

Discontinuation of contact precautions for hospital patients with drug-resistant healthcare associated infections – When is this a consideration?

Malindu Fernando^{1, 2}

¹ College of Medicine and Dentistry, James Cook University, Townsville, Queensland, Australia

² Townsville University Hospital, Townsville Hospital and Health Service, Townsville, Queensland, Australia

Background

Health care associated infections cause significant global morbidity and mortality.¹⁻² The use of contact precautions is widely promoted in most hospitals throughout Australia and globally for people with drug-resistant healthcare associated infections to reduce bacterial colonisation and hospital acquired infections.¹ The universal implementation of contact precautions is however labour and cost-intensive, contributes to hospital associated plastic waste and can be a barrier to the patient-doctor relationship which may adversely impact the patient's care during admission.² While guidelines exist regarding the initiation of contact precautions by hospitals, few guidelines address when, and under what circumstances, these could be discontinued. The latest Australian Guidelines specify that routine practices should continue unless there is sufficient evidence or new research to support alternate procedures. Hence the routine use of contact precautions remains a contentious issue.

Aim

The aim of this literature review was to evaluate the evidence base for and against the discontinuation of contact precautions for people with drug-resistant healthcare associated infections.

Methods

A comprehensive literature search was conducted in May 2018 and repeated in February 2020 to identify published clinical studies evaluating the use of contact precautions in people with three common drug-resistant healthcare associated infections; Methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant Enterococcus (VRE) and *Clostridium difficile*. The outcomes of interest from studies were; the incidence of health care-associated infections, adverse outcomes, policy and processes used to initiate discontinuation, alternate methods of infection control and reported cost-benefit.

Results

Several prospective and retrospective studies (controlled and Quasi-experimental) on the impact of discontinuing contact precautions on hospital acquired infection rates for MRSA and VRE were found.³ There were limited studies in relation to *Clostridium difficile* and most studies were performed in oncology, haematology and intensive care units.³⁻⁵ The most widely used indication for discontinuing contact precautions was the presence of several negative surveillance cultures in patients with prior colonisation without high risk for persistent colonization. However, practices for discontinuation varied greatly between studies.⁴⁻⁵ Incidence rates of nosocomial MRSA and VRE did not significantly change following discontinuation of contact precautions as reported in several studies. Limitations were that the follow-up duration of studies varied greatly, and some studies did not have a control group. Direct annual cost savings of \$ 643,776 USD and up to \$ 4.6 million USD on staff and personnel time was estimated with the discontinuation of contact precautions.⁴ Suggested alternates to contact precautions include more evidence-based infection prevention initiatives such as robust horizontal infection prevention strategies with routine hand hygiene and chlorhexidine bathing.³

Conclusion

There is some evidence to indicate that discontinuation of contact precautions, when combined with horizontal infection prevention measures was not associated with an increased incidence of hospital associated infections with MRSA or VRE. Studies on *Clostridium difficile* were less clear. Multi-centre, carefully designed studies should be performed in Australia to evaluate the impact of discontinuation of contact precautions and to determine alternate methods of infection control to better inform policy.

References

1. National Health and Medical Research Council. Australian guidelines for the prevention and control of infection in healthcare. Canberra, ACT; 2019.
2. Kullar R, Vassallo A, Turkel S, Chopra T, Kaye KS, Dhar S. Degowning the controversies of contact precautions for methicillin-resistant *Staphylococcus aureus*: A review. *American journal of infection control*. 2016;44(1):97-103.
3. Marra AR, Edmond MB, Schweizer ML, Ryan GW, Diekema DJ. Discontinuing contact precautions for multidrug-resistant organisms: A systematic literature review and meta-analysis. *Am J Infect Control*. 2018;46(3):333–340. doi:10.1016/j.ajic.2017.08.031
4. Martin, E. M, Russell, D, Rubin, Z, Humphries, R, Grogan, T. R, Elashoff, D et. al. Elimination of Routine Contact Precautions for Endemic Methicillin-Resistant *Staphylococcus aureus* and Vancomycin-Resistant *Enterococcus*: A Retrospective Quasi-Experimental Study. *Infection control and hospital epidemiology*. 2016; 37(11), 1323–1330.
5. Schrank GM, Snyder GM, Davis RB, Branch-Elliman W, Wright SB. The discontinuation of contact precautions for methicillin-resistant *Staphylococcus aureus* and vancomycin-resistant *Enterococcus*: Impact upon patient adverse events and hospital operations. *BMJ Quality & Safety*. 2019; doi: 10.1136/bmjqs-2018-008926