Bathroom and Toilet Hygiene

The bathroom and toilet are communal areas of the home and the places for public which are in constant use throughout the day. Bathroom and toilet areas usually have higher levels of moisture in the atmosphere and on surfaces than the rest of the house and the place. Given that there will also almost always be some residual nutrients from organic matter, this provides good conditions for micro-organisms to survive for extended periods, and in some circumstances microbial populations can grow and form permanent reservoirs of infection. The bathroom and toilet provides an ideal environment for spread of gut, respiratory and skin pathogens via hands and surfaces.

How do Pathogens get into the Bathroom & Toilet?

Respiratory Pathogens (Viruses) such as **Cold and Flu Viruses** are shed in large numbers in nasal and other secretions produced by coughing, sneezing and nose blowing by an infected person. The bathroom and toilet provides an ideal environment for the spread of respiratory viruses via hands and hand contact surfaces. Family members, people can become infected if they rub their eyes or nose with contaminated hands.

In addition, **Airborne Fungi** which enter the bathroom and toilet can colonise moist (particularly damaged) surfaces. This fungal growth is not infectious but can release spores or substances which trigger respiratory allergies such as asthma.

How do Pathogens spread in the Bathroom & Toilet cause infection?

Toilets…
Toilets are a potential source of infection because they are contaminated with microbes from the gut every time they are used for defacation. Being wet provides ideal conditions for the survival and growth of microbes. Flushing the toilet efficiently removes most organisms. If not regularly decontaminated, however, residual organisms from an infected person can survive in significant populations, even for weeks if protected by biofilms or limescale (e.g. *Salmonella* has been shown to survive in the scaly biofilms on the surface of the toilet for at least 6 weeks after an infection has occurred in the toilet place. In this case the organism was found under the flushing rim and in the scale on the porcelain surface of the toilet). The risks from the toilet are assessed as follows:

- In general, the risk from the toilet bowl itself is not high, because the organisms are removed by flushing and or cleaning the toilet. However the hands can become contaminated during toilet cleaning or when children decide to investigate!

But

- Splashing and aerosol formation can occur during toilet flushing. Splashes will transfer organisms to the seat and the lid, whilst aerosol particles can travel greater distances and can settle not only on the toilet seat and lid but also other toilet surfaces such as the toilet flush handle, faucet, tap handle, door handle, as well as basin and bath surfaces, or even items such as toothbrushes. People can pick these up on their hands and can be infected by direct hand to mouth transfer or by touching, handling or preparing ready-to-eat foods and beverages.

It is hard to quantify the risks of transfer from the toilet to surfaces such as basin taps and toilet flush handles (or door handles if the toilet is in a separate room or in a separate place). The statistics show that the risk of spread arising from splashing and aerosols transmission

from the toilet is increased if an individual within the household has diarrhoea. There is also potentially a greater risk of spread from babies and toddlers with diarrhoea because they have no control over their bowels and they rely on others to meet their hygiene needs. The same applies to older children and adults who lose their ability to maintain their own hygiene or lose bowel control due to infection, ill health or age.

Who is at risk?

Although the bathroom and toilet offer constant opportunities for spread of infection within the family and the public it is difficult to assess the extent to which infections arise as a result of poor hygiene. For the normal healthy adult, the risks of infection from exposure to microbes in this environment are relatively small but:
Any home or any place for public is likely to contain one or more people who are at increased risk of infection because their immune system is not functioning at full strength. This includes the very young and the elderly together with people who have an underlying medical condition or who are taking drugs which reduce their immunity to infection.
For example:

- People with wounds, catheters or other invasive devices that break the skin may be at risk from contact with dirty baths, toilets, showers and whirlpool baths.
- People with underlying respiratory conditions, such as cystic fibrosis, and older people are at increased risk of infection caused by aerosolised microbes disseminated by showers and whirlpools.
- People who are suffering from diarrhoea and vomiting spend a lot of time in the bathroom and are likely to leave behind pathogens (bacteria or viruses) in the toilet, in the air and on surfaces.
  Remember that people, particularly visitors to the home, to the public restrooms are reluctant to say that they have diarrhoea.

This briefing material is for the government authorities, the healthcare professionals, the media, and others who are looking for background understanding and/or are responsible for informing the public about infectious diseases in the communal areas of the Home and the Bathroom & Toilet places open for general public use.