

Hygiene Practices for Drinking Water Operators



Adopting good hygiene practices as a water treatment or network operator will protect your health, as well as the health of the public



What are the hazards?

The main microbial hazards that may impact personal or public health in drinking water operations include:

- Viruses: e.g. *Rotavirus*, *Norovirus*, *Coronavirus*
- Bacteria: e.g. *Campylobacter*, *Staphylococcus*
- Protozoa: e.g. *Cryptosporidium*, *Giardia*.

What are the preventative measures?

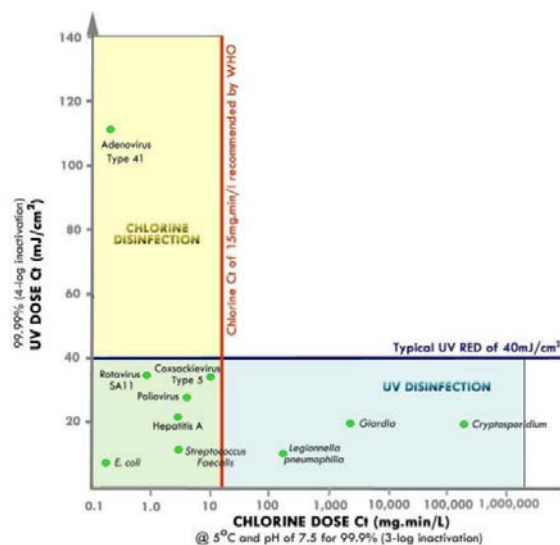
Washing hands often is the best way to control pathogens. Hand-washing should include:

- Washing hands with soap under running water for at least 20 seconds.
- Antibacterial soap is not necessarily better. Any germs on your hands are attached to the layer of acidic fats, oils and cellular debris on the surface of the skin, and soap dissolves this layer dislodging the microbes from your skin;
- Running water is best. Although hot water can kill microbes, the temperature needed (>80°C) would cause burns. Warm water may help in producing a better soap lather;
- Rinse your hands with water once the soap and friction have lifted the dirt and germs from your skin.

Social distancing is another important factor that protects people from transferring microbial diseases. If you are sick, stay at home.

Having clean (and disinfected if necessary) clothing, workspaces, equipment, tools, pipes and fittings is also an important factor in controlling microbial infection, especially if operators are required to undertake tasks on both sewage and drinking water systems.

Disinfection is an effective control against virus and bacterial pathogens (including *Coronavirus*), just so long as adequate Chlorine Contact Time (c.t.) is maintained (>15 mg.min/L). Chlorine disinfection at the levels present in drinking water supplies does not control protozoa.



Coxsackievirus, Poliovirus and Rotavirus are examples of non-enveloped viruses. It can be seen that these are inactivated at chlorine Ct of less than 15mg.min/litre, therefore an enveloped virus such as the COVID-19 virus will be inactivated at even lower Ct values.

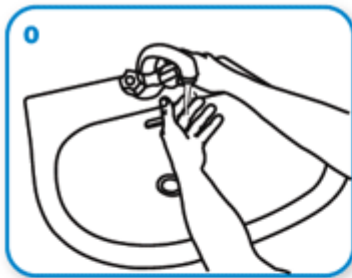
Hygiene Do's

- Always wash your hands with soap and clean running water for at least 20 seconds:
 - After you use the bathroom;
 - After you cough or sneeze;
 - After taking public transport;
 - Before eating or preparing food;
 - When dealing with somebody who is sick;
- If soap is unavailable, use hand sanitiser or gel that contains at least 60 % alcohol. Be aware that hand sanitiser will not work if the hands are already dirty, or for certain microbial contaminants if contact time is not adequate (leave for >20 seconds);
- Cough into your elbow or into a clean tissue, throw the tissue in the bin, and then wash the infected area;
- Seek medical attention if you are feeling sick
- Let your supervisor and/or coordinator know if you are unwell;
- Report any potential actual or potential microbial contamination as soon as it happens;
- Wear gloves whenever possible, especially when working on areas that may potentially contain pathogens;
- Ensure you are wearing the appropriate PPE;
- Ensure you are following appropriate WHS and organisational policies and procedures;
- Ensure that any visitors to site and contractors are also practicing good hygiene habits;
- Disinfect tools and equipment, including touch screens and HMI's, using dilute chlorine solution, disinfectant spray (such as Glen 20) or alcohol wipes;
- Make sure your phone is disinfected with alcohol wipes throughout the day;
- If you come across somebody who has a viral infection, gargle some antibacterial and antiviral mouthwash.
- Avoid physical contact with other personnel. Do not shake hands, if a greeting is required, consider performing a "PNG fist-bump".

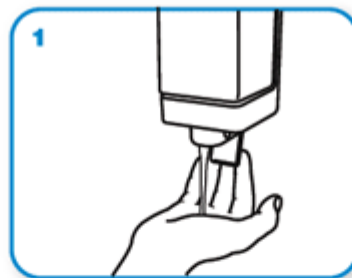
Hygiene Don'ts

- Don't come to work when you are sick. This is both a Simmonds & Bristow policy, as well as a socially astute practice to reduce the likelihood of illnesses spreading;
- Don't allow other people who are sick to infect you or the drinking water supplies
- Don't use the same tools or equipment that are potentially contaminated without first cleaning and/or disinfecting;
- Don't use pipes or infrastructure or undertake repairs that have not been cleaned and disinfected;
- Do not share your phone with others, unless it is disinfected between uses;
- Don't operate your computer, HMI or other equipment without first washing your hands;
- Avoid touching your eyes, nose or mouth, unless you have previously washed your hands (and make sure you wash your hands after you touch these areas as well);
- Face-masks are not necessary for the control of microbial contaminants in drinking water systems (avoiding contact with the face unless hands are washed is effective). However, face-masks should be worn if required for other WHS requirements (e.g. handling of hazardous chemicals);
- Don't allow dirty water or contaminants to enter into the water supply system (e.g. maintain adequate clearance within excavation when performing pipe repairs);
- Remember WTP clarifier sludge, filter sand, backwash water and backwash pond sludge (and sometimes supernatant) may contain high concentrations of microbes (compared to untreated raw water), so handle these with care and appropriate PPE.

Correct hand-washing procedure



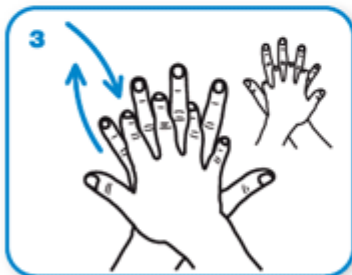
Wet hands with water



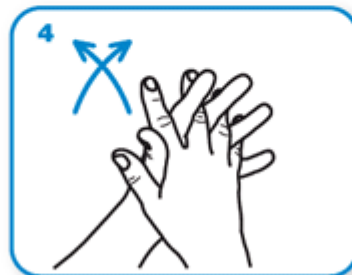
apply enough soap to cover all hand surfaces.



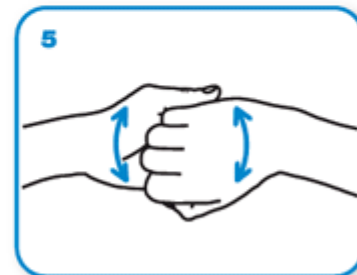
Rub hands palm to palm



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



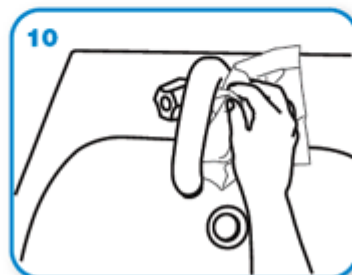
rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa.



Rinse hands with water



dry thoroughly with a single use towel



use towel to turn off faucet



...and your hands are safe.

Source: World Health Organisation Website: https://www.who.int/gpsc/clean_hands_protection/en/