Public Health Physicians of Canada PHPC MSPC Médecins de santé publique du Canada

Case and Contact Management

Contact tracing requires expertise, experience, and public health capacity.

Public health is much broader than outbreak response, however. Its functions include population health assessment, health surveillance, health protection, health promotion, disease and injury prevention, and as well as emergency preparedness and response. It works to improve health and decrease inequity within populations.

It is an essential component of case and contact management for many communicable diseases and is one of multiple measures happening simultaneously during a case or outbreak response.

It is a population-based measure that aims to interrupt networks of transmission. It does this by intervening to stop the spread of disease between an infected person and the ring of close contacts around them, by identifying those close contacts and in turn stopping these people from passing the virus to others around them.[1] This occurs for many individuals simultaneously while also considering the overall clusters and patterns of transmission to adjust the response measures.

In Canada, it is typically conducted by trained and experienced groups of public health nurses or public health inspectors, working with public health specialist physicians such as Medical Officers of Health, epidemiologists, and others as part of a team.

Why do we do it?

Case management and contact tracing decreases the spread of a communicable disease by breaking the chain of transmission within a population/community.[2]

Individuals can receive information about disease transmission, symptoms, and when to seek follow-up; be screened for symptoms and tested as needed; receive post-exposure prophylaxis as appropriate for a communicable disease; and be advised to isolate or quarantine as appropriate to prevent further spread.

Allows for population-level investigations, including outbreak clusters.

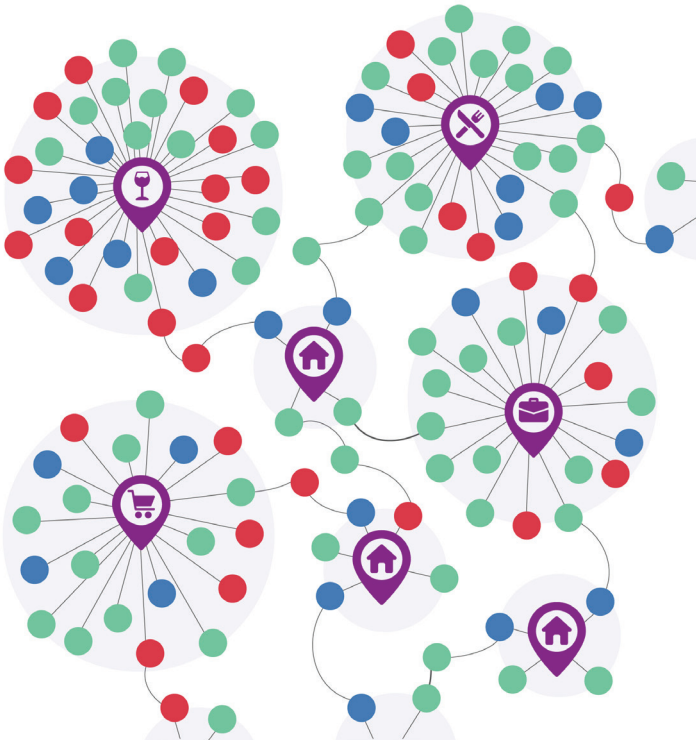
Contributes to our understanding of the epidemiology of the disease by providing insight into how the disease is spreading in the population. For example, it allows us to understand what percentage of close household contacts become infected.[2]

All of this links to other elements of public health response, including environmental measures, infection prevention and control, and communication.

Public Health Physicians of Canada (PHPC) is the national specialty society for PHPM specialists and other physicians working in public health. Many PHPC members are Medical Officers of Health (MOH) with responsibilities for overseeing the public health response to the pandemic within health authorities and health units across Canada.

Those conducting contact tracing must have expertise in:

- Maintaining patient confidentiality
- Understanding and explaining medical terms and concepts
- Communicating medical information clearly and sensitively
- Asking questions in an open, non-judgmental way to elicit responses that inform the public health response
- Identifying patients who require further management and connecting them with the appropriate resources
- Connecting with the overall public health and population response
- Demonstrating cultural competency in their interactions with the community[3]



LEGEND

Location
Asymptomatic
Symptomatic
Symptoms Unknown

Figure 1 demonstrating hypothetical spread within a cluster of COVID-19 cases. Within a population, not all contacts may be identified, not all those exposed will develop COVID-19, and not all cases may show symptoms.

An Example of the Complexity of Individual and Population Circumstances

Alina has developed symptoms and tested positive for COVID-19. On initial contact tracing follow-up, it is identified that she works at a food production facility that has 500 employees, 50 of whom she has interactions with on each of her shifts. Her partner, Fionn, works as a healthcare aide at a local long-term care facility with 250 residents. He works on all three floors of the building, depending which shift he is on. Fionn works part time and is not entitled to benefits such as sick leave. Alina and Fionn live at home with their 3 kids who now go to their grandparents' house while the couple works, as schools and daycares are closed. The grandparents live with their other daughter, her husband and their child. Alina and Fionn rent the basement suite of a 3-storey house; two other families live on the main and upper floors, for a total of 13 people in the home. The entrance and laundry are shared. It is identified that several members of one of the other family have been mildly ill recently, but the family did not have a primary care provider or receive testing.

Some estimates have suggested the following timeframes per case or contact respectively[4]:

Interview case, create contact list, reach out to contacts

12 HOURS

1 - 3 STAFF EACH STEP

Quarantine and monitoring (regular follow-up)

20 MINUTES

1 STAFF EACH STEP

Testing of symptomatic contact (assess symptoms, conduct test)

6.5 HOURS

1+ STAFF EACH STEP

Part of a team

Those conducting case and contact management work as part of a larger outbreak management team. Controlling communicable disease outbreaks requires applying successful interdisciplinary collaboration; health care provider involvement is only one part of this. Roles in an outbreak management team may include:

MEDICAL OFFICER OF HEALTH

Often determines if an outbreak is present, leads the outbreak response team, ensures appropriate outbreak investigation and management in line with evidence and best practice, and oversees the public health control measures and interventions.

COMMUNICABLE DISEASE TEAM

Conducts outbreak investigations according to disease-specific protocols, obtains case details, and conducts case and contact management as needed. Provides education and information to community partners to facilitate outbreak management. Typically includes public health nurses and or inspectors.

EPIDEMIOLOGIST

Collects, manages, analyzes and interprets outbreak data to inform the response and assist in identifying trends and targeting interventions.

ENVIRONMENTAL HEALTH TEAM

Assists with outbreak investigations, provides guidance on environmental measures and cleaning, and conducts inspections to ensure compliance and enforce public health measures.

LOCAL HEALTH CARE PROVIDER TEAM

Provides care for patients identified, and as well as notifies and shares information with public health.

OTHERS

Communications and administrative support are crucial to the response. Laboratory specialists and others may also play a large role.

Future

We can continue to learn from and improve on our ways of doing contact tracing. COVID-19 has prompted a number of conversations about digital contact tracing support and the role of phone apps. While it has not yet been shown to improve outcomes, work is moving forward quickly on this front, and we hope to better understand how these tools can fit in. We hope these conversations can also occur in the larger context of public health data in Canada, including implementing the learnings from SARS and previous discussions about public health data solutions in Canada.

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