

COVID-19: Responding to an emerging respiratory pathogen

Clinicians in British Columbia have been responding to COVID-19, the novel coronavirus that originated in late 2019 in Wuhan, China. The virus subsequently spread to countries around the globe, prompting the World Health Organization to declare it a Public Health Emergency of International Concern. At the time of writing (28 February 2020), 83 324 cases have been reported, with the vast majority still in Mainland China. Fifty-one countries, including Canada, have reported imported cases, and a handful of countries, including Iran, Italy, and South Korea, are responding to local outbreaks. By the time this article is published, the global picture will likely look very different. This article describes the health system response to a novel pathogen as it emerges.

COVID-19 in British Columbia

As of 28 February 2020, testing of 1425 specimens has identified seven infections in BC, all in travelers or close contacts of travelers to an area with community transmission. The very small number of cases, all of which have a known source of infection, indicate that at the end of February 2020 there is little community transmission of COVID-19 in British Columbia. At this stage of the emergence of a new pathogen, containment measures can be effective.

How do we respond to an emerging respiratory pathogen?

On 31 December 2019, China reported an outbreak of pneumonia of unknown cause to the World Health Organization. At that time, the pathogen, the clinical spectrum of disease, and

the populations at greatest risk were unknown. However, within 10 days, China identified the virus and published the viral genetic code. This enabled laboratories to quickly develop tests for the virus. The BC Centre for Disease Control (BCCDC) Public Health Laboratory was able to develop a test within 3 days, and then test the first specimen within 10 days. In the following month, testing protocols were developed and validated, and laboratories throughout BC had the ability to test for the virus. Public health monitored emerging research and epidemiology about COVID-19 in order to provide advice to the public and testing recommendations to clinicians.

During this period of an emerging disease, there is a great deal of information and misinformation, and recommendations change rapidly, often leading to uncertainty and concern. In British Columbia, the provincial health officer, your local medical health officers, and the BCCDC are committed to providing you with up-to-date information that is relevant to your community.

By the end of February, a great deal was learned about COVID-19. Information from the outbreak in China indicated that among those with a diagnosed illness, the majority (over 80%) of people have mild illness with recovery in about 2 weeks. Early data from outbreaks on cruise ships suggested that a substantial proportion of people with infection are asymptomatic. Children and adolescents appear to be relatively spared, and the risk of serious illness and death increases sharply in the seventh and eighth decades of life and in those with chronic conditions including cardiovascular and respiratory diseases, diabetes, and cancer. The case fatality rate, which is essential to know for both planning and response, remains difficult

to estimate. In Hubei province, the epicentre of the epidemic, it is estimated to be 2% to 3%, while outside this area the case fatality rate is well below 1%. These estimates are likely to be refined by the time this article is published, as information becomes available about the rate of asymptomatic infections.

At the early stage of a new communicable disease, when there is no indication of community transmission, each individual case is managed using the core measures of public health: prompt identification and isolation of cases, contact tracing and management, and effective infection control practices in health care settings. At the same time, the health care system prepares for potential sustained local transmission.

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How do we prepare for the possibility of sustained community transmission in BC?

In February, emergency operations centres (EOCs) were established at provincial, regional, and hospital levels to coordinate public health and clinical responses across the health care system and with government and community partners. These EOCs have the goal of preparing for additional cases and working to minimize disruption to the health care system. Clinicians across the health care system continue to respond to COVID-19: by identifying and managing potential cases, and by addressing patient concerns often fueled by the “infodemic” of news and social media information.

It is still possible that the massive and unprecedented efforts of the Chinese and other governments will be successful in containing the virus through quarantine and isolation, and

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Rural medicine and the College Library

Internet access and online resources have come a long way to providing additional support for rural physicians. While using online databases, point-of-care tools, textbooks, and journals has never been easier, rural physicians still face high-stakes challenges in isolated settings. Emergency medicine, geriatrics, and obstetrics/gynecology are all possible parts of a rural physician's day, and the College Library

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has numerous ways for doctors to access the information they need.

Most of the College Library's resources are online and available throughout the province 24 hours a day—use your CPSID and password to log in. A list of rural health journals that the College Library subscribes to is available at <https://bit.ly/2u9J1o9>. Additionally, the Library can send you any journal's table of contents, and source and deliver articles from almost any journal at no cost.

First Nations patients may feature in your practice, and we have books to help you provide your patients with informed and culturally sensitive care (visit <https://bit.ly/3bOL9m7>).

Current online and print titles regarding rural health are available at <https://bit.ly/39LQysu>.

Most print books can be mailed to you anywhere in the province at no cost. We provide return, postage paid mailing labels; save the envelope that your book arrived in, and when you're done with it, affix the new labels, reseal the envelope, and mail it back to the Library.

The College Library is expanding its book collection in rural health. If you have suggestions, questions, or require assistance, contact the Library at medlib@cpsbc.ca or 604 733-6671. ■

—Paula Osachoff
Librarian

BCCDC

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the effect of this virus on our community will be limited. However, as of late February, community transmission is occurring in multiple locations globally including South Korea, Japan, Singapore, Iran, and Italy. This raises the probability of sustained community transmission in BC.

If sustained local transmission occurs, the focus of the intervention will shift. Testing for COVID-19 will decrease even as community cases increase, as we shift from containment to mitigation. People with mild symptoms consistent with COVID-19 (or with other respiratory illnesses), in whom knowledge of the infectious agent would not change management, will be asked to self-isolate without testing. Testing capacity will focus on severe cases and on sentinel surveillance, which will allow us to estimate the total disease burden and monitor trends in disease activity in our communities. In this scenario, clinicians will be asked to support patients by educating them on basic self-care measures at home when symptomatic; reinforcing messaging about hand hygiene, respiratory etiquette and the importance of self-isolation

during illness to prevent transmission; and identifying patients experiencing severe symptoms or at risk of severe disease who will need more intensive management and support. Additional social distancing strategies, such as telecommuting or discouraging mass gatherings, will be recommended by public health only if the epidemiology of the disease suggests significant transmission in these settings. Once mitigation is the goal, it will remain essential that measures to prevent health care-associated transmission, including adherence to personal protective equipment guidelines, be maintained. Some nonessential services may need to be paused to meet demand and maintain continuity of care for urgent medical needs.

A novel disease such as COVID-19 is a challenge to our health care system, but also an opportunity to strengthen our relationships in service of patient needs. It remains essential to have a rational and measured response to COVID-19 while ensuring that uncertainty and fear do not lead to undue disruption and delay of care. On behalf of public health

physicians in British Columbia, we thank you for your partnership. ■

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Information on COVID-19 from Doctors of BC, updated regularly:
www.doctorsofbc.ca/covid-19