April 8, 2020

Crisis Working Group Report
Public Health and Emergency Measures

The C.D. Howe Institute has initiated a special project to provide rapid expert insights to help Canadians and Canadian policymakers navigate the COVID-19 crisis. The complexity of the current crisis and its far-reaching effects have necessitated across-the-board policy responses. Accordingly, the C.D. Howe Institute has convened specialized groups to discuss the ongoing policy issues in the following areas:

- Public Health and Emergency Measures
- Household Income and Credit Support
- Business Continuity and Trade
- Monetary and Financial Measures

The Public Health and Emergency Measures working group is Chaired by Janet Davidson, Chair of the Board of the Canadian Institute for Health Information, former Deputy Minister of Health (AB) and C.D. Howe Institute Senior Fellow, and is supported by a group of health academics, professionals and business leaders. Meeting weekly, this group discusses policy ideas for addressing various aspects of the COVID 19 crisis, and publicly communicate the results of its discussions via Communiqués.

The most recent meeting of the Public Health and Emergency Measures Working Group was on April 3, 2020. The discussion focussed on addressing supply shortages of critical medical equipment and inputs. In particular, the group discussed way to mitigate shortages of personal protective equipment (PPE) and strategies for directing limited supplies to where they will have the maximal public health benefit. In addition, the group discussed different testing and diagnostic strategies used internationally and across Canadian provinces. Since testing strategies and the availability and timeliness of public health data varies across provinces, the group discussed some of the reasons that Canada's public health data collection and dissemination lacks coordination with reference to recommendations made for improvement of laboratory infra- and infostructure post-SARS and current legislative hurdles.

Personal Protective Equipment

Shortages of face masks, gloves, and other personal protective equipment (PPE) are putting health care workers at higher risks of exposure to COVID 19 in health care facilities battling the pandemic across the world. Meanwhile, pharmacy and hardware store inventories are running low or completely depleted as individuals purchase protective equipment for themselves and their families. Governments and companies have warned against excessive price gouging for personal protective equipment. But when global supplies run short in a high demand situation, paying a high price for supplies might become a necessity if Canadian health care workers and the public are to be able to access critical personal protective equipment.

Recently, two separate shipments of KN95 masks manufactured in China were rerouted from their original destination to the United States. French officials have said that supplies bound for France were re-routed to the US "on the runway" after the US offered "3 to 4 times the price in cash." A similar situation has occurred in Quebec, where the owner of a manufacturing company has reported that a shipment of KN95 masks arrived at a DHL shipping centre in Quebec on Sunday, but the shipment was redirected to Ohio (the masks have since been rerouted back to Quebec). China has also changed the rules for exporting PPE and diagnostic testing supplies to limit the scope of companies allowed to export supplies to Europe following complaints of substandard products. 3M has reported that the US Administration has requested it cease exporting N95 face masks to Canada and Latin America.

Guidance from public health authorities has been that members of the public shouldn't wear a protective mask unless they are sick or caring for those who are sick. But the WHO has convened an expert panel to reassess that guidance. Similarly, the CDC in the US, and European health authorities are considering the question of whether or not to recommend the public wear face masks to prevent COVID 19 spread. Health and economics commentators have indicated encouraging the public to wear masks preventatively as a factor in controlling disease spread.

Meanwhile, public health officials in Quebec have asked the public to avoid preventative use of face masks in an effort to reserve dwindling supplies for health care workers and sick people. Ensuring that Canada's health care workers have access to high quality PPE is critical to managing the crisis. The healthcare system cannot run at full capacity when workers are exposed to COVID-19 and need to isolate to reduce the spread of infection.

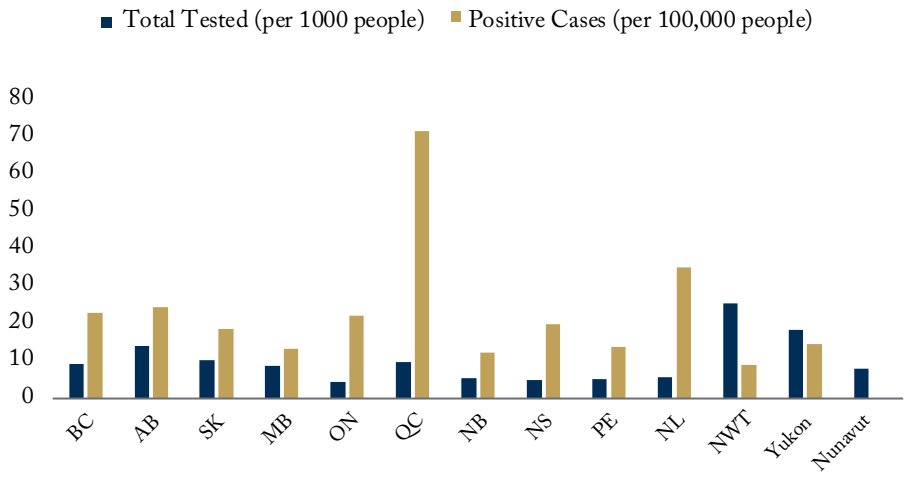
There are many stories of hospitals running low on PPE supplies in Canada and internationally. When critical supplies are rerouted mid-shipment and prices climb by hundreds of percent, it's a strong indicator of a global shortage. The efficient use of these limited supplies is critical to minimizing the

health and economic effects of the pandemic. Health care systems are under strain with the surge of people requiring hospitalization and the presence of disease spread in communities. Encouraging the public to preventatively use face masks would increase demand for them, further increasing prices and exacerbating the existing global shortage. If there were no shortage in personal protective equipment, however, recommending preventative use would be a practical step towards limiting disease spread in the community.

The working group discussed strategies to increase the supply of face masks and other PPE in Canada and strategies for directing limited supplies to highest affect in mitigating disease spread and had the following observations:

- Health Canada should develop and issue guidance on sterilizing and reusing masks and other PPE, where possible.
  - Researchers at the University of Manitoba have tested various types of face masks for functionality following autoclave or aerosol hydrogen peroxide sterilization. The results show that some masks can be sterilized with autoclaving – equipment that is widespread throughout medical facilities.
  - The FDA has issues Guidance for reprocessing N95 respirators using STERRAD Sterilization systems under the "Enforcement Policy for Sterilizers, Disinfectant Devices and Air Purifiers During the Coronavirus Disease 2019 (COVID-19) Public Health Emergency"
  - The British Columbia Interior Health Authority confirmed it will collect used disposable N95 masks to be sterilized and stored as an emergency back-up supply.
- Since shortages of PPE are occurring, guidance for the public should continue to discourage personal use of N95 face masks and maintain its current focus on physical distancing, hand and respiratory hygiene measures as the best way for individuals to protect themselves from infection. The recent shift to recommending personal use of non-medical masks as an additional measure to protect those around you further promotes containment of the spread of infection and aligns with guidance issued by the CDC.
- Where shortages occur, reserve higher level PPE for highest risk of exposure situations and use lower-grade PPE for other applications. In an acute shortage scenario, public health authorities should discourage the use of such equipment by the public in an effort to reserve necessary supplies for health care workers and patients in areas that are at higher risks of exposure.

COVID 19 Testing and Case Rates, by Province



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Laboratory Testing, Public Health Data and Contact Tracing

A major factor in successfully containing the spread of infectious disease is the ability to quickly identify new cases and trace contacts so that other who may have been exposed can self-isolate or be tested. As of April 5, 323,297 people had been tested for COVID19 in Canada. Canada is neither a leader nor particularly a laggard when compared to other countries. In Germany, about 350,000 tests are preformed per week and are carried out in hospitals, doctors' practices and special drive-in test stations. The UK is targeting 100,000 tests per day, though as of March 21, was testing at a rate of 10,412 per day.

Within Canada, both the rate of COVID testing and testing strategies vary (Figure). Ontario lags most other provinces in testing rates – despite similar case numbers to Alberta and British Columbia, Ontario has performed about half as many tests per capita, meaning there are likely many positive cases not included in official counts due to individuals not receiving tests. The Working Groups discussed possible reasons that Alberta and British Columbia were more successful in testing larger portions of their population more quickly than elsewhere in the country and why Ontario, in particular, did not achieve similar results.

In the case of Ontario, group members discussed a lack of preparedness to scale up coordinated testing in the province. Initially, testing strategy in Ontario relied only on the Public Health Lab for testing; neither private labs nor hospital labs were involved in sample collection or testing. Now public, private and hospital labs are doing testing, hospitals are involved in sample collection but private labs are not. Not involving private and hospital labs early on in testing along with the Public Health Lab caused backlogs and negatively impacted Ontario's attempt at containment. Group members also discussed whether the regional organization of health care in Alberta and British Columbia affected their ability to rapidly scale up and coordinate testing relative to Ontario.

While more rapid and widespread testing could have affected provinces' ability to contain the spread of COVID 19 early on in the epidemic, there was some debate amongst group members about whether broad population testing would be appropriate at this stage of the outbreak. The presence of community spread, limited testing capacity, and the presence of asymptomatic positive cases[1] suggests that testing should be done strategically. At this point in time there are still places and populations where rapid testing, widely deployed, with rigorous contact tracing and isolation could keep the virus at bay. Priority should be given to testing members of the public in relatively isolated communities (indigenous, rural communities, etc.) in which the concentration of infected people (symptomatic or not) would be low. In areas that already have significant community spread of infection, however, broad population testing is of limited use in managing it. In these areas, the priority for testing should be front-line health care workers and vulnerable populations; population at the highest risk of exposure and those at the highest risk for transmission.

Once the outbreak is under control or there is appropriate testing capacity, however, the use of testing should be evaluated and shifted to managing and preventing further community spread. Similarly, new testing procedures are being developed constantly, and should be individually evaluated for appropriate use and deployed as quickly as possible. More accurate and timely information about COVID cases would be incredibly valuable to informing policies to contain the infection and to ensure that loosening of restrictions won't inadvertently lead to a resurgence of cases.

1 If individuals can infect other people, but themselves do not have symptoms, they are unlikely to receive testing. So, testing symptomatic patients in the community is likely to be of limited value in managing disease spread, as long as those who have symptoms are directed to self-isolate. With limited testing capacity, it is not currently feasible to test the entire population.

Since there is significant disparity between provinces in testing rates and ability to trace contacts in the community, the group discussed legislative and policy tools that could have improved coordination between provinces in gathering and disseminating new information.

- The Emergencies Act does not appear useful in these circumstances to impose testing protocols, or obligations to report comprehensive information and data related to disease tracking. It could possibly be used to increase testing capacity via emergency laboratory and hospital facilities or in accessing individuals' personal data to facilitate improved contact tracing.
- Part of the current problem with collecting and disseminating diagnostic data is a lack of coordinated laboratory infrastructure across the country. The group referenced recommendations made following the SARS outbreak and noted that many recommendations for renewing laboratory infrastructure and surveillance/data gathering and dissemination were only partially implemented or remain to be addressed.[2] In particular, while a national public health information system exists, it does not reliably contain all relevant information and lacks a compulsion mechanism to address the incomplete nature of reporting. Having an integrated, well-resourced public health lab system is critical but so is having an accessible reporting system using common case definitions that can reliably and rapidly share surveillance data between jurisdictions.

In the current public health crisis, a major priority for governments should be addressing shortages of personal protective equipment, and other supplies necessary to protect frontline workers from infection. In addition, proactive guidance for health care providers and institutions about appropriate practices for directing limited supplies and their reuse, would reduce the negative effects of shortages in critical supplies where they arise.

Once the immediate threat of the pandemic has passed, governments should address preparedness gaps in coordinating and scaling epidemic response in the future. Shortages of PPE occurred during the SARS crisis. The importance of emergency supplies of PPE and practices for managing infectious disease outbreaks in Canada were highlighted when Ebola surfaced in a US hospital in 2014. When crisis strikes, ensuring a coordinated and timely approach to managing it across the country helps to minimize health and economic damage.

2 See Learning from SARS for list of recommendations considered during this discussion.

Working Group Participants

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