nail beds, back of hands and base of thumbs and thoroughly rinse after lathering and rubbing. Ideally, use individual paper towels to pat hands dry. Turn off the taps with the paper towel to avoid recontaminating your hands.”

<http://www.chica.org/pdf/handhygiene.pdf>

Public Health Agency of Canada

- **2010 Hand Hygiene Recommendations for Remote and Isolated Community Settings**

“When Running Water is Available

When running tap water* is available (day-to-day and during an outbreak) in a community, wash hands with plain soap and water and dry thoroughly. The recommended procedure for hand washing using running water is as follows:

[...] dry hands with a clean cloth or paper towel while taking special care to dry thoroughly between the fingers

turn off the tap/spout with a paper towel or cloth

When Running Water is Not Available

[...] dry hands with a clean cloth or paper towel while taking special care to dry thoroughly between the fingers. throw out the water from the hand washing container following each individual use”

UNITED STATES

US Center for Disease Control

- **2009 Outbreak Prevention and Response Control - OPRP - General information on Hand Hygiene**
 - Information disseminated to the cruise line industry, which is heavily affected by outbreaks of gastroenteritis among passengers.

“Wet hands have been known to transfer pathogens much more readily than dry hands or hands not washed at all. The residual moisture determines the level of bacterial and viral transfer following hand washing. Careful hand drying is a critical factor for bacterial transfer to skin, food and environmental surfaces.

The drying times required to reduce the transfer of these pathogens varies with drying methods. Repeated drying of hands with reusable cloth towels is not recommended and should be avoided. Recommended hand drying methods and drying times are outlined below:

Drying method	Protocol	Total drying time	Comments
Single-use paper towels	Rub hands on two paper towels drying hands for 10 seconds on each	20 seconds	The first towel removes the bulk of the water; the seconds achieves complete drying
Air dryer	Rub hands together for while rotating them under warm air	30 - 45 seconds	A prolonged drying period is required to achieve complete drying
Single-use cloth towel	Rub hands on two sections of the towel, drying hands for 10 seconds on each section	20 seconds	The first section of the towel removes the bulk of the water; the seconds achieves complete drying”

http://www.cdc.gov/nceh/vsp/cruiselines/hand_hygiene_general.htm

- **2002 Guideline for Hand Hygiene in Health-Care Settings**
 - Recommendations of the Healthcare Infection Control Practices Advisory Committee and the HICPAC/SHEA/APIC/IDSA Hand Hygiene Task Force
 - From the introduction: “The Guideline for Hand Hygiene in Health-Care Settings provides health-care workers (HCWs) with a review of data regarding handwashing and hand antisepsis in health-care settings. In addition, it provides specific recommendations to promote improved hand-hygiene practices and reduce transmission of pathogenic microorganisms to patients and personnel in health-care settings.”

. “Hand-hygiene technique

- A. When decontaminating hands with an alcohol-based hand rub, apply product to palm of one hand and rub hands together, covering all surfaces of hands and fingers, until hands are dry (IB) (288,410). Follow the manufacturer's recommendations regarding the volume of product to use.
- B. When washing hands with soap and water, wet hands first with water, apply an amount of product recommended by the manufacturer to hands, and rub hands together vigorously for at least 15 seconds, covering all surfaces of the hands and fingers. Rinse hands with water and dry thoroughly with a disposable towel. Use towel to turn off the faucet (IB) (90-92,94,411). Avoid using hot water, because repeated exposure to hot water may increase the risk of dermatitis (IB) (254,255).
- C. Liquid, bar, leaflet or powdered forms of plain soap are acceptable when washing hands with a non-antimicrobial soap and water. When bar soap is used, soap racks that facilitate drainage and small bars of soap should be used (II) (412-415).
- D. Multiple-use cloth towels of the hanging or roll type are not recommended for use in health-care settings (II) (137,300).”

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5116a1.htm>