Cystic Fibrosis WA Infection Prevention and Control Guidelines:

Indoor and outdoor events for people living with cystic fibrosis (CF).

Cross infection, or the transfer of infection from one person to another, poses a threat for people living with cystic fibrosis (CF) and can have adverse health consequences.

The Australian Cystic Fibrosis Director Group are currently developing National Cross Infection Guidelines for National and State CF events to minimise the consequences of cross infection. Cystic Fibrosis WA have adopted these guidelines in their draft form. These guidelines will be updated in accordance with changes in Infection Prevention and Control standards of care.

Background: People living with CF should be concerned about the possibility of transmission of respiratory pathogens between individuals and the subsequent serious outcomes.

Chronic infection with certain bacteria such as *Pseudomonas aeruginosa* (Pa), *Burkholderia cepacia complex, Methicillin Resistant Staphylococcal aureus* (MRSA), and *non-tuberculosis mycobacterium abscessus* (NTM) have significant health implications and are associated with reduced lung function, poor growth, increased need for antibiotic therapy, increased hospitalisations and may impact on life expectancy.

The potential for certain pathogens to pass from person-to-person, or environment-to-person was first reported in the 1980s. A strain of *Burkholdaria cepacia* that caused rapid respiratory deterioration in many individuals was found to have originated from one individual with CF. This strain spread throughout CF communities in two countries following social contact and shared social spaces. Similar experiences have now been observed with other pathogens such as *Mycobacterium abscessus* and

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Pseudomonas aeruginosa. Whilst these pathogens are renowned for their potential for patient-to-patient transmission, the CF scientific community now recognises that **any respiratory pathogen could be transmitted from person to person.**

With the increased use of a technique called molecular typing we have the technology to identify strains that are shared among people with CF.

Research has now confirmed that respiratory pathogens can be projected into the air with coughing and sneezing to a greater distance than originally recognised; up to four metres and possibly further. They can exist in the air as aerosols and droplets or contaminate surfaces and survive outside in the environment for hours.

In addition, while persons without CF rarely carry the bacteria that typically cause chronic infection in CF, they can carry other bacteria such as Streptococcal pneumoniae or viruses such as RSV, influenza and adenovirus that can cause coughs, colds and chest infections in the community. Infection with these pathogens may have greater implications for people with CF. These acute bacterial and viral infections are also transmissible between individuals with or without CF.

In the past, people with CF were asked to provide a recent sputum for culture and sign a waiver in order to attend an event or a CF conference. However, there are no tests that will guarantee 100% the culture status of a person with CF and this former practice is no longer considered safe because some pathogens are 'slow growers' and may not be identified until after the person has attended the event. The concept of 'less threatening' bacteria is also no longer accepted, and **all pathogens should be considered as potentially transmissible and harmful.**

In view of the growing body of research and evidence surrounding how and which pathogens are transmitted from person-person, new strategies to safeguard the health of people with CF attending events are needed.

Methods of Transmission

Direct contact Person to person spread occurs with actual physical contact (touching). This includes intimate contact such as kissing or casual contact such as touching hands that are contaminated with secretions (e.g. a handshake after covering the mouth during coughing).

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Indirect contact Involves contact with an object or surface that has been contaminated by secretions from an infected person (e.g. sharing eating utensils, respiratory equipment, and toys) and contact with surfaces soiled by respiratory secretions.

Droplet route This involves transmission of pathogens through the air in large droplets and can occur if a person coughs or sneezes and these are inhaled by a non-infected patient in close proximity (i.e. usually within 2 metres). The droplets do not remain suspended in air for long, because of their large size.

Airborne Infection is transmitted by inhalation of pathogens on tiny droplets, which have been ejected from an infected person following a cough or sneeze. These tiny particles can remain suspended in air for a long time and carried substantial distances making the risk of inhaling them greater.

Contact spread has been associated with transmission of *Burkholderia cepacia*, MRSA, *Pseudomonas aeruginosa* and respiratory viruses. Droplet spread is associated with transmission of *Burkholderia cepacia*, *Pseudomonas aeruginosa* and respiratory viruses. Airborne spread with respiratory viruses such as influenza. However, it is likely most respiratory pathogens can be transmitted by a combination of pathways amongst people in confined spaces.

General hygiene measures for people living with CF

• Wash your hands using soap and water or waterless antiseptic hand wash (e.g. alcohol based hand rub) frequently before eating, after coughing or handling sputum or tissues, and when using bathroom facilities. It is important to dry your hands thoroughly.

• Always cover your mouth and nose with either your inner elbow or tissue when you sneeze or cough. Throw away tissues immediately after use and wash your hands thoroughly afterwards.

• Throw away tissues immediately after you use them.

• Do not leave sputum pots uncovered.

• Do not share eating or drinking utensils, drink cans, cup or bottles, toothbrushes or towels with others with CF.

• Do not share respiratory equipment (nebuliser, inhalers, spacers etc).

• Infants and children with CF should avoid sharing toys.

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• Avoid car journeys with friends with CF (unless they live in the same household).

• If you have symptoms of a viral respiratory infection (e.g. runny nose, cold or flu like illness) or gastrointestinal illness you should not attend an event and take particular care in following these general hygienic measures.

Events involving persons with CF.

There is no reliable way to prevent the risk of cross infection and the safest approach for people living with CF is not to attend events. Adults with CF have the right to make an informed decision, however, we advise children with CF not to attend events involving other people with CF.

If adults choose to attend an event the following recommendations are offered to reduce the risk of cross infection:

Outdoor events:

People with CF should not participate in "CF camps", retreats or events involving more than one person with CF. Cross infection in these situations is difficult to avoid and there is strong evidence for person-person transmission of pathogens in these settings.

- If more than one person with CF attends an event they should be separated by a distance of at least four metres.
- Observe good hand hygiene and cough etiquette. Dispose of used tissues in covered container.
- Avoid close contact with persons (shaking hands, kissing) and do not share personal items such as drinking and eating utensils, cosmetics, soap bars.
- Avoid congregating in common areas (meal areas, elevators, restrooms), and avoid participating in common activities (e.g. face painting, meals at pubs or restaurants).
- Avoid traveling in the same vehicle (bus, car) as another person with CF, unless they reside in the same household.
- Whether you have CF or not, it is important that you do not attend the event if you are unwell with respiratory or gastrointestinal illness (including colds and flu).

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Indoor Events:

The risk is high for person to person transmission in enclosed spaces (cars, small rooms, elevators, bathrooms) and appears to be greater with epidemic strains of specific pathogens. The precise risks of transmission of specific pathogens is difficult to quantify and therefor the recommendation is that only one person with CF should attend any indoor events or conference.

Future CF Conference and Events

In view of the growing body of research and evidence surrounding how and which pathogens are transmitted from person-person, new strategies to safeguard the health of people living with CF attending events are needed.

It is important that we apply this knowledge as soon as possible. There are people who may find it difficult to adapt to these changes but with new and emerging communications technologies such as live streaming of conferences, no one with CF need miss out.

The goal of the guidelines being developed is to reduce the risk of transmission and acquisition of pathogens between CF individuals in non-health care settings.

This could be a sensitive and controversial issue for people with CF. If you find this raises concerns for you, please contact CFWA to discuss further 6457 7333 or info@cfwa.org.au

References

This policy has been put together by the Australian Cystic Fibrosis Director group.

It is based on similar policies from:

1. Cystic Fibrosis Foundation, USA 2014: Saiman L et al, Infection and Control Guideline for Cystic Fibrosis: 2013 Update. Infection Control and Hospital Epidemiology 2014: 35 S1-S67.

2. Cystic Fibrosis Trust, UK 2013: 'Cystic Fibrosis why we are here. Cross Infection Policy. Guidance for people with CF at events and meetings'. CF Trust website www.cysticfibrosis.org.uk

3. Cystic Fibrosis, Europe 2013 'Cystic Fibrosis conference / meeting anti-cross infection requirements for people with CF. www.cf-europe.eu

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