RESEARCH BRIEF

At-home COVID-19 testing: A rapid scoping review

Summary

Evidence indicates that at-home tests are available and in use in various jurisdictions across the globe. This review primarily identified studies examining the performance of self-collected specimens compared with standard, HCP-collected specimens. Studies reported that self-collected samples had similar performance to the standard PCR test. Several studies reported that self-administered testing is both feasible and acceptable. However, it is still unclear how implementation of at-home tests occurs in a real-world setting and the effectiveness of this strategy on COVID-19 transmission.

Implications

There is availability of at home tests in many countries, however gaps in the evidence exist in terms of best-use case, implementation, monitoring and follow-up. It is important to differentiate between self-administered tests that require laboratory analysis rather than at-home tests with near immediate results. Both will have considerations for implementation. There may be enough available evidence on self-administered testing performance to conduct a systematic review or network-meta-analysis study.

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What is the current situation?

Although self-administered home testing has been used internationally, Canada has only approved tests done by health care professionals (HCP) or trained operators. To move toward approving home-based tests, information on the implementation of at-home testing strategies internationally, in the workplace, or other settings is of interest.

What is the objective?

The primary objective is to examine how at-home testing for COVID-19 been implemented internationally, including details on their performance, their impact and how at-home testing fits within the broader test-trace-isolate plan for the jurisdiction.

How was the review conducted?

A comprehensive conducted on January 29 to retrieve studies published from January 2019 until the search date. The search was designed by a library scientist and executed in MEDLINE, Scopus, medRxiv/bioRxiv, and the Cochrane Database of Systematic Reviews. A targeted grey literature search was also conducted (Feb1-3, 2021). Based on timelines, literature sources were screened independently by one reviewer for inclusion. Data was extracted independently by one reviewer and then reviewed by another team member.

What did the review find?

1063 unique published articles and 34 grey literature sources were found. After screening, 63 sources were included for data extraction

Types of at-home/self-admin tests

Forty-nine sources described at-home tests or self-collected specimen samples including: rapid antigen tests, PCR-tests with self-collected swab samples, saliva specimen tests, mouth rinse/throat wash, molecular virus tests, serology, and CRISPR. Most sources described self-administered tests for COVID-19 diagnosis. Costs that were disclosed ranged from $25 USD (nasal swab) to $149 (saliva).

Performance

Test collection, oversight and reporting methods varied among studies therefore it is difficult to compare across with accuracy. Generally, studies found that self-administered tests were a suitable replacement for tests administered by HCP. Several studies recommended that positive results from self-administered tests should be followed-up with an HCP-administered PCR test.

Implementation

Several studies reported that home and/or self-administered testing is both feasible and acceptable. There is limited information on how at-home tests are implemented within real-world settings.

Impact on transmission of COVID-19

The impact of at-home testing on the transmission of COVID-19 is unknown.

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