

## FOCUS ON

# **(ARCHIVED)** Considerations for Community-Based Health Care Workers on Interpreting Local Epidemiology

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## ARCHIVED DOCUMENT

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## Background

In order to reduce the risk of COVID-19 (SARS-CoV-2) spread, community-based health care providers have been asked throughout the COVID-19 pandemic to defer elective or lower acuity services, and to provide services virtually when possible. This requires a risk assessment, weighing the risk of COVID-19 spread against the risk of harm to the client/patient. As Ontario continues to move through phases of reopening, health care workers must consider which services should be provided in-person, which to provide virtually, and which to defer. This document aims to provide further considerations on how to interpret local epidemiology and apply it to a risk assessment in making service provision decisions.

## Methods

- Literature review: Articles relevant to this question were reviewed on MEDLINE®. The detailed search strategy is available in Appendix 1. The literature search was performed on July 14, 2020.
- Jurisdictional scan: A grey literature scan for similar guidance produced by governments and health organizations from other provinces and countries was conducted. This was followed by a more thorough search specifically reviewing each Canadian province and territory, and Canada's Organization for Economic Co-operation and Development (OECD) comparator countries (United States of America, Australia, New Zealand, United Kingdom, Germany, France, Netherlands and Sweden). The search was limited to English. The jurisdictional scan was performed on July 29, 2020.

# Review of Current Guidance

## Literature Review

When looking at published literature, several articles were identified that provided guidance to specific medical specialties on decision-making around resumption of services. However, most of this guidance was directed at hospital-based services, primarily surgery<sup>1-4</sup>. Marin-Gabriel and Santiago (2020) addressed the resumption of endoscopy, which in Ontario can be provided as a community-based service<sup>5</sup>. All articles were in agreement with these common factors in deciding whether to resume services:

- Acuity or necessity of medical service; risk of harm to the patient if service delayed
- Sufficient preparations made for service provision, including staff training and infection prevention and control (IPAC) measures in place
  - Sufficient resources available for safe provision of care, including availability of personal protective equipment (PPE)
- Surge capacity within the local health care system (e.g. Risk of complication requiring admission to hospital)
- Patient having symptoms of COVID-19
- Patient comorbidities; patient at higher risk for morbidity and mortality from COVID-19 infection
- Local epidemiology, particularly evidence of community transmission of COVID-19
  - Only Marin-Gabriel and Santiago (2020) specifically highlight an epidemiologic indicator to consider, in this case local effective reproductive number (R)

## Jurisdictional Scan

Similar guidance for the resumption of community-based health care services has been created by multiple jurisdictions around the world, as follows:

- Canada:
  - Canadian Medical Association: [Reopening your practice during COVID-19](#)<sup>6</sup>
  - College of Physicians and Surgeons of British Columbia: [Providing in-person care](#)<sup>7</sup>
  - College of Physicians and Surgeons of Alberta: [COVID-19: Reopening practice](#)<sup>8</sup>
  - College of Physicians and Surgeons of Saskatchewan: [Guidance document to physicians: Re-open Saskatchewan phase 2](#)<sup>9</sup>
  - College of Physicians and Surgeons of Ontario (CPSO): [COVID-19 FAQs for physicians](#)<sup>10</sup>
- United States

- Center for Disease Control: [Framework for health care systems providing non-COVID-19 clinical care during the COVID-19 pandemic](#)<sup>11</sup>
- Guidance specific to dental services: [Guidance for dental settings](#)<sup>12</sup>
- Centers for Medicare and Medicaid: [Re-opening facilities to provide non-emergent non-COVID-19 healthcare: Phase I](#)<sup>13</sup>
- Australia
  - Department of Health: [Guide for general practitioners to inform shared decision-making with patients around risk of severe illness related to COVID-19](#)<sup>14</sup>

## Discussion

### Factors in Risk Assessment

In agreement with guidance from other organizations discussed above, the decision to provide services relies upon a risk assessment, weighing the risk of transmission of COVID-19 and the risk of harm to the patient. Questions to ask include:

### **RISK OF TRANSMISSION OF COVID-19, OR HARM FROM TRANSMISSION OF COVID-19**

- Is there evidence of ongoing community transmission of COVID-19 where the facility is located? If so, how much?
  - In some cases, it may be relevant to consider evidence of ongoing community transmission of COVID-19 in nearby communities, which may be catchment areas for patients or areas from where staff may commute to work.
  - If local metrics are not available consider regional (public health unit or Ontario Health region/sub-region).
  - Refer to the thresholds section below for metric considerations.
- Is the facility prepared to implement recommended IPAC measures to protect other patients and staff?
  - Are staff trained and aware of the facility's policies?
  - Is there adequate PPE available?
- Is the patient at higher risk of severe outcomes due to COVID-19 infection?
- Am I or any staff members who I supervise at higher risk of severe outcomes due to COVID-19 infection?

- Is the patient showing any signs or symptoms of COVID-19, or are they a known contact of someone diagnosed with COVID-19, exposed to an outbreak setting or travelled outside of Canada in the last 14 days?
- What is the probability of complications arising from this service that could require acute care resources, which may be scarce?

## RISK OF HARM TO THE PATIENT IF THE SERVICE IS DELAYED

- Can this service be provided virtually or in another setting that would pose less risk?
- What harms, complications or other negative outcomes may arise if this service is deferred?
- Will offering this service to the patient prevent the need for future use of limited acute care resources?

## Finding Local COVID-19 Epidemiologic Data

When looking for COVID-19 epidemiologic data, consider the relevant population level – provincial, regional, local, or even institutional. Data about COVID-19 epidemiology for local communities can be found in several places, some of which we suggest below:

- [Website of your local Public Health Unit](#)<sup>15</sup>
- [Public Health Ontario COVID-19 Data Tool](#)<sup>16</sup>
- [Public Health Ontario Daily and Enhanced Surveillance Reports](#)<sup>17</sup>

## Interpreting Local Epidemiology

### INDICATORS

As a community-based health care organization, the goal of looking at local epidemiologic indicators is to assess the level of transmission within one's community. This means that cases related to institutional outbreaks or cases that contracted COVID-19 in a different jurisdiction may not reflect ongoing transmission within one's community.

There are several epidemiologic indicators that can be useful in assessing the transmission of COVID-19 in your community. However, a single indicator alone provides an incomplete picture. The table below provides a few epidemiologic indicators, their definition and interpretation, and possible ways to translate them to a risk assessment.

**Table 1. Interpretation of epidemiologic indicators and where to find them for your community**

Epidemiologic Indicator	Definition	Role in Risk Assessment
Incidence	Number of new cases being diagnosed (e.g. daily, weekly)	<ul style="list-style-type: none"> <li>When interpreting incidence, consider whether these new cases reflect community transmission or are related to other events (e.g. Institutional outbreaks)</li> <li>Watching trends over time in incidence provides useful information about changes in burden of disease in the community</li> </ul>
Cumulative case count	Total number of cases in the area, both active and resolved	<ul style="list-style-type: none"> <li>Often the most readily accessible information</li> <li>Helpful in understanding the impact of COVID-19 in your community throughout the pandemic</li> <li>May not provide the timely information required for a point-of-care risk assessment</li> </ul>
Prevalence	Cumulative number of cases, both active and resolved, given as a rate per 100 000 people	<ul style="list-style-type: none"> <li>Helpful in understanding the current “pre-test probability” or probability of encountering COVID-19 in the general public</li> </ul>
Current hospitalization count (or in ICU, or ventilated)	Current number of cases that are hospitalized (or in ICU or ventilated)	<ul style="list-style-type: none"> <li>Indicator of severity of illness</li> <li>Does not indicate underlying community transmission</li> <li>Can inform other components of risk assessment, such as use and availability of health care resources</li> </ul>
Effective reproductive number	Average number of secondary cases caused by a single case	<ul style="list-style-type: none"> <li>Not as readily available - may be more difficult to find</li> <li>Requires a baseline level of cases in order to accurately calculate</li> <li>Indicator of the current rate of increase in disease burden</li> </ul>
Percent test positivity	Percentage of tests completed that result positive for SARS-CoV-2	<ul style="list-style-type: none"> <li>In interpreting this, consider whether it is due to a change in rates of COVID-19, or because of a change in testing strategy (e.g. more tests are being done in asymptomatic)</li> </ul>

Epidemiologic Indicator	Definition	Role in Risk Assessment
		people, decreasing the percentage that come back positive)

## THRESHOLDS

Though thresholds are sometimes useful or necessary, risk is on a continuum. Different organizations have suggested thresholds for some of the epidemiologic indicators, for varying purposes. For example:

- [The Government of Ontario](#)<sup>18</sup> has been using multiple indicators in deciding how and when to relax community measures to control the spread of COVID-19. The epidemiological indicators include the number of new cases, number of cases that cannot be traced back to a source, and the number of hospitalized cases. Rather than set thresholds, Ontario has been looking for consistent decreases over two weeks in these indicators in order to proceed to the next stage of opening.
- The [CDC](#)<sup>19</sup> assesses risk of travel to other countries using new case counts and incidence rate. Low risk countries are those with <250 new cases and <1.5 new cases/100 000, while high risk countries are those with >500 new cases and >3 new cases/100 000. They also look at the general trend of cases, assessing whether it is decreasing, stable or increasing.
- [Infectious Diseases Society of America](#)<sup>20</sup> defines low prevalence of COVID-19 as <2% and high prevalence as >10%, in guidelines on the diagnosis of COVID-19.
- PHO proposes the following thresholds for consideration as early warning for COVID-19 activity:
  - Incidence of five or more cases per 100,000 population over 7 days
  - Percent positivity of COVID-19 laboratory tests over 7 days of 0.5% or higher

While these thresholds have been proposed by some for interpreting epidemiologic indicators, epidemiology is not the sole factor in a risk assessment, as discussed above.

Further, these organizations have proposed thresholds based on the purpose for their risk assessment. What may be an appropriate threshold for one organization and purpose may not be appropriate for another. Thus, for example, [Ontario Health](#)<sup>21</sup> recommended hospitals determine their own incidence rate to use as a trigger for ramping up or ramping down services.

## Applying Local Epidemiology to Decision-Making

### TYPES OF DECISIONS

The questions listed in this risk assessment can be asked to inform several decisions, including whether to reopen your clinic, which services to provide, whether to defer care to a specific patient, and how to provide care. However, this risk assessment alone is not sufficient to inform decisions around IPAC and PPE – further information for these decisions can be found here:

- Public Health Ontario: [COVID-19: Universal mask in health care settings and retirement homes](#)<sup>22</sup>

- Public Health Ontario: [IPAC recommendations for use of personal protective equipment for care of individuals with confirmed or suspected COVID-19](#)<sup>23</sup>
- Public Health Ontario: [COVID-19 in Dental Care Settings](#)<sup>24</sup>
- CPSO: [Infection Prevention and Control Assessment for Independent Health Facilities and Out of Hospital Premises During the COVID-19 Pandemic](#)<sup>25</sup>

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## POTENTIAL FRAMEWORK FOR DECISION MAKING

**Table 2. Framework for decision to provide a clinical service in-person**

Potential for patient harm if service delayed	Examples	Substantial community transmission	Minimal to moderate community transmission	No to minimal community transmission
Potential for acute, severe or imminent harm	<ul style="list-style-type: none"> <li>Well-child visits for newborns and young children for whom there are growth or developmental concerns</li> <li>Dental emergencies</li> <li>Unstable chronic conditions</li> <li>Concerning new symptoms requiring physical exam</li> </ul>	Provide care without delay	Provide care without delay	Provide care without delay
Potential for moderate or long-term harm	<ul style="list-style-type: none"> <li>New symptoms requiring physical exam, without red flags or concerning features</li> <li>Pediatric vaccinations</li> </ul>	Provide care when feasible, prioritizing higher risk patients	Provide care when feasible to all patients	Provide care without delay
Potential for mild harm	<ul style="list-style-type: none"> <li>Elective procedures</li> <li>Care for stable chronic conditions</li> </ul>	Consider deferring until community transmission of COVID-19 decreases	Provide care when feasible, prioritizing higher risk patients	Provide care without delay

\*\*table adapted from Centers for Disease Control and Prevention<sup>11</sup>

## SHARED-DECISION MAKING

Though this guidance is aimed towards health care providers, we hope that this also equips health care providers to have discussions about risk with patients. At times, patients may have different perceptions of their risk than their health care providers, either of complications from delayed service or of infection



with COVID-19. Working through these questions with patients may help patients understand the health care provider's risk assessment.

## Conclusion

This document was developed to provide guidance to community-based health care providers in deciding how to resume clinical services to patients. This decision requires a nuanced point-of-care assessment, considering factors about one's community, clinic and patient. Thus, this decision may vary between facilities and even between patients. There is no single threshold (e.g. of prevalence), as risk exists on a continuum.

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