

CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Portable or Temporary Negative Pressure Rooms for Tuberculosis: Clinical Effectiveness and Guidelines

Service Line: Rapid Response Service
Version: 1.0
Publication Date: April 23, 2020
Report Length: 7 Pages

Authors: Diksha Kumar, Melissa Severn

Cite As: *Portable or Temporary Negative Pressure Rooms for Tuberculosis: Clinical Effectiveness and Guidelines*. Ottawa: CADTH; 2020 Apr. (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.

Questions or requests for information about this report can be directed to requests@cadth.ca

Research Questions

1. What is the clinical effectiveness of portable or temporary negative pressure rooms for the management of people with active tuberculosis?
2. What are the evidence-based guidelines regarding the use of portable or temporary negative pressure rooms for the management of people with active tuberculosis?

Key Findings

No relevant studies were identified regarding the clinical effectiveness of portable or temporary negative pressure rooms for the management of people with active tuberculosis. In addition, no relevant evidence-based guidelines were identified regarding the use of portable or temporary negative pressure rooms for the management of people with active tuberculosis.

Methods

A limited literature search was conducted by an information specialist on key resources including Medline via Ovid, PubMed, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of 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 negative pressure rooms and tuberculosis, COVID-19, and other respiratory illnesses. No filters were applied to limit the retrieval by study type. The search was also limited to English language documents published between Jan 1, 2010 and Apr 16, 2020. Internet links were provided, where available.

This report is a component of a larger CADTH Condition Level Review on TB. A condition level review is an assessment that incorporates all aspects of a condition, from prevention, detection, treatment, and management. For more information on CADTH's Condition Level Review of TB, please visit the project page (<https://www.cadth.ca/tuberculosis>).

Selection Criteria

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

Table 1: Selection Criteria

Population	People with active tuberculosis infection
Intervention	Portable or temporary negative pressure rooms (e.g., conversion of a hospital room using filtration equipment, standalone equipment that surrounds the patient used within an existing room, temporary negative pressure rooms or units used outside of the hospital)
Comparator	Standard dedicated negative pressure hospital rooms; No negative pressure room
Outcomes	Q1: Clinical effectiveness (e.g., prevention of disease transmission), ease of use Q2: Recommendations regarding when and how portable or temporary equipment, or should, be used
Study Designs	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, and evidence-based guidelines

Results

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

No relevant studies were identified regarding the clinical effectiveness of portable or temporary negative pressure rooms for the management of people with active tuberculosis. In addition, no relevant evidence-based guidelines were identified regarding the use of portable or temporary negative pressure rooms for the management of people with active tuberculosis.

References of potential interest are provided in the appendix.

Overall Summary of Findings

No relevant clinical evidence or evidence-based guidelines were identified regarding portable or temporary negative pressure rooms for the management of people with active tuberculosis, therefore no summary can be provided.

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

No literature identified.

Guidelines and Recommendations

No literature identified.

Appendix — Further Information

Non-Randomized Studies — Laboratory-Based Outcomes

1. Bergeron V, Chalfine A, Misset B, et al. Supplemental treatment of air in airborne infection isolation rooms using high-throughput in-room air decontamination units. *Am J Infect Control*. 2011 May;39(4):314-320.
[PubMed: PM21095042](#)

Guidelines and Recommendations

Alternative Condition — COVID-19

2. Alhazzani W, Møller MH, Arabi YM, et al. Surviving Sepsis Campaign: guidelines on the management of critically ill adults with Coronavirus Disease 2019 (COVID-19). *Intensive Care Med*. 2020;1–34.
<https://link.springer.com/content/pdf/10.1007/s00134-020-06022-5.pdf>
See: Recommendation #2

Clinical Practice Guidelines

3. Airborne Infectious Disease Management Methods for Temporary Negative Pressure Isolation. St. Paul (MN): Minnesota Department of Health; [2019]:
<https://www.health.state.mn.us/communities/ep/surge/infectious/airbornenegative.pdf>
See: Temporary Negative Pressure Isolation, page 5; Portable anteroom, page 13

Alternative Condition — COVID-19

4. Provincial Critical Care Communicable Disease Working Group. Care of the Adult Critically Ill COVID-19 Patient Annex D. Edmonton (AB): Alberta Health Services; 2020:
<https://www.albertahealthservices.ca/assets/info/ppih/if-ppih-covid-19-care-adult-critically-ill.pdf>
See: B. Preparation and Admission of COVID-19 Patients to ICU, Recommendation #6, page 3

Additional References

5. Severe Acute Respiratory Infections Treatment Centre. Geneva (CH): World Health Organization; 2020:
<https://apps.who.int/iris/rest/bitstreams/1273270/retrieve>
See: Portable air filtration systems, page 19
6. Miller S, Clements N. Temporary Isolation Rooms and their Application to Hospital Surge Capacity for Infection Control. *microBEnet*; 2014:
<https://microbe.net/2014/10/04/temporary-isolation-rooms-and-their-application-to-hospital-surge-capacity-for-infection-control/>
7. Tuberculosis Infection Control. San Francisco (CA): Curry International Tuberculosis Center; 2011
https://www.currytbcenter.ucsf.edu/sites/default/files/ic_book_2011.pdf

Alternative Condition — COVID-19

8. Enforcement Policy for Sterilizers, Disinfectant Devices, and Air Purifiers During the Coronavirus Disease 2019 (COVID-19) Public Health Emergency. Guidance for Industry and Food and Drug Administration Staff. Silver Spring (MD): U.S. Department of Health and Human Services, Food and Drug Administration; 2020
<https://www.fda.gov/media/136533/download>