

ENVIRONMENTAL SCAN

Public Health Measures and COVID-19 Epidemiology in Select Jurisdictions (Current up to February 2, 2022)

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Key Findings

- There is an observed shift in prevalence of variant infection from the Delta variant (B.1.617.2, first identified in India) to the Omicron variant (B.1.1.529, first identified in South Africa) across the 12 jurisdictions since the last scan, which was current up to January 4, 2022.
- Overall, jurisdictions reported sustained increasing Coronavirus Disease 2019 (COVID-19) case rates in January 2022 or an initial increase followed by plateauing or decreasing rates later in the month. Hospitalizations and death rates showed varying patterns across the jurisdictions throughout January 2022.
- In January 2022, due to reported stabilizing hospitalizations, many jurisdictions eased or lifted public health measures, while at the same time, encouraged vaccination including proof of vaccination and vaccine mandates. France, Israel and Portugal are experiencing increasing rates of hospitalizations and are maintaining some stringent measures; Denmark is the only country experiencing increasing hospitalizations that has removed most or all measures.
- Some jurisdictions (e.g., Israel and Germany) have accelerated their booster programs, and expanded eligibility to include those aged 12 to 17 years old. These changes have resulted in a large increase in the percentage of the population that have received an additional dose across the jurisdictions. Of note, the jurisdictions removing most or all measures (i.e., Denmark, England, Ireland, and Norway) have higher rates of additional dose coverage than many of the other jurisdictions.
- There is variation in the status of implemented public health measures across jurisdictions. Most jurisdictions scanned continue to require masks in multiple community indoor settings, with the exception of England and Finland (recommendation) and Denmark (airports only).
- Jurisdictions with immunity or health pass systems are increasing the stringency of the pass system by shortening the length of time an individual is considered valid (e.g., shortening the time-period for validity for those with only two-doses of a vaccine or time-period post-infection).
- Several jurisdictions have capacity limits in place at this time. A few jurisdictions have additional measures in place (e.g., setting-specific closures, remote work mandates, or general vaccine mandates).

Objectives and Scope

This environmental scan highlights public health measures for select jurisdictions (i.e., Denmark, England, Finland, France, Germany, Ireland, Israel, Italy, Norway, Portugal, the Netherlands, and United States). It summarizes epidemiological trends (i.e., COVID-19 cases, hospitalizations, and deaths) and additional contextual factors (e.g., vaccination rates and variants of concern [VOCs]) at a high level. Out of scope for this scan was testing and case and contact management strategies which may be an important contextual difference across jurisdictions. In addition, county- and city-level public health measures were out of scope.

Background

As of January 30, 2022, 84.1% of the total population in Ontario had received at least one dose of a COVID-19 vaccine, and 79.3% of the total population received two doses.¹ As of February 1, 2022, over 6.4 million Ontarians have received a third dose.² Individuals 5 years or older are eligible to complete their primary series of vaccination while individuals 18 years or older who received their second dose at least three months prior are eligible for a booster vaccination.^{1,3} An epidemiological report published on January 1, 2022, confirmed that the Omicron variant is the dominant variant in Ontario.⁴ Molecular test-confirmed COVID-19 cases saw an exponential increase through the end of December 2021 with a peak in early January 2022 and an ongoing gradual decline towards the end of January.⁶ Confirmed case numbers are an underestimate of the true epidemiology given limited access to molecular test and rapid antigen tests (RAT) and no required reporting of positive RATs for the general population.⁵ COVID-19-related hospitalizations including ICU admissions increased through the beginning of January 2022 and reached a peak towards the final week of January before starting a more recent decline.⁷ The number of new COVID-19 related deaths saw an increase through January 2022 and continue to be at high levels with a 7-day average above 60.^{6,7}

The province of Ontario, local public health units, and its municipalities have implemented various public health measures since the beginning of the COVID-19 pandemic (e.g., mandatory masking, physical distancing, and limits on social gatherings). Since the emergence of Omicron, Ontario has increased public health measures including moving into Step Two of the Roadmap to Reopen on January 5, 2022 (e.g., tightening gathering limits and closing restaurants, bars, and gyms).^{8,9} On January 31, 2022, Ontario began easing measures including reopening previously closed venues with a 50% capacity limit (e.g., restaurants and cinemas) and increasing gathering limits.⁸ Like many jurisdictions, Ontario is navigating the next stage of the COVID-19 pandemic with ongoing levels of sustained community transmission of SARS-CoV-2. Evidence from earlier in the pandemic suggests it takes a median of 8 days after introducing a public health measure to observe 60% of the maximum reduction in the reproduction number (R), and a median of 17 days following relaxation to observe 60% of the maximum increase in R.¹⁰ Thus, there is evidence to support public health measures being lifted in phases, with at least three weeks before lifting more measures. Tracking public health measures and epidemiology in jurisdictions with similar contexts (e.g., vaccination coverage, type of vaccines, and dominant SARS-CoV-2 variants), may be helpful in order to learn from their experience.

Methods

This environmental scan reports on accessible information up to February 2, 2022. It was informed by previous Public Health Ontario (PHO) reports, scanning of key government websites, as well as general Google searches for items related to public health measures, COVID-19 epidemiology and vaccination coverage. A formal bibliographic database search was not conducted due to time constraints; thus, some relevant articles may not be included.

The public health measures and overall epidemiology of select jurisdictions will be described and their relevance to Ontario will be discussed. For the context of this paper, the terms “immunity pass” (i.e., a system that requires proof of vaccination and/or recovery) and “health pass” (i.e., a system that requires proof of vaccination, recovery, and/or negative test result) will be used. The term “eligibility” refers to which individuals can obtain the pass (e.g., vaccinated, recently recovered from infection, or unvaccinated individuals). “Validity” refers to how long the pass can be used after last vaccination, recovery, or negative test.

Detailed data on week to week case rate, hospitalizations, deaths, and detailed changes to public health measures for jurisdictions included in this scan are available upon request.

Results

Summarized Epidemiology and Vaccine Coverage in Select Jurisdictions

- The jurisdictions included in this scan have a high proportion of their total population vaccinated, similar to Ontario, ranging between 74% and 93% receiving at least one dose of a COVID-19 vaccine and between 64% and 90% of the population receiving two doses.¹¹⁻¹⁴ All jurisdictions (except England and Norway) are vaccinating individuals five years and older.¹⁵⁻²⁶
- The jurisdictions included in this scan have between 27% and 65% of their population receiving an additional dose.^{11,14} There are minor differences between jurisdictions regarding eligibility for third and fourth doses, as well as the interval between doses.^{15,17,18,27-36} Of the jurisdictions included in this scan, England and Denmark have the highest additional dose coverage, at 64.5% and 61%, respectively.^{11,14}
- Overall, the included jurisdictions experienced one of two case rate trajectories throughout January 2022:³⁷⁻⁴⁰
 - A sustained increase in case rates (e.g., Netherlands and Germany).
 - An initial increase in case rates at the beginning of January with a plateauing or decreasing of case rates later in the month (e.g., Denmark, Israel, Portugal, France, Norway, Italy, Ireland, Finland, England, California, and New York State).
- The number of COVID-19 patients in hospital in January 2022 varied across the jurisdictions.^{39,41-43}
 - Denmark, France, Portugal, and Israel experienced an increasing number of COVID-19 patients in hospital.
 - England, Finland, Italy, Ireland, California, and New York State experienced an increasing number of COVID-19 patients in hospital at the beginning of January with a plateauing or decreasing number later in the month.
 - Norway experienced a small decreasing number of COVID-19 patients in hospital in the first week of January with a plateauing later in the month.
 - The Netherlands experienced a decreasing number of COVID-19 patients in hospital with an increasing number later in the month.

- COVID-19-related death rates in January 2022 varied across the jurisdictions.^{39,43-45}
 - Denmark, Portugal, and Israel experienced an increasing death rate.
 - Finland, Germany, and the Netherlands reported a decreasing death rate at the beginning of January with a plateauing and increasing rate towards the end of the month.
 - England, Italy, France, California, and New York State experienced increasing death rates at the beginning of January 2022 and a plateauing or decreasing towards the end of the month.
- In the week ending on January 15, 2022, the Omicron variant was the dominant variant across all jurisdictions, accounting for 85.2% to 100% of cases.^{46,47}

Status of Public Health Measures in Select Jurisdictions

The current status of public health measures is described below for each jurisdiction. Most jurisdictions continue to utilize vaccine-related policies while easing other public health measures.

DENMARK

Despite a rising case rate, Denmark reopened public venues on January 16, 2022⁴⁸ and lifted all remaining COVID-19 protective measures on February 1, 2022.⁴⁹ Currently, Denmark does not require an immunity pass or health pass to enter venues; however, it does require masks to be worn in airports.

ENGLAND

England gradually lifted public health measures in January 2022 after experiencing a decreasing case rate since January 4, 2022. Currently, England no longer requires an immunity pass or health pass to enter venues or events, nor does it require its patrons to wear a mask in communal areas (both measures lifted on January 27, 2022). However, it is recommended to wear a mask in crowded, enclosed spaces.⁵⁰

FINLAND

On February 1, 2022, Finland started easing protective measures⁵¹ (e.g., lifted recommendation to limit gatherings, and increased capacity limit at food establishments) after experiencing a decreasing case rate since January 24, 2022. At this time, Finland has the following public health measures in place:⁵²

- Masks are recommended on public transport and in all indoor public spaces.
- Food and drink establishments have reduced hours and capacity limits.⁵¹
- Remote work is recommended.
- COVID-19 vaccines are mandatory for health and social care workers.⁵³

FRANCE

France strengthened its COVID-19 pass system from a health pass to an immunity pass on January 24, 2022, while lifting some public health measures (i.e., capacity limits, remote work mandate, and outdoor masking mandate) on February 2, 2022.⁵⁴ At this time, France has the following public health measures:⁵⁴

- An immunity pass is required for access to non-essential businesses for individuals 16 years and older. Its validity period is four months after vaccination. A health pass is required for individuals 12 – 15 years and individuals accessing medical establishments who do not have a valid immunity pass.⁵⁵
- Masks are required in all indoor spaces and public transport for individuals six years and older.
- Spectators at concerts have to be seated.
- Consumption of drinks and food is banned in cinemas.
- Only seated customers are able to consume food and drinks in bars and restaurants.
- Nightclubs remain closed.
- Workplaces are encouraged to permit employees to work from home, whenever possible.

GERMANY

Germany gradually tightened its health pass eligibility and immunity pass validity in January and February 2022 and extended its national public health measures on January 24, 2022 after experiencing an increasing case rate. At this time, Germany has the following public health measures:⁵⁶

- An immunity pass is required for non-essential settings (e.g., restaurants) including shopping (except convenience and grocery stores). Vaccinated individuals maintain a valid immunity pass for nine months post vaccination⁵⁷ and recovered individuals maintain a valid immunity pass for three months post infection. Unvaccinated individuals must present a negative COVID-19 test result to go to their workplace.
- Masks are required to be worn when physical distancing cannot be maintained.
- Masks and filtering face piece 2 (FFP2) respirators (similar to a N95 or KN95 mask) are mandatory for the general public on public transport and when shopping.
- Private gatherings for vaccinated people are limited to a maximum of 10 (excluding children up to 14 years old) and gatherings for unvaccinated individuals are limited to one household plus two people from another household (excluding children).
- Large-scale events are not allowed spectators.
- Nightclubs remain closed.
- Workplaces are encouraged to permit employees to work from home, whenever possible.

IRELAND

Ireland lifted most of its national public health measures, including a health pass for entry into venues, on January 22, 2022 after experiencing a decreasing case rate since January 12, 2022.⁵⁸ At this time, Ireland has the following public health measures:⁵⁸

- Face mask mandate for indoor settings and on public transit (for individuals 9 years and older).

ISRAEL

Israel did not change their national public health measures in January 2022. At this time, Israel has the following public health measures:

- A health pass is required in most indoor settings. Its validity period is six months from last vaccination (if completed series), 24 hours for a negative RAT result or 72 hours for a negative polymerase chain reaction (PCR) result, or six months if recovered from the infection.⁵⁹
- Masks are required in all indoor settings (except for permanent place of residence) and for outdoor gatherings with more than 50 people.^{60,61}
- Social gathering limits are determined based on a four-level traffic light model.^{62,63}
- Capacity limits are in place in malls and essential shops (e.g., stores selling hygiene products and grocery stores).⁶⁴

ITALY

On January 20, 2022 and February 2, 2022, Italy expanded the use of its health pass and immunity pass systems, respectively, after experiencing a plateauing case rate on January 14, 2022.⁶⁵ At this time, Italy has the following public health measures:⁶⁶

- An immunity pass applies to most indoor settings (e.g., gyms and restaurants) for individuals 12 years and older. It has a validity period of six months post-vaccination.³¹ A health pass is required for personal services and commercial activities (e.g., banks and post offices).⁶⁵
- Individuals are required to wear FFP2 masks both indoors and outdoors and on public transportation.
- Events involving gatherings in the open are prohibited.
- Indoor and outdoor sporting events have a capacity limit of 35% and 50%, respectively.
- Some venues (e.g., dance halls and discos) are closed.
- Vaccinations are mandatory for law enforcement, military, healthcare workers, pharmacists, and all school employees.^{67,68} There is also a general vaccine mandate for individuals 50 years and older.⁶⁹ This mandate requires individuals 50 years and older to be vaccinated to enter the workplace (previously, they were able to show proof of a negative test result).⁷⁰ There is also a 100 EURO fine for individuals in this age group that are not vaccinated.

NORWAY

On February 1, 2022, Norway lifted most of its protective measures (e.g., lifted its remote work mandate, removed capacity limits) after experiencing a plateauing case rate.⁷¹ At this time, Norway has the following public health measures:⁷²

- Face-masks are mandatory at all indoor public events and at locations where it is not possible to keep a distance of at least one meter from others (unless at an event while in designated seating or for employees where physical barriers have been put in place).
- Events and venues must ensure groups can maintain 1-meter distance from those not in their household.
- Workplaces are encouraged to permit employees to work from home, whenever possible.

PORTUGAL

On January 14, 2022, Portugal reopened its nightclubs, bars, and restaurants after a temporary closure for the holidays.⁷³ At this time, Portugal has the following public health measures:⁷⁴

- A health pass is required to access some non-essential businesses (e.g., restaurants and gyms) for individuals 12 years and older. Validity for proof of negative results include a PCR test within 72 hours, a rapid test within 48 hours, or a self-test done at the entrance.⁷³
- Face masks are mandatory in all indoor spaces and on public transportation.
- Capacity limit in commercial establishments (e.g., shops) is one person per five square meters.⁷⁵

THE NETHERLANDS

The Netherlands gradually eased some national public health measures (e.g., reopened bars, restaurants, and non-essential stores) in January 2022 while experiencing an increasing case rate. At this time, the Netherlands has the following public health measures:^{76,77}

- A health pass is required to enter most venues.
- Face masks remain mandatory in indoor public spaces and when social distancing cannot be maintained for anyone 13 years and older. Non-medical single-use face masks are recommended.
- The general public are only permitted up to four visitors per day indoors or groups of four outdoors.
- Non-essential stores and events with assigned seating have reduced hours and reduced capacities.
- Large-scale events without assigned seating (e.g., festivals) are not permitted.
- Workplaces are encouraged to permit employees to work from home, whenever possible.

UNITED STATES (US)

- It was announced that 400 million high-grade N95 masks would be given to Americans for free beginning on January 31, 2022 through pharmacies and community health centres.^{78,79}
- Since public health measures are decided at the state-level, the states of California and New York are described below as examples from the US.

CALIFORNIA, US

California's public health measures introduced few new public health measures in January 2022 (e.g., tightened visitation requirements to long-term care facilities). At this time, California has the following public health measures:

- Masks are required indoors including workplaces.⁷⁹
- Participants of indoor "mega events" (i.e., events with more than 500 people) are required to show either proof of vaccination or a negative COVID-19 test.⁸⁰
- All health care workers and students/staff at some post-secondary schools are required to get the COVID-19 vaccine booster shot.⁸¹
- Visitors to a long-term care facility must show proof of a negative test result (regardless of vaccination status).⁸²

NEW YORK STATE, US

New York State slightly tightened public health measures in January 2022 (e.g., introduced a booster dose mandate for health care workers and allowed remote learning for students).^{83,84} At this time, New York State has the following public health measures:

- Masks are required in indoor public places.⁸⁵
- Teachers can allow students to study remotely.⁸⁴
- All health care workers are required to get a booster dose.⁸³

Summary of Findings

Table 1. Overview of Public Health Measures Implemented in Select Jurisdictions, as of February 2, 2022

Jurisdiction	Immunity Pass* or Health Pass**	Mask Mandate	Capacity/ Gathering Limits	Setting- specific Closures	Remote Work
Denmark	No	No	No	No	No
England	No	Rec	No	No	No
Finland	No	Rec	Yes	No	Rec
France	Yes	Yes	No	Yes	Rec
Germany	Yes	Yes	Yes	Yes	Rec
Ireland	No	Yes	No	No	No
Israel	Yes	Yes	Yes	No	No
Italy	Yes	Yes	Yes	Yes	No
Norway	No	Yes	No	No	Rec
Portugal	Yes	Yes	Yes	No	No
Netherlands	Yes	Yes	Yes	Yes	Rec
California	No	Yes	No	No	No
New York	No	Yes	No	No	No

Table Legend: “Yes” indicates the measure is currently mandated. “Rec” indicates the measure is recommended.

“No” indicates the measure is not currently mandated, nor officially recommended.

*Immunity Pass: a system that requires proof of vaccination and/or recovery.

**Health Pass: a system that requires proof of vaccination, recovery, and/or negative test result.

Discussion

Throughout January 2022, most of the jurisdictions in this scan have started to ease or lift public health measures that were introduced in response to Omicron. Specifically, Ireland, England, Denmark, and Norway removed most or all measures. Jurisdictions have cited a high vaccination rate⁸⁶ or stabilizing hospitalizations as a reason for easing public health measures.^{71,87} Jurisdictions in this scan experiencing a sustained increasing number of COVID-19 hospitalizations are maintaining more stringent measures (except Denmark).

At the same time as jurisdictions eased public health measures, governments also emphasized vaccination as a key measure to control COVID-19.^{56,88} In practice, this involved jurisdictions encouraging vaccination throughout January 2022 by means of increasing vaccination eligibility, tightening immunity pass and health pass eligibility and validity, and introducing vaccine mandates. These efforts may be reflected in the large increase in booster doses across jurisdictions since the previous scan. There remains a visible plateauing of vaccination coverage once populations reach >70% of total population coverage. Of note, England and Denmark are two jurisdictions in the scan to lift most public health measures. Ireland also removed most of its public health measures with the exception of mandatory masking, and also has a relatively high additional dose coverage, at 55%, compared to the other jurisdictions.

At the time of writing, Ontario generally has a similar additional dose coverage (55% of population 18 years and older)⁷ and public health measures in place compared to jurisdictions experiencing increased health care system strain. There are some exceptions where other jurisdictions have stricter measures: for example, some jurisdictions have already implemented (e.g., Italy) or are considering (e.g., Germany and Ireland) general vaccine mandates.^{89,90} Ontario has workplace-specific vaccine mandates, but does not have a general vaccine mandate for the population. Further, some jurisdictions have strict validity criteria for their immunity passes with an expiration set at a certain number of months post vaccination compared to Ontario with no expiration after being fully vaccinated. Ontario can continue to monitor other jurisdictions to gain insight on how public health measures impact COVID-19 burden.

Implications For Practice

- Due to changes in PCR testing eligibility in Ontario on December 31, 2021, and lack of rapid antigen tests (RAT), current surveillance strategies are unable to capture the true epidemiology of SARS-CoV-2. Current indicators of COVID-19 burden such as hospitalizations, ICU admissions, and death will continue to be key indicators to monitor moving forward; however, they are lagging indicators. In the absence of accurate case counts through rapid or molecular tests there is a need for a reliance on new and/or alternative data sources to estimate the prevalence of SARS-CoV-2 in the population (e.g., waste water surveillance). These indicators can be monitored to examine the impact of loosening of public health protective measures. Triangulation across new indicators can provide greater confidence in the estimates.
- A multi-phased, gradual lifting of public health measures in Ontario would allow for close monitoring of key burden of COVID-19 indicators (e.g., hospitalizations, ICU admissions, and deaths) to ensure a continued downward trajectory before further loosening of protective measures. It will also be important to continuously monitor other jurisdictions, many of which relaxed measures before Ontario, to see if there is any subsequent increased demand on their health care system.
- There remain many unknowns related to the potential trajectory of the pandemic in Ontario for winter 2022 and into spring 2022, which are important to consider in relation to a benefit and/or need for community-based public health measures.^{91,92} The emergence of the BA.2 sub-lineage introduces additional unknowns and therefore risks to anticipation of a decline in SARS-CoV-2 burden.⁹³ A gradual approach to removal of public health measures across multiple settings can be valuable to mitigate risk of resurgence and health system impacts.

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