



# Rapid Review: What COVID-19 testing requirements and/or recommendations do high-income countries currently have in place in healthcare and long-term care settings?

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# Executive Summary

## Background

Healthcare institutions and long-term care (LTC) facilities have implemented COVID-19 testing policies – typically as part of a broader suite of infection prevention and control (IPAC) measures – to identify and contain COVID-19 infections among staff, patients/residents, and/or visitors. Approaches to testing within healthcare and LTC settings have varied across countries, including eligibility, timing, and indication; these approaches have also evolved within countries as the pandemic itself has evolved. Many countries identify national expectations, but practice may be governed more locally, possibly resulting in significant differences between what is reported at the national level and implemented at a local level. The local implementation of testing policies may also be impacted by several known barriers and facilitators, including resource (e.g., skilled personnel and testing availability), timing (e.g., time available to test), and adherence (e.g., willingness to test) limitations.

This rapid review was produced to support public health decision makers' response to the coronavirus disease 2019 (COVID-19) pandemic. It seeks to identify, appraise, and summarize emerging research evidence to support evidence-informed decision making.

This rapid review includes a jurisdictional scan and evidence search available up to June 27, 2022, to answer the question: **What COVID-19 testing requirements and/or recommendations do high-income countries currently have in place in healthcare and LTC settings?**

In our review, LTC settings include nursing homes, elderly congregate care homes, assisted living facilities, and geriatric supportive care facilities.

This review also addresses the sub-question: **What is the impact of testing on identifying and reducing the spread of COVID-19 in healthcare and LTC settings?**

This review did not assess the effectiveness of different *types* of tests in detecting or preventing transmission of the virus that causes COVID-19.

**What testing policies do high-income countries currently have in place, and what is the impact of testing on identifying and reducing the spread of COVID-19 in healthcare and LTC settings?**

## Key Points

- From the jurisdictional scan, we categorized testing within healthcare and LTC settings as: **required** (i.e., testing is mandatory), **recommended** (i.e., testing is encouraged, but not required), or **prioritized** (i.e., testing is provided and prioritized for certain groups – staff, visitors, patients/residents – but it may not be clear if/when it is required or recommended).
- Data from the jurisdictional scan demonstrated that testing is **recommended** most often, followed by **prioritized**, with testing being **required** implemented the least often. In Canada,

provincial and territorial governments **required** testing most often, followed by **prioritized** and, to a lesser extent, **recommended**.

- Four countries **required** testing, specifically for LTC visitors (Israel, Scotland, South Korea), resident admissions/readmissions (Scotland, Northern Ireland), and staff (Scotland).
- Eight countries (Australia, Canada, Denmark, Northern Ireland, Singapore, Sweden, Switzerland, USA) **recommended** testing for healthcare and LTC staff, residents/patients, and/or visitors to detect COVID-19 infection early and limit potential spread. The recommendation to test can depend on the current state of infection within a facility (e.g., during an outbreak) and surrounding area (e.g., if community transmission is high); vaccination status; presence of symptoms; and/or risk of exposure.
- Eight countries **prioritized** testing by providing free or reduced-priced testing for LTC staff, volunteers, visitors, and/or residents (Australia, England, Germany, Hong Kong), patients going into hospital (England, Scotland), and healthcare workers (HCW), in general (Germany, Netherlands, New Zealand, Scotland).
- In Canada, testing is **required** for LTC residents at admission / readmission (Alberta, Ontario, Quebec), during outbreaks (Alberta, Saskatchewan), or if symptomatic (NB). Testing is also required for LTC staff if symptomatic (NB, Ontario), asymptomatic but a close contact (Alberta, based on vaccination status), or working at multiple sites (Alberta) and LTC visitors (BC, Ontario). Certain special patient populations (e.g., transplant or NICU patients) also require testing prior to admission (Manitoba).
- Testing is **recommended** in other Canadian provinces for LTC visitors (Alberta, Saskatchewan) and suspected patient or HCW cases (Ontario, Manitoba).
- Testing is **prioritized** for symptomatic HCW and LTC staff and residents (Alberta, Yukon); in some cases (Quebec, NWT, PEI) this means this population is fast tracked for testing at a local health centre or testing clinics.
- Most of the testing recommendations described in the jurisdictional scan are dependent on **certain contextual factors**; only 3 countries (Denmark, Northern Ireland, Singapore) recommend universal testing of LTC and HCW. Some recommend expanding testing to all HCW and LTC personnel, regardless of vaccination status, if healthcare-associated transmission is suspected (e.g., during an outbreak) (US) or community transmission is high (Australia); the World Health Organization (WHO) also recommends testing under these circumstances. Others recommend testing only symptomatic HCW and LTC staff or residents (Canada, US, Sweden) or asymptomatic staff or patients with close contacts (Canada, US), again, regardless of vaccination status. Testing is not recommended among asymptomatic patients, LTC residents, and HCW who have recovered from COVID-19 in the past 90 days (Sweden, US).

- It is important to note that **national policies are likely adapted locally**. At least four countries (Canada, England, Switzerland, United States) specified that testing requirements are determined at the local (e.g., provincial/state, institutional, facility, etc.) level, creating a disconnect between national guidance and local implementation.
- Several moderate-to-high quality studies concluded that implementing testing protocols, as **part of a suite of infection control measures**, was associated with a lower incidence / prevalence of COVID-19 in patients and personnel (n=2), limited hospital transmission (i.e., lower transmission rates than in the community) (n=2), reduced secondary infections (n=2), and reduced mortality (n=1). Since there were no studies identified examining the impact of testing as a singular IPAC measure, it is not possible to determine the impact of any one testing approach. The certainty of the evidence is very low (GRADE); findings are likely to change as more data become available.
- At a local level, the frequency of testing, and for whom, is generally impacted by facility outbreak status and community rates of COVID-19, such that when outbreaks occur and/or community transmission is higher, the tendency for more widespread (low-threshold) testing increases.
- In LTC, one synthesis found that the frequency of LTC staff and resident testing largely depended on outbreak status or community prevalence; one synthesis recommended widespread testing in LTC settings after a case had been detected, estimating that this approach identified half of cases that would have otherwise gone undetected. Similarly, one high quality single study concluded that low-threshold (i.e., minor indications, mild symptoms) testing of LTC staff and residents prevented up to 144 secondary infections. The certainty of the evidence is very low (GRADE); findings are likely to change as more data become available.
- A small number of studies that assessed testing as part of a suite of IPAC measures, found very limited transmission among HCW in general hospital settings (n=3) and no transmission to staff associated with endoscopies (n=1), suggesting that strict adherence to IPAC measures could significantly reduce the risk of transmission. The certainty of the evidence is very low (GRADE); findings are likely to change as more data become available.
- In terms of drawbacks to asymptomatic testing, two high quality studies reported, significantly delayed time to admission for patients undergoing laparoscopic surgery for acute appendicitis (n=1) and attending the emergency department (n=1), as well as increased length of stay among those attending the emergency department (n=1). The certainty of the evidence is very low (GRADE); findings are likely to change as more data become available.
- The trade-off between expanding testing to mitigate the spread of COVID-19 with available local resources (e.g., staff time, money spent on testing), needs to be considered alongside facility outbreak status and community rates of COVID-19.

## Overview of Evidence and Knowledge Gaps

- A targeted scan of jurisdictional policies returned relevant government websites, guidance documents, fact sheets, and press releases from 16 high-income countries, 10 Canadian provinces/territories, and the World Health Organization (WHO). A search of the literature returned 19 relevant studies, including five low-to-moderate quality syntheses and 14 moderate-to-high quality single studies conducted in various countries, including USA (n=6), Italy (n=2), UK (n=2), Austria (n=1), Netherlands (n=1), South Korea (n=1), Sweden (n=1). Syntheses examined evidence from LTC settings (n=2), hospitals (n=2), or both (n=1), while single studies were mostly conducted in hospital-based settings (e.g., hospital-wide or emergency, surgical, obstetric, oncology, pediatric, and mental health departments; n=13), with one study conducted in an LTC facility.
- Our jurisdictional scan did not include the provinces/territories/states of any country besides Canada, as this was beyond the scope of this review. Some countries may have been excluded if they did not have information current as of January 1, 2022 or available in English.
- There is significant heterogeneity (e.g., level of detail, varied descriptions of testing policies) and nuances (e.g., importance of local context) of the included evidence, warranting caution in interpretation of evidence.

## Methods

A description of the development of the National Collaborating Centre for Methods and Tools' Rapid Evidence Service has been published (Neil-Sztramko *et al.*, 2021). The paper provides an overview of the review process with rationale for methodological decisions.

### Research Questions

What COVID-19 testing requirements and/or recommendations do high-income countries currently have in place in healthcare and LTC settings?

What is the impact of testing on identifying and reducing the spread of COVID-19 in healthcare and LTC settings?

### Search

On June 27, 2022, the following databases were searched using key terms PCR, test\*, polic\*, requirement\*, hospital\*, emergency department\*/centre\*, clinic\*, long-term care, nursing home\*, retirement home\*, outpatient\*, patient\*, resident\*, visitor\*, support person\*, adm\*, staff\*, physician\*, doctor\*, nurs\* and surgeon\*:

- [MEDLINE](#) database
- [MedRxiv preprint server](#)
- [Political Science Database](#)

A jurisdictional scan was conducted by searching government websites of high-income countries for policies current as of January 1, 2022.

A copy of the full search strategy, including all government websites searched, is available in [Appendix 1](#).

## Study Selection Criteria

The search results were first screened for recent guidelines and syntheses. When available, findings from syntheses and clinical practice guidelines are presented first, as these take into account the available body of evidence and, therefore, can be applied broadly to populations and settings.

Single studies were included if no syntheses were available, or if single studies were published after the search was conducted in the included syntheses. English-language, peer-reviewed sources and sources published ahead-of-print before peer review were included. Guidance documents and jurisdictional policies were included as relevant to the question. Government websites were included in the jurisdictional scan if they were available in English or could be easily translated to English (i.e., Google Translate), and were specific to testing policies current as of 2022. Surveillance and modeling sources were excluded.

	Inclusion Criteria	Exclusion Criteria
Population	<p><i>Locations</i></p> <ul style="list-style-type: none"> <li>Hospitals, including specific departments (emergency medicine, surgery, etc.)</li> <li>Long-term care (LTC)</li> <li>Outpatient clinics</li> <li>Retirement homes</li> <li>Nursing homes</li> </ul> <p><i>Populations</i></p> <ul style="list-style-type: none"> <li>Patients (including admissions and readmissions)</li> <li>Visitors</li> <li>Staff (including physicians, nurses, etc.)</li> <li>Support persons</li> <li>Residents</li> </ul>	Non-healthcare settings
Intervention	Testing policies, requirements, and/or recommendations	Recommendations, guidelines, and data on effectiveness of COVID-19 mitigation strategies other than testing
Comparisons	N/A	N/A
Outcomes	<p>Outcomes in the literature sources related to testing effectiveness, including, but not limited to:</p> <ul style="list-style-type: none"> <li>Rates of transmission</li> <li>Early identification of positive cases</li> <li>Cost (monetary, personnel hours, etc.)</li> </ul>	<p>Seroprevalence of COVID-19</p> <p>Comparisons of testing methods</p>
Setting	High-income countries	

<b>Timeframe</b>	<p>Studies published Jun 1, 2021 – present (for published literature)</p> <p>Government policies, guidance, and recommendations released Jan 1, 2022 – present (for jurisdictional scan)</p>	
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## Data Extraction and Synthesis

Data relevant to the research question, such as study design, setting, location, population characteristics, interventions or exposure and outcomes were extracted when reported. We synthesized the results narratively due to the variation in methodology and outcomes for the included studies.

For the jurisdictional scan information regarding the date of release, the population of interest, and the current policies and recommendations for COVID-19 testing was extracted. If multiple websites from the same country or region contained identical information, the sources that were most recent and provided the most in-depth information were selected. A narrative description of the policy or guidance has also been provided.

## Appraisal of Evidence Quality

We evaluated the quality of included evidence using critical appraisal tools as indicated by the study design below. Quality assessment was completed by one reviewer and verified by a second reviewer. Conflicts were resolved through discussion.

<b>Study Design</b>	<b>Critical Appraisal Tool</b>
Synthesis	Assessing the Methodological Quality of Systematic Reviews (AMSTAR)
	<a href="#">AMSTAR 1 Tool</a>
Case Control	Joanna Briggs Institute (JBI) <a href="#">Checklist for Case Control Studies</a>
Cohort	Joanna Briggs Institute (JBI) <a href="#">Checklist for Cohort Studies</a>
Cross-sectional	Joanna Briggs Institute (JBI) <a href="#">Checklist for Analytical Cross Sectional Studies</a>
Quasi-experimental	Joanna Briggs Institute (JBI) <a href="#">Checklist for Quasi-Experimental Studies</a>

Completed quality assessments for each included study are available on request.

Quality assessment was not relevant for the jurisdictional sources.

The Grading of Recommendations, Assessment, Development and Evaluations ([GRADE](#)) (Schünemann *et al.*, 2013) approach was used to assess the certainty in the findings based on eight key domains.



In the GRADE approach to quality of evidence, **observational studies**, as included in this review, provide **low quality** evidence, and this assessment can be further reduced based on other domains:

- High risk of bias
- Inconsistency in effects
- Indirectness of interventions/outcomes
- Imprecision in effect estimate
- Publication bias

and can be upgraded based on:

- Large effect
- Dose-response relationship
- Accounting for confounding.

The overall certainty in the evidence for each outcome was determined by taking into account the characteristics of the available evidence (observational studies, some not peer-reviewed, unaccounted-for potential confounding factors, different tests and testing protocols, lack of valid comparison groups). A judgement of 'overall certainty is very low' means that the findings are very likely to change as more evidence accumulates.

## Findings

### Summary of Evidence Quality

This document includes data from 39 websites retrieved from a jurisdictional scan. It also includes five completed syntheses and 14 single studies for a total of 19 publications. The number of sources that addressed each question and the quality of that evidence is as follows:

Research Questions	Evidence included		Overall certainty in evidence
What COVID-19 testing requirements and/or recommendations do high-income countries currently have in place in healthcare and LTC settings?	Jurisdictional scan sources <ul style="list-style-type: none"><li>• 23 International</li><li>• 16 Canadian</li></ul>	39	Quality not assessed
What is the impact of testing on identifying and reducing the spread of COVID-19 in these healthcare settings?	Syntheses Single studies	5 14	Very low

### Warning

Given the need to make emerging COVID-19 evidence quickly available, many emerging studies have not been peer reviewed. As such, we advise caution when using and interpreting the evidence included in this rapid review. We have provided a summary of overall certainty of the evidence to support the process of decision making. Where possible, make decisions using the highest quality evidence available.

**Table 1. Jurisdictional scan – International**

Reference	Date	Document Type	Setting	Population	Testing Action	Details
<b>INTERNATIONAL</b>						
World Health Organization. (2022, March 9). <a href="#">Country &amp; technical guidance – Coronavirus disease (COVID-19)</a> . Technical Guidance Publications.	Mar 9, 2022	Guidance	LTC	Residents, staff	Recommended	<p>Studies show that testing healthcare workers (HCW) on a regular schedule is likely to identify early infection. Clear intervals for routine testing or time points are not identified but should depend on level of transmission within a facility and surrounding community, including:</p> <ul style="list-style-type: none"> <li>• LTC staff should be tested as soon as a positive case is suspected or identified in either residents or staff; staff should be tested if symptomatic.</li> <li>• During an outbreak, staff and residents should be tested regularly (e.g., weekly, if resources allow) until there are no cases in the facility.</li> <li>• Residents should be tested on admission or re-admission in areas with community or cluster transmission if resources permit.</li> </ul>
<b>AUSTRALIA</b>						
Australian Government – Department of Health. (2022, June 10). <a href="#">COVID-19 outbreaks in Australian residential aged care facilities</a> .	Jun 10, 2022	National snapshot / fact sheet	LTC	Residents, staff	Prioritized	The government provides and prioritizes rapid antigen test kits for LTC staff and residents, particularly for use in high-transmission risk areas and during outbreaks (defined as one or more resident or two or more staff cases reported).
Council on the Ageing. (2022, March 22). <a href="#">Industry code for visiting in aged care homes</a> .	Mar 22, 2022	Industry code	LTC	Visitor	Recommended	<p>Visitor testing rapid antigen testing on visit or PCR within 72 hrs) should be based on current level of community transmission and visitor vaccination status:</p> <p>Testing <b>NOT</b> recommended:</p> <ul style="list-style-type: none"> <li>- <b>Green</b> (low risk of community transmission) and <b>vaccinated</b> (or children who are ineligible for vaccination)</li> </ul> <p>Testing recommended:</p> <ul style="list-style-type: none"> <li>- <b>Green</b> (low risk) and <b>unvaccinated</b></li> <li>- <b>Orange</b> (moderate risk) and <b>any vaccination status</b></li> <li>- <b>Red</b> (high risk / outbreak) and <b>any vaccination status</b></li> </ul>

CANADA						
Government of Canada. (2022, July 5). <a href="#">Infection prevention and control for COVID-19: Interim guidance for long-term care homes.</a>	Jan 25, 2022	Interim guidance (Public Health Agency of Canada)	LTC	Residents, staff	Recommended  (Additional requirements may be at the discretion of the local jurisdiction)	Consideration should be given to testing new residents prior to admission.  Residents being admitted from the community or returning from another facility who develop signs or symptoms of COVID-19 within the 14-day isolation period should “promptly” be tested.  Staff with recent potential risk of exposure reported prior to their shift may be required to be tested, depending on local public health guidance.
DENMARK						
Nationalt Kommunikations Partnerskab COVID-19. (2022, July 5). <a href="#">Rules and Regulations.</a>	Jul 5, 2022	Government website (joint website of Danish authorities)	Hospital, LTC	Patients, support persons; LTC staff, visitors	Recommended	From Jul 1 – Aug 15, 2022 LTC staff are encouraged to take two weekly rapid antigen test. From Aug 15, 2022 staff are encouraged to take one PCR every 14 days. Visitors of relatives 85+ years old are encouraged to take rapid antigen testing prior to visiting.  Testing is recommended for patients (>12 years) and support persons without symptoms, regardless of vaccination status, prior to moving into institutions or being acutely admitted to the hospital within certain specialties.
ENGLAND						
National Health Service. (2022, July 4). <a href="#">Who can get a free NHS coronavirus (COVID-19) test.</a>	Jul 4, 2022	Government website (National Health Service (NHS))	Hospital, LTC	Patients, staff	Prioritized  (Additional requirements may be at the discretion of the local jurisdiction)	NHS provides free at-home testing kits for high-risk groups, including patients going into hospital for a procedure (if they have received a letter from the hospital requiring them to test), patient-facing staff, and LTC staff.
UK Health Security Agency. (2022, May 9). <a href="#">COVID-19 testing in adult social care.</a>	May 9, 2022	Guidance (UK Health Security Agency)	LTC	Staff, residents	Prioritized	Staff and volunteers (who regularly attend a service) are eligible for free testing.
GERMANY						
The Commissioner of the Federal Government for Culture and media. (n.d.). <a href="#">What do you currently need to know about corona.</a>	No date	Government website (German Government Integration Commissioner)	LTC, medical institutions	Staff, visitors	Prioritized	Anyone who provides medical care or visits people in nursing homes or medical institutions are entitled to free tests.  Visitors of persons over age 60 are eligible for reduced priced testing (3€).

<b>HONG KONG</b>						
The Government of the Hong Kong Special Administrative Region. (2022, April 30). <a href="#">Government continues to provide free COVID-19 nucleic acid testing service for the elderly and targeted groups.</a>	April 30, 2022	Press release (The Government of the Hong Kong Special Administrative Region)	LTC	Elderly (>60 years), staff and residents	Prioritized	The Food and Health Bureau offers free PCR testing for elders. Free testing also extends to staff of residential care homes for the elderly and nursing homes who are fully vaccinated.
<b>ISRAEL</b>						
Israel Ministry of Health. (2022, June 24). <a href="#">When to be tested.</a>	Jun 24, 2022	Government website (Ministry of Health)	Assisted living facilities, LTC	Visitors	Required	Visitors to assisted living facilities or nursing homes must show proof of a negative authorized or at-home rapid antigen test, taken within 24 hrs prior to entry (children <3 years are exempt).
<b>NETHERLANDS</b>						
Government of the Netherlands. (n.d.). <a href="#">Getting tested for coronavirus by the GGD if you have symptoms.</a>	No date	Government website (Joint website of the National Government and the Ministry of Health, Welfare and Sport)	LTC, healthcare institutions	Healthcare worker, nursing home resident	Prioritized	Healthcare workers, nursing home residents and residents of other healthcare institutions are eligible for testing through municipal health services.
<b>NEW ZEALAND</b>						
New Zealand Ministry of Health. (2022, June 23). <a href="#">Free testing for specific groups.</a>	Jun 23, 2022	Government website (Ministry of Health)	LTC and other residential care facilities	Healthcare workers	Prioritized	The Ministry of Health provides free rapid antigen tests for healthcare workers who work in high density vulnerable populations.

New Zealand Ministry of Health. (2022, May 17). <a href="#">Testing guidance.</a>	May 17, 2022	Guidance (Government of New Zealand Ministry of Health)	LTC, hospice and other residential care facilities	Healthcare workers	Prioritized	<p>Rapid antigen tests are provided directly to healthcare providers for testing of <b>symptomatic workers</b> prior to contact with vulnerable individuals (defined as those in hospital, palliative care, outpatient or residential care).</p> <p>Asymptomatic critical care workers working with vulnerable populations are required to perform a rapid antigen test each day prior to starting work.</p> <p>Vulnerable persons (e.g., those in hospital or residential care facilities) are prioritized for PCR testing. A supervised rapid antigen test will be administered with potential for a follow up PCR for definitive diagnosis.</p>
<b>NORTHERN IRELAND</b>						
Department of Health of Northern Ireland. (2022, May 2). <a href="#">Visiting with care - A Pathway.</a>	May 2, 2022	Regional principles	LTC	Residents	Required & Recommended	<p>Following any trip out of the care home, residents with a suspected or confirmed exposure/close contact with a COVID positive or symptomatic person are required to test (PCR; symptomatic, lateral flow devices (LFD); asymptomatic), regardless of their vaccination status.</p> <p>All visitors to care homes are encouraged to test prior to visiting, however it is not required.</p>
<b>SCOTLAND</b>						
National Health Service Scotland. (2022, June 16). <a href="#">Testing.</a>	Jun 16, 2022	Government website (NHS Inform Scotland)	health and social care	Healthcare workers, care home visitors	Prioritized	Testing remains accessible to healthcare workers in the NHS or social care settings, those going into hospital for surgery or a procedure or visiting a hospital or care home.

<p>Public Health Scotland. (2022, May 31). <a href="#">COVID-19: Information and guidance for care home settings.</a></p>	<p>May 31, 2022</p>	<p>Guidance (Public Health Scotland)</p>	<p>LTC</p>	<p>Healthcare workers, residents and care home visitors</p>	<p>Required</p>	<p>Testing has shifted from population-wide testing to targeted testing to support clinical care.</p> <p>For residents:</p> <ul style="list-style-type: none"> <li>• LFD testing is required for admission.</li> <li>• Residents returning to care homes from hospital (non-respiratory pathway) are required to have one negative PCR or LFD, preferably within 48 hours prior to discharge from hospital.</li> <li>• Residents returning to care homes from hospital (COVID-19 recovered) are required to have one negative PCR or LFD, before discharge, preferably within 48 hours prior to discharge.</li> <li>• Residents returning to care homes from the community (including other care homes and hospices) are required to have one negative PCR or LFD within 3 days prior to their admission date (when testing is not prior to admission, testing on admission is acceptable).</li> </ul> <p>For staff:</p> <ul style="list-style-type: none"> <li>• Care home staff are required to PCR test once/week alongside LFD testing twice weekly (on workdays). New or agency staff must provide a negative PCR test prior to coming into the home. If testing is not possible, the care home manager should assess the individual risk.</li> </ul> <p>For visitors:</p> <ul style="list-style-type: none"> <li>• Visitors are required to LFD test before visiting the care homes or twice weekly for regular visitors.</li> </ul>
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SINGAPORE						
Ministry of Health Singapore. (2022, April 25). <a href="#">Further easing of measures for in-person visits to hospitals and residential care homes.</a>	Apr 25, 2022	Press release (Ministry of Health Singapore)	Hospitals, residential care homes	Hospitals, residential care home visitors	Recommended	Visitors should administer a self-test prior to visiting hospitals or residential care homes.
Ministry of Health Singapore. (2022, February 16). <a href="#">Resetting our measures to live with the omicron variant.</a>	Feb 16, 2022	Press release (Ministry of Health Singapore)	Hospitals, residential care homes	Hospitals, residential care home visitors	Recommended	In the context of the Omicron wave, those coming into contact with a vulnerable person should self-test with rapid antigen test prior to leaving home that day.
SOUTH KOREA						
Central Disaster Management Headquarters, Republic of Korea. (2022, May 26). <a href="#">MOHW extends period of face-to-face contact visits to nursing hospitals and facilities.</a>	May 26, 2022	Press release (Republic of Korea Ministry of Health and Welfare)	Nursing hospitals and facilities	Visitors	Required	All visitors are required to provide proof of a negative COVID-19 status via PCR or rapid antigen test prior to visiting.
SWEDEN						
The Public Health Agency of Sweden. (2022, March 3). <a href="#">Testing for COVID-19.</a>	Mar 3, 2022	Government website (The Public Health Agency of Sweden)	Health and social care	HCWs	Recommended	HCW and those who work in social care should get tested if they develop symptoms of COVID-19. However, testing is <b>NOT</b> recommended if recently recovered from COVID-19 (within the previous three months).  Those at risk of becoming seriously ill with COVID-19 (e.g., people in residential care) may be recommended to get tested.
SWITZERLAND						
Swiss Confederation. (2022, June 14). <a href="#">Coronavirus: Protect yourself and others.</a>	Jun 14, 2022	Government website (Federal Office of Public Health)	Hospital or care home visitors	Visitors	Recommended	The cost of testing is covered by the federal government. Visitor regulations for hospital or care homes is set by the individual facility.



UNITED STATES						
Centers for Disease Control and Prevention. (2022, February 2). <a href="#">Infection Control for Nursing Homes</a> .	Feb 2, 2022	Government website (US CDC)	LTC	HCW and residents	Recommended	<p>HCW who are up to date with all recommended COVID-19 vaccine doses may be exempt from expanded screening testing. For those not up to date with all recommended doses:</p> <ul style="list-style-type: none"> <li>• If community transmission is high, HCW should have a viral test (e.g., rapid antigen testing or PCR) 2x/week. Infrequent workers should be tested within three days prior to their shift.</li> <li>• If community transmission is moderate, HCW should have a viral test 1x/week.</li> <li>• If community transmission is low, expanded testing for asymptomatic HCW, regardless of vaccination status is <b>NOT</b> recommended. Tests should be prioritized for symptomatic people and close contacts.</li> </ul> <p>Symptomatic residents, regardless of vaccination status should receive a viral test as soon as possible.</p> <p>Newly admitted residents, or residents who have left the facility for &gt;24 hrs, regardless of vaccination status, should have a series of two viral tests immediately and, if negative, 5-7 days after admission.</p> <p>Asymptomatic residents with close contact to a confirmed case, regardless of vaccination status, should have a series of two viral testing immediately (but not earlier than 24 hrs post exposure) and, if negative, 5-7 days post exposure.</p> <p>Testing is <b>NOT</b> necessary for asymptomatic people who have recovered from SARS-CoV-2 infection in the prior 90 days; however, if testing is performed on these people, an antigen test instead of a nucleic acid amplification test (NAAT) is recommended.</p>

<p>Centres for Disease Control and Prevention. (2022, February 2). <a href="#">Infection Control Guidance</a>.</p>	<p>Feb 2, 2022</p>	<p>Government website (US CDC)</p>	<p>Healthcare</p>	<p>HCW</p>	<p>Recommended</p>	<p>Symptomatic HCWs, regardless of vaccination status should receive a viral test as soon as possible.</p> <p>In the event of an outbreak, testing should be expanded to all HCW, regardless of vaccination or exposure status.</p> <p>Asymptomatic patients with close contact to a confirmed case, regardless of vaccination status, should have a series of two viral tests immediately (but not earlier than 24 hrs post exposure) and, if negative, 5-7 days post exposure.</p> <p>Testing is <b>NOT</b> necessary for asymptomatic patients who have recovered from SARS-CoV-2 infection in the prior 90 days; however, if testing is performed on these people, an antigen test instead of a nucleic acid amplification test (NAAT) is recommended.</p> <p>Pre-procedure or pre-admission viral testing is at the discretion of the facility.</p> <p>If healthcare-associated transmission is suspected or identified, facilities may consider:</p> <ul style="list-style-type: none"> <li>• expanded testing of HCW and patients as determined by the distribution and number of cases throughout the facility and ability to identify close contacts.</li> <li>• depending on testing resources available or the likelihood of healthcare-associated transmission, facilities may elect to initially expand testing only to HCW and patients on the affected units or departments, or a particular treatment schedule or shift, as opposed to the entire facility.</li> <li>• If an expanded testing approach is taken and testing identifies additional infections, testing should be expanded more broadly. If possible, testing should be repeated every 3-7 days until no new cases are identified for at least 14 days.</li> </ul>
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\***HCW**: healthcare worker; **LTC**: long-term care; **PCR**: polymerase chain reaction; **RAT**: rapid antigen testing; **LFD**: lateral flow device

**Table 2. Jurisdictional scan – Canada**

Reference	Date	Document Type	Setting	Population	Testing Action	Details
<b>ALBERTA</b>						
Government of Alberta. (2022, April 29). <a href="#">COVID-19 Prevalence Testing and Screening – DSL, LTC &amp; Hospice.</a>	Apr 29, 2022	Guidance (Government of Alberta)	Healthcare	Residents, staff	Required Recommended Prioritized	<p>Testing is <b>NOT</b> required for asymptomatic patients before triaging, providing care or before accepting a new patient who is being transferred from another site (rationale: to avoid false negatives and to prevent delay in healthcare service delivery).</p> <p>Symptomatic staff working in continuing and/or acute care are prioritized for testing through Alberta Health Services.</p> <p>In the event of outbreak at a care facility, testing is required for:</p> <ul style="list-style-type: none"> <li>• those who exhibit symptoms of COVID-19,</li> <li>• all residents and staff considered a close contact of a suspected or confirmed case.</li> </ul> <p>Any staff working at multiple sites and are NOT fully vaccinated (two-doses), must opt into the rapid testing option.</p>

<p>Government of Alberta. (2022, February). <a href="#">Questions &amp; answers: COVID-19 requirements for licensed supportive living, long-term care and hospice settings.</a></p>	<p>Feb 2022</p>	<p>Guidance (Government of Alberta)</p>	<p>LTC, hospice and designated licensed supportive living (collectively referred to as “care facilities”)</p>	<p>HCW, residents and visitors</p>	<p>Required Recommended Prioritized</p>	<p>Residents returning from an absence of &gt;24 hrs, or who are asymptomatic AND fully vaccinated (defined as fully immunized plus a booster dose), and a close contact of a confirmed case should rapid antigen test on days 1, 3 and 7, of a 10 daily surveillance period as onsite capacity allows. Exemptions to the above are those who have tested positive in the previous 21 days (no further testing required).</p> <p>Staff who are asymptomatic and who are known close contacts of a confirmed case are managed according to their vaccination status:</p> <ul style="list-style-type: none"> <li>• Fully vaccinated plus a booster dose: no rapid testing prior to work required.</li> <li>• Fully immunized: daily rapid antigen testing is required prior to each shift for 10 days post any exposure; those who have tested positive in the previous 21 days are not required to be tested.</li> <li>• Not fully immunized: only those who have tested positive in the previous 21 days are not restricted, all others are restricted from entering the site for 10 days.</li> </ul> <p>Molecular testing is prioritized by Alberta Health Services for those living and working in care facilities.</p> <p>All LTC and designated supportive living residents must be tested within 48 hrs of hospital discharge (prior to discharge or immediately following discharge). This applies to both new admissions and return to acute care, those who have tested positive in the previous 21 days are exempt.</p> <p>Visitors are encouraged to participate in rapid antigen testing prior to visiting.</p>
<p><b>BRITISH COLUMBIA</b></p>						
<p>British Columbia Ministry of Health. (2022, March 23). <a href="#">COVID-19: Viral testing guidelines for British Columbia.</a></p>	<p>Mar 23, 2022</p>	<p>Guidance (BCCDC)</p>	<p>Healthcare</p>	<p>Residents, staff</p>	<p>Recommended</p>	<p>Viral testing is recommended for those at greater risk of developing severe disease, specifically those who are:</p> <ul style="list-style-type: none"> <li>• hospitalized</li> <li>• aged 70 years and older</li> <li>• living or working in settings with others who are high-risk for severe illness (i.e., HCW in hospitals and LTC).</li> </ul>

British Columbia Ministry of Health. (2022, March 18). <a href="#">Ministry of Health – Overview of visitors in long-term care and seniors’ assisted living</a>	Mar 18, 2022	Guidance (BCCDC)	LTC, assisted living and hospice	Visitors	Required Recommended	<p>Visitors ≥ 12 years must undergo rapid antigen testing on-site or in the community within 48 hrs prior to a visit.</p> <p>Visitors to a seniors assisted living building are <b>NOT</b> required to undergo rapid antigen testing, unless the home is part of a campus of care with LTC or where there is a common shared space with LTC, in which case testing is recommended.</p> <p>Visitors providing compassionate visits related to end-of-life are <b>NOT</b> required to undergo rapid antigen testing.</p> <p>Frequent visitors are not recommended to undergo rapid antigen testing more than 3x/week.</p> <p>Testing is NOT required for visitors who leave the facility and return the same day.</p>
<b>MANITOBA</b>						
Government of Manitoba. (2022, June 9). <a href="#">Provincial guidance for COVID-19: A return to symptomatic testing infection prevention and control risk and response.</a>	Jun 9, 2022	Guidance	Acute and LTC; Labour and Delivery	Patients and visitors	Required	<p>Asymptomatic individuals, regardless of vaccine status or reported COVID-19 infection in the previous 180 days are not required to test prior to admission.</p> <p>Symptomatic individuals with clinical findings of COVID-19 should be tested (PCR or point-of-care test (POCT)).</p> <p>Surveillance asymptomatic testing is required in selected situations:</p> <ul style="list-style-type: none"> <li>• persons being admitted to the Bone Marrow Transplant-Leukaemia Unit will be PCR tested upon admission.</li> <li>• donors and recipients participating in the transplant program will be PCR tested prior to admission.</li> <li>• mothers of infants admitted to the neonatal intensive care unit (open pod) is required to be tested upon admission.</li> </ul>
<b>NEW BRUNSWICK</b>						
New Brunswick Department of Social Development. (2022, July). <a href="#">Living with COVID: Management of COVID-19 for New Brunswick long term care homes.</a>	July, 2022	Guidance	LTC	Residents and staff	Required Recommended	<p>Point-of-care testing (POCT) is required for symptomatic residents and staff. Secondary PCR testing is recommended if initial POCT is positive, and resident or staff is asymptomatic.</p> <p>Re-testing (PCR/POCT) is recommended for those who previously tested positive:</p> <ul style="list-style-type: none"> <li>• &lt;30 days, no additional testing is recommended unless known risk of exposure and re-infection is suspected</li> <li>• between 30 and 90 days for those with worsening symptoms</li> <li>• is more than 90 days, if the individual is symptomatic.</li> </ul>

NORTHWEST TERRITORIES						
Northwest Territories Health and Social Services Authority. (2022, April 25). <a href="#">COVID-19 public testing guidance.</a>	Apr 25, 2022	Guidance	Healthcare	Residents and HCW	Prioritized	Symptomatic individuals who are residents or staff of a congregate living facility are prioritized for testing at a local health centre or testing centre.
ONTARIO						
Government of Ontario. (2022, June 28). <a href="#">COVID-19 guidance document for long-term care homes in Ontario</a>	Jun 28, 2022	Guidance (Ontario of Ministry of Health)	LTC	Visitors, Staff and support staff	Required	LTC staff are required to rapid antigen test at least two times per week, on separate days, if they are up to date with recommended COVID-19 doses. Those who are not up to date with current doses are required to rapid antigen test at least 3 times per week, on separate days. Staff should not provide direct care to a resident until a negative result is received.  All visitors and support workers entering a LTC must provide a negative antigen test taken at the LTC on that day or demonstrate proof of negative test result from an antigen test or PCR test taken on the same day or the day prior to the visit (those who enter on two consecutive days within a seven-day period may enter without requiring a second negative test. Those who have had a prior confirmed COVID-19 infection in the past 90 days do not perform screening or testing until the 90 <sup>th</sup> day from the start of their confirmed infection.
Ontario Ministry of Health. (2022, June 11). <a href="#">COVID-19 guidance: Acute care.</a>	Jun 11, 2022	Guidance (Ontario Ministry of Health)	Acute care	Residents and staff	Required	Suspected patients and/or staff cases should be tested with a PCR test, rapid molecular test, or a rapid antigen test.
Ontario Ministry of Health. (2022, June 11). <a href="#">COVID-19 guidance: Long-term care homes and retirement homes for public health units.</a>	Jun 11, 2022	Guidance (Ontario Ministry of Health)	LTC	Residents	Required	Residents being transferred from another LTC, retirement home, or healthcare facility that is not experiencing a COVID-19 outbreak at the time of transfer are required to take a molecular test on day 5, post transfer. The resident is not required to isolate if they pass initial screening and are asymptomatic.  Residents coming from the community are required to take a PCR test prior to admission (i.e., within 24 hours), or on arrival (i.e., day 0) and a second PCR test on or after day 5.
PRINCE EDWARD ISLAND						
Government of Prince Edward Island. (2022, June 7). <a href="#">COVID-19 close contacts.</a>	Jun 7, 2022	Website (Government of Prince Edward Island)	LTC	Residents, staff	Prioritized	Those who live or work in vulnerable settings (i.e., HCW, LTC staff and residents) are prioritized for testing at a community testing clinic.
Health PEI. (2022, January 5). <a href="#">Fast pass priority COVID-19 testing available for staff.</a>	Jan 5, 2022	Website (Health PEI)	Healthcare	HCW	Prioritized	Health system employees are eligible for priority testing through COVID-19 testing clinics if they have an upcoming shift and require testing beforehand or are symptomatic and have not been diagnosed with COVID-19.

QUÉBEC						
Government of Québec. (2022, May 30). <a href="#">Get a COVID-19 test</a> .	May 30, 2022	Website (Government of Quebec)	Health care, LTC, retirement, nursing homes	HCW, residents	Prioritized	Health, social services workers and clients who receive, or will receive, healthcare and social services in a healthcare or residential facility (e.g., continuous assistance residences, private senior's homes, residential centres or residential long-term care centres, respite homes, birthing centres, palliative care hospices, residential settings) are prioritized for PCR testing at screening clinics.
Government of Québec. (2022, May 4). <a href="#">Instructions regarding clients' or residents' admission or return to a residence or rehabilitation centre</a> .	May 4, 2022	Website (Government of Quebec)	Residential centre	Residents	Required	Residents being admitted or returning to a residential centre who are asymptomatic and have been in close contact with someone who has had COVID-19 or had a high-risk exposure in the community to a person who has COVID-19 must do a screening test (test type not reported (NR)).
SASKATCHEWAN						
Saskatchewan Health Authority. (2022, June 20). <a href="#">Saskatchewan Health Authority COVID-19 outbreak guidance for long term care homes</a> .	Jun 20, 2022	Outbreak Guidance (Saskatchewan Health Authority)	LTC	HCW, residents, visitors	Required	<p>*These are outbreak guidelines and may not apply during non-outbreak conditions.</p> <p>Staff testing:</p> <ul style="list-style-type: none"> <li>• staff testing can occur via peer-to-peer or point-care-testing;</li> <li>• staff may access testing in the community if they are not scheduled to work for the next 2-3 days;</li> <li>• staff may continue to work while awaiting results provided they pass the HCW screening tool;</li> <li>• staff who are considered COVID-19 recovered do not need to be tested if it has been ≤ 90 days from when they first tested positive.</li> </ul> <p>Resident testing:</p> <ul style="list-style-type: none"> <li>• residents who are considered COVID-19 recovered do not need to be tested if it has been ≤ 90 days from when they first tested positive;</li> <li>• residents who have been tested within 48 hours do not need to be re-tested unless they develop symptoms.</li> </ul> <p>Visitor testing:</p> <p>where capacity/feasibility exists, POCT of essential family/support persons, visitors and staff should occur immediately upon entering the home if they have not been tested in the previous 7 days.</p>

YUKON						
Yukon Communicable Disease Control. (2022, June 8). <a href="#">COVID-19 testing regulations – Whitehorse and rural Yukon.</a>	Jun 8, 2022	Guidance (Government of Yukon)	Healthcare, LTC and residential care	HCW, residents, patients	Prioritized	Symptomatic individuals who are residential or congregate setting residents or staff, patients in acute healthcare settings and frontline HCW delivering direct patient care are prioritized for PCR testing.  Testing is not recommended for recently recovered COVID-19 cases in the first 45 days following initial positive lab test.

\***HCW**: healthcare worker; **LTC**: long-term care; **POCT**: point-of-care testing; **PCR**: polymerase chain reaction



**Table 3: Syntheses**

Reference	Date Released	Population, Setting	Description of Included Studies	Additional mitigation measures	Summary of Findings	Quality Rating: Synthesis	Quality Rating: Included Studies
<p>Mei, Y., Guo, X., Chen, Z., &amp; Chen, Y. (2022). <a href="#">An effective mechanism for the early detection and containment of infections in the setting of the COVID-19 pandemic: a systematic review and meta-synthesis</a>. <i>Int J Environ Res Public Health</i>, 19(10), 5943.</p>	<p>May 13, 2022</p> <p>(Search conducted Apr 2020 - Mar 2022)</p>	<p>Healthcare workers</p> <p>US, UK, Singapore, Italy, China, Malaysia, Germany, Belgium, Netherland, Turkey, Australia, Philippines, Brazil</p>	<p>This systematic review included 38 studies: 28 addressed testing.</p> <ul style="list-style-type: none"> <li>• 27 observational</li> <li>• 1 experimental</li> </ul>	<p>Additional IPAC measures include:</p> <ul style="list-style-type: none"> <li>• syndromic surveillance</li> <li>• contacting tracing</li> <li>• exposure management</li> </ul>	<p>Some studies advocate for HCWs to be given low-threshold access to testing, with debate on whether this applies to asymptomatic HCWs.</p> <ul style="list-style-type: none"> <li>• Pros: early detection, reduce risk of nosocomial transmission, potential cost savings (e.g., one study found that compared to quarantining, antigen testing HCWs every other day reduced total cost by 87%).</li> <li>• Cons: scarce time/resources, symptoms are best predictors so unnecessary if sufficient PPE and invention prevention and control measures in place, false negatives.</li> </ul> <p>The authors conclude that one effective strategy, in line with Centers for Disease Control (CDC) guidelines on testing sensitivity and specificity, includes:</p> <ul style="list-style-type: none"> <li>• Provide HCWs with a known exposure, antigen tests* <ul style="list-style-type: none"> <li>→ If positive, consider infected.</li> <li>→ If negative, confirm with PCR test.</li> </ul> </li> </ul> <p>(*Antigen tests have shorter testing time, independent application/interpretation, comparable specificity to PCR (according to CDC guideline, i.e., false positive results are unlikely), but lower sensitivity.)</p>	<p>Moderate</p>	<p>Low to moderate</p>

<p>Hashim, N., Mahdy, Z.A., Abdul Rahman, R., Kalok, A., &amp; Sutan, R. (2022). <a href="#">Universal Testing Policy for COVID-19 in Pregnancy: A Systematic Review</a>. <i>Frontiers in public health</i>, 10, 588269.</p>	<p>Feb 8, 2022 (Search dates not reported)</p>	<p>Obstetrics, worldwide</p>	<p>This systematic review includes 34 observational studies, all addressed testing.</p>	<p>None reported</p>	<p>This systematic review reports the prevalence of worldwide <i>pre-admission universal testing</i> (i.e., all tested with at-home or point-of-care rapid antigen test, regardless of symptoms or exposures) of pregnant women presenting to labour and delivery admission units.</p> <p>On average, 5.3% of the 19,958 women included tested positive, with positivity rates ranging from 0.4% (17/3,906) to 27.0% (137/370):</p> <ul style="list-style-type: none"> <li>• Of those who tested positive on admission, 260/19,958 (1.3%) were asymptomatic.</li> <li>• Of those who tested positive in total, 75.5% were asymptomatic compared to 24.5% symptomatic.</li> <li>• 13,165/19,958 (66.0%) of the total population tested were from the United States, one of the countries with the highest number of populations affected by the disease.</li> </ul> <p>Policy implementation was highest in New York, Italy, Spain and Portugal.</p>	<p>Moderate</p>	<p>Moderate</p>
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<p>Bertini, L., Bogen-Johnston, L., Middleton, J., Wood, W., Sadhwani, S., Forder, J., ... Cassell, J.A. (2021). <a href="#">COVID-19 management in social care in England: a systematic review of changing policies and newspaper reported staff perspectives</a>. <i>Preprint</i>.</p>	<p>Nov 21, 2021</p> <p>National guidance for social care search (29 Jul – 28 Oct 2020)</p> <p>Newspaper coverage of infection control issues in social care (27 Jul – 10 Sept 2020)</p>	<p>LTC / social care, UK</p>	<p>This systematic review includes 15 guidance documents: 1 addressed testing.</p> <p>This systematic review includes 24 newspaper articles: 10 addressed testing.</p>	<p>Additional IPAC measures include:</p> <ul style="list-style-type: none"> <li>• PPE</li> <li>• Distancing</li> <li>• Contact between workers</li> <li>• Self-isolation</li> </ul>	<p>This systematic review integrated a comparison of government guidance documents and newspaper articles of infection control issues in social care homes.</p> <p>The review of the guidance documents reports the government was looking to increase staff testing from the current policy requiring asymptomatic staff have ongoing access to individual testing (increased capacity not stated). In the event of a suspected outbreak, Public Health England provides testing to support outbreak control.</p> <p>Review of the newspaper articles reveals that care staff are required to test weekly, while residents undergo monthly testing.</p> <ul style="list-style-type: none"> <li>• Critiques of this strategy were critical, noting that testing was implemented too late and due to industry pressure.</li> <li>• Industry executives criticized gaps in the staff testing system, noting that staff have a variety of movements during the week after they have been tested which could lead to asymptomatic infection.</li> </ul> <p>Staff highlighted the pressure to receive patients without testing coming from hospitals and noted a lack of clear guidance on return-to-work policies post infection.</p>	<p>Low</p> <p><b><i>PREPRINT</i></b></p> <p><b><i>NOT PEER REVIEWED</i></b></p>	<p>Not assessed</p>
<p>Egunsola, O., Farkas, B., Flanagan, J., Salmon, C., Mastikhina, L., Clement, F. (2021). <a href="#">Surveillance of COVID-19 in a Vaccinated Population: A Rapid Literature Review</a>. <i>Preprint</i>.</p>	<p>Nov 8, 2021</p> <p>Search conducted Jun 14, 2021</p>	<p>Healthcare, LCT worldwide</p>	<p>This rapid review includes 33 studies: 21 addressed testing in healthcare and LTC.</p> <ul style="list-style-type: none"> <li>• 21 observational</li> </ul>	<p>None reported</p>	<p>This rapid review explored COVID-19 surveillance in vaccinated populations, including healthcare and LTC settings.</p> <p>The findings in healthcare settings highlighted the differences in strategies and tests used. The most common test reported was RT-PCR, but some studies reported using rapid antigen test and testing with RT-PCR as a confirmation test. Testing strategies included routine post-exposure universal testing for staff and periodic surveillance testing. All studies identified breakthrough cases among vaccinated individuals highlighting the need for continued testing.</p> <p>The findings for LTC facilities found the frequency of testing largely depended on outbreak status of the facility or surrounding community prevalence. Reviews noted testing of both residents and staff.</p>	<p>Moderate</p> <p><b><i>PREPRINT</i></b></p> <p><b><i>NOT PEER REVIEWED</i></b></p>	<p>Not assessed</p>

<p>Giri, S., Chenn, L.M., &amp; Romero-Ortuno, R. (2021). <a href="#">Nursing homes during the COVID-19 pandemic: a scoping review of challenges and responses</a>. <i>European geriatric medicine</i>, 12(6), 1127–1136.</p>	<p>Jun 16, 2021 (Search conducted Mar 1, 2020 – Jan 31, 2021)</p>	<p>LTC, worldwide</p>	<p>This scoping review includes 76 studies: 10 observational studies addressed testing.</p>	<p>Additional IPAC measures include:</p> <ul style="list-style-type: none"> <li>• Isolation</li> <li>• Cohorting</li> <li>• Staff protection and support</li> <li>• Technology in care</li> </ul>	<p>This scoping review identified widespread testing as a strategy to mitigate the impact of COVID-19 in nursing homes, noting the evolution of testing strategies throughout the pandemic; initially from those indicated to widespread testing.</p> <ul style="list-style-type: none"> <li>• Widespread testing aided in the identification of cases as prevalence of typical COVID-19 symptoms was much lower than expected in LTC homes resulting in significant failure to identify infection in residents.</li> </ul> <p>It is estimated that the shift to widespread testing identified up to 50% of COVID-19 cases that would have otherwise gone undetected.</p> <ul style="list-style-type: none"> <li>• Studies reported a decrease in point case prevalence from 35% down to 18% after implementation.</li> </ul> <p>Widespread testing was recommended after case detection; delays in testing were associated with the risk of larger outbreaks.</p>	<p>Low</p>	<p>Not assessed</p>
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\***IPAC**: infection prevention and control; **HCW**: healthcare worker; **PPE**: person protective equipment; **CDC**: Centers for Disease Control; **LTC**: long-term care; **RT-PCR**: reverse transcriptase polymerase chain reaction

**Table 4: Single Studies**

Reference	Date Released	Study Design	Population, Setting	Participants, COVID strain	IPAC & Screening Measures	Summary of Findings	Quality Rating:
Diekmann, P.R., O'Neill, O.R., Floyd, E.R., Meinke, L.C., Lehman-Lane, J., Uzlik, R.M., & Stone McGaver, R. (2022). <a href="#">Orthopedic Surgery in Ambulatory Surgery Centers During the COVID-19 Pandemic: Low Incidence of Infection Among Patients, Surgeons, and Staff</a> . <i>Cureus</i> , 14(4), e24247.	Apr 18, 2022	Quasi-experimental	Surgical patients and personnel  Orthopedic surgery practice  Minnesota, United States	n=13,115 patients • mean age: 52(SD±17.4) • 16,491/23,115 (53.6%) women  n=642 personnel  Apr 28 -Dec 31, 2020 (wild-type/Alpha VOC)	Staff procedure: • Daily online assessment prior to start of shift • Bi-weekly PCR testing • Self-monitoring  Emergency patient procedure: • Test prior to surgery (test type NR)  Scheduled patient procedure: • RT-PCR test prior to surgery (≤96 hrs) • Self-quarantine between test and procedure • Symptom screening in lobby upon arrival • Visitor restrictions; exemption for minors (<18 years) • Designated drivers for day surgery patients were connected with patients outside of the building upon discharge.	During the study period, 12,115 patients representing 13,304 procedures were tested for COVID-19: • 70/12,115 (0.6%) tested positive ○ 51 of the positive cases were identified in Nov and Dec of 2020 when the Alpha VOC was quickly becoming the dominant strain of COVID-19 in the US.  During the study period, 642 personnel were tested for COVID-19 (8,594 tests). Each staff was tested an average of 13.1 times: • 41/642 (6.4%) tested positive.  The authors conclude that based on their finding, the infection control procedures implemented were associated with a low incidence of COVID-19 in patients and personnel.	Moderate

<p>Fong, D., Mair, M.J., Lanthaler, F., Alber, M., &amp; Mitterer, M. (2022). <a href="#">Mobility as a driver of severe acute respiratory syndrome coronavirus 2 in cancer patients during the second coronavirus disease 2019 pandemic wave</a>. <i>International journal of cancer</i>, 150(3), 431–439.</p>	<p>Sep 28, 2021</p>	<p>Cohort</p>	<p>Oncology outpatients  Franz Tappeiner Hospital Merano  South Tyrol, Italy</p>	<p>n=719  <ul style="list-style-type: none"> <li>• median age: 64 (IQR: 28-88)</li> <li>• 51/106 (48.1%) women</li> </ul> <p>Oct 19, 2020 – Feb 28, 2021  (wild-type and Alpha VOC)</p> </p>	<p>Staff measures:  <ul style="list-style-type: none"> <li>• Separated by Home Office (no crossover between facilities)</li> </ul> <p>Outpatient measures:  <ul style="list-style-type: none"> <li>• Provided tele-medicine on a case by case basis</li> <li>• RT-PCR testing 2 days prior to any intravenous or subcutaneous treatment</li> </ul> <p>*During this time local restrictions were relaxed.</p> </p></p>	<p>During the study period, defined as the second wave of COVID-19, 719 patients were treated representing 4754 patient visits and 1454 treatments. 106/719 (14.7%) tested positive for COVID-19.</p> <p>Compared to the first wave, the case positivity during the study period (second wave) was ~20 times higher (0.8% vs. 14.7%), <math>p &lt; 0.001</math>.</p> <ul style="list-style-type: none"> <li>• The positivity rate of outpatients was significantly lower than the community, resulting in a reduction of 58.5% of new positive cases.</li> <li>• The death rate of outpatients was significantly higher than in the community (7/106 (6.6%) vs. 731/46,421 (1.6%)), <math>p &lt; 0.001</math>.</li> </ul> <p>Among all the positive patients, infection was determined to be community acquired and not in-hospital infection according to contact tracing by local authorities, <math>p &lt; 0.001</math>.</p>	<p>High</p>
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<p>Geeraedts, F., Luttje, M., Visschedijk, J., van Hattem, M., Hasper, H.J., Kohnen, R., ... Al Naiemi, N. (2022). <a href="#">Low-Threshold Testing for SARS-CoV-2 (COVID-19) in Long-Term Care Facilities Early in the First Pandemic Wave, the Twente Region, the Netherlands: A Possible Factor in Reducing Morbidity and Mortality</a>. <i>Journal of applied gerontology</i>, 7334648221093050.</p>	<p>Mar 16, 2022</p>	<p>Case control</p>	<p>LTC residents and HCW  Twente GGD  Twente Region, Overijssel, Netherlands</p>	<p>n=19,087  <ul style="list-style-type: none"> <li>• 13,438 HCW</li> <li>• 5,649 residents</li> </ul> <p>Mar 3 – Apr 9, 2020 (wild-type)</p> </p>	<p>National guidelines:</p> <ul style="list-style-type: none"> <li>• HCW with mild symptoms without fever can continue to work without being tested, while HCW with a fever have to stay home without being tested (unless symptoms resolved within 24 hrs, then HCW could return to work)</li> <li>• Residents to be RT-PCR tested only in the presence of fever</li> <li>• Hospital discharge after 1 day symptom-free with no testing.</li> </ul> <p>Twente guidelines:</p> <ul style="list-style-type: none"> <li>• HCW with minimal symptoms in the absence of fever had to stop working and immediately RT-PCR test (referred to as “low threshold testing”)</li> <li>• Residents to be tested at the first sign of any symptom</li> <li>• Hospital discharge after 3 days symptom free with the possibility of testing.</li> </ul>	<p>For two weeks prior to the peak of the first wave of the epidemic, the region of Twente adopted a divergent low threshold testing strategy for staff and residents of LTC homes.</p> <p>During the study period, 144/13,348 (1.08%) HCW and 96/5,649 (1.69%) residents tested positive for COVID-19 representing 34% of all positive cases in the region.</p> <p>In the following two weeks the percentage of COVID-19 related deaths/inhabitant in the region was 0.011%; 2.4 times lower than in other parts of the province.</p> <p>Excess mortality rate in the Twente region (8%) was 62-89% lower than other parts of the province where low-threshold guidelines were not adopted (values NR).</p> <p>National <math>R_0</math> during the study period was estimated to range from 0.7 – 1.0, resulting in an estimated 101 to 144 secondary infections prevented due to the adoption of low-threshold testing.</p>	<p>High</p>
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<p>Liu, K.Y., Kulatilake, A., Kalafatis, C., Smith, G., King, J.D., Serra-Mestres, J., ... Livingston, G. (2022). <a href="#">Infection control and the prevalence, management and outcomes of SARS-CoV-2 infections in mental health wards in London, UK: lessons learned from wave 1 to wave 2</a>. <i>BJPsych open</i>, 8(2), e63.</p>	<p>Mar 8, 2022</p>	<p>Quasi-experimental</p>	<p>Mental health patients (older in-patients ≥ 65 and those with dementia)</p> <p>London National Health Service mental health trusts</p> <p>London, United Kingdom</p>	<p>n=91</p> <ul style="list-style-type: none"> <li>• mean age: 77(SD±7.2)</li> <li>• 52/91 (57%) women</li> <li>• 17/89 (19%) Black Caribbean, African British</li> <li>• 6/89 (7%) Asian or Asian British</li> <li>• 3/89 (3%) Mixed or other</li> </ul> <p>Dec 2020 – Feb 2021 (Alpha VOC)</p> <p>compared to reference period Mar 1 – Apr 31, 2020 (wild-type)</p>	<p>Reference period (Mar 1 – Apr 30, 2020)</p> <ul style="list-style-type: none"> <li>• Limited and delayed testing</li> <li>• Limited availability of PPE</li> </ul> <p>Study period (Dec 14, 2020 – Feb 15, 2021)</p> <ul style="list-style-type: none"> <li>• Immediate access to PCR tests</li> <li>• Unlimited access to PPE</li> <li>• Testing prior to arrival for transfer patients</li> <li>• PCR tests for pre-admission screening for symptomatic staff</li> <li>• PCR or LFD testing for asymptomatic staff 1-2x/week</li> <li>• Visitor restrictions</li> </ul>	<p>Compared to the reference period, the study period prevalence of COVID-19 was significantly lower; 91/358 (25% 95% CI = 21,30) vs. 131/344 (38% 95% CI = 33,43) p&lt;0.001.</p> <p>Of all new admissions in the study period 31/127 (24%) who tested positive, the median number of days between admission and first test was 0 [IQR: 0, 1] compared to new admissions in the reference period who experienced a delay of 6 days [IQR: 4.7, 7].</p>	<p>High</p>
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<p>Moyer, S., Aktay, S., &amp; Blanchard, S. (2022). <a href="#">The COVID-19 Pandemic Impact on Pediatric Endoscopies in a Single Center</a>. <i>Global pediatric health, 9</i>, 2333794X221100948.</p>	<p>Apr 28, 2022</p>	<p>Cohort</p>	<p>Pediatric patients (aged 1-21 years)</p> <p>University of Maryland</p> <p>Maryland, USA</p>	<p>n=1200</p> <p>Mar 1, 2019 – Mar 1, 2020 (wild-type)</p>	<p>Endoscopy intake procedure:</p> <ul style="list-style-type: none"> <li>• RT-PCR testing 48-72 hrs prior to procedure</li> <li>• Screening questions completed over the phone 2-3 days prior to procedure (anyone with a positive screening answer was removed from the schedule)</li> <li>• PPE (N95 mask, face shield, gloves, fully body water resistant isolation gown and hairnet)</li> <li>• Family member restrictions</li> <li>• Patient and family masking</li> </ul>	<p>During the study period, the volume of endoscopy procedures was drastically reduced due to hospital policy (elective procedures were postponed) and patient cancellations due to COVID infection. This resulted in fewer than 10 monthly procedures completed in Mar-Apr 2020 compared to 52 average monthly procedures in 2019.</p> <p>Pre-procedure testing resulted in 1% total patients testing positive for COVID-19 (values NR). None of the endoscopists or trainees tested positive during the same time period.</p> <p>Procedure volumes in the ensuing months of 2020 returned to those in the pre-pandemic period.</p>	<p>Moderate</p>
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<p>Rhee, C., Baker, M.A., &amp; Klompas, M. (2022). <a href="#">Survey of coronavirus disease 2019 (COVID-19) infection control policies at leading US academic hospitals in the context of the initial pandemic surge of the severe acute respiratory coronavirus virus 2 (SARS-CoV-2) omicron variant</a>. <i>Infection control and hospital epidemiology</i>, 1–7.</p>	<p>Jun 16, 2022</p>	<p>Cross-sectional</p>	<p>Hospital epidemiologists Nation-wide USA</p>	<p>n = 23 Feb 15 – Mar 3, 2022 (Omicron VOC)</p>	<p>All hospital mitigation measures:</p> <ul style="list-style-type: none"> <li>• Universal masking</li> <li>• PPE (e.g., eye protection, gown and glove)</li> </ul> <p>Some hospital mitigation measures:</p> <ul style="list-style-type: none"> <li>• Dedicated COVID-19 units</li> <li>• Air purifiers</li> <li>• Universal testing of patients on admission</li> <li>• Regular testing of unvaccinated employees</li> <li>• Mandatory testing of all employees, regardless of vaccination status.</li> </ul>	<p>Overall, 21/23 (91%) of hospitals surveyed practiced universal testing of patients on admission. 2/23 (9%) sites restricted testing to only symptomatic/exposed of high-risk patients.</p> <ul style="list-style-type: none"> <li>• 7/23 (30%) hospitals administered at least 1 post-admission test to detect virus that may have been missed by the admission test. Days to second test ranged from 3 to 7 days.</li> <li>• 6/23 (26%) hospitals reported ongoing surveillance testing on covid negative patients; days to second test ranged from 4-7 days.</li> <li>• 5/23 (22%) hospitals reported tailored strategies including repeated surveillance testing at 3-day intervals for 14 days for specific high-risk groups (e.g., those undergoing aerosol-generating procedures (n=2), pre-procedure testing after day 7 (n=1), repeated testing for patients in congregate units (n=1) bi-weekly testing for patients receiving nebulizers (n=1).</li> </ul> <p>Testing type differed based on symptom status; in asymptomatic patients:</p> <ul style="list-style-type: none"> <li>• 13/23 (57%) used nasopharyngeal swabs</li> <li>• 8/23 (35%) used anterior nasal swabs</li> <li>• 2/23 (9%) used midturbinate swabs</li> <li>• No hospitals reported using saliva tests</li> </ul> <p>In symptomatic patients:</p> <ul style="list-style-type: none"> <li>• 18/23 (78%) used nasopharyngeal swabs</li> <li>• 4/23 (17%) used anterior nasal swabs</li> <li>• No hospitals reported using saliva tests</li> </ul> <p>The role of testing was mixed in clearing positive patients; 8/23 (35%) relied on time-based criteria; 2/23 (9%) used test-based criteria; 12/23 (52%) used time-based criteria supplemented with testing for risk patients with immunocompromising conditions.</p> <p>Overall, 1/23 (4%) hospitals required mandatory weekly employee testing (regardless of vaccination status); this was time limited to surge due to the omicron VOC</p> <ul style="list-style-type: none"> <li>• 5/23 (22%) required regular testing of unvaccinated employees</li> </ul>	<p>Moderate</p>
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						18/23 (78%) did not have a mandatory surveillance testing program; employees required a test if they developed new symptoms or had a known exposure. Of this 18, 13 (72%) allowed electing testing at the employee's discretion.	
Sangal, R. B., Peaper, D. R., Rothenberg, C., Landry, M. L., Sussman, L. S., Martinello, R. A., Ulrich, A., & Venkatesh, A. K. (2022). <a href="#">Universal SARS-CoV-2 Testing of Emergency Department Admissions Increases Emergency Department Length of Stay</a> . <i>Annals of emergency medicine</i> , 79(2), 182–186.	Feb 7, 2022	Cross-sectional	Emergency department  Health system  USA	n= 70,856  Mar 15 – Sep 30, 2020	Health system is made up of 3 distinct sites. Patients were transferred between sites based on bed availability. Additional IPAC measures NR.	<p>From Mar 15 – Apr 24, 2020, hospital policy restricted COVID-19 testing to only those patients under investigation with lower respiratory tract infection symptoms, fever or clinical suspicion of COVID-19.</p> <p>From Apr 24 onward, a universal testing policy was adopted for all ED admissions.</p> <p>During the study period, 70,856 patients accessed the ED:</p> <ul style="list-style-type: none"> <li>• 11,541/70,856 (16.3%) prior to universal testing policy; 3,910/11,541 (33.9%) were admitted</li> <li>• 59,315/70,856 (83.7%) post universal testing policy; 18,311 (30.9%) were admitted.</li> </ul> <p>For those admitted to the ED, the universal testing policy was associated with:</p> <ul style="list-style-type: none"> <li>• 1.89 hrs increase in ED admitted length of stay (95% CI = 1.39, 2.38) representing a 24% increase in admission length of stay</li> <li>• 0.19 hr increase in discharge length of the stay (95% CI = 0.069, 0.3)</li> <li>• 1.58 hrs increase in ED boarding length of stay (95% CI = 1.15,2.01)</li> </ul> <p>In times of high community transmission (39.7%), the lowest number needed to treat was 2.5 patients/week to identify 1 positive case. In times of low community transmission (0.5%), the number needed to test exceeded 170 patients/week being tested to identify 1 positive case.</p>	High

<p>Benoni, R., Campagna, I., Panunzi, S., Varalta, M. S., Salandini, G., De Mattia, G., ... Bovo, C. (2021). <a href="#">Estimating COVID-19 recovery time in a cohort of Italian healthcare workers who underwent surveillance swab testing</a>. <i>Public health, 196</i>, 52–58.</p>	<p>May 19, 2021</p>	<p>Cohort</p>	<p>HCW  University Hospital of Verona  Veneto Region, Italy</p>	<p>n=6455  Feb 29, 2020 – May 18, 2020 (wild-type)</p>	<p>University health surveillance screening (HSP) programme:</p> <ul style="list-style-type: none"> <li>• High risk wards (e.g., ICU, infectious disease, respiratory disease, COVID-19 units) RT-PCR tested ever 10 days</li> <li>• Clinical staff RT-PCT tested every 20 days</li> <li>• Staff and administration RT-PCR tested every 30 days</li> </ul>	<p>During the study period, 6,455 HCW were tested for COVID-19 through the HSP; 248/6,455 (3.8%) tested positive (95% CI = 3.4,4.3). Of those positive 121/248 (49%) were asymptomatic:</p> <ul style="list-style-type: none"> <li>• There were no significant differences between those who tested positive or negative with respect to age, sex or ward related risk;</li> <li>• Symptomatic HCW were significantly older (mean 48.2) than asymptomatic HCW (mean 39.8), <math>p &lt; 0.001</math>.</li> </ul> <p>127/248 (87.5%) positive cases were initially referred for HSP testing after close contact with a positive patient.</p> <p>31/248 (12.5%) positive cases were identified through routine HSP screening.</p> <p>Return to work testing (time from initial positive test to second consecutive negative test) indicated a median recovery time of 21 days (95% CI = 15.5, 30.5).</p>	<p>High</p>
<p>Berger, J. M., Gansterer, M., Trutschnig, W., Bathke, A. C., Strassl, R., Lamm, W., Raderer, M., Preusser, M., &amp; Berghoff, A. S. (2021). <a href="#">SARS-CoV-2 screening in cancer outpatients during the second wave of the COVID-19 pandemic: Conclusions for crisis response at a high-volume oncology center</a>. <i>Wiener klinische Wochenschrift, 133</i>(17-18), 909–914.</p>	<p>Aug 19, 2021</p>	<p>Case report</p>	<p>Cancer outpatients  Oncology centre  Medical University of Vienna, Austria</p>	<p>n= 1,557</p> <ul style="list-style-type: none"> <li>• median age: 63 (IQR: 18-93)</li> <li>• 913/1,577 (57.9%) women</li> </ul> <p>Oct 1 – Nov 30, 2020 (wild-type and Alpha VOC)</p>	<p>Staff measures:</p> <ul style="list-style-type: none"> <li>• Staffing cohorts</li> <li>• Separate access for patients with structured triage with a HCW</li> <li>• PPE</li> <li>• Hygiene recommendations</li> </ul> <p>Patient measures:</p> <ul style="list-style-type: none"> <li>• Masks and protective gear</li> <li>• test all patients in the day prior to appointment</li> <li>• symptomatic screening</li> </ul>	<p>During the study period, only asymptomatic oncology outpatients were permitted access to the department. As per institutional policy, these patients underwent bi-weekly PT-RCT testing; 23/1,577 (1.46%) tested positive.</p> <p>Compared to the first wave, the detection rate in the second wave significantly increased; 1.5% (95% CI = 1.0, 2.2) vs. 0.4% (95% CI = 0.1,1.0%); with an odds ratio (OR) = 3.9 (95% CI = 1.5, 10.1), <math>p &lt; 0.005</math>. This is comparable to community positivity rates for the same time period comparison; OR = 4.0 (95% CI = 4.0, 4.1), <math>p &lt; 0.001</math>.</p> <p>Patients undergoing active anti-cancer treatment (172/960; 17.9% not tested) were more likely to have been tested than patients in follow-up or best supportive care (326/617; 52.8% not tested <math>p &lt; 0.001</math>).</p> <p>Patients with only 1 visit within 4 weeks were more likely to not have been tested; 386/598 (64.5%) compared to patients with 2 or more visits; 112/979 (11.4%), <math>p &lt; 0.001</math>. The projected number of patients with undetected infection during the study period was 5.</p>	<p>Moderate</p>

<p>Gilner, J., Kansal, N., Biggio, J.R., Delaney, S., Grotegut, C.A., Hardy, E., ... Hughes, B.L. (2021). <a href="#">Universal SARS-CoV-2 testing for obstetric inpatient units across the United States</a>. <i>Clinical infectious diseases</i>, ciab955.</p>	<p>Nov 17, 2021</p>	<p>Cross-sectional</p>	<p>Asymptomatic obstetric inpatients  Nation-wide  USA</p>	<p>n = 10,147  <ul style="list-style-type: none"> <li>6,423 (63%) POC upon admission</li> <li>3,704 (30.3%) at admission</li> </ul> <p>Apr 3 – Jul 31, 2020 (wild-type)</p> </p>	<p>Universal admission testing</p>	<p>During the study period, 124/10,147 (1.2%) asymptomatic people tested positive for COVID-19:</p> <ul style="list-style-type: none"> <li>Positivity rates varied by site, ranging from 0-3.2%</li> <li>Inpatient positivity rates were lower than in the surrounding communities; weighted positivity rate of 1.2% (95% CI = 0.5, 2.0)</li> </ul> <p>Asymptomatic positivity rates in obstetric inpatients units were positively correlated to rates in the surrounding communities of origin:</p> <ul style="list-style-type: none"> <li>Counties; r=0.782, p=0.003</li> <li>States; r=0.708, p=0.007</li> </ul>	<p>Moderate</p>
<p>Merrick, B., Noronha, M., Batra, R., Douthwaite, S., Nebbia, G., Snell, L.B., ... Harrison, H.L. (2021). <a href="#">Real-world deployment of lateral flow SARS-CoV-2 antigen detection in the emergency department to provide rapid, accurate and safe diagnosis of COVID-19</a>. <i>Infection prevention in practice</i>, 3(4), 100186.</p>	<p>Nov 18, 2021</p>	<p>Quasi-experimental</p>	<p>Acute care patients  Emergency department  London, United Kingdom</p>	<p>n=2,844 (1422 LFD, 1024 PCR)  Jan 2-22, 2021 (Alpha VOC)</p>	<p>Reference period (1): PCR only (Dec 1 – Mar 30, 2021)  Reference period (2): POC-r-PCR (Dec 15, 2020)  Study period:  <ul style="list-style-type: none"> <li>LFD (Jan 2-22, 2021)</li> </ul> </p>	<p>During the reference period (1), the median turnaround time for RT-PCR testing was 3 hrs and 34 minutes (of a 4 hr emergency department (ED) performance target). This resulted in 1/3 patients leaving the ED without a confirmation diagnosis and 689 ED breaches (i.e., waited longer than the 4 hr performance target), 40/689 (5.8%) by patients waiting ward placement.</p> <p>During the reference period (2), point of care rapid-PCR testing decreased turnaround time (values NR) and resulted in 410/532 (77%) of patients leaving the ED with a confirmation diagnosis. ED breaches were reduced from 689 to 87, of those 20/87 (13.3%) by patients waiting ward placement.</p> <p>During the study period, 1422/2844 (50%) of ED patients had lateral flow device (LFD) testing and 1024/1422 (72%) had LFD with RT-PCR confirmation (within 48 hrs):</p> <ul style="list-style-type: none"> <li>LFD positive 288/1422 (20.3%)</li> <li>LFD negative: 1134/1422 (79.7%)</li> <li>based on disease prevalence of 34.7%; PPV = 97.7%; negative predictive value = 86.4%.</li> </ul> <p>LFD testing can be useful in meeting ED performance targets and reducing breaches.</p>	<p>High</p>

<p>Mortazavi, S.E., Inghammar, M., Christiansen, C., Pesola, A., Stenkilsson, M., &amp; Paulsson, M. (2021). <a href="#">A cohort study of the effect of SARS-CoV-2 point of care rapid RT-PCR at the Emergency Department on targeted admission.</a> <i>Preprint.</i></p>	<p>Dec 31, 2021</p>	<p>Cohort</p>	<p>Emergency Departments patients (≥18 years)</p> <p>Skåne University Hospital</p> <p>Lund, Sweden</p>	<p>n=2,940</p> <ul style="list-style-type: none"> <li>mean age: 60.8 (SD±20.8)</li> <li>1497/2940 (50.9%) women</li> </ul> <p>Period 1: Nov 13 – Dec 2, 2020</p> <p>Period 2: Dec 3 – Dec 22, 2020</p> <p>Period 3: Dec 23, 2020 – Jan 12, 2021 (Alpha VOC)</p>	<p>ED patient pathway:</p> <ul style="list-style-type: none"> <li>Patients with suspected COVID-19 were transferred to units with increased IPAC until results were obtained.</li> <li>Patients who tested negative remained in the ED until proper treatment was delivered or they were admitted to a care ward (i.e., ICU, mixed-COVID/Internal medicine ward)</li> </ul>	<p>During the study period 1,866/2,940 (63.5%) were tested for COVID-19 upon arrival at the emergency department (ED):</p> <ul style="list-style-type: none"> <li>408/2,940 (13.9%) tested positive</li> <li>1,458/2,940 (49.6%) tested negative</li> <li>568/2,940 (19%) had a positive test prior to admission to the ED</li> <li>506/2,940 (17.2%) were not tested or test result was not recorded.</li> </ul> <p>Compared to standard RT-PCR tests, use of rapid antigen tests for positive patients:</p> <ul style="list-style-type: none"> <li>reduced the mean ED length of stay by 1.5 days (95% CI = 0.3, 2.7);</li> <li>reduced admission to COVID-19 wards from 34.0/100 down to 14.7/100 admissions [(95% CI = 28.9, 40.5), (95% CI = 11.1, 19.1)];</li> </ul> <p>Compared to standard RT-PCR tests, use of point-of-care-rapid-PCR for negative patients reduced transfers between hospital wards in the first 5 days from 50.0 to 34.0/100 admission [(95% CI = 45.0,55.0), (95% CI = 30.3,37.9)].</p>	<p>Moderate</p> <p><b>PREPRINT</b></p> <p><b>NOT PEER REVIEWED</b></p>
<p>O'Hara, L.M., Schrank, G.M., Frisch, M., Hogan, R., Deal, K. E., Harris, A.D., &amp; Leekha, S. (2021). <a href="#">Coronavirus disease 2019 (COVID-19) symptoms, patient contacts, polymerase chain reaction (PCR) positivity and seropositivity among healthcare personnel in a Maryland healthcare system.</a> <i>Infection control and hospital epidemiology</i>, 1–3.</p>	<p>Aug 20, 2021</p>	<p>Cohort</p>	<p>Hospital HCW</p> <p>Multi-site healthcare system</p> <p>Maryland, USA</p>	<p>n=5,135</p> <p>Mar 1 – Aug 31, 2020 (wild-type)</p>	<p>System policy requires:</p> <ul style="list-style-type: none"> <li>staff use high-level PPE defined as respirator, eye protection, gloves, and gowns</li> <li>Extended use and decontamination of N95 masks for continued use</li> <li>Universal masking and eye protection for all patient contact</li> <li>Universal patient admission testing (beginning May 6, 2020)</li> </ul>	<p>During the study period 5,135 HCW were PCR tested for COVID-19; 342/5,135 (6.7%) tested positive:</p> <ul style="list-style-type: none"> <li>301/342 (88%) were symptomatic; test positivity rate = 9.7%</li> <li>41/342 (12%) were asymptomatic; test positivity rate = 2.0% <ul style="list-style-type: none"> <li>2,787/5,135 (54.3%) did not report a known community or work exposure</li> <li>2,348/5,135 (45.7%) had a known exposure <ul style="list-style-type: none"> <li>928/2,348 (39.5%) were patient exposures</li> <li>1,013/2,348 (43.1%) were colleague exposures</li> <li>218/2,348 (9.3%) were community exposures</li> <li>189/2,348 (8.1%) were household exposures</li> </ul> </li> </ul> </li> </ul> <p>Compared to exposure from a positive patient, exposure in the home or community was associated with greater odds of contracting COVID-19 for HCW:</p> <p>Household exposure OR: 4.96 (95% CI = 3.22, 7.64), p&lt;0.0001  Community exposure OR: 2.86 (95% CI = 1.79, 4.78), p&lt;0.0001  Colleague (in hospital) exposure OR: 0.74 (95% CI = 0.49, 1.11) NS</p>	<p>Moderate</p>

<p>Kim, C.W. &amp; Lee, Suk-Hwan. (2021). <a href="#">Impact of COVID-19 on the care of acute appendicitis: a single-center experience in Korea</a>. <i>Annals of Surgical Treatment and Research</i> 101(4): 240-246.</p>		<p>Cohort</p>	<p>Hospital, patients undergoing laparoscopic surgery for acute appendicitis</p> <p>Korea</p>	<p>n=495</p> <p>pre-pandemic (Nov 2019) vs. pandemic (Nov 2020) groups (wild-type, Alpha VOC)</p>	<p>Universal admission</p> <p>tesecondting</p>	<p>In Korea, all patients admitted for surgery first received a COVID-19 test; admission could only proceed with a confirmed negative result. (If positive, patient transferred for treatment at a COVID-19-designated facility.)</p> <p>The time between admission and surgery was longer in the pandemic group than the pre-pandemic group (17.6 hours vs. 9 hours, p &lt;0.001).</p> <p>Operating time was longer (p=0.014) and inflammation more severe (50.9% vs. 60.9%, p=0.036) in the pandemic group; no significant differences in postoperative complications or length of stay.</p>	<p>High</p>
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\***VOC**: variant of concern; **NR**: not reported; **RT-PCR**: reverse transcriptase polymerase chain reaction; **PCR**: polymerase chain reaction; **HCW**: healthcare worker; **LTC**: long-term care; **PPE**: personal protective equipment; **LFD**: lateral flow device; **ED**: Emergency department; **POC-r-PCR**: point-of-care rapid-polymerase chain reaction; **HSP**: health surveillance screening; **ICU**: intensive care unit

## References

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