

CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Standardized Precautions Through Early Prompt Technology for Infection Control Protection in Acute Care: Clinical Effectiveness

Service Line: Rapid Response Service
Version: 1.0
Publication Date: May 28, 2019
Report Length: 6 Pages

Authors: Camille Dulong, Caitlyn Ford

Cite As: *Standardized Precautions Through Early Prompt Technology for Infection Control Protection in Acute Care: Clinical Effectiveness*. Ottawa: CADTH; 2019 May. (CADTH rapid response report: summary of abstracts).

Disclaimer: The information in this document is intended to help Canadian health care decision-makers, health care professionals, health systems leaders, and policy-makers make well-informed decisions and thereby improve the quality of health care services. While patients and others may access this document, the document is made available for informational purposes only and no representations or warranties are made with respect to its fitness for any particular purpose. The information in this document should not be used as a substitute for professional medical advice or as a substitute for the application of clinical judgment in respect of the care of a particular patient or other professional judgment in any decision-making process. The Canadian Agency for Drugs and Technologies in Health (CADTH) does not endorse any information, drugs, therapies, treatments, products, processes, or services.

While care has been taken to ensure that the information prepared by CADTH in this document is accurate, complete, and up-to-date as at the applicable date the material was first published by CADTH, CADTH does not make any guarantees to that effect. CADTH does not guarantee and is not responsible for the quality, currency, propriety, accuracy, or reasonableness of any statements, information, or conclusions contained in any third-party materials used in preparing this document. The views and opinions of third parties published in this document do not necessarily state or reflect those of CADTH.

CADTH is not responsible for any errors, omissions, injury, loss, or damage arising from or relating to the use (or misuse) of any information, statements, or conclusions contained in or implied by the contents of this document or any of the source materials.

This document may contain links to third-party websites. CADTH does not have control over the content of such sites. Use of third-party sites is governed by the third-party website owners' own terms and conditions set out for such sites. CADTH does not make any guarantee with respect to any information contained on such third-party sites and CADTH is not responsible for any injury, loss, or damage suffered as a result of using such third-party sites. CADTH has no responsibility for the collection, use, and disclosure of personal information by third-party sites.

Subject to the aforementioned limitations, the views expressed herein do not necessarily reflect the views of Health Canada, Canada's provincial or territorial governments, other CADTH funders, or any third-party supplier of information.

This document is prepared and intended for use in the context of the Canadian health care system. The use of this document outside of Canada is done so at the user's own risk.

This disclaimer and any questions or matters of any nature arising from or relating to the content or use (or misuse) of this document will be governed by and interpreted in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein, and all proceedings shall be subject to the exclusive jurisdiction of the courts of the Province of Ontario, Canada.

The copyright and other intellectual property rights in this document are owned by CADTH and its licensors. These rights are protected by the Canadian *Copyright Act* and other national and international laws and agreements. Users are permitted to make copies of this document for non-commercial purposes only, provided it is not modified when reproduced and appropriate credit is given to CADTH and its licensors.

About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada's health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.

Funding: CADTH receives funding from Canada's federal, provincial, and territorial governments, with the exception of Quebec.

Research Question

What is the clinical effectiveness of standardized additional precautions following early prompt technology for infection control in patients with suspected flu or gastrointestinal infections in acute care?

Key Findings

One non-randomized study was identified regarding the clinical effectiveness of standardized additional precautions for infection control in patients with suspected flu or gastrointestinal infections in acute care.

Methods

A limited literature search was conducted by an information specialist on key resources including Ovid Medline, the Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine’s MeSH (Medical Subject Headings), and keywords. The main search concepts were additional standardized precautions and patients undergoing viral swab testing for influenza or viral gastroenteritis. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2014 and May 15, 2019. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	Hospitalized patients who are undergoing viral swab test (flu or Gastrointestinal infections)
Intervention	Additional standardized precautions (i.e., measures/alerts/precautions including appropriate signage, safety equipment, quarantine of patient, appropriate cleanliness/hospital cleaning)
Comparators	Routine precautions; Additional precautions
Outcomes	Clinical effectiveness (transmission reduction, length of hospital stay, proper treatment/diagnosis, hospital acquired infections (HAIs), readmissions, etc.)
Study Designs	Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies

Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first, followed by randomized controlled trials and non-randomized studies.

One non-randomized study was identified regarding the clinical effectiveness of additional standardized precautions for infection control in patients with suspected flu or gastrointestinal infection in acute care. No relevant health technology assessments, systematic reviews, meta-analyses, or randomized controlled trials were identified.

Additional references of potential interest are provided in the appendix.

Overall Summary of Findings

The researchers of one non-randomized study¹ investigated whether taking additional precautions and isolating patients was effective in reducing hospital-acquired C difficile infections. A quasi-experimental study was conducted to determine the changes in hospital-acquired C difficile with suspected carriers of C difficile placed under isolation precautions compared with control subjects prior to the designated isolation period. The authors concluded that the incidence of hospital-acquired C difficile was lower after the isolation period was implemented compared to the pre-isolation period and there was a significant decrease in trend over in a 4-week period .¹

References Summarized

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

1. Longtin Y, Paquet-Bolduc B, Gilca R, et al. Effect of Detecting and Isolating Clostridium difficile Carriers at Hospital Admission on the Incidence of C difficile Infections: A Quasi-Experimental Controlled Study. *JAMA Intern Med.* 2016 06 01;176(6):796-804.
[PubMed: PM27111806](#)

Appendix — Further Information

Previous CADTH Reports

2. Non-manual room disinfection techniques for infection prevention in healthcare facilities: a review of the clinical effectiveness, cost-effectiveness, and guidelines. (*CADTH rapid response report: summary with critical appraisal*). Ottawa (ON): CADTH; 2015: <https://www.cadth.ca/non-manual-room-disinfection-techniques-infection-prevention-healthcare-facilities> Accessed 2019 May 27.

Non-Randomized Studies

Patient Related Outcomes Not Specified

3. Skyum F, Andersen V, Chen M, Pedersen C, Mogensen CB. Infectious gastroenteritis and the need for strict contact precaution procedures in adults presenting to the emergency department: a Danish register-based study. *J Hosp Infect*. 2018 Apr;98(4):391-397. [PubMed: PM29128345](#)
4. Coleman BL, Ng W, Mahesh V, et al. Active surveillance for influenza reduces but does not eliminate hospital exposure to patients with influenza. *Infect Control Hosp Epidemiol*. 2017 04;38(4):387-392. [PubMed: PM28069087](#)
5. Widmer AF, Frei R, Erb S, et al. Transmissibility of clostridium difficile without contact isolation: results from a prospective observational study with 451 patients. *Clin Infect Dis*. 2017 02 15;64(4):393-400. [PubMed: PM28172613](#)

Guidelines and Recommendations

6. Gastrointestinal infection outbreak guidelines for healthcare facilities. Vancouver (BC): Provincial Infection Control Network of British Columbia (PICNet); 2016: https://www.picnet.ca/wp-content/uploads/PICNet-GI-Outbreak-Guidelines_Revised-June-2016.pdf . Accessed 2019 May 27.

Clinical Practice Guidelines – Unspecified Methods

7. Prevention strategies for seasonal influenza in healthcare settings. Atlanta (GA): Centers for Disease Control and Prevention; 2018: <https://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm> . Accessed 2019 May 27.
8. Infection control: pandemic influenza sub plan. Adelaide (AUS): Government of South Australia; 2015: <https://www.sahealth.sa.gov.au/wps/wcm/connect/7b9d5d0048c6302a9cb8fd7577aa6b46/Infection+Control+for+Pandemic+Influenza+sub+plan+2015.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-7b9d5d0048c6302a9cb8fd7577aa6b46-lpjlqXe> . Accessed 2019 May 27.
9. Influenza and influenza-like illness (ILI). (*Policies & procedures, number 40-70*). Saskatoon (SK): Saskatoon Health Region; 2014:

<https://www.saskatoonhealthregion.ca/about/IPC Policies/40-70.pdf> Accessed 2019 May 27.

10. Routine practices and additional precautions across the continuum of care. St. John's (NL): Department of Health & Community Services, Newfoundland and Labrador; 2014: https://www.health.gov.nl.ca/health/publichealth/cdc/routine_practices_and_additional_precautions.pdf Accessed 2019 May 27.

Review Articles

11. Wiedel N, Gilbert J, Baloun B, Nelson C. Clostridium difficile Associated Diarrhea. *South Dakota Medicine: The Journal of the South Dakota State Medical Association*. 2016 Mar;69(3):124-127.
[PubMed: PM27156262](#)

Additional References

12. Infection prevention & control: Outbreaks. Vancouver (BC): Vancouver Coastal Health; Various dates: <http://ipac.vch.ca/outbreaks> . Accessed 2019 May 27.
13. Infection prevention & control: Additional precautions. Vancouver (BC): Vancouver Coastal Health; Various dates: <http://ipac.vch.ca/additional-precautions> . Accessed 2019 May 27.