



TITLE: Disposable Blood Pressure Cuffs for Adult Patients: Clinical Effectiveness, Cost-Effectiveness, and Guidelines

DATE: 31 October 2016

RESEARCH QUESTIONS

1. What is the comparative clinical effectiveness of single-use blood pressure cuffs compared to conventional blood pressure cuffs?
2. What is the cost-effectiveness of single-use blood pressure cuffs?
3. What are the evidence-based guidelines regarding infection prevention and control practices related to blood pressure cuffs?

KEY FINDINGS

No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations, or evidence-based guidelines regarding the use of disposable blood pressure cuffs were identified. References of potential interest are provided in the appendix.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) CINAHL, Canadian and major international health technology agencies, as well as a focused Internet search. No methodological filters were applied to limit retrieval. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2006 and October 18, 2016. Internet links were provided, where available.

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SELECTION CRITERIA

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

Population	Adult patients in any setting requiring their blood pressure to be measured
Intervention	Single-use (i.e., disposable) blood pressure cuffs
Comparator	Conventional (i.e., multiple use) blood pressure cuffs
Outcomes	Q1: clinical effectiveness, benefits (e.g., reduced infections, improved patient safety), accuracy and harms (e.g., incorrect measurement of blood pressure) Q2: cost-effectiveness (e.g., cost per QALY) Q3: guidelines and recommendations (e.g., staff education related to cleaning conventional blood pressure cuffs, recommendations regarding disposable cuffs, how best to implement disposable cuffs)
Study Designs	Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations and evidence-based guidelines

RESULTS

No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, economic evaluations, or evidence-based guidelines regarding the use of disposable blood pressure cuffs were identified. References of potential interest, including several guidelines of uncertain methodology, are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

No relevant literature was found regarding the use of disposable blood pressure cuffs was identified, 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.

Economic Evaluations

No literature identified.

Guidelines and Recommendations

No literature identified.

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APPENDIX – FURTHER INFORMATION:

Previous CADTH Reports

1. Canadian Agency for Drugs and Technologies in Health. Disposable Blood Pressure Cuffs to Prevent the Transmission of Antibiotic-Resistant Bacterial Strains: Clinical Effectiveness [Internet]. Ottawa: The Agency; (Rapid response report: summary of abstracts). [cited 2008 September 15]. Available from: <https://www.cadth.ca/disposable-blood-pressure-cuffs-prevent-transmission-antibiotic-resistant-bacterial-strains-clinical>

Non-Randomized Studies – Laboratory Findings

2. Grewal H, Varshney K, Thomas LC, Kok J, Shetty A. Blood pressure cuffs as a vector for transmission of multi-resistant organisms: colonisation rates and effects of disinfection. *Emerg Med Australas*. 2013 Jun;25(3):222-6.
[PubMed: PM23759042](#)
3. Matsuo M, Oie S, Furukawa H. Contamination of blood pressure cuffs by methicillin-resistant *Staphylococcus aureus* and preventive measures. *Ir J Med Sci*. 2013 Dec;182(4):707-9. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3824197>
[PubMed: PM23639972](#)
4. Uneke CJ, Ijeoma PA. The potential for transmission of hospital-acquired infections by non-critical medical devices: the role of thermometers and blood pressure cuffs. *World Health Popul*. 2011;12(3):5-12.
[PubMed: PM21677524](#)
5. de Gialluly C, Morange V, de Gialluly E, Loulergue J, van der Mee N, Quentin R. Blood pressure cuff as a potential vector of pathogenic microorganisms: a prospective study in a teaching hospital. *Infect Control Hosp Epidemiol*. 2006 Sep;27(9):940-3.
[PubMed: PM16941320](#)
6. Walker N, Gupta R, Cheesbrough J. Blood pressure cuffs: friend or foe? *J Hosp Infect*. 2006 Jun;63(2):167-9.
[PubMed: PM16616799](#)

Guidelines and Recommendations – Methodology not Reported

7. Healthy Canadians [Internet]. Ottawa: Government of Canada; 2016. Infection prevention and control guidance for Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in acute care settings. Updated Feb 2016 [cited 2016 Oct 27]. Available from: <http://healthycanadians.gc.ca/publications/diseases-conditions-maladies-affections/accute-care-settings-middle-east-respiratory-syndrome-respiratoire-moyen-orient-etablisements-soins-actifs/index-eng.php>
See: Section 13, Patient care equipment
8. Infectious diseases [Internet]. Ottawa: Public Health Agency of Canada; 2015. Infection prevention and control expert working group: Advice on infection prevention and control

- measures for Ebola Virus Disease in healthcare settings. Updated 2015 [cited 2016 Oct 27]. Available from:
<http://www.phac-aspc.gc.ca/id-mi/vhf-fvh/ebola-ipc-pci-eng.php#cont>
See: Reprocessing (Cleaning, Disinfection and Sterilization of Medical Equipment)
9. Best Practices for cleaning, disinfection and sterilization of medical equipment/devices [Internet]. Toronto: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Provincial Infectious Diseases Advisory Committee; 2013 [cited 2016 Oct 27]. Available from:
http://www.publichealthontario.ca/en/eRepository/PIDAC_Cleaning_Disinfection_and_Sterilization_2013.pdf
See: Appendix B: Reprocessing Decision Chart
 10. Infectious Diseases [Internet]. Ottawa: Public Health Agency of Canada; Clostridium difficile infection: Infection prevention and control guidance for management in long-term care facilities. 2013 [cited 2016 Oct 27] Available from:
<http://www.phac-aspc.gc.ca/nois-sinp/guide/c-dif-ltc-sld/index-eng.php>
See: 12. Cleaning and Disinfection of Non-critical Resident Equipment
 11. Infectious Diseases [Internet]. Ottawa: Public Health Agency of Canada; Routine practices and additional precautions for preventing the transmission of infection in healthcare settings. 2013 [cited 2016 Oct 27] Available from:
<http://www.phac-aspc.gc.ca/nois-sinp/guide/summary-sommaire/tihs-tims-eng.php>
See: IV. Recommendations for Additional Precautions in All Healthcare Settings and Modifications for Precautions in Specific Healthcare Settings
 12. CHICA-Canada practice recommendations: Cleaning and disinfection of non-critical multi-use equipment/devices in community settings [Internet]. Winnipeg: Infection Prevention and Control Canada; 2012 [cited 2016 Oct 27] Available from:
<http://ipac-canada.org/photos/custom/OldSite/pdf/CHIG%20Practice%20Recommendations%202012Dec.pdf>
See: Section 2. Cleaning and Low-Level Disinfection

Cost Reporting

13. Montgomery, SR. Disposable versus reusable blood pressure cuffs: A nursing led initiative. J Perioper Crit Intensive Care Nurs. 2016; 2(1):2-3. Available from:
<http://www.omicsonline.org/open-access/disposable-versus-reusable-blood-pressure-cuffs-a-nursing-led-initiative-jpcic-1000108.php?aid=69324>