CADTH COVID-19 PANDEMIC

COVID-19 CADTH REFERENCE LIST

Remote Monitoring Medical Devices for COVID-19: Clinical Utility and Cost-Effectiveness

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To produce this report, CADTH used a modified approach to the selection, appraisal, and synthesis of the evidence to meet decision-making needs during the COVID-19 pandemic. Care has been taken to ensure the information is accurate and complete, but it should be noted that international scientific evidence about COVID-19 is changing and growing rapidly.

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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.

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

Research Questions

1. What is the clinical utility of remote monitoring medical devices for coronavirus disease 2019 (COVID-19)?
2. What is the cost-effectiveness of remote monitoring medical devices for COVID-19?

Key Findings

No literature was identified regarding the clinical utility of remote monitoring medical devices for coronavirus disease 2019. In addition, no relevant economic evaluations were identified regarding the cost-effectiveness of remote monitoring medical devices for coronavirus disease 2019.

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 remote monitoring and COVID-19. 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, 2018 and July 10, 2020. 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	Patients with confirmed or presumptive coronavirus disease 2019
Intervention	Medical devices that support remote monitoring, remote diagnosis, or remote physical examination (e.g., portable pulse oximeters, digital stethoscopes, digital otoscopes, portable electrocardiogram, digital connected thermometers, devices that facilitate on-demand medical exams, blood pressure cuffs)
Comparator	No remote medical devices; standard of care
Outcomes	Q1: Clinical utility (e.g., morbidity, mortality, health-related quality of life, patient satisfaction, convenience for the patient, satisfaction for health care providers, time to access health care services, hospital admissions, in-person visits to primary care providers or specialists, emergency department visits, patients receiving appropriate treatment, accurate diagnoses, adverse events); Delay in services that are non-coronavirus disease related Q2: Cost-effectiveness (e.g., cost per quality-adjusted life year, cost per benefit gained, cost per clinical outcome)
Study Designs	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, economic evaluations

Results

No relevant health technology assessments, systematic reviews, randomized controlled trials, or non-randomized studies were identified regarding the clinical utility of remote monitoring medical devices for COVID-19. In addition, no relevant economic evaluations were identified regarding the cost-effectiveness of remote monitoring medical devices for COVID-19.

References of potential interest that did not meet the inclusion criteria are provided in the appendix.

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.

Appendix — Further Information

Previous CADTH Reports

1. Pulse oximetry monitoring in patients at risk of hypoxia: an ultra-rapid review of clinical utility and guidelines *(CADTH Rapid response report: summary with critical appraisal)*. Ottawa (ON): CADTH; 2020: https://covid.cadth.ca/screening/pulse-oximetry-monitoring-in-patients-at-risk-of-hypoxia-an-ultra-rapid-review-of-clinical-utility-and-guidelines/. Accessed 2020 Jul 15.

2. Digital stethoscope for patients with confirmed or suspected infectious disease: guidelines *(CADTH Rapid response report: summary with critical appraisal)*. Ottawa (ON): CADTH; 2020: https://covid.cadth.ca/screening/digital-stethoscope-for-patients-with-confirmed-or-suspected-infectious-disease-guidelines/. Accessed 2020 Jul 15.

Additional References

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