



Children's Health Queensland Hospital and Health Service



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Meeting the challenge of emerging pathogens in children with cystic fibrosis

Introduction

Emerging pathogens associated with deterioration in health present infection control challenges, particularly in the paediatric setting as children play, socialise and attend school. Their tendency to have close physical contact with carers and play mates increases the risk of transmission¹. Children with Cystic Fibrosis (CF) are at particular risk of colonisation or infection with pathogens due to their lung physiology.

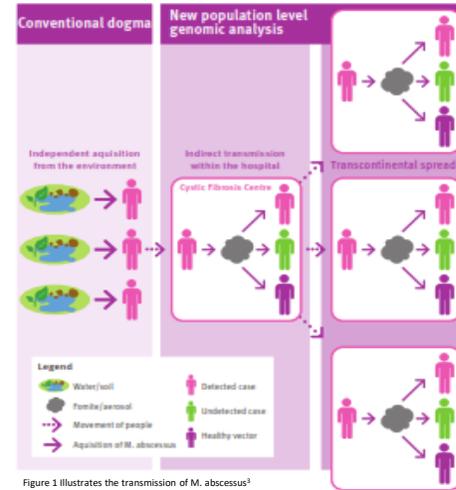
Background

Mycobacterium abscessus is a multidrug resistant nontuberculous Mycobacterium found in water and soil. Infection with this pathogen in people with CF is often associated with a decline in clinical condition. This organism can be difficult to treat.

Recent studies have identified transmission of *M. abscessus* in the healthcare setting, despite conventional cross-infection prevention measures²

The problem

Although some literature has been published, there is no consensus on best practice to prevent transmission of *M. abscessus*. Given the transmission risk and potential adverse outcomes, strategies were developed to protect all children with CF.



The solution

Existing transmission based precautions models such as contact and droplet precautions did not provide a good fit, therefore, a new framework of precautions was customised for the CF patient cohort.

“**Pink precautions**” were divided into two levels:

Pink precautions level one comprised all children with CF

Pink precautions level two were specifically for those children with CF who also had infection or colonisation with the pathogens: *M. abscessus* or *Burkholderia cepacia*.

Implementation challenges

New terminology and restrictions on the children posed a challenge. Extensive patient, family, carer and staff consultation and education was required.



Further questions and challenges

What disinfection is most suitable for environmental decontamination?

What level of air exchange is required to enhance patient safety?

Conclusion

Emerging pathogens present a challenge, particularly with the evolution of resistant organisms and survival of high risk patient groups.

Research and development of best practice models will assist in addressing these risks and enhancing patient safety and quality.

References
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 2. Bryant JM1, Grogono DM, Greaves D, Foweraker J, Roddick I, Inns T, Reacher M, Haworth CS, Curran MD, Harris SR, Peacock SJ, Parkhill J, Floto RA. (2013). Whole-genome sequencing to identify transmission of *Mycobacterium abscessus* between patients with cystic fibrosis: a retrospective cohort study.
 3. Infographic of *Mycobacterium abscessus* global genomics study <<https://twitter.com/flotocambridge>>