

Monitoring for Future Waves of COVID-19

To: Chair and Members of the Board of Health

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Recommendations

It is recommended that the Board of Health:

1. Receive this report for information.

Key Points

- With increased incidence of COVID-19 being highly probable over the next few weeks or months, it is important for Wellington-Dufferin-Guelph Public Health (WDGPH) to conduct surveillance to detect any sustained increases in transmission.
- Monitoring of trends in reported cases will be enhanced by analysis of other indicators related to hospitalizations, syndromic surveillance, preparedness and public health performance.

- Thresholds will be developed for certain indicators to act as triggers for local public health action to reduce transmission and mitigate the effects of the pandemic.
- Appropriate public health actions to be taken in response to triggers will be determined by the IMS Command Table.

Discussion

Overview

Historically, pandemics have occurred in two or more waves of cases, rather than just a single wave. For example, the first wave of the novel influenza (pH1N1) that occurred in the spring of 2009 was followed in the fall and winter by a second and larger wave, and that strain of influenza is now seen every fall and winter as one of several strains of seasonal influenza.

It is currently unknown exactly how the current pandemic of COVID-19 will unfold in the future. However, increased transmission of the virus that causes COVID-19 is highly likely given two important factors:

1. Only a small proportion of Ontario's population has been exposed to the virus so far. A seroprevalence study conducted by Public Health Ontario has revealed that less than 2% of the population appears to have COVID-19 antibodies, indicating prior infection.¹ This potentially leaves over 98% of the population susceptible to infection in the future.
2. Reopening the economy and the lifting of some control measures will increase contact between individuals returning to work and attending social gatherings. Person-to-person contact rates influence the reproductive number (R) that drives transmission during a pandemic.

In July, members of the Board of Health were presented with additional information about how the COVID-19 pandemic may unfold. On August 14, Chief Public Health Officer Dr. Theresa Tam revealed federal modelling data that included a second wave in the fall as a possible scenario.²

Local Surveillance for COVID-19

Effective surveillance is essential to understanding and managing the transmission of COVID-19 locally in Wellington, Dufferin and Guelph (WDG). Surveillance includes the systematic and ongoing collection, analysis, and interpretation of COVID-19 data, combined with dissemination of the data so that it can inform local decision-making. Since the start of the pandemic, WDGPH has been sharing local data about cases and outbreaks online in an interactive dashboard.

To ensure effective surveillance for any sustained transmission within the population, WDGPH is in the process of adding several indicators to those currently being monitored. While the current indicators are based on detected (diagnosed) cases of COVID-19, this can be subject to changes in testing volumes and criteria. The indicators that will be added will reflect trends in:

- Hospitalizations related to COVID-19,
- Emergency room and school absenteeism-based syndromic surveillance,
- Availability of personal protective equipment (PPE), and
- The performance of WDGPH in case and contact follow-up.

In addition to providing more robust information about local disease activity, these indicators will also provide insight into the available capacity of the health system during a second wave.

Indicators and Alert Thresholds

The list of indicators being considered for enhanced surveillance for future waves of COVID-19 activity is shown in Appendix A. For some indicators, alert thresholds will be determined and built into the surveillance system. These alerts are meant to act as triggers for public health actions in response to the start of a second or subsequent wave of transmission.

Actions taken in response to indicators of a second wave would be determined within WDGPH's IMS response structure. These actions may include:

- Suspending non-COVID services and redeploying staff to COVID-19 work;
- Shifting WDGPH's public communications, to acknowledge an increase in COVID-19 transmission;
- Liaison with health system partners to ensure they are prepared for an imminent increase in demand for testing and other health services; and

- Engaging with non-health stakeholders, including municipalities, about actions that they can take to slow transmission.

Conclusion

This report provides information on the initiative underway at WDGPH to enhance the current COVID-19 surveillance with additional indicators that provide a more comprehensive picture of trends of transmission and disease in the local population. Public health actions taken in response to triggers generated by the enhanced surveillance system can be used to mitigate the effects of the current COVID-19 pandemic.

Ontario Public Health Standard

“Surveillance is the **systematic and ongoing collection, collation, and analysis of health-related information** that is **communicated in a timely manner to all who need to know**, so that action can be taken. Surveillance contributes to effective public health program planning, delivery, and management. Dissemination of surveillance analyses **may take the form of reports, advisories, healthy public policy recommendations, alerts, or warnings**. Surveillance has historically been associated with infectious diseases and vaccination programs, but its importance has become increasingly recognized for environmental health issues, child health, reproductive health, chronic disease prevention, and injury prevention.”³

The board of health shall:

1. conduct surveillance, including the ongoing collection, collation, analysis, and periodic reporting of population health indicators
2. interpret and use surveillance data to communicate information on risks to relevant audiences

2020 WDGPH Strategic Direction(s)

Service Delivery: We will provide our programs and services in a flexible, modern and accessible manner, and will ensure they reflect the immediate needs of our Clients and our role in the broader sector.

System Transformation: We will equip the Agency for change in all aspects of our work so that we are ready for transformational system change when the time comes.

☒ **Knowledge Transfer:** We will ensure that our decision-making and policy development efforts are informed by meaningful health data at all times.

Health Equity

Health equity is the condition where everyone can attain their full health potential and are not disadvantaged due to their social position or other socially determined circumstances.

It is recognized that there are differential impacts of COVID-19. Pre-existing social vulnerabilities tend to get worse following a disaster.

The response to the threat from the COVID-19 pandemic has had a significant impact on the economy. People who work in lower paying jobs such as the service industry are disproportionately affected. They are also less likely to have paid sick leave.

People who live in poverty are more likely to have a chronic health condition such as diabetes or heart disease at a younger age than those with a higher income.⁴ As a result they are more likely to be infected with COVID-19 and to have poorer illness outcomes.

References

1. Public Health Ontario. COVID-19 Serosurveillance Summary: COVID-19 Seroprevalence in Ontario: March 27, 2020 to June 30, 2020. [Internet]. 2020 Jul 29 [cited 2020 Aug 16]. Available from: <https://www.publichealthontario.ca/-/media/documents/ncov/epi/2020/07/covid-19-epi-seroprevalence-in-ontario.pdf>
2. Cable Public Affairs Channel. Federal health officials present updated COVID-19 modelling – August 14, 2020. [Video file]. 2020 Aug 14 [cited 2020 Aug 16]. Available from: <https://www.youtube.com/watch?v=NuKbEi1Flkg>
3. Ministry of Health and Long-Term Care. Ontario Public Health Standards: Requirements for Programs, Services, and Accountability. 2018 Jul 1. Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/pr otocols_guidelines/Ontario_Public_Health_Standards_2018_en.pdf

4. Elo IT. Social Class Differentials in Health and Mortality: Patterns and Explanations in Comparative Perspective. *Annu Rev Sociol.* 2009; 35:553-572.

Appendices

Appendix A - List of Indicators currently being considered for surveillance of COVID-19 activity and preparedness for future waves of transmission within WDG.

Appendix A

The following is a list of indicators currently being considered for surveillance of COVID-19 activity and preparedness for future waves of transmission within WDG.

Indicator	Data Source	Alert Threshold for Action
7-day average of COVID-19 cases for the past 14 days	iPHIS	7-day increase in average
7 day average of daily new COVID-19 Cases (non-institutional) by specimen collection/onset date	iPHIS	7-day increase in average
7-day average of Re	iPHIS/RedCap/CCM system	TBD
Percent of new COVID-19 Cases that are non-epi linked (no link to confirmed case, outbreak or travel)	iPHIS	7-day increase in average
New and Cumulative number of institutional and congregate care settings in COVID-19 outbreak	iPHIS	Sustained increase (TBD by decision-makers)
COVID-19 deaths per week	iPHIS	N/A (Not an early enough indicator of COVID-19 activity)
7-day moving average of new hospitalized COVID-19 cases by hospitalization date	Ministry of Health Visual Analytics System	3-day increase in average
Percent of occupied acute care beds	Ministry of Health Visual Analytics System	90% occupied
7-day moving average of occupied intensive care unit beds	Ministry of Health Visual Analytics System	5-day increase in average
Percent of occupied intensive care unit beds	Ministry of Health Visual Analytics System	90% occupied
7-day moving average of occupied intensive care unit beds with ventilators	Ministry of Health Visual Analytics System	5-day increase in average
Percent of occupied intensive care unit beds with ventilators	Ministry of Health Visual Analytics System	75% occupied
Days of personal protective equipment stock in reserve	Ministry of Health Visual Analytics System	TBD depending on amount of time required for replenishing supplies
Percent of newly reported COVID-19 cases reached within 24 / 48 hours of reported date	iPHIS	N/A
Percent of newly identified COVID-19 contacts (high- and medium-risk) reached within 24 / 48 hours of contact identification date	REDCap	N/A
COVID-19 testing rate per 100,000 population	OLIS	N/A
LTCH/RH IPAC assessment status	WDGPH internal data	Green/Yellow/Red categories
COVID-19 test percent positivity	OLIS	14-day increase
7-day average of number of daily RESP syndrome ED visits	ACES	Sustained 7-day increase in ED as well as school absenteeism
Percentage of schools with <10% student absenteeism	School absenteeism reporting	
Number of suspect COVID hospitalizations	Ministry of Health Visual Analytics System	TBD