Changes to Public Health Measures and COVID-19 Epidemiology in Select Jurisdictions

November 5, 2021

Key Findings

- There has been heterogeneity in the approach to public health measures in jurisdictions with similar rates of full vaccination coverage to Ontario, with variation in the implementation and use of vaccine certificates and masking policies, two key measures currently in place in Ontario. Some jurisdictions are enacting locally implemented public health measures (e.g., masking in certain settings, capacity limits) to respond to changes in Coronavirus Disease 2019 (COVID-19) epidemiology at the local level (e.g., England, Finland, Germany, Norway, the United States [US]), however the impact and effectiveness of these local approaches remains unclear.

- In the jurisdictions reviewed, different contexts illustrate different approaches with some jurisdictions are lifting nearly all public health measures (Denmark, England, Norway), some are lifting select measures and extending the remaining measures (Finland, Ireland, Portugal), some are increasing measures (France, Israel, California, New York State), and other jurisdictions are removing and implementing different public health measures (Germany, Italy).

- Despite rates of fully vaccinated coverage of >65%, in the same range as Ontario, many jurisdictions are still implementing public health measures in the context of the Delta variant.

- Across the jurisdictions reviewed at this time, there was no consistent relationship between lifting or implementing measures, and trends in COVID-19 case, hospitalization and death rates in the following three weeks. Further monitoring of this relationship will be helpful to inform future learnings for Ontario.

Objectives and Scope

This environmental scan aims to examine the changes in public health measures for select relevant jurisdictions (i.e., Denmark, England, Finland, France, Germany, Ireland, Israel, Italy, Norway, Portugal, US), as well as epidemiological trends before and after the changes (e.g., COVID-19 cases, hospitalizations, deaths). Additional contextual factors (e.g., vaccination rates, variants of concern [VOCs], and status of masking and vaccine certificate systems) are also included where possible.

Background

As of October 31, 2021, 78% of the total population in Ontario had received at least one dose of a COVID-19 vaccine, and 74.8% of the total population was fully vaccinated. As of September 25, 2021, the Delta variant (B.1.617.2, first identified in India) remains the dominant variant in Ontario accounting for 99.2% of cases sequenced. This high prevalence is concerning as the Delta variant has increased disease severity and transmissibility (i.e., higher viral load and potentially shorter incubation period),
compared with previous severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) strains, after controlling for other variables. Emerging data also indicate that the prevalence and risk of breakthrough cases caused by the Delta variant is higher than those caused by the Alpha variant (B.1.1.7, first identified in the United Kingdom [UK]). Recent COVID-19 epidemiology for Ontario can be found in the table below.

### Table 1: Epidemiology in relation to increasing public health measures in Ontario

<table>
<thead>
<tr>
<th>Date</th>
<th>Rolling 7-day average of new cases per 100,000 people</th>
<th>Number of COVID-19 patients in hospital</th>
<th>Number of new deaths reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 8, 2021</td>
<td>5.02</td>
<td>375</td>
<td>16</td>
</tr>
<tr>
<td>September 15, 2021</td>
<td>4.96</td>
<td>346</td>
<td>5</td>
</tr>
<tr>
<td>September 22, 2021*</td>
<td>4.75</td>
<td>299</td>
<td>7</td>
</tr>
<tr>
<td>September 29, 2021</td>
<td>4.19</td>
<td>292</td>
<td>8</td>
</tr>
<tr>
<td>October 6, 2021</td>
<td>3.94</td>
<td>280</td>
<td>14</td>
</tr>
<tr>
<td>October 13, 2021</td>
<td>3.43</td>
<td>242</td>
<td>12</td>
</tr>
</tbody>
</table>

*September 22, 2021: proof of vaccination became mandatory for individuals in Ontario to enter certain businesses and settings.

The Ontario government has implemented various public health measures since the beginning of the COVID-19 pandemic (e.g., mandatory masking, physical distancing, limits on social gatherings). On September 22, 2021, proof of vaccination became mandatory for individuals in Ontario to enter certain businesses and settings (e.g., indoor dining, large sporting events, gyms, bars). An enhanced vaccine certificate and verification app came into effect on October 22, 2021. As Ontario navigates the next stage of the COVID-19 pandemic, it can be helpful to track changes to public health measures and epidemiology in jurisdictions with similar contexts (e.g., vaccination coverage, type of vaccines, dominant SARS-CoV-2 variants etc.), in order to learn from their experiences.

### Methods

This environmental scan reports on information up to November 5, 2021. It was informed by previous Public Health Ontario (PHO) reports and keyword searches in the Google search engine and government websites for literature related to public health measures, COVID-19 epidemiology and vaccination coverage. A formal database search was not conducted due to time constraints; thus, some relevant articles may not be included.

In order to track changes in the epidemiology and identify potential (crude) trends, this scan reports publically available information for the case rate, hospitalization rate and death rate at two weeks before a recent public health measure change, and three weeks after the same public health measure change (if available), in select jurisdictions. Two weeks before was selected as a means to identify any trend leading up to the change in public health measure(s). Three weeks after the public health measure change was selected due to scoping constraints and based on evidence that a median of 8 and 17 days is required to reach 60% of the maximum reduction in growth after introducing measures and after relaxing a public health measure, respectively.7

Changes to public health measures and COVID-19 epidemiology in select jurisdictions
Results

Jurisdictions that largely removed public health measures

DENMARK

- As of October 22, 2021, 77% of the total population had received at least one dose of a COVID-19 vaccine and 76% were fully vaccinated.  
- As of October 9, 2021, the Delta variant accounted for 100% of cases.

PUBLIC HEALTH MEASURES

- Denmark introduced an immunity passport, called the Coronapas, in March 2021 to facilitate the gradual easing of public health measures. The Coronapas was no longer required by law in Denmark as of September 1, 2021, except in nightclubs, where it was no longer required as of September 10, 2021. The Coronapas is currently only used for travel and if companies or private institutions require it.  
- Masks are still required in airports in Denmark, and individuals are advised to wear a face mask or shield at test centres and hospitals. Masks are no longer required on public transportation.

Table 2: Epidemiology in relation to removing public health measures in Denmark

<table>
<thead>
<tr>
<th>Date</th>
<th>Rolling 7-day average new cases per 100,000 people</th>
<th>Number of COVID-19 patients in hospital</th>
<th>Rolling 7-day average deaths per 100,000 people</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 27, 2021</td>
<td>16.68</td>
<td>126</td>
<td>0.032</td>
</tr>
<tr>
<td>September 3, 2021</td>
<td>13.41</td>
<td>137</td>
<td>0.027</td>
</tr>
<tr>
<td>September 10, 2021</td>
<td>9.12</td>
<td>132</td>
<td>0.052</td>
</tr>
<tr>
<td>September 17, 2021</td>
<td>6.41</td>
<td>105</td>
<td>0.034</td>
</tr>
<tr>
<td>September 24, 2021</td>
<td>5.90</td>
<td>87</td>
<td>0.044</td>
</tr>
<tr>
<td>October 1, 2021</td>
<td>7.43</td>
<td>83</td>
<td>0.047</td>
</tr>
</tbody>
</table>

*September 10, 2021: the Coronapas was no longer required in venues, including nightclubs.

- The number of COVID-19 patients in hospital declined in the three weeks following removal of the Coronapas. Case and death rates have varied.

NORWAY

- As of October 22, 2021, 78% of the total population had received at least one dose of a COVID-19 vaccine and 69% were fully vaccinated.  
- In the week ending on October 9, 2021, 90% of cases were the Delta variant.
PUBLIC HEALTH MEASURES

- Effective September 25, 2021, Norway removed all domestic public health restrictions (including their vaccine certificate system), apart from the requirement of isolation if an individual tests positive for COVID-19. Although national-level measures are lifted, municipalities have primary responsibility for implementing public health measures and adopting local regulations if the situation calls for it.\textsuperscript{16}

- There is no longer use of a vaccine certificate system, and there are no longer national recommendations for the use of face masks in public. Face masks may be recommended for use in addition to but not instead of other public health measures.\textsuperscript{17} As of October 18, face masks are no longer required on domestic flights.\textsuperscript{18}

Table 3: Epidemiology in relation to removal of public health measures in Norway

<table>
<thead>
<tr>
<th>Date</th>
<th>Rolling 7-day average new cases per 100,000 people\textsuperscript{13}</th>
<th>Number of COVID-19 patients in hospital\textsuperscript{14}</th>
<th>Rolling 7-day average deaths per 100,000 people\textsuperscript{15}</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 11, 2021</td>
<td>24.28</td>
<td>September 10: 116</td>
<td>0.013</td>
</tr>
<tr>
<td>September 18, 2021</td>
<td>16.40</td>
<td>September 17: 107</td>
<td>0.037</td>
</tr>
<tr>
<td>September 25, 2021*</td>
<td>12.52</td>
<td>September 24: 96</td>
<td>0.023</td>
</tr>
<tr>
<td>October 2, 2021</td>
<td>9.59</td>
<td>October 1: 94</td>
<td>0.029</td>
</tr>
<tr>
<td>October 9, 2021</td>
<td>7.98</td>
<td>October 8: 105</td>
<td>0.026</td>
</tr>
<tr>
<td>October 16, 2021</td>
<td>7.49</td>
<td>October 15: 95</td>
<td>0.034</td>
</tr>
</tbody>
</table>

*September 25, 2021: all domestic public health restrictions were removed.

- The COVID-19 case rate declined in the three weeks following removal of all measures. The number of COVID-19 patients in hospital and death rates varied in the weeks after removal of measures.

ENGLAND

- As of October 20, 2021, 73.4% of the total population had received at least one dose of the COVID-19 vaccine\textsuperscript{19} and 67.4% were fully vaccinated.\textsuperscript{20}

- The Delta variant accounted for approximately 99.8% of sequenced and 91.4% of genotyped cases from September 12, 2021 to October 11, 2021.\textsuperscript{21}

PUBLIC HEALTH MEASURES

- On September 28, 2021, the government proposed a Plan B under the the Fall and Winter Plan that would only be used if it is needed to protect the National Health Service (NHS). Implementation of this plan is at the discretion of the government, and no thresholds were identified in this scan. This contingency plan includes introducing mandatory COVID-19 vaccination certification in some riskier settings, legally mandating face coverings in certain settings, and communicating clearly and urgently to the public if the risk level increases.\textsuperscript{22}
On October 21, 2021, it was reported that a section of Plan B (i.e., Enduring Transmission Area support) is set to be implemented in four local jurisdictions (Leicester, Bolton, Luton and Blackburn and Darwen) in the coming days and an additional 15 local jurisdictions (Bradford, Rochdale, Slough, Bristol, Peterborough, Oldham, Kirklees, Preston, Hartlepool, Tameside, Middlesbrough, Burnley, Ealing, Manchester and Hyndburn) in the next month. This is primarily to support testing and the NHS; public health measures in Plan B (i.e., masking, work from home, and social distancing) will not be implemented yet.\textsuperscript{23,24}

The government continues to encourage the voluntary use of certification and the NHS COVID Pass. Many events and venues use certification on a voluntary basis.\textsuperscript{25}

As of July 19, 2021, there is no legal requirement to wear a mask in indoor settings or on public transport, but masks are still recommended in crowded or enclosed spaces.\textsuperscript{26}

### Table 4: Epidemiology in relation to anticipating increased public health measures in England

<table>
<thead>
<tr>
<th>Date</th>
<th>Rolling 7-day average new cases per 100,000 people\textsuperscript{27}</th>
<th>Number of COVID-19 patients in hospital\textsuperscript{28}</th>
<th>7-day average number of deaths of people with a positive COVID-19 test and died within 28 days\textsuperscript{29}</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 6, 2021</td>
<td>348.5</td>
<td>5,009</td>
<td>83.4</td>
</tr>
<tr>
<td>October 13, 2021</td>
<td>424.8</td>
<td>5,246</td>
<td>91.9</td>
</tr>
<tr>
<td>October 20, 2021*</td>
<td>490.1</td>
<td>October 21: 6,366</td>
<td>106.6</td>
</tr>
</tbody>
</table>

\*October 21, 2021: reported that part of the Plan B will soon be implemented in some local jurisdictions

### Jurisdictions lifting select public health measures and extending others

#### FINLAND

- As of October 22, 2021, 76% of the total population had received at least one dose of a COVID-19 vaccine and 68% were fully vaccinated.\textsuperscript{8}

- In the week ending on October 9, 2021, 100% of cases were the Delta variant.\textsuperscript{9}

### PUBLIC HEALTH MEASURES

- For the first year of the pandemic, Finland implemented public health measures that applied to the general population, regardless of immunity status. Finland has not created a national immunity status certificate/passport, but the European Union (EU) Digital COVID Certificate can be used by private and public operators to permit access to their premises/services if they are subject to restrictions by central government, regional state administrative authorities and municipalities. The EU Digital Certificate would only serve as an alternative health security measure when the event or facilities in question were subject to restrictions.\textsuperscript{30}

- Finland planned to lift COVID-19 restrictions once at least 80% of people >12 years of age had received two doses of a COVID-19 vaccine or had the opportunity to receive both doses.\textsuperscript{31} In the event of regional clusters of infection, they would primarily be managed through local and regional measures in line with Finland’s Communicable Diseases Act.
• By September 30, 2021, 72.5% of > 12-year-olds and 63.5% of the entire population were fully vaccinated. However, the first weekend of October 2021, COVID-19 public health measures were lifted, with some exceptions:
  • The guidelines on good hygiene (e.g., wash your hands and cough in your sleeve) are still in effect.32
  • Restrictions on restaurants in areas with community transmission.33
  • Masks are recommended on public transport and indoor spaces where distancing cannot be maintained. Masks are recommended outdoors in crowded situations of long duration in which movement is difficult.34
  • The Finnish government has stated they do not intend to introduce vaccination mandates.35
  • The recommendation to work remotely was planned to end October 15, 2021.

**Table 5: Epidemiology in relation to removal of some public health measures in Finland**

<table>
<thead>
<tr>
<th>Date</th>
<th>Rolling 7-day average new cases per 100,000 people</th>
<th>Number of COVID-19 patients in hospital</th>
<th>Rolling 7-day average deaths per 100,000 people</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 17, 2021</td>
<td>8.12</td>
<td>98</td>
<td>0.023</td>
</tr>
<tr>
<td>September 24, 2021</td>
<td>7.11</td>
<td>104</td>
<td>0.034</td>
</tr>
<tr>
<td>October 1, 2021*</td>
<td>9.10</td>
<td>122</td>
<td>0.034</td>
</tr>
<tr>
<td>October 8, 2021</td>
<td>9.18</td>
<td>171</td>
<td>0.046</td>
</tr>
<tr>
<td>October 15, 2021</td>
<td>10.86</td>
<td>194</td>
<td>0.052</td>
</tr>
</tbody>
</table>

*October 1, 2021: public health measures were lifted with some exceptions.

• The COVID-19 case rate, number of patients in hospital, and death rate increased in the two weeks following removal of measures.

**IRELAND**

• As of October 22, 2021, 77% of the total population had received at least one dose of a COVID-19 vaccine and 76% were fully vaccinated.8

• In the week ending on October 9, 2021, 100% of cases were the Delta variant.9

**PUBLIC HEALTH MEASURES**

• Ireland announced easing of some restrictions effective October 22, 2021, including reopening nightclubs and similar entertainment venues to full capacity, and lifting the requirement for bars and restaurants to close at 23:30.36 However, the government has stated that some public health measures are extended due to the high level of disease in the community and the uncertain trajectory of the pandemic. Measures that remain in place include:
• EU Digital COVID Certificate (COVID-19 pass) (vaccine or recovery certificate) is required for indoor hospitality (e.g., bars, restaurants, and for events).

• Face masks are mandatory in retail, banks, in all forms of public transport and for customer-facing workers in cafés, bars and restaurants. Masks are also recommended in crowded workplaces, places of worship, crowded outdoor spaces, and in circumstances where two metres distance cannot be maintained.\(^{37}\)

• Social distancing.

• Table service only in hospitality settings (maximum of 10 adults per table, and maximum of 15 including children).

• Collection of contact tracing data.

• Indoor live music, drama, live entertainment and sporting events audience/spectators should be fully seated (standing permitted at your seat).

• Specific guidance will be developed for nightclubs setting out appropriate protective measures. This will involve COVID-19 passes, contact tracing data collection and wearing of face masks except when eating, drinking and dancing.

• COVID-19 passes and fixed capacity limits will not apply for outdoor events, but sectors should ensure appropriate protective measures are in place.

• Organizers of indoor and outdoor group activities should ensure that appropriate protective measures are in place, and where indoor groups have a mix of vaccinated and unvaccinated people indoors, cohorts of six should be used. Fixed capacity limits will not apply to these indoor and outdoor group activities.

• Religious services and weddings can proceed without capacity limits but all other protective measures should be in place.

• Return to workplaces will continue on a phased and cautious basis for specific business requirements.

Table 6: Epidemiology in relation to easing of public health measures in Ireland

<table>
<thead>
<tr>
<th>Date</th>
<th>Rolling 7-day average new cases per 100,000 people(^{13})</th>
<th>Number of COVID-19 patients in hospital(^{38})</th>
<th>Rolling 7-day average deaths per 100,000 people(^{15})</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 9, 2021</td>
<td>26.37</td>
<td>353</td>
<td>0.089</td>
</tr>
<tr>
<td>October 16, 2021</td>
<td>34.29</td>
<td>406</td>
<td>0.074</td>
</tr>
<tr>
<td>October 22, 2021*</td>
<td>40.63</td>
<td>457</td>
<td>0.181</td>
</tr>
</tbody>
</table>

*October 22, 2021: several restrictions were eased (see above).
PORTUGAL

- As of October 25, 2021, 88% of the total population had received at least one dose of a COVID-19 vaccine and 86% were fully vaccinated.\(^\text{39}\)

- In the week ending on October 9, 100% of cases were the Delta variant.\(^\text{9}\)

PUBLIC HEALTH MEASURES

- Mask-wearing remains compulsory on public transport, at large events, in nursing homes, hospitals, shopping malls and hypermarkets (combination of department and grocery store). Masks ceased being compulsory outdoors in the last week of September.\(^\text{40,41}\)

- Effective October 1, 2021, digital certificates or negative tests are no longer mandatory in restaurants, hotels and gyms, but are still required for air or sea travel, or to attend major cultural or sporting events.\(^\text{40,42}\)

- Also effective October 1, 2021,
  - There are no restrictions on the number of people allowed to sit together in restaurants and cafes, or to attend cultural events, weddings and baptisms.\(^\text{40,41}\)
  - Nightclubs and bars are allowed to reopen. However, customers have to show a digital vaccination certificate or a negative COVID-19 test.

Table 7: Epidemiology in relation to further easing of public health measures in Portugal

<table>
<thead>
<tr>
<th>Date</th>
<th>Rolling 7-day average new cases per 100,000 people(^\text{13})</th>
<th>Number of COVID-19 patients in hospital(^\text{14})</th>
<th>Rolling 7-day average deaths per 100,000 people(^\text{15})</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 18, 2021</td>
<td>9.41</td>
<td>457</td>
<td>0.069</td>
</tr>
<tr>
<td>September 25, 2021</td>
<td>6.99</td>
<td>408</td>
<td>0.070</td>
</tr>
<tr>
<td>October 1, 2021*</td>
<td>6.10</td>
<td>357</td>
<td>0.045</td>
</tr>
<tr>
<td>October 8, 2021</td>
<td>5.81</td>
<td>332</td>
<td>0.067</td>
</tr>
<tr>
<td>October 15, 2021</td>
<td>6.49</td>
<td>301</td>
<td>0.072</td>
</tr>
<tr>
<td>October 22, 2021</td>
<td>6.92</td>
<td>284</td>
<td>0.066</td>
</tr>
</tbody>
</table>

*October 1, 2021: further easing of public health measures (e.g., lifting capacity limits in some settings).

- The number of COVID-19 patients in hospital decreased in the three weeks following removal of several measures. The case rate and death rate varied after removal of these measures.
Jurisdictions that increased public health measures

FRANCE

- As of October 22, 2021, 76% of the total population had received at least one dose of a COVID-19 vaccine and 68% were fully vaccinated. 3.4% of the population have received an additional dose.8
- In the week ending on October 9, 2021, 100% of cases were the Delta variant.9

PUBLIC HEALTH MEASURES

- France implemented an immunity certificate system, called the Health Pass, in July 2021.44 Before September 30, 2021, teenagers were exempt from the COVID health pass rules. However, effective September 30, 2021, the COVID health pass is mandatory for individuals aged 12 years and older.45
- The COVID health pass was set to expire on September 30, 2021. On September 29, 2021, the health pass was extended to November 15,46 and it was reported on October 13, 2021, that the health pass would be extended longer term until July 31, 2022.47
- Masking is still compulsory in enclosed public spaces, at work, on public transport or, by decision of the local authorities, in outdoor areas with a high density of people, and is recommended when physical distancing cannot be maintained.48

Table 8: Epidemiology in relation to increasing public health measures in France

<table>
<thead>
<tr>
<th>Date of Measurement</th>
<th>Rolling 7-day average new cases per 100,000 people13</th>
<th>Number of COVID-19 patients in hospital14</th>
<th>Rolling 7-day average deaths per 100,000 people15</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 16, 2021</td>
<td>12.54</td>
<td>9,297</td>
<td>0.121</td>
</tr>
<tr>
<td>September 23, 2021</td>
<td>9.82</td>
<td>8,237</td>
<td>0.117</td>
</tr>
<tr>
<td>September 30, 2021*</td>
<td>7.91</td>
<td>7,565</td>
<td>0.087</td>
</tr>
<tr>
<td>October 7, 2021</td>
<td>7.69</td>
<td>6,903</td>
<td>0.079</td>
</tr>
<tr>
<td>October 14, 2021</td>
<td>6.81</td>
<td>6,523</td>
<td>0.056</td>
</tr>
<tr>
<td>October 21, 2021</td>
<td>7.30</td>
<td>6,453</td>
<td>0.048</td>
</tr>
</tbody>
</table>

*September 30, 2021: the COVID health pass was mandated for individuals aged 12 years and older.

- The number of COVID-19 patients in hospital and death rate decreased in the three weeks following the extension of measures. The case rate varied after extension of these measures.

ISRAEL

- As of October 22, 2021, 69% of the total population had received at least one dose of a COVID-19 vaccine and 63% were fully vaccinated. 43% of the population has received an additional dose.8
• As of October 28, 2021, the GISAID tracking of variants site reported 96.4% of cases were “VOC Delta GK (B.1.617.2+AY.) first detected in India” in the previous four weeks.  

PUBLIC HEALTH MEASURES

• Effective October 3, 2021, Israel’s COVID Green Pass is valid for only six months after a person’s last vaccine shot.  

PUBLIC HEALTH MEASURES

• For most Israelis, this means requiring a third or ‘booster’ shot. Individuals who have recently recovered from COVID-19 and have received one dose of vaccine are also eligible for the Green Pass. A temporary Green Pass can be obtained through a negative COVID-19 test result, which must be paid for by the individual unless they are not eligible for vaccination. The Green Pass is currently required to enter indoor venues.

• Masks are required in all indoor settings, except for permanent place of residence, and are recommended during large outdoor gatherings.

Table 9: Epidemiology in relation to increasing public health measures in Israel

<table>
<thead>
<tr>
<th>Date</th>
<th>Rolling 7-day average new cases per 100,000 people</th>
<th>Number of COVID-19 patients in hospital</th>
<th>Rolling 7-day average deaths per 100,000 people</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 19, 2021</td>
<td>90.81</td>
<td>1,383</td>
<td>0.257</td>
</tr>
<tr>
<td>September 26, 2021</td>
<td>61.89</td>
<td>1,176</td>
<td>0.218</td>
</tr>
<tr>
<td>October 3, 2021*</td>
<td>38.88</td>
<td>993</td>
<td>0.237</td>
</tr>
<tr>
<td>October 10, 2021</td>
<td>25.33</td>
<td>756</td>
<td>0.161</td>
</tr>
<tr>
<td>October 17, 2021</td>
<td>17.24</td>
<td>607</td>
<td>0.128</td>
</tr>
<tr>
<td>October 24, 2021</td>
<td>10.99</td>
<td>457</td>
<td>0.081</td>
</tr>
</tbody>
</table>

*October 3, 2021: Israel updated the COVID Green Pass to be valid for six months after an individual’s last vaccine dose.

• The COVID-19 case rate, number of patients in hospital, and death rate decreased in the three weeks following tightening eligibility for the Green Pass.

UNITED STATES (US)

• As of October 22, 2021, 66% of the total population had received at least one dose of a COVID-19 vaccine and 57% were fully vaccinated. 3.5% of the population had received an additional dose.

• As of October 28, 2021, the GISAID tracking of variants site reported 95.2% of cases were “VOC Delta GK (B.1.617.2+AY.) first detected in India” in the previous four weeks.

PUBLIC HEALTH MEASURES

• There is no national level document for immunity status in the US; however, some states have implemented their own certificate system. Most public health measures also vary by state, and even at the county and city level within states.
• The US Centers for Disease Control and Prevention (CDC) advises that masks be worn in indoor public spaces (regardless of vaccination status) if you are in an area of substantial or high transmission (as defined by the CDC). Masks are also required on all public transportation across the US.54

• The states of California and New York are described below as examples from the US.

**CALIFORNIA**

**PUBLIC HEALTH MEASURES (STATE-LEVEL ONLY)**

• California does not have a state-wide vaccine certificate system; however, some cities (e.g., Los Angeles) have implemented their own certificate system.55

• Effective August 12, 2021, a new public health order was implemented requiring all school staff to either show proof of full vaccination or be tested at least once per week.56 California also implemented mask requirements in K-12 schools when indoors.57

• On October 1, 2021, California became the first state to announce COVID-19 vaccine mandates for students.56 The Governor announced plans to add the COVID-19 vaccine to the list of vaccinations required to attend school in-person when the vaccine receives full approval from the Food and Drug Administration (FDA) for middle and high school grades.

• California requires unvaccinated individuals to wear masks in indoor public settings and businesses. Additionally, masks are required for all individuals (regardless of vaccination status) on public transit, schools, emergency shelters, healthcare settings, correctional facilities, homeless shelters, and long term care settings.57

**Table 10: Epidemiology**58 in relation to increasing public health measures in California

<table>
<thead>
<tr>
<th>Date</th>
<th>Rolling 7-day average new cases per 100,000 people</th>
<th>Number of COVID-19 patients in hospital</th>
<th>Rolling 7-day average deaths per 100,000 people</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 29, 2021</td>
<td>19.3</td>
<td>4,103</td>
<td>0.1</td>
</tr>
<tr>
<td>August 5, 2021</td>
<td>26.1</td>
<td>August 6: 5,953</td>
<td>0.1</td>
</tr>
<tr>
<td>August 12, 2021*</td>
<td>August 11: 28.8</td>
<td>7,063</td>
<td>August 11: - 0.060</td>
</tr>
<tr>
<td>August 19, 2021</td>
<td>32.2</td>
<td>8,236</td>
<td>0.1</td>
</tr>
<tr>
<td>August 26, 2021</td>
<td>30.7</td>
<td>August 27: 8,675</td>
<td>0.2</td>
</tr>
<tr>
<td>September 2, 2021</td>
<td>September 1: 35.2</td>
<td>September 3: 8,454</td>
<td>September 1: 0.2</td>
</tr>
</tbody>
</table>

*August 12, 2021: all school staff must either show proof of vaccination or be tested at least once per week.

• The COVID-19 death rate increased in the three weeks following addition of measures. The case rate and number of patients in hospital varied after addition of these measures.
NEW YORK STATE
PUBLIC HEALTH MEASURES (STATE-LEVEL ONLY)

- On September 15, 2021, the Governor of New York State announced several mask mandates, applying to:
  - New York State Office of Children and Family Services-licensed and –registered child care centers, home-based group family and family child care programs, after-school child care programs and enrolled legally exempt group programs during operational hours.
  - Congregate programs and facilities licensed, registered, operated, certified or approved by the Office of Mental Health, the Office of Addiction Services and Supports, the Office for People With Developmental Disabilities, Office of Children and Family Services and the Office of Temporary and Disability Assistance. This includes but is not limited to certified residential and day programs, inpatient and outpatient mental health facilities, substance abuse programs, juvenile detention programs, juvenile residential facilities, congregate foster care programs, runaway and homeless youth, domestic violence and other shelter programs.
  - These requirements apply to anyone medically able to tolerate wearing a mask, regardless of vaccination status.
  - On October 5, 2021, the Governor announced expansion of the healthcare worker vaccine mandate to include those working in certain facilities offering health care to individuals served by the Office of Mental Health and the Office for People with Developmental Disabilities. These staff will be required to show proof of at least the first dose of a COVID-19 vaccine series by November 1, 2021, without a test-out option. And before that date, staff will be required to submit to weekly testing, if unvaccinated, beginning October 12, 2021.
  - The state of New York does not have a mandatory state-wide vaccine certificate; however, some cities (e.g., New York City) have implemented their own certificate system.

<table>
<thead>
<tr>
<th>Date</th>
<th>Rolling 7-day average new cases per 100,000 people</th>
<th>Number of COVID-19 patients in hospital</th>
<th>Rolling 7-day average deaths per 100,000 people</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 1, 2021</td>
<td>25.29</td>
<td>2,319</td>
<td>26</td>
</tr>
<tr>
<td>September 8, 2021</td>
<td>27.64</td>
<td>2,427</td>
<td>30</td>
</tr>
<tr>
<td>September 15, 2021*</td>
<td>34.43</td>
<td>2,374</td>
<td>37</td>
</tr>
<tr>
<td>September 22, 2021</td>
<td>24.63</td>
<td>--</td>
<td>September 23: 35</td>
</tr>
<tr>
<td>September 29, 2021</td>
<td>24.28</td>
<td>--</td>
<td>41</td>
</tr>
<tr>
<td>October 6, 2021*</td>
<td>26.83</td>
<td>--</td>
<td>35</td>
</tr>
</tbody>
</table>

*September 15, 2021: mask mandates were introduced in a number of settings
*October 5, 2021: extension of healthcare worker vaccine mandate.
• The COVID-19 case rate and death rate varied after the addition of some masking measures.

Jurisdictions adjusting different public health measures at similar points in time

GERMANY
• As of October 22, 2021, 69% of the total population had received at least one dose of a COVID-19 vaccine and 66% were fully vaccinated. 1.8% of the population have received an additional dose.8
• In the week ending on October 9, 2021, 100% of cases were the Delta variant.9

PUBLIC HEALTH MEASURES
• On August 23, 2021, Germany’s 3G (‘geimpft’ – vaccinated, ‘genesen’ – recovered, and ‘getestet’– tested) COVID Health Pass system came into effect.64 The 3G rule applies in areas where the 7-day incidence rate of COVID-19 cases rises above 35 cases per 100,000 people.65 If the number is below that, it is up to the state to decide whether to implement the rule regardless. The 3G rule applies in general to all hospitals and nursing home settings regardless of the incidence rate.
• Masks are mandatory for the general public on public transport and when shopping.66
• Effective October 1, 2021, the German states of North Rhine-Westphalia, Bavaria and Saarland lifted most of their remaining COVID-19 restrictions.67
  • In the most populous state, North Rhine-Westphalia, masks are no longer required in outdoor public spaces, but they are still formally recommended. The cap on the number of people allowed to attend soccer matches, stadiums and concerts is also lifted. Venues will also begin accepting rapid antigen tests (not only PCR) but the tests must be no more than six hours old.
  • In Bavaria, discos and brothels have re-opened and the "3G rule" will apply. Bavaria also lifted a ban on public festivals and mask requirements have been lifted in schools.
Table 12: Epidemiology in relation to changing public health measures in Germany

<table>
<thead>
<tr>
<th>Date</th>
<th>Rolling 7-day average new cases per 100,000 people(^{13})</th>
<th>Weekly new hospital admission for COVID-19(^{14})</th>
<th>Rolling 7-day average deaths per 100,000 people(^{15})</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 9, 2021</td>
<td>3.45</td>
<td>August 8: 1,003</td>
<td>0.021</td>
</tr>
<tr>
<td>August 16, 2021</td>
<td>5.41</td>
<td>August 15: 1,646</td>
<td>0.016</td>
</tr>
<tr>
<td>August 23, 2021*</td>
<td>8.48</td>
<td>August 22: 2,332</td>
<td>August 22: 0.019</td>
</tr>
<tr>
<td>August 30, 2021</td>
<td>11.14</td>
<td>August 29: 3,175</td>
<td>0.031</td>
</tr>
<tr>
<td>September 6, 2021</td>
<td>12.52</td>
<td>September 5: 3,201</td>
<td>0.036</td>
</tr>
<tr>
<td>September 12, 2021</td>
<td>12.48</td>
<td>3,169</td>
<td>0.047</td>
</tr>
</tbody>
</table>

*August 23, 2021: Germany’s 3G COVID Health Pass system came into effect.

- The COVID-19 death rate increased in the three weeks following the introduction of the 3G COVID Health Pass. The case rate and weekly new hospital admissions varied in the weeks following the introduction of the 3G Health Pass.

ITALY

- As of October 22, 2021, 77% of the total population had received at least one dose of a COVID-19 vaccine and 71% were fully vaccinated. 1.5% of the population has received an additional dose.\(^8\)

- In the week ending on October 9, 2021, 100% of cases were the Delta variant.\(^9\)

PUBLIC HEALTH MEASURES

- Approved on September 16, 2021, the use of Green Passes will be extended from October 15, 2021 to December 31, 2021. Green Passes are not required for children under the age of 12.\(^68\)

- All regions in Italy are in the White Zone (i.e., lowest risk level).\(^69\) In the White zone, masks must be worn in indoor public places such as bars, restaurants, museums and public transport. Masks are not mandatory outdoors.\(^70\)

- On October 15, 2021, it was announced that all workers in both the public and private sectors must show proof of their Green Pass (i.e., vaccination, negative test within 48 hours, or recovery from infection).\(^71,72\)

- On October 11, 2021, nightclubs were able to reopen with the Green Pass required and masks to be worn everywhere except on the dance floor.\(^72\)
### Table 13: Epidemiology in relation to changing public health measures in Italy

<table>
<thead>
<tr>
<th>Date</th>
<th>Rolling 7-day average new cases per 100,000 people</th>
<th>Number of COVID-19 patients in hospital</th>
<th>Rolling 7-day average deaths per 100,000 people</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 1, 2021</td>
<td>5.22</td>
<td>3,547</td>
<td>0.088</td>
</tr>
<tr>
<td>October 8, 2021</td>
<td>October 7: 4.71</td>
<td>3,125</td>
<td>0.060</td>
</tr>
<tr>
<td>October 15, 2021*</td>
<td>4.07</td>
<td>2,802</td>
<td>October 14: 0.062</td>
</tr>
<tr>
<td>October 22, 2021</td>
<td>4.99</td>
<td>October 17: 2,735</td>
<td>0.061</td>
</tr>
</tbody>
</table>

*October 15, 2021: all workers in both the public and private sectors must show proof of their Green Pass.

### Discussion and Limitations

The objective of this scan was to examine changes in public health measures in select jurisdictions as well as epidemiological trends before and after these public health measure changes. Some jurisdictions are lifting nearly all public health measures (Denmark, Norway), some are lifting select measures and extending the remaining measures (Finland, Ireland, Portugal), some are increasing measures (France, Israel, California, New York State), some are preparing to increase public health measures again (England), and other jurisdictions are removing and implementing different public health measures (Germany, Italy). In terms of differences between jurisdictions’ decision to lift, implement, and/or extend public health measures, risk threshold is an important contributing factor.\(^{73}\) Different approaches can be seen when comparing reopening plans and epidemiological triggers for reimplementing measures.\(^{74}\)

Across jurisdictions, there was no consistent relationship between lifting or implementing measures, and trends in COVID-19 case, hospitalization and death rates in the following three weeks. It would also not be possible to attribute changes in COVID-19 rates to the public health measures identified in this report. Rather, evaluations that focus on specific public health measures at a local-level and control for confounding variables are needed. Nevertheless, this report and future updates can provide insight into how other jurisdictions with some similarities to Ontario (e.g., vaccination coverage, circulating variants etc.) have made changes to measures and their experiences.

In terms of the epidemiological metrics reported here, COVID-19 case rates seem to have less decision-making weight than before because vaccination significantly reduces the likelihood of severe disease, making hospitalization an increasingly emphasized metric as health system capacity is prioritized (over transmission) in highly vaccinated settings. While we expect health system capacity challenges will be mitigated with high vaccination coverage due to strong evidence for effectiveness against severe disease, hospitalization and intensive care unit admission,\(^{75}\) it is important to note that health care capacity impacts will be lagging indicators. In addition, other parts of the health system aside from hospitals are impacted by COVID-19 community prevalence, with unmeasured and unmitigated strain to public health, for example, potentially negatively impacting other diseases and health conditions.

There will be numerous contextual factors contributing to the variability in the epidemiological changes that followed the reported changes to public health measures. For example, although masking was included in the scope of this scan, the type of mask recommended by jurisdictions was not recorded and could make a difference to prevention. Germany, for example, was one of the first countries to mandate use of either single-use filtering facepiece respirator surgical masks or masks such as N95s, in January
The requirement for medical masks in community settings is different from other jurisdictions. How masking is implemented – the type of mask, people’s willingness to comply, business owners ability to safely enforce it – will impact how effective this measure is in a given jurisdiction.

Another possible factor contributing to the observed variability in epidemiological changes could be that some jurisdictions are using state- or local-level authorities to lift or implement public health measures as needed, whereas the epidemiological data reported in this scan is at the national level (except for California and New York State). Therefore, the epidemiological data presented may not capture the impact of local- and state-level public health measure changes. An analysis of local epidemiological trends would provide better insight into potential impacts of local public health measure changes. Changes to vaccine coverage before and after these public health measure changes could also account for variability in the epidemiology, as well as differences in cumulative infection rates and the resulting population immunity.

This report focused solely on community-level measures such as masking, social-distancing, and immunity certificates. There are other public health efforts that impact transmission, hospitalization, and death rates, including robust testing, tracing, and isolation policies. These public health efforts were out of scope in this scan, but they could partly account for the observed epidemiological differences between jurisdictions.

Lastly, this scan reported vaccination coverage for each jurisdiction as vaccination plays a role both in COVID-19 epidemiological trends and in the decision to remove public health measures. For example, Finland set a goal for vaccination coverage as their benchmark for loosening measures. Although vaccination is a crucial step towards decreasing cases, hospitalizations, and deaths, evidence and experience has found that other public health measures such as masking are important to use in conjunction with vaccination in order to mitigate transmission, relevant in the context of more transmissible variants such as Delta.
References


Changes to public health measures and COVID-19 epidemiology in select jurisdictions


12. COVID-19 National Communication Partnership. Rules and regulations [Internet]. Copenhagen: Nationalt Kommunikations Partnerskab COVID-19; 2021 [cited 2021 Oct 26]. Available from: [https://en.coronasmitte.dk/rules-and-regulations?__cf_chl_captcha_tk__=pmd_kWrbaFvcRq00iL2qoQq7PIOetGZwXuvyzNhFDqeIR4-1635353024-0-gqNtZGzNAzujcnBsQmR](https://en.coronasmitte.dk/rules-and-regulations?__cf_chl_captcha_tk__=pmd_kWrbaFvcRq00iL2qoQq7PIOetGZwXuvyzNhFDqeIR4-1635353024-0-gqNtZGzNAzujcnBsQmR)


Changes to public health measures and COVID-19 epidemiology in select jurisdictions


