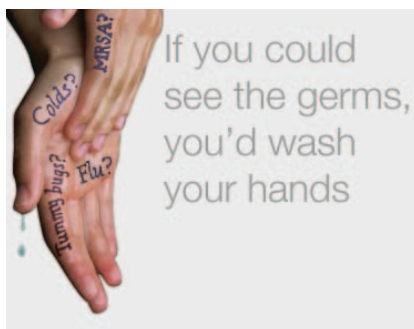


Hand hygiene revisited – Part 2

The public and hand hygiene

By Dr Vincent C Amerena, PSM, RFD, BDS, BDS, LDS, MDSc, FRACDS, FICD, FPFA

Whilst the World Health Organisation and Hand Hygiene Australia have recently investigated the attitudes of health care providers to hand hygiene and initiated programmes to improve the level of hand hygiene in health facilities, less is known about the attitudes and practices of the general public. Despite public health authorities constantly emphasizing the need for hand washing with soap and water when preparing food, both in the home and commercial kitchens, many hundreds of cases of food poisoning occur in Australia each year. In 2002, the Food Safety Information Council surveyed 1,250 individuals throughout Australia to find that whilst almost all recognized the importance of hand washing, 42% of males and 30% of females thought it was safe to handle food after just rinsing their hands under water and



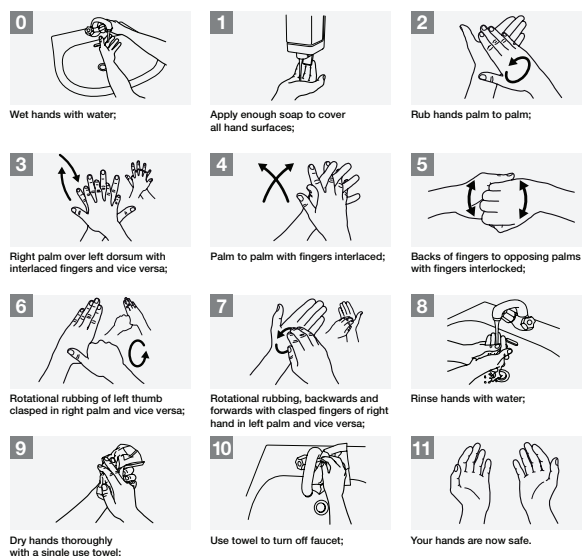
that 32% of males and 24% of females thought the use of soap was unnecessary if the hands were dried after rinsing. Further, in an observational study on 11 October 2002 of 200 people washing their hands after using the public toilets near a food hall, only 20% of females and 7% of males washed their hands with soap and water for sufficient time and then rinsed and dried with a paper towel. In addition, 8% of females and 29% of males failed to wash their hands at all after going to the toilet. Young girls were best at washing and drying their hands correctly whilst older men were worst. It appears that there is a gap between knowledge of the correct method of hand washing and drying and actual behaviour. It is interesting to note that in a Southern Queensland public health unit survey in 1998, young children of pre-school or early primary age were observed trying to wash their hands correctly but were hurried by parents.

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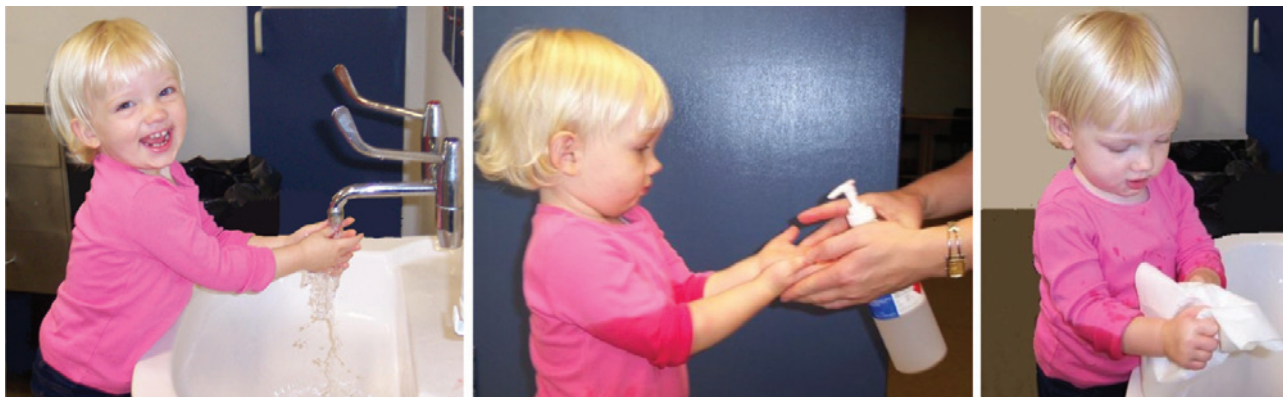
HOW TO HANDWASH?

WASH HANDS WHEN VISIBLY SOILED!

⌚ Duration of the entire procedure: 40-60 seconds



Similar results were found in 2000 by Market Research and Associates in an observational study commissioned by Kimberley Clarke Australia. The study was conducted in male and female public toilets in two major NSW shopping centres over a Saturday and Sunday. Of 979 individuals observed after going to the toilet, 40% did not wash their hands at all, most did not use soap and women were twice as likely to dry their hands as men. It was found that girls became much more conscious of hand hygiene as they became teenagers. In addition, of those who used hot air blowers to dry hands, the vast majority did not use the appliances for sufficient time to fully dry the hands, thus aiding the multiplication of



Images from Hand Hygiene Australia's *Clean Hands, Happy Hands, All Hands* brochure for childcare centres.

bacteria (The most effective hand drying method is the use of a single sheet disposable paper towel).

In a concomitant study by the same organization, it was found that in the home, 20% of people do not wash their hands before preparing food, many just use a quick rinse with cold running water and only 10% use soap and water for more than 20 seconds. Further research examined the behaviour of 1,092 kitchen staff in 100 commercial kitchens (hospitals, aged care facilities, clubs, hotels) in regard to the use of tea towels. It was found that on average, tea towels were used 12 times a day to dry hands or wipe the face and several times to handle hot utensils, clean wet spills and clean work benches. 96% of the on average 32 tea towels per location per day became wet during a shift but continued to be used. These have the potential to act as breeding grounds for bacteria which could contaminate food during or after preparation. In the 100 kitchens studied, 32,500 meals were produced each day; if 5% were to become contaminated, many individuals each month could be put at risk of food poisoning.

In 2009, the Great Australian Washroom Survey was undertaken by two commercial firms to establish the attitudes in regard to washrooms of 492 adults in Sydney and Melbourne who broadly were representative of Australian Bureau of Statistics data. The results showed that whilst many preferred not to use public toilets, 98% of respondents did use public facilities at least once a week. Many went to great lengths to avoid touching surfaces that others come in contact with such as toilet seats (77%), flush buttons (47%) and the exit door (36%) whilst 70% of women rated the importance of clean, hygienic toilets as 9.8 out of 10.

The attitudes and practices of Australians in regard to hand hygiene are similar to those of other developed countries. In New Zealand over a three month period in 2006, observations were made of 150 males and 150 females in public toilets near food halls in each of large shopping centres in Auckland, Hamilton, Wellington and Christchurch. Of the 1200 individuals studied, 89% of females washed their hands with 73% using soap whilst for males only 77% washed their hands and 62% used soap. Of those who washed their hands, 91% also dried them with females drying hands more often than males. In the United States, a 2005 study based in the washrooms of six international airports showed that 17% of females and 26% of males failed to wash their hand after using the toilet.

Whilst alcoholic hand gels are now often used routinely in medical and dental practices and some hospitals ask visitors to use the gels on entering and leaving the hospital, most public toilets and wash rooms dispense liquid soap in refillable bulk dispensers. Unfortunately, some American studies have shown that these soaps can be contaminated and are a public health risk. A 2007 US study of liquid hand soaps in refillable dispensers collected from public restrooms in restaurants, health clubs, office buildings and retail stores across the nation revealed that 25% of samples had numbers of bacteria greater than 500 CFU/mL and 16% contained gram negative coliform bacteria such as *Klebsiella Pseudomonas* and *Enterobacteria*. Another study in 2011 showed that using these contaminated soaps resulted in an increase in the number of opportunistic pathogens on the hands with the potential to transmit disease. However, the use of sealed single use disposable soap containers greatly decreased the risk of contamination but markedly increased the cost to facility managers.

Whilst public health authorities in Western affluent countries have promoted correct hand washing with soap and water since the 19th century, it is of concern that so many individuals are still ignoring the recommendations. At times of an influenza or swine flu epidemic, most people practise better hand hygiene but once the immediate threat has passed, they fall back into their old ways. To change peoples' attitudes and behaviour is an ongoing educational, psychological and sociological problem.

Further reading

- Garbutt C., Simmons G. et alia. Public hand hygiene practices of New Zealanders J. New. Z. Med. J. 120 No 1265 Nov 2007.
- Food Safety Information Council Hand washing understanding and behaviour by Australian consumers www.foodsafety.asn.au/publications/articlesand surveys.
- Zapka C., Campbell E. et alia Bacterial hand contamination and transfer after use of contaminated bulk-soap-refillable Dispensers. *App.& Environ. Microbiol.* 77. No 9 2898-2904. May 2011.

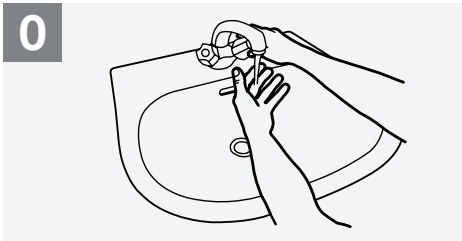
About the author

Dr Vincent C Amerena is the infection control editor of eLABORATE magazine and a retired periodontist who now works as an infection control and risk management consultant. He has been instrumental in the drafting of infection control guidelines nationally and lectures extensively to assist dental practices and laboratories in ongoing compliance.

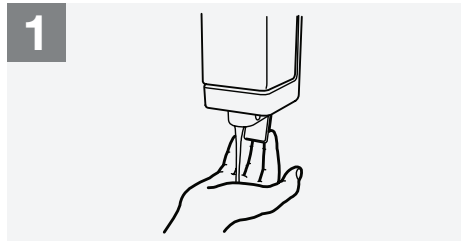
HOW TO HANDWASH?

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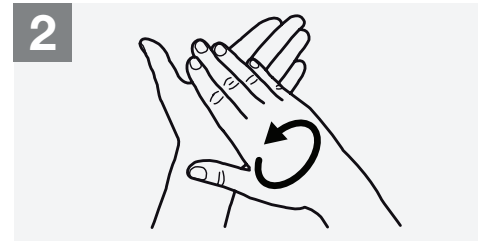
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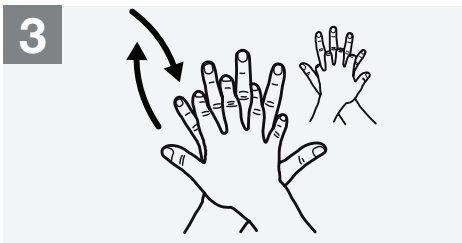
Wet hands with water;



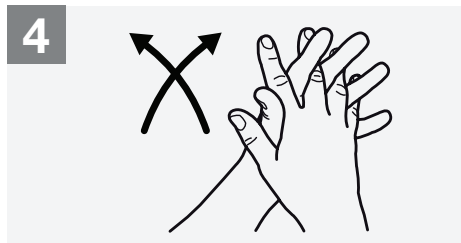
Apply enough soap to cover all hand surfaces;



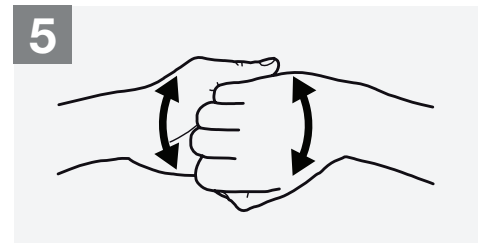
Rub hands palm to palm;



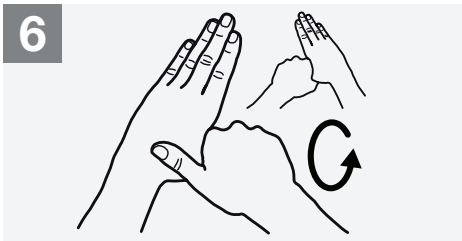
Right palm over left dorsum with interlaced fingers and vice versa;



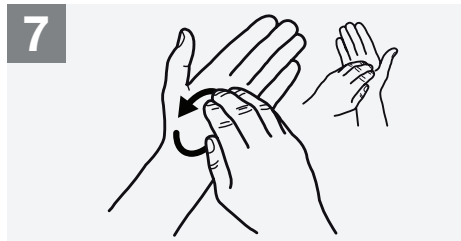
Palm to palm with fingers interlaced;



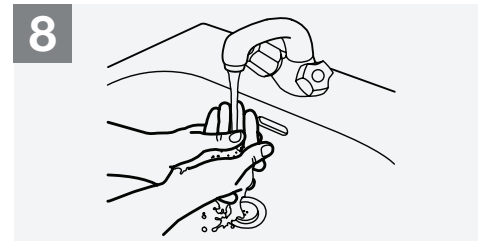
Backs of fingers to opposing palms with fingers interlocked;



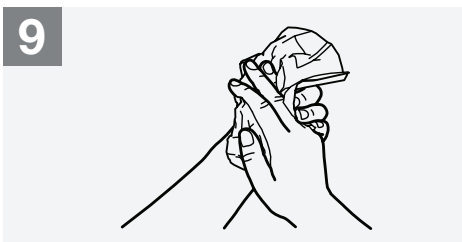
Rotational rubbing of left thumb clasped in right palm and vice versa;



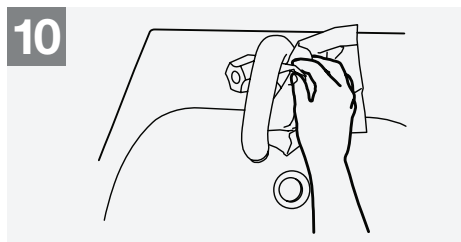
Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



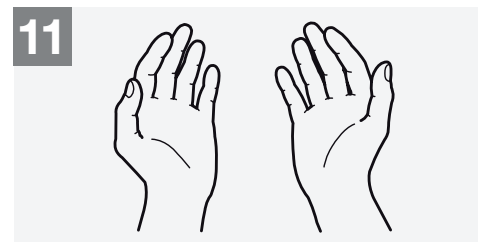
Rinse hands with water;



Dry hands thoroughly with a single use towel;



Use towel to turn off faucet;



Your hands are now safe.