



Rapid Point of Care Testing in Non-Traditional Settings: A Rapid Review

Jan 12, 2021

Research Objectives

Objective:

- To summarize the evidence on the use of rapid point of care (PoC) testing in non-traditional testing environments, specifically the impact on transmission of COVID-19.

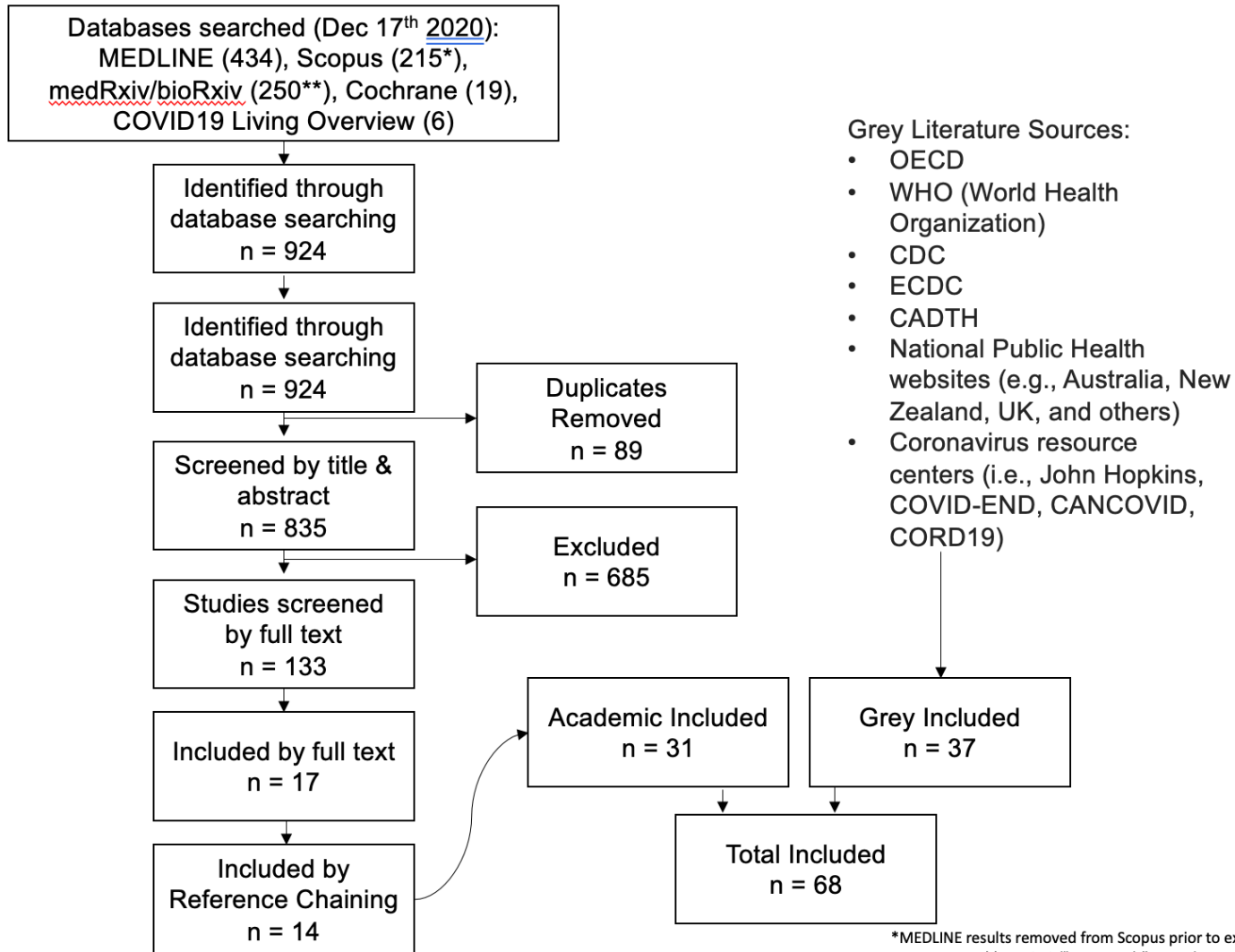
Non-traditional settings (# of studies included):

- Travel/borders/points of entry (8)
- Schools (11)
- Long term care/residential/rehab (13)
- Correctional Facilities and Penitentiaries (1)
- Rural setting (5)
- Indigenous Communities (4)
- Rotational workers (1)
- Acute care clinics/primary care clinics/community health centres/pharmacy (17)
- Pop-up sites (outside) (2)

Methods

- A comprehensive literature search was conducted by and information specialist on December 17, 2020 to retrieve studies published from January 1, 2020 until search date
- Databases searched: MEDLINE, Scopus, medRxiv, the Cochrane Database of Systematic Reviews, and Epistemonikos
- A targeted grey literature search was also conducted to identify media, technical reports and white papers
 - i.e., OECD, WHO, UN, CAN-COVID, COVID-END

Results



- Grey Literature Sources:
- OECD
 - WHO (World Health Organization)
 - CDC
 - ECDC
 - CADTH
 - National Public Health websites (e.g., Australia, New Zealand, UK, and others)
 - Coronavirus resource centers (i.e., John Hopkins, COVID-END, CANCOVID, CORD19)

*MEDLINE results removed from Scopus prior to export
**Top 250 "best match" records exported

Key takeaways

Impact on infection¹

- 1 article described impact on prevalence.
- Using pop-up sites in Slovakia, mass rapid antigen testing reduced the prevalence of COVID-19 by 50-80% across 3 time points.
- Following a positive test, 10-day quarantine and contact tracing was also completed.

Implementation

- Evidence on implementation came from a range of sources and processes varied.
- Rapid PoC tests are combined with other mitigation strategies (i.e., quarantine, social distancing, PPE).
- Rapid PoC tests are described as an accessible, low-cost testing option, but the evidence to support this is limited.

Key takeaways

Borders²

- With no academic articles found, evidence regarding the use of rapid testing at borders or during travel is currently very limited.
- Pilot studies (grey literature) are ongoing with anticipated publication of findings in early 2021.
- Borders and points of entry are a key area of interest for the WHO, who are presently conducting evidence reviews and developing related knowledge tools.

Schools^{3,4}

- Rapid tests are being disseminated to public schools, colleges and universities and to students/teachers' homes for self-administered testing.
 - Evidence from USA, UK, Germany
- Protocols include the requirement of two negative rapid tests
 - confirmatory lab-based PCR test for those who have a positive rapid test or a negative rapid test, with symptoms.
- Most of the testing protocols and results from the mass-rapid testing campaigns announced for schools have not yet been made available or published in the academic literature.
- The impacts of rapid testing in schools on transmission in the community has not yet been published.

Key takeaways

Long-term Care Homes

- Guidelines suggests the use of rapid PoC testing for visitors at LTC centres, on entrance to the facility, including daily testing of an individual in case of repeat visits.⁵
- Contextual differences between LTC facilities and technologies used may influence implementation and the impact on infection⁶.
- Rapid tests are beneficial during LTC outbreaks in identifying active cases.
- Can prove helpful in active screening of symptomatic cases in the first 5 days, either in the absence of, or in combination with RT-PCR⁷.
- Public health measures for isolation and PPE are advised in all scenarios.

Primary care

- Rapid testing in primary care was used for symptomatic and non-severe cases of COVID-19, not asymptomatic patients. They followed a specific testing protocol, with several test re-evaluation points at day 7 and 14⁹

Key takeaways

Other Settings

- Rapid tests can be used as a screening tool in settings where⁸:
 1. Traditional lab PCR is not locally available (e.g., remote areas),
 2. Physical distancing is difficult (e.g., correctional facilities, congregated living facilities, or overcrowded households).
 3. Negative perceptions may inhibit cooperation for sample collection
 - In these settings, rapid tests have the advantage of locating new cases quickly before they spread further.

Key Gaps

- Borders
 - The impact of rapid testing at borders and points of entry on transmission, independent of other public health measures.

- Healthcare workforce
 - The impact of rapid testing on the onwards transmission to patients.

- Evidence of implementation of testing protocols and results from the mass-rapid testing campaigns have not yet been made available or published in the academic literature.

Evolving Evidence

- The evidence on Rapid PoC testing is rapidly evolving – most of the current literature is from groups that publish while these novel testing methods are being adopted or initially piloted.
- The evidence presented here serves as a useful starting point for the discussions regarding implementing rapid PoC testing.
- The evidence should be revisited in the future (< 3 months) to address advances in the field.

Acknowledgements

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