

The world we live in, is currently undergoing a massive global-lockdown as the recent Covid-19 pandemic spreads rapidly, with confirmed cases reaching just over 1.6 million as of April 2020. Previously busy areas appear to be at a standstill as individuals and organizations adopt new practices to conform to these novel quarantine guidelines. A timeline of when the pandemic will end is still uncertain with Canadian Prime Minister, Justin Trudeau, stating that this “will be the new normal until a vaccine is developed,” which he adds could take upwards to a year (Daily Hive, 2020). In the meantime, preventative measures need to be taken by individuals and organizations to collectively minimize the number of deaths in Alberta and ensure the safety and health of Albertans is being prioritized.

The World Health Organization (WHO) first became aware of Covid-19 on December 31, 2019 by Chinese medical officials (World Health Organization, 2020). This strain of coronavirus is similar to previous respiratory diseases such as SARS and MERS, and is a novel virus originating from the province of Wuhan in Mainland China. Most common symptoms of Covid-19 include, fever, tiredness, dry cough, aches and pains, and shortness of breath in more severe cases. A common myth spread at the earlier stages of this virus was that it is no different from the common flu. This myth has been extremely detrimental in the efforts to halt the spread of the virus since numerous individuals did not heed the warnings, nor take the situation seriously, resulting in a large number of fatalities that could have been avoided if proper attention was given. Studies have found that the reproductive rate,  $R_0$ , of Covid-19 is higher than the common flu and SARS, with a  $R_0$  ranging from 1.4 - 6.49, with a mean of 3.28 (Liu, 2020). This means that each infected person could potentially infect about 3 to 4 people resulting in a catastrophic spread. Another factor that makes this virus particularly dangerous is that since it is a novel virus unlike the flu, the human body has no immunity to Covid-19. Moreover, this virus disproportionately affects older populations and those with compromised immune systems and underlying medical conditions, making it particularly more fatal for them if contracted; refer to Figure 1.

Individual's practices in combating the virus are extremely important in slowing its spread as these measures are the first response to ensuring the health and wellbeing of people is protected. Hygienic practices are of particular importance as they can significantly reduce the exposure to Covid-19. This includes repeatedly cleaning common household surfaces with a 1 to 9 ratio of bleach, refraining from touching your face, coughing or sneezing into your elbow, wearing a mask and gloves in public and frequently washing hands with soap for 20 seconds. If individuals have travelled recently abroad, they should self-isolate for 14 days in order to limit any potential spread of the virus to their family, as well as strangers. Particular attention should be given to observing symptoms as healthcare links such as 811 can be called to provide further instructions on testing and on what additional measures need to be taken. Calling in advance will allow health care providers to quickly direct individuals to the right healthcare options. In addition, social distancing is fundamental in mitigation efforts. It keeps people at an appropriate distance, usually 6 feet, making every transmission opportunity less likely. Organizations such as grocery chains have also adopted a policy of 6 feet distancing between individuals to minimize human to human contact in order to combat the spread (WHO, 2020). Social distancing is necessary and effective in that it is a means to avoiding large interactions and thereby slowing

the spread. Individual measures are vital to undertake as people could be subjecting vulnerable groups to the disease in their own household even, thereby minimizing the number of deaths.

As the confirmed cases in Alberta continue to rise, the government of Alberta proceeds to work with the federal government as well as the healthcare systems to ensure Albertans have the resources and support needed to get through this pandemic. Unemployment numbers have risen up to 25% in Alberta due to the pandemic but fortunately the provincial and federal governments are offering monetary support in an effort to allow people to continue following quarantine guidelines but still be able to provide for their families. Alberta offered its residents a one-time Emergency Isolation Support payment of \$1146, to those affected by this crisis (The Government of Alberta, 2020). The federal government is offering a Canadian Emergency Response Benefit payment of \$8000 over the course of 4 months (Government of Canada, 2020). Additionally, the government has offered GST credits, implemented new EI measures and waived previous wait periods and have paused all repayments of student loans for 6 months with no interest. The Albertan government is also implementing vigorous testing criteria and has one of the highest testing rates for Covid-19 in the world, refer to figure 2. Testing individuals for Covid-19 at such a large scale limits the spread of the virus even further as some people may be ‘silent carriers’ of this virus and spread it to others in grocery stores or even in their own homes (WHO, 2020). This allows individuals to proceed with caution to help protect themselves and others.

The Albertan government and various municipalities have also introduced restrictions on gatherings as well as social distancing measures in order to limit the spread. Restrictions have been put in place that bars a “gathering of more than 15 people” (The Government of Alberta, 2020). Due to these restrictions, many public spaces, including recreational facilities, have shut down until further notice. In addition, the provincial government has taken the decision to close down schools and universities until September as the spread of the virus would have been accelerated by the large numbers present on school facilities. Similarly, various organizations have taken initiative and have implemented new procedures and rules in order to cut down contact between individuals. Hospitals and nursing homes have changed visitation hours to cut down traffic in their facilities in an effort to protect their vulnerable populations as well as their healthcare workers from contracting the virus. Restaurants have limited their seating and delivery services now offer curbside delivery to minimize contact between individuals. With the various social distancing measures put in place, a large number of Albertans have lost their jobs and are now struggling to provide for their families. Private organizations such as banks, utility companies, etc have introduced measures to help ease the financial burden on Albertans by offering mortgage, internet service and utility payment deferrals amongst other services to lend support to Albertans in an effort to overcome this unprecedented moment in history together.

A pandemic of this magnitude was unanticipated by the global community, thus various individual and organizational measures have to be put in place to help minimize the number of deaths that ultimately occur. All of these preventative measures effectively ‘flatten the curve’, or in other words it halts the rapid spread by merely slowing it. This technique is critical in that it

prevents the overburdening of the healthcare system as it reduces the number of active cases, “giv[ing] doctors, hospitals, police, schools and vaccine-manufacturers time to prepare and respond without becoming overwhelmed” (New York Times, 2020). If the entire population were to get sick in a shorter period of time, it would mean more sick individuals needing healthcare attention including healthcare workers which would result in reduction of staff and resources to a point where the healthcare system could potentially collapse and individuals that might have survived otherwise would die. This is currently the case in other countries such as Italy, where they did not anticipate this scale of a pandemic and must now resort to ‘choosing’ who to save. This situation gives rise to ethical and medical dilemmas since we as humans should not get to ‘play god’ and condemn others to death based on social discretions. Therefore, many countries, provinces and states around the world are using the ‘flattening the curve’ technique, including Alberta. Flattening the curve means reducing the risk of running out of finite resources and allowing sick patients to be able to get access to ventilators and other necessary medical supplies. Through the various efforts of governments, medical/healthcare professionals, organizations and individuals, the extreme spread of Covid-19 has been significantly reduced and mass deaths have been kept at a halt. Figure 3 shows a scenario with few preventative controls, which would have resulted in a drastic peak of cases in Alberta causing 1.6 million people to become infected in a short period of time, with an estimated 16,000 to 32,000 deaths. This figure effectively demonstrates the disastrous effect overburdening the health care system could have as a drastic peak in cases has twice as many people infected as a slower peak but would result in 10 times as many deaths (The Government of Alberta, 2020). However, with preventative measures put in place, the probable scenario in Alberta, with the help of aggressive interventions and contact tracing, will be successful in containing the growth of Covid-19. The Albertan government is anticipating a total of 800,000 infected with the total deaths ranging between 400-3,100 in a more probable scenario and that will be due to individual and collective efforts to help minimize deaths.

In conclusion, the Covid-19 pandemic has become far more serious and detrimental to the health of Albertans and the economy than what anyone could have anticipated. Luckily, there are effective quantitative measures that could be implemented by individuals and organizations to greatly reduce the number of deaths that could potentially occur. Strategies such as social distancing as well as hygienic and new organizational procedures are particularly important in ‘flattening the curve’ and reducing risk to Albertans. Moreover, many resources available for individuals and businesses in need during this isolation period, which will ensure the overall safety of Albertans is preserved. Ultimately, preventative measures can easily be utilized by individuals and organizations which uphold the common goal of preserving life.

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## Appendix

### Cases and deaths by age group in Alberta

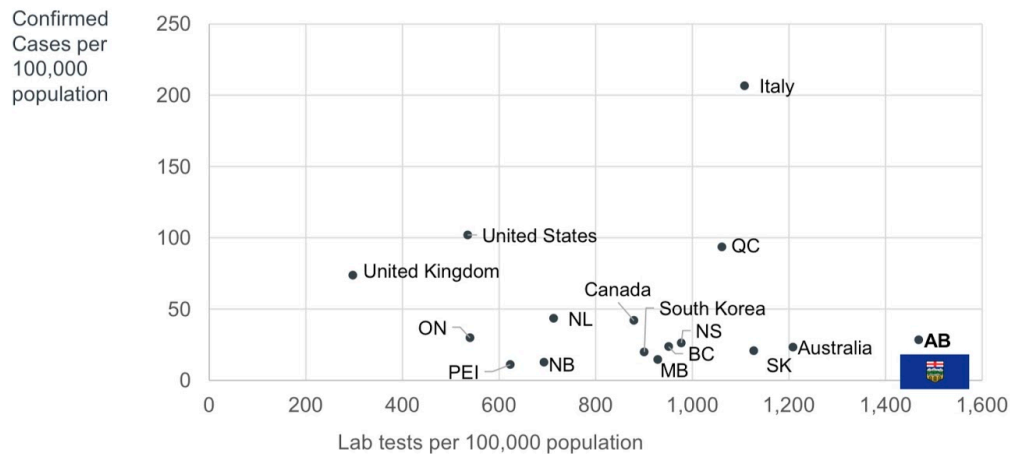
Age Group	Cases	Death	Case Fatality Ratio
19 and under	149	0	-
20-39	446	2	0.45%
40-59	446	1	0.22%
60-79	256	4	1.56%
80+	76	19	25.0%
<b>Total</b>	<b>1,373</b>	<b>26</b>	<b>1.89%</b>

Data as of April 6, 2020, source <https://www.alberta.ca/covid-19-alberta-data>

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Figure 1: Cases and deaths by age group in Alberta, *The Government of Alberta*.

### Comparison of testing rates across jurisdictions

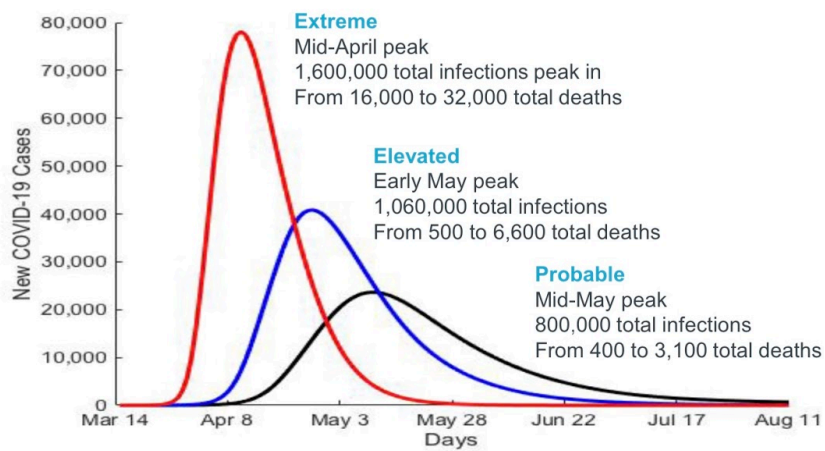


Data as of April 6, 2020, source <https://ourworldindata.org/covid-testing>

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Figure 2: Comparison of testing rates across jurisdictions, *The Government of Alberta*.

## Illustrative comparison of the scenarios



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Figure 3: Illustrative comparison of the scenarios, *Government of Alberta*.