International Guidance on COVID-19 Surveillance in a Vaccinated Population: A Targeted Literature Review

June 25, 2021

Research Objectives

To summarize the available evidence on:

- international guidance on testing and surveillance for SARS-CoV-2 and its variants of concern in a fully vaccinated population*.

This targeted literature review was conducted between June 13 2021 and June 25 2021.

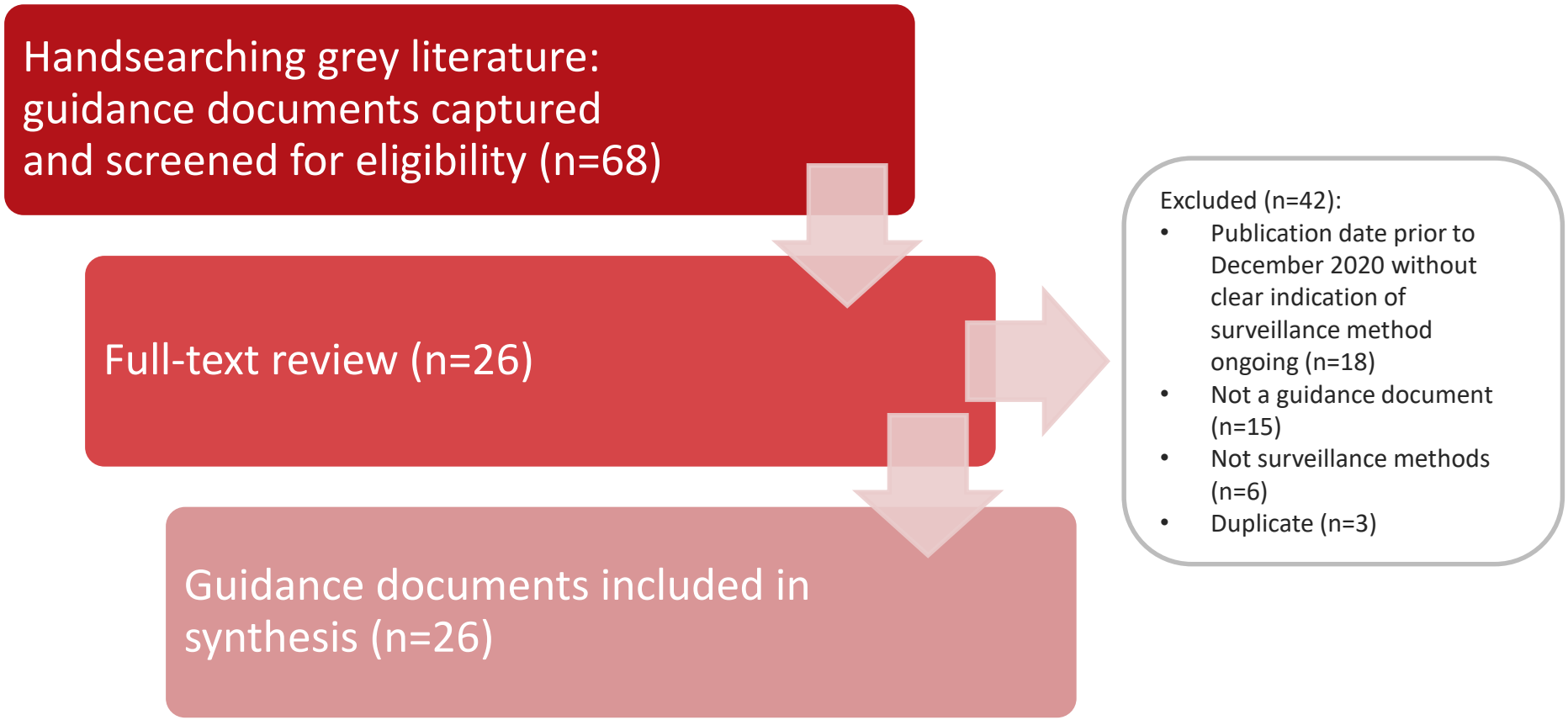
Fully vaccinated refers to individuals who have received complete dosage of a given vaccine

Methods

- A thorough hand search of grey literature was conducted, including a Google search and websites of the following organizations to identify any published guidance documents:
  - International health organizations (e.g., WHO, Pan American Health Association)
  - Government websites (e.g., Departments/Ministries of Health, National Governments) and subsidiaries of national governments (e.g., Public Health England, Centre for Disease Control)
  - National network consortiums (e.g., McMaster Health Forum (COVID-END))

Results

Figure 1: Flow chart of included guidance documents for review



Surveillance Methods for COVID-19 Cases

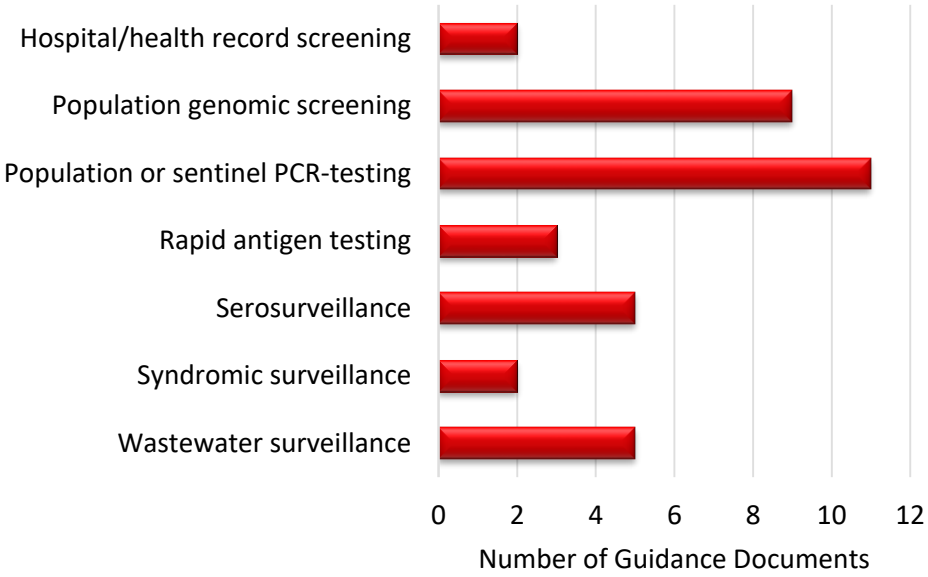


Figure 2: Surveillance Methods Reported in Included International Guidelines (n=26)

- 7 Overarching surveillance methods:
  - Polymerase chain reaction (PCR) testing
  - Genomic screening
  - Serosurveillance
  - Wastewater surveillance
  - Antigen testing
  - Health record screening
  - Syndromic surveillance

Key messages

- Guidance documents were identified from **11 countries/regions** including: Australia, Europe, India, New Zealand, Spain, the United Kingdom, and the United States.
- Most guidance was not specific to vaccinated-populations; it was assumed that it was still in effect but has not yet been updated.
- Only one guidance document was specific to surveillance methods to be used in a ***vaccinated*** population:
  - The ***Public Health England COVID-19 Vaccine Surveillance Strategy*** includes PCR-testing, health record screening, serosurveillance, and genome sequencing.[1]
- Guidance documents were generally in consensus about the following:
  - Population PCR screening, supplemented by rapid antigen tests, was the most recommended method across jurisdictions.
  - PCR-testing, antigen-testing, syndromic surveillance, health record screening, and serosurveillance was used to: monitor the intensity, spread, and severity of COVID-19 to estimate the burden of disease, identify at-risk populations, identify outbreaks, and to adjust public health measures as needed. [1-4]
  - Genomic sequencing was used to identify variations and evolution of SARS-CoV-2 to identify variants of concern. [5-6]
  - Wastewater surveillance was used to complement other surveillance methods, to detect if COVID-19 and its variants are present in a community settings.[7-9]

Key Gaps

- There is very limited evidence-based international guidance on surveillance in fully vaccinated populations.

Considerations and Limitations

- Due to rapid nature of this review, we were unable to carry out an exhaustive and systematic search of the literature therefore, international guidance captured may not include all countries'/institutes' guidance for surveillance of SARS-CoV-2.

- We were unable to address the quality of the evidence reported in guidance documents due to the variation in reporting and level of detail provided.

Acknowledgement

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References

1. Public Health England. COVID-19 vaccine surveillance strategy, 2021.
2. Public Health England. COVID-19: paediatric surveillance. 2021. https://www.gov.uk/guidance/covid-19-paediatric-surveillance#covid-19-surveillance-in-schools-in-england (accessed June 11 2021).
3. Communicable Diseases Network Australia. Australian National Disease Surveillance Plan for COVID-19, 2021.
4. Pan American Health Organization. Guidance for the implementation of the Influenza and SARS-CoV-2 Multiplex RT-PCR Assay into the influenza and COVID-19 integrated surveillance, 2021.
5. Centers for Disease Control and Prevention. Genomic Surveillance for SARS-CoV-2 Variants. May 17, 2021 2021. https://www.cdc.gov/coronavirus/2019-ncov/variants/variant-surveillance.html (accessed June 9 2021).
6. Communicable Diseases Network Australia. Australian National Disease Surveillance Plan for COVID-19, 2021.
7. Government of South Australia. COVID-19 Wastewater Surveillance Program. 2021. https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/conditions/infectious+diseases/covid-19/response+and+restrictions/covid-19+wastewater+surveillance+program (accessed June 11 2021).
8. Government of Western Australia Department of Health. COVID-19 wastewater testing. 2021. https://ww2.health.wa.gov.au/Articles/A_E/Coronavirus/COVID19-wastewater-testing (accessed June 11 2021).
9. Ministry of Health NZ. COVID-19: Wastewater testing. 2021. https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-health-advice-public/covid-19-wastewater-testing (accessed June 11 2021).