Introduction

- COVID-19 continues to spread rapidly across the globe.
- To date, Alberta has fared better than most.
- Albertans need to know what they can expect over the next 6 to 8 weeks:
  - How is COVID-19 expected to spread in Alberta?
  - What actions should Albertans take?
  - What is the Alberta plan?
Introduction

- Alberta continuously monitors the spread of COVID-19 – locally, across Canada and globally.
- Public health interventions that slow the spread have been developed based on what has worked elsewhere.
- Evidence gathered from other outbreaks informs the modelling of COVID scenarios in Alberta.
- The scenarios help the health system and Albertans plan for the potential impact of the pandemic and its peak.
Current State
Comparison of Alberta to countries

Confirmed cases per 10,000

Data as of April 7, 2020, respective country websites. When not available Johns Hopkins CSSE github repository.
Comparison of Alberta to countries (log scale)

Data as of April 7, 2020, respective country websites. When not available Johns Hopkins CSSE github repository.
Comparison of Alberta to other provinces

Confirmed cases per 10,000

Data as of April 7, 2020, source PHAC: https://health-infobase.canada.ca/covid-19/
Comparison of Alberta to other provinces (log scale)

Data as of April 7, 2020, PHAC: source https://health-infobase.canada.ca/covid-19/
# Confirmed cases, hospitalization, ICU, and deaths for Canada’s 6 largest provinces

## Table

<table>
<thead>
<tr>
<th>Province</th>
<th>Confirmed cases</th>
<th>Hospitalization</th>
<th>ICU</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># Cases</td>
<td>Per 10,000</td>
<td># Cases</td>
<td>Per 10,000</td>
</tr>
<tr>
<td>AB</td>
<td>1348</td>
<td>3.05</td>
<td>90</td>
<td>0.2</td>
</tr>
<tr>
<td>QC</td>
<td>9340</td>
<td>11.00</td>
<td>902</td>
<td>1.06</td>
</tr>
<tr>
<td>ON</td>
<td>4726</td>
<td>3.24</td>
<td>614</td>
<td>0.45</td>
</tr>
<tr>
<td>BC</td>
<td>1291</td>
<td>2.58</td>
<td>290</td>
<td>0.57</td>
</tr>
<tr>
<td>SK</td>
<td>260</td>
<td>2.21</td>
<td>4</td>
<td>0.03</td>
</tr>
<tr>
<td>MB</td>
<td>217</td>
<td>1.58</td>
<td>11</td>
<td>0.08</td>
</tr>
</tbody>
</table>

Data as of April 7, 2020, source PHAC: Epi summary, health-infobase.canada.ca and provincial dashboards

* Reporting of ICU, hospitalizations and deaths has a lag in Ontario, which would understate severity
Cases and deaths by age group in Alberta

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Cases</th>
<th>Death</th>
<th>Case Fatality Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 and under</td>
<td>149</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>20-39</td>
<td>446</td>
<td>2</td>
<td>0.45%</td>
</tr>
<tr>
<td>40-59</td>
<td>446</td>
<td>1</td>
<td>0.22%</td>
</tr>
<tr>
<td>60-79</td>
<td>256</td>
<td>4</td>
<td>1.56%</td>
</tr>
<tr>
<td>80+</td>
<td>76</td>
<td>19</td>
<td>25.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,373</td>
<td>26</td>
<td>1.89%</td>
</tr>
</tbody>
</table>

Data as of April 6, 2020, source https://www.alberta.ca/covid-19-alberta-data
Comparison of testing rates across jurisdictions

Confined Cases per 100,000 population

Lab tests per 100,000 population

Data as of April 6, 2020, source https://ourworldindata.org/covid-testing
Modelling
Many jurisdictions use data from other countries, like China or Italy, to model the spread of COVID-19.

Due to its extensive testing and surveillance program, Alberta case data is used to develop more accurate model scenarios.

The modelling is updated as new data becomes available.

Alberta has modelled two core scenarios – Probable and Elevated.
Scenarios

**Probable Scenario**
- For every case, 1-2 more people are infected.
- This scenario is comparable to the more moderate growth seen in the UK and countries that have had some success in “containing” growth.
- Given our early and aggressive interventions and contact tracing to limit spread, this is expected to be the most likely scenario for Alberta.

**Elevated Scenario**
- For every case, 2 people are infected.
- This is comparable to the more rapid growth initially seen in Hubei.
- Planning for this scenario is prudent and responsible given the catastrophic impacts should the health system become overwhelmed.

**Extreme Scenario**
- For every case, 3 more people are infected.
- This scenario assumes limited and late interventions so that COVID-19 rapidly spreads through the population.
- This scenario shows what would have happened if Alberta did not undertake early and aggressive interventions and contact tracing to limit spread.
Illustrative comparison of the scenarios

**Extreme**
Mid-April peak
1,600,000 total infections peak in
From 16,000 to 32,000 total deaths

**Elevated**
Early May peak
1,060,000 total infections
From 500 to 6,600 total deaths

**Probable**
Mid-May peak
800,000 total infections
From 400 to 3,100 total deaths
Hospitalizations and ICU - Probable

- Probable Peak of 818 (736 to 900) hospitalizations in late May
- Probable Peak of 232 (220 to 244) needing critical care in late May-June
Hospitalizations and ICU – Elevated Scenario

Elevated Peak of 1,570 (1,491 to 1,649) hospitalizations beginning of May

Elevated Peak of 392 (372 to 412) requiring critical care by early-May
Health System Capacity
## Existing Capacity

<table>
<thead>
<tr>
<th></th>
<th>North</th>
<th>Edm.</th>
<th>Central</th>
<th>Cgy.</th>
<th>South</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals</td>
<td>33</td>
<td>12</td>
<td>30</td>
<td>13</td>
<td>12</td>
<td>100</td>
</tr>
<tr>
<td>Hospital Beds</td>
<td>929</td>
<td>3,020</td>
<td>1,098</td>
<td>2,791</td>
<td>645</td>
<td>8,483</td>
</tr>
<tr>
<td>ICU beds</td>
<td>12</td>
<td>150</td>
<td>12</td>
<td>97</td>
<td>24</td>
<td>295</td>
</tr>
<tr>
<td>Ventilators</td>
<td>33</td>
<td>205</td>
<td>27</td>
<td>213</td>
<td>31</td>
<td>509</td>
</tr>
</tbody>
</table>
Building Acute Care Capacity

- AHS plans to have 2,250 COVID-19 designated acute care beds by the end of April:
  - As of April 3, 2020, 1,935 are available for COVID patients; and
  - New COVID dedicated spaces are being brought online.

- COVID-19 acute care capacity is being achieved by:
  - Postponing scheduled surgeries, tests and procedures while ensuring urgent, emergent and oncology surgeries continue;
  - Transferring patients who no longer require acute care to a community setting;
  - Increasing occupancy while maintaining physical distance between patients; and
  - Opening overcapacity, and new and decommissioned spaces.
Building acute care capacity

Peak of 1,570 (1,491 to 1,649) hospitalizations in elevated scenario, which is projected start of May

Peak of 818 (736 to 900) hospitalizations in probable scenario, which is projected late May
AHS plans to be able to increase ICU capacity by 1081 beds for COVID-19 patients by the end of April, if necessary.

ICU capacity will be increased by:
- Adding ICU beds to existing ICU rooms;
- Converting operating rooms and recovery rooms to ICU capacity;
- Converting procedure and treatment rooms to ICU capacity; and
- New models of care (e.g. more aggressive use of step down care).
AHS plans to have 761 ventilators available by the end of April for COVID-19 patients, if necessary, to respond to severe a scenario.

314 ventilators are currently dedicated to COVID-19 patients and the capacity will be increased by:

- Purchased ventilators on order (35 that have arrived and another 30 in May);
- Ventilators from NAIT and SAIT Respiratory Therapy program (40), STARS (6) and AADL Respiratory Outreach Program (25);
- Repurposed from Chartered Surgical Facilities (30);
- Alternative devices capable of mechanical ventilation including transport, anaesthetic and pediatric devices (305); and
- Ventilators from Public Health Agency of Canada (6).
Building ICU & Ventilator Capacity

Projected ventilator and ICU capacity

<table>
<thead>
<tr>
<th># of units</th>
<th>April 3</th>
<th>April 8</th>
<th>April 15</th>
<th>April 22</th>
<th>April 29</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICU</td>
<td>158</td>
<td>158</td>
<td>325</td>
<td>570</td>
<td>1,081</td>
</tr>
<tr>
<td>Ventilators</td>
<td>314</td>
<td>372</td>
<td>426</td>
<td>576</td>
<td>761</td>
</tr>
</tbody>
</table>

Peak of 392 (372 to 412) needing critical care in elevated scenario, which is projected early May.
Peak of 232 (220 to 244) needing critical care in probable scenario, which is projected May-June.

Note: assumes that 195 of existing 295 ICU with ventilators are available to non-COVID cases.
Workforce

- Preparing for COVID-19 is about more than beds and equipment – it is about health care providers.
- To ensure Alberta has the highly skilled staff to respond to the pandemic the following is being developed:
  - Accelerated training for ICU nurses;
  - New models of care to expand the reach of existing ICU nurses;
  - Working with the faculties of nursing to complete senior practicums to enable the nurses to enter the workforce;
  - Contacting former RNs with ICU experience and other recently retired staff; and
  - Redeployment of anesthesiologists, other physicians, other nurses, respiratory therapists, other allied health professionals and other staff with appropriate skills to work in a critical care environment.
# Personal Protective Equipment (PPE)

<table>
<thead>
<tr>
<th>Category of critical PPE</th>
<th>Forecast days of supplies inventory at end of April</th>
<th>Forecast days of supplies inventory at end of June</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Probable(^1)</td>
<td>Elevated(^2)</td>
</tr>
<tr>
<td>Face shields (single use)</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Goggles</td>
<td>50</td>
<td>29</td>
</tr>
<tr>
<td>Gowns/coveralls</td>
<td>39</td>
<td>19</td>
</tr>
<tr>
<td>Gloves</td>
<td>110</td>
<td>85</td>
</tr>
<tr>
<td>Procedural masks</td>
<td>76</td>
<td>51</td>
</tr>
<tr>
<td>N95 masks</td>
<td>32</td>
<td>7</td>
</tr>
</tbody>
</table>
Increasing PPE Stocks

**Demand levers**
- Tracking PPE inventory and distribution across non-health sites
- Ensuring appropriate PPE according to recommended guidelines
- PPE reuse where safe and appropriate – e.g. sterilizing N95 masks for multiple use

**Supply levers**
- Increasing number of domestic and global suppliers to meet PPE demands
- Creating and working with local companies to increase production of supplies (e.g. face shields, scrubs, gowns and hand sanitizer)
- Virtual trade show April 8, 2020
Comparison of All Scenarios at the Peak

Hospitalizations:
- Extreme: 13,000 (12,350 to 13,650)
- Elevated: 1,491 to 1,649
- Probable: 818

ICU:
- Extreme: 3,900 (3,705 to 4,095)
- Elevated: 392 (372 to 412)
- Probable: 232 (220 to 244)

Death:
- Extreme: 640 (384 to 896)
- Elevated: 100 (20 to 180)
- Probable: 50 (2 to 102)
The Plan
Alberta’s Plan – the next 6 to 8 weeks

- World class testing and surveillance
- Aggressive contact tracing and containment
- Public health Interventions based on evidence of what works
- Supporting Albertans in pushing the peak down
- Supporting fellow Canadians in a time of crisis
What’s next?

• Relaunch Strategy
  – Aggressive system of mass testing, including serological testing
  – Strong tracing and tracking of contacts leveraging technology
  – Strong border screening
  – Use of masks