City of Hamilton
BOARD OF HEALTH

Meeting #: 18-003
Date: March 19, 2018
Time: 1:30 p.m.
Location: Council Chambers, Hamilton City Hall
71 Main Street West

Loren Kolar, Legislative Coordinator (905) 546-2424 ext. 2604

Pages

1. APPROVAL OF AGENDA

   (Added Items, if applicable, will be noted with *)

2. DECLARATIONS OF INTEREST

3. APPROVAL OF MINUTES OF PREVIOUS MEETING

   3.1 February 22, 2018 — 3

4. DELEGATION REQUESTS

5. CONSENT ITEMS

   5.1 Food Advisory Committee Minutes - January 10, 2018 — 10

   5.2 Oral Health (BOH18001) (City Wide) — 14

   5.3 Food Waste Reduction (BOH13001(h)/PW18023) (City Wide)(Outstanding Business List) — 36

   5.4 Infectious Disease and Environmental Health Semi-Annual Report (BOH18004) (City Wide) — 47

6. PUBLIC HEARINGS / DELEGATIONS

7. STAFF PRESENTATIONS

8. DISCUSSION ITEMS

9. MOTIONS

10. NOTICES OF MOTION

11. GENERAL INFORMATION / OTHER BUSINESS

12. PRIVATE AND CONFIDENTIAL

13. ADJOURNMENT

BOARD OF HEALTH
MINUTES 18-002

1:30 p.m.
Thursday, February 22, 2018
Council Chambers
Hamilton City Hall

Present:	Mayor F. Eisenberger, Councillor T. Jackson (Deputy Mayor) Councillors A. Johnson, M. Green, S. Merulla, C. Collins, D. Skelly, B. Johnson, L. Ferguson and J. Partridge
Absent with regrets:	Councillors J. Farr – City Business, T. Whitehead, D. Conley, M. Pearson and R. Pasuta – Personal, A. VanderBeek - Illness

THE FOLLOWING ITEMS WERE REFERRED TO COUNCIL FOR CONSIDERATION:

1. Financial Controls Checklist (BOH18008) (City Wide) (Item 5.1)

(B. Johnson/Green)
That Report BOH18008, respecting Financial Controls Checklist, be received.

CARRIED

2. Bay Area Climate Change Partnership (BOH18009) (City Wide) (Item 5.2)

(Partridge/Green)
That Report BOH18009, respecting the Bay Area Climate Change Partnership, be received.

CARRIED

3. OPHS Modernization - Annual Service Plan & Budget (BOH17010(e)) (City Wide) (Item 7.1)

(Jackson/Merulla)
That Appendix “A” attached to Report BOH17010(e) respecting the City of Hamilton Public Health Services 2018 Annual Service Plan and Budget be approved for submission to the Ministry of Health and Long-Term Care.

CARRIED

4. Food Strategy Implementation Plan (BOH13001(f)) (City Wide) (Item 8.1)

(Collins/Merulla)
That Report BOH13001(f), respecting a Food Strategy Implementation Plan, be received.

CARRIED

5. Food Strategy Implementation Plan (BOH13001(g)) (City Wide) (Item 8.2)

(Collins/Merulla)
That Report BOH13001(g), respecting a Food Strategy Implementation Plan, be received.

CARRIED

6. Amendment to the City of Hamilton's Food Strategy (Revised) (Item 9.1)

(Collins/Merulla)
WHEREAS, the Emergency Food Providers' Network, in addition to providing emergency food to the most vulnerable citizens in our community, member agencies are multi-service organizations that also provide a wide-array of social programs and services designed to improve the overall health and quality of life of people living in poverty

THEREFORE BE IT RESOLVED:

(a) That Public Health Services' staff work with the Emergency Food Providers' Network to amend the City of Hamilton Food Strategy Report language pertaining to Emergency Food Provision on pages 42-43, attached hereto as Appendix "A", of the Food Strategy document;

(b) That the Board of Health recognizes the valuable work of the Emergency Food Providers' Network and its member agencies as assets in our community, and be promoted and supported as an integral part of Hamilton's Food Strategy***;*** and

(c) That the Board of Health encourages and welcomes the Emergency Food Providers' Network to identify and put forward a representative from the Network for consideration of service on the City's Food Advisory Committee during its next term.

CARRIED

7. Correspondence from the Minister of Health and Long-Term Care respecting a Base Funding Increase to Support the Delivery of the Needle Exchange Program Initiative for the City of Hamilton. (Item 11.1)

(Jackson/B. Johnson)
That the Board of Health authorize and direct the Medical Officer of Health to receive, utilize, and report on the increased funding from the Ministry of Health and Long-Term Care to support the delivery of the Needle Exchange/Syringe Program and services.

CARRIED

FOR INFORMATION:

(a) CHANGES TO THE AGENDA (Item 1)

The Clerk advised the Board of the following changes:

1. ADDED DELEGATION REQUEST (Item 4)

4.2 Don McLean, Hamilton 350 Committee, respecting Item 5.2, Climate Change Partnership (BOH18009)

2. REPLACEMENT MOTION (Item 9)

9.1 Amendment to the City of Hamilton's Food Strategy (Revised)

(B. Johnson/A. Johnson)
That the agenda for the January 15, 2018 Board of Health be approved, as amended.

CARRIED

(b) DECLARATIONS OF INTEREST (Item 2)

None.

(c) APPROVAL OF MINUTES OF PREVIOUS MEETING (Item 3)

(i) January 15, 2018 (Item 3.1)

(A. Johnson/Merulla)
That the Minutes of the January 15, 2018 meeting of the Board of Health be received, as presented.

CARRIED

(d) DELEGATION REQUESTS (Item 4)

(i) Sandi Stride, Mohawk College, respecting Item 5.2, Climate Change Partnership (BOH18009), and to provide an update on the Centre for Climate Change Management, and the March 7/8th Climate Change Summit (for today's meeting) (Item 4.1)

(Partridge/Green)
That the delegation request from Sandi Stride, Mohawk College, respecting Item 5.2, Climate Change Partnership (BOH18009), and to provide an update on the Centre for Climate Change Management, and the March 7/8th Climate Change Summit, be approved, for today’s meeting.

CARRIED

(ii) Don McLean, Hamilton 350 Committee, respecting Item 5.2, Climate Change Partnership (BOH18009) (for today's meeting) (Added Item 4.2)

(Partridge/Green)
That the delegation request from Don McLean, Hamilton 350 Committee, respecting Item 5.2, Climate Change Partnership (BOH18009), be approved, for today's meeting.

CARRIED

(e) DELEGATIONS (Item 6)

(i) Lynn Gates, Food Advisory Committee, respecting the Food Strategy Implementation Plan (Item 6.1)

The delegation from Lynn Gates, Food Advisory Committee, respecting the Food Strategy Implementation Plan, was withdrawn.

(ii) Sandi Stride, Mohawk College, respecting Item 5.2, Climate Change Partnership (BOH18009), and to provide an update on the Centre for Climate Change Management, and the March 7/8th Climate Change Summit (Item 6.2)

Sandi Stride addressed the Board of Health respecting Item 5.2, Climate Change Partnership (BOH18009), and to provide an update on the Centre for Climate Change Management, and the March 7/8th Climate Change Summit with the aid of a PowerPoint Presentation. A copy of the presentation has been included in the official record.

(Skelly/Jackson)
That the delegation from Sandi Stride, Mohawk College respecting Item 5.2, Climate Change Partnership (BOH18009), and to provide an update on the Centre for Climate Change Management, and the March 7/8th Climate Change Summit, be received.

CARRIED

For further disposition, refer to Item 2.

A copy of the presentation is available at www.hamilton.ca

(iii) Don McLean, Hamilton 350 Committee, respecting Item 5.2, Climate Change Partnership (BOH18009) (Added Item 6.3)

Don McLean, Hamilton 350 Committee, addressed the Board of Health respecting Item 5.2, Climate Change Partnership (BOH18009), with the aid of a PowerPoint presentation. A copy of the presentation has been included in the official record.

(Partridge/Green)
That the delegation from Don McLean, Hamilton 350 Committee, respecting Item 5.2, Climate Change Partnership (BOH18009), be received.

CARRIED

For further disposition, refer to Item 2.

A copy of the presentation is available at www.hamilton.ca

(f) DISCUSSION ITEMS (Item 8)

(i) Food Strategy Implementation Plan (BOH13001(f)) (City Wide) (Referred from the December 8, 2017 Council meeting) (Item 8.1)

(Collins/Merulla)
That Report BOH13001(f), respecting a Food Strategy Implementation Plan, be LIFTED from the table.

CARRIED

For disposition of this matter, refer to Item 4.

(ii) Food Strategy Implementation Plan (BOH13001(g)) (City Wide) (Referred from the December 8, 2017 Council meeting) (Item 8.2)

(Collins/Merulla)
That Report BOH13001(g), respecting a Food Strategy Implementation Plan, be LIFTED from the table.

CARRIED

For disposition of this matter, refer to Item 5.

(g) GENERAL INFORMATION / OTHER BUSINESS (Item 11)

(i) Amendments to the Outstanding Business List (Item 11.2)

(Ferguson/B. Johnson)
Items to be marked as completed and removed:

Item M - Food Strategy Priority Actions 4 & 5 (August 11, 2016, Item 7.1)
Addressed in Item 8.1

Item N - Food Strategy Priority Actions Implementation Plan
(August 11, 2016, Item 7.1)
Addressed in Item 8.2

Item S - Review of the City of Hamilton Public Health Services School Program
(January 16, 2017, Item 9.1)

Item AA - Review of Heart & Stroke Position Statement on Sugar, Heart Disease and Stroke (BOH17022)
(June 19, 2017)

Item JJ - Correspondence from the Association of Local Public Health Agencies (alPHa) dated July 18, 2017, respecting the Council of Medical Officers of Health Recommendations for the Immunization of School Pupils Act (ISPA) and the Child Care and Early Years Act (CCEYA)
(November 13, 2017, Item 11.2)
Mailed February 9, 2018

Items with revised due dates:

Item A - Staff to report on Food Waste Management (Motion from Councillor Merulla)
(January 12, 2015, Item 10)
Due Date: December 4, 2017
Revised Date: March 19, 2018

Item G - Review of the City of Hamilton's Pest Control By-law
(November 16, 2015, Item 9.1)
Due Date: March 19, 2018
Revised Date: ON HOLD – with Legal Services

Item I - Pilot-Project to Eliminate Sales of Products with Peanuts or Tree Nuts in four City of Hamilton Facilities
(June 13, 2016, Item 8.2)
Due Date: Q1 2018
Revised Date: March 19, 2018

Item P - Contaminated Sites Management Plan
(December 5, 2016, Item 5.1)
Due Date: --
Revised Due Date: Q4 2018

Item CC - Mill grove Public School respecting a Food Recovery Program from Stores and Farmers for the Benefit of the Food Bank (June 19, 2017, Added Item 6.3)
Due Date: --
Revised Due Date: March 19, 2018

Item DD - Stock Epinephrine Auto Injector Expansion in Restaurants (BOH13040(c))
(June 19, 2017, Item 7.1)
Due Date: --
Revised due date: March 19, 2018

Item EE - Reduction of Airborne Particulate in Hamilton
(July 13, 2017, Added Item 9.1)
Due Date: Q1 2018
Revised Due Date: April 16, 2018

CARRIED

(h) ADJOURNMENT (Item 13)

(A. Johnson/Ferguson)
That, there being no further business, the Board of Health be adjourned at 3:07 p.m.

CARRIED

Respectfully submitted,

Mayor F. Eisenberger
Chair, Board of Health

Loren Kolar
Legislative Coordinator
Office of the City Clerk

Hamilton

Minutes

FOOD ADVISORY COMMITTEE

January 10 2018, 7:00 – 9:00 p.m.
City Hall, Room 264, 2nd Floor
71 Main Street West, Hamilton

Present: Luc Peters (Co-Chair), Kate Flynn, Clare Wagner, Laurie Nielsen, Tracy Hutchings, Bill Wilcox, Hannah Pahuta, Lynn Gates (Recorder), Sandy Skrzypczyk (Staff Liaison)

Absent: Vijay Jos (Co-Chair), Nancy Henley, Bill Slowka, Lauren Beeler, Steve Robinson

1. CHANGES TO THE AGENDA
Item 7.4 Added – Membership, otherwise agenda approved as presented.

2. DECLARATIONS OF INTEREST
There were no declarations of interest.

3. APPROVAL OF MINUTES OF PREVIOUS MEETING
(C. Wagner/H. Pahuta)
Minutes from October 25th, 2017 were approved as presented.

CARRIED

4. CONSENT ITEMS
None

5. PRESENTATIONS
None

6. MEMBER UPDATES
Kate Flynn, Mohawk College: The Sustainability Office has become part of the new Climate Change Management Centre. Funding has been received from the Ministry of Environment and Climate Change through monies gained by the Cap and Trade program. Further information available at The Centre for Climate Change Management at Mohawk College ...

Public Health Climate Change staff will be relocated to the Mohawk office to facilitate collaboration. The City of Burlington is also a partner in this initiative. The group is tasked with developing a Bay Area Climate Change Action Plan/Program. Additional

staff will be hired to conduct community outreach, student engagement, and project management. A public forum will be held in March at the RBG.

7. DISCUSSION ITEMS

7.1 Food Strategy Update, Sandy Skrzypczyk, Public Health Services: Two Public Health Food Strategy reports were completed by Sandy and presented to the Board of Health (BOH) at their December 4, 2017 meeting (Update on Priority Actions 4 and 5; Food Strategy Implementation Plan). Both reports were received at the BOH December 4th meeting. At that meeting only two comments/questions came forward: Councillor Partridge asked a question regarding the Millgrove Elementary School Food Waste Project and the Mayor reiterated his hopes for this project also. This project/initiative will be addressed in an upcoming BOH report on Food Waste, scheduled for March 2018. At the December 10th 2017 Council meeting, both reports were deferred back to the BOH at Councillor Collins request due to concerns raised that he has received from the Emergency Food Providers Network. The reports are available online: https://pub-hamilton.escribemeetings.com/FileStream.ashx?DocumentId=138709

Action: L. Gates agreed to attend the January 15th BOH meeting as a delegate of the Food Advisory Committee so that the Committee can have an understanding of the Network's concerns. Lynn will complete online Request to Delegate form and draft comments to send out to Committee for review.

The term project for McMaster MBA students within the Healthcare and Marketing course this semester is focused on communication tools for food literacy, specifically digital tools. Sandy and Kate will be attending their class on Jan. 15th: Sandy to present the Food Strategy and Kate as a member of the Hamilton Food Literacy Network.

Hamilton Farm Map: Mohawk College Sustainability Office is collaborating with staff from the Economic Development and Public Health to update the Hamilton Eat Local Farm Map previously coordinated through Environment Hamilton. The new version will be housed on the City's website using StoryMaps. A recent graduate from McMaster has been contracted to conduct outreach to farms to update the farm map content.

Food Waste: Staff from Public Works who address waste diversion are collaborating with Public Health staff to prepare a report for the BOH meeting in March. Laurie mentioned that the Province is moving to a zero organic waste policy https://www.ontario.ca/page/strategy-waste-free-ontario-building-circular-economy Note: The draft policy is no longer open for public comment.

Home Food Businesses: Sandy had a Ryerson University grad student/dietetic intern with her last fall that investigated and compiled findings regarding the requirements for operating an at-home business involving food for sale. Sandy will be sending the document to relevant staff in Economic Development and Public Health/Food Safety for review to ensure accuracy of the information.

Community Kitchen Scan work is continuing.

7.2 Debrief of November 8th 2017 in-service: Key messages identified by committee members included:
- Develop a yearly schedule
- Take advantage of opportunities
- A role of the FAC can be that of co-ordination - bringing groups together

For the Interdepartmental Food Strategy Steering Team, a focus for 2018 will be to conduct more outreach to increase awareness of the Strategy and to identify opportunities for collaboration, for example considering organizing an event on the Food Strategy Goals

Brief discussion about the Implementation Plan Report to Council and whether the purpose is to document initiatives that the City of Hamilton is involved with, either through grants or staff time:
- If the Implementation Report is meant to be an inventory of all community initiatives, there would need to be a process to provide content, a place to locate the information, and ongoing person hours to keep the information up-to-date
- The value of having an accurate base of initiatives to ongoing success of a Strategy versus taking advantage of opportunities identified by knowledgeable people in specific sectors was discussed

7.3 2018 Work Plan
The June 14, 2017 planning activity notes were reviewed to identify 2-3 specific actions for this year. The following Actions were identified and agreed to:
- Task Group to investigate opportunities around food literacy and the Food Skills & Employability actions and report back to the Committee in February (S. Skrzypczyk, L. Gates, C. Wagner, H. Pahuta)
- Sandy to invite Public Works and Public Health staff to present an update on Food Waste initiatives at February meeting (30 minutes total including questions)
- Food Literacy Update/Discussion will be a regular item on every meeting agenda. Sandy to invite Public Health staff working on food literacy to attend our March meeting.

7.4 Membership on the Food Advisory Committee: members are being asked by interested people if they can join to be a member of the Committee. The message from Legislative Office is that no new members will be taken on until the next term. Note: please encourage people to apply when recruitment for next term starts.

8. NOTICES OF MOTION
None

9. GENERAL INFORMATION & OTHER BUSINESS
None

10. ADJOURNMENT
(L. Nielson/B. Wilcox)
Meeting adjourned at 9:09 pm

CARRIED

INFORMATION REPORT

TO:	Mayor and Members Board of Health
COMMITTEE DATE:	March 19, 2018
SUBJECT/REPORT NO:	Oral Health (BOH18001) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Mackenzie Slifierz, (905) 546-2424, Ext. 4868 Pat Armstrong (905) 546-2424, Ext. 7158
SUBMITTED BY & SIGNATURE:	Jennifer Vickers Manzin Director, Chief Nursing Officer Public Health Services, Healthy Families Division Healthy and Safe Communities Department

Council Direction:

Not Applicable.

Information:

Summary

The purpose of this oral health report is to provide a local overview of oral health status, identify populations with the greatest need and provide important information for future program planning. The City of Hamilton Oral Health Report (Appendix A) and Infographic 2017 (Appendix B) highlight three important characteristics of oral health in Hamilton for all populations including children, adults and seniors:

1. Good oral health is important for overall health and quality of life. Poor oral health continues to be a significant, preventable issue for many Hamiltonians.
2. The impacts of poor oral health are greater among low income children, adults and seniors compared to high income populations.
3. Information from this report can be used for decision making and program planning, to inform strategic spending, demonstrate accountability, and to raise awareness about the importance of oral health in the community.

Oral health and overall health are linked

Oral health is inextricably linked to overall health; it affects physical, mental and behavioural health. Many people think that good oral health simply means teeth without cavities. However, poor oral health increases the risk of cardiovascular and respiratory diseases, complications during pregnancy and childbirth, poor nutrition and other conditions. The effects of poor oral health on mental health and social outcomes, such as poor self-esteem, social isolation and employment opportunities are often not recognized[1]. Ultimately, healthier mouths mean healthier people and healthier people mean stronger communities.

Poor oral health is preventable

Oral health issues are common but with early intervention most are preventable. A focus on prevention has a high return on investment ultimately saving individual and system costs[2]. Barriers to care create burden on other parts of the health care system: hospital emergency departments and operating rooms (day surgery units) are frequently being used to treat preventable oral disorders. Using Hamilton's resources wisely means making smart decisions now to avoid problems later. Strong prevention efforts and access to oral health care can reduce costs by stopping problems before they start.

Keys to oral health

Accessing good oral health is like going through a series of locked doors. The doors open up to fluoridated water and nutritious food, insurance that covers dental benefits, and dentists who accept different kinds of health insurance. Some people have the keys to unlock every door, while others are missing some or all of them. Without a full set of keys, people will not be able to get good oral health, no matter how hard they try. The City of Hamilton Oral Health Report (Appendix A) and Infographic 2017 (Appendix B) highlight:

- Oral health issues are common in Hamilton,
- Oral health care is inaccessible to many Hamiltonians, and;
- Oral health burdens Hamiltonians unequally.

In general, the Oral Health Report reveals low income Hamiltonians have poorer oral health and less access compared to middle and high income Hamiltonians. The main barriers to good oral health are:

- The cost of care; income and dental insurance are the most important determinants of dental care use,
- Lack of oral health literacy, and;
- Lack of awareness of supports.

Highlighting the need and impact of system barriers is the first step to reduce social and health consequences of poor oral health. Determining which populations have the greatest need for oral health services can assist the City of Hamilton to develop oral health programming with targeted investments that will have a greater impact. In oral

health care, a one-size-fits-all approach rarely works. People have different needs when it comes to their oral health, and different situations call for different responses.

Evidence to Action: promoting equitable access to quality care

Information from this report will be used to inform oral health programming for the City Of Hamilton. Continuously improving oral health programs and services involves understanding the needs at a local level; raising awareness about the link between oral health and overall health; responsible management of resources to focus on prevention; ensuring all people have the keys they need to access good oral health and working closely with partners inside and outside the health system to help address and reduce health disparities and improve health for those at risk. Below is an overview of current work underway to advance oral health in our community.

Seniors

From January to October 2017, the dental clinic and bus staff served 785 seniors. In Hamilton, seniors represent a target population to focus efforts to increase oral health literacy and improve oral health care. To address this need, in 2017 dental staff actively participated in community events, targeting senior populations. Further, improvement in care for senior's oral health in long-term care facilities has been identified. In 2017, an oral health care curriculum for Personal Support Worker (PSW) students was developed to teach techniques in providing hands on daily care for others, especially in long-term care facilities. Due to the success of the half day workshops 7 PSW programs have now adopted the oral health curriculum for PSW students in Hamilton.

Public Health Services (PHS) Registered Dental Hygienists collaborated with the Local Health Integration Network (LHIN) and its advisor from the Registered Nurses' Association of Ontario. The oral health gaps in a long-term care setting were examined. Based on the findings, action plans were developed to assist long-term care staff and families to meet the oral health needs of residents by preventing issues and maintaining or improving oral health. Moving forward this initiative will serve as a template to engage other long-term care facilities in the community.

Adults

PHS dental clinic and dental health bus served 3,227 clients in 2016, 494 clients were turned away at the bus. Review of staffing ratios and clients' served suggests there may be untapped capacity within existing resources. The dental program is examining models of care to reduce the number of turn-aways at the bus and increase services.

PHS continues to advocate for more comprehensive oral health care across the lifespan. In November, the dental bus staff participated in a national CBC radio broadcast highlighting barriers to care and importance of good oral health care. In April 2018 the dental program will be participating in a province wide oral health month promotional campaign about the importance of good oral health.

Children and Youth

The Oral Health Assessment and Surveillance protocol is a provincial mandatory oral health screening program focused on prevention. The dental team provides screening in all publically funded schools annually and in private schools upon request. In the 2016-2017 school year dental program staff screened 17,122 students in schools. Of those students screened in school's 1,471 students required urgent dental care and 3,244 needed preventive care.

As part of the provincial poverty reduction strategy the Healthy Smiles Ontario (HSO) program was initiated to provide preventive and treatment services for eligible children and youth under 18. Dental program staff screening in schools link eligible children to the HSO program. For example, the HSO program requires dental hygienists to follow up with families to ensure children who require urgent care get the dental treatment they need. Dental program staff are also required to follow up with parents whose children would benefit from preventive dental services. Currently residents can get HSO services through PHS or private dental offices in the community. PHS offers 2 HSO preventive clinics in Hamilton and the downtown dental clinic. HSO is also accepted by some private dental offices in the community. In 2016 provincial data indicated that there are 26,400 Hamilton children eligible for HSO, but over 8,000 are not enrolled in the program. Continuous Quality Improvement (CQI) initiatives have been implemented across programs to improve the uptake of HSO. For example, program staff connected with Ontario Works to encourage case workers to inform parents that their children are automatically enrolled in HSO and can get free dental care. Program staff also strengthened relationships within PHS programs that serve low income, high risk families.

Dental program staff continue to look for ways to increase the reach of the HSO program and raise awareness of good oral health. Currently, staff are working in collaboration with the Social Planning and Research Council (SPRC) to link HSO enrollment with the Financial Empowerment Strategy. Additionally, plans in 2018 include enhancing relationships with the Hamilton Academy of Dentistry and primary care to increase awareness of the HSO program and access to dental services for families in Hamilton.

Conclusion

Oral health impacts overall health and wellbeing. Population health and program data show that poor oral health is common in Hamilton and unequally affects the city's most vulnerable populations. Many Hamiltonians who need dental care do not have dental insurance coverage and cannot afford to pay out-of-pocket; consequently, they avoid dental care until it is too late. Increasing oral health literacy as well as awareness and access to publicly-funded dental services for Hamiltonians with the greatest need are essential components to improving oral health. Additionally, PHS will continue monitor oral health status locally; advocate and ensure responsible management of resources to focus on prevention and work closely with partners inside and outside the health system to help address and reduce health disparities and improve health for those at risk.

Improved oral health in combination with other public health strategies will benefit the overall health of the community.

APPENDICES

Appendix A to Report BOH18001 – City of Hamilton Oral Health Report 2017
Appendix B to Report BOH18001 – City of Hamilton Oral Health Infographic 2017

REFERENCES

1. Locker D, Matear D. Oral disorders, systemic health, well-being and the quality of life. A summary of recent research evidence. Community Health Services Research Unit; Faculty of Dentistry, University of Toronto. 2001.
2. Griffin SO, Jones K, Tomar SL. An economic evaluation of community water fluoridation. J Public Health Dent 2001;61(2):78-86.

MESSAGE FROM THE MEDICAL OFFICER OF HEALTH

On behalf of Healthy and Safe Communities, I am pleased to endorse and present the City of Hamilton's Oral Health Report, Infographic and Information Report.

Oral health is inextricably linked to overall health; it affects physical, mental health and behavioural health. Ultimately, healthier mouths mean healthier people and healthier people mean stronger communities.

Good oral health and access to care is strongly linked to a person's socio-economic status. This report encourages us to take note of systemic barriers. When it comes to oral health, different people have different needs. A one-size-fits-all approach to oral health may sound like a good way to support equal access to oral health care, but it does not work in practice. We need to make sure all people have the supports they need to access oral health.

We can reduce the cost of oral health by stopping problems before they start. Prevention programs help people avoid serious issues such as cavities, abscesses, and gum disease that can be very expensive to treat. We need to ensure we are using our community resources wisely and work together to ensure comprehensive prevention programs exist in Hamilton.

The Oral Health Reports raise our awareness of the importance of oral health to overall health. Local data reveals what is happening in Hamilton and identifies those at risk of poor health outcomes. The data will help us to develop and improve universal programs to improve the health of the entire community while targeting strategies to priority populations experiencing health disparities.

Information in this report will be used to inform oral health programming for the City of Hamilton. Such local evidence supports decision-making and planning, demonstrates accountability, raises awareness about local issues, and, most importantly, informs strategic spending of limited resources.

Elizabeth Richardson

Elizabeth Richardson, MD, MHSc, FRCPC
Medical Officer of Health
City of Hamilton, Public Health Services
Healthy and Safe Communities Department

CITY OF HAMILTON ORAL HEALTH REPORT

OCTOBER 2017

EXECUTIVE SUMMARY

This report summarizes the oral health status of Hamiltonians, as well as the oral health inequities that exist within our community. The following is a summary of the key findings:

Oral health issues are prevalent in Hamilton

- The 2016-2017 oral screening program found 19,346 decayed, missing/extracted, and filled teeth among Kindergarten and Grade 2 students; 42% of Grade 2 students had a history of tooth decay.
- 2 in 3 Hamilton youth said they experienced oral or facial pain or discomfort in the past month.
- 312 Hamiltonians had day surgery to correct oral health issues in 2016; nearly half were children.
- On average, 66 Hamiltonians (30+ years-old) will be diagnosed with oral cancer annually.

Oral health care is inaccessible to many Hamiltonians

- 1 in 10 Grade 2 students in Hamilton require urgent dental care.
- Locally, it is estimated that over 185,000 Hamiltonians have no dental insurance.
- Nearly 1,500 Hamiltonians sought dental care through hospital emergency departments (ED) in 2016; this is an increasing trend, especially among children and seniors.
- There are 8,000 eligible children in Hamilton who are not enrolled in Healthy Smiles Ontario.
- 3,227 Hamiltonians received dental care at the PHS Dental Clinic in 2016 and represents a 93% increase when compared to the 1,675 clients served in 2013.
- Hamilton's Dental Health Bus provided care to 1,965 adults and seniors in 2016.

Oral health issues burden Hamiltonians unequally

- Just 11% of the student population accounted for all 3,819 untreated cavities found through the oral screening program (2016-2017) – most of these students have multiple untreated cavities.
- Greater need for urgent dental care among Hamilton children was linked to socio-economic factors such as single parent families, low income households, and recent immigration.
- Hamilton's low income seniors had the poorest access to oral health care compared to any other age and income group; 77% lack dental insurance and 60% avoid regular visits to the dentist.
- Hamilton's rate of oral day surgeries and dental-related ED visits were greatest in lower Hamilton, especially in neighbourhoods with postal codes beginning with L8R, L8N, L8L, and L8M. There is a greater need for access to preventative care among residents from these neighbourhoods.

BACKGROUND

Oral health impacts overall health and well-being. Poor oral health has been linked to other diseases and health conditions, such as heart disease, respiratory disease, stroke, malnutrition, low birth weight, and psycho-social well-being[1-2]. You cannot be healthy without good oral health.

Poor oral health is preventable. Despite this, oral health issues are common. In particular, tooth decay (cavities) is one issue that significantly burdens local population health. Although it is largely preventable, tooth decay will impact 96-100% of adults, making it one of the most common diseases globally and locally[3-4]. One common method of preventing tooth decay is through the use of fluorides, which can be used safely and effectively in a number of ways[2]:

- Routinely brushing with fluoridated toothpaste
- Fluoride mouth rinse programs in schools
- Professionally-applied fluoride varnishes
- Community water fluoridation

Prevention is good economics; it saves money while making communities healthier. Many preventative oral health interventions show a return on investment. For example, the return on investment for community water fluoridation is estimated to be $38 saved for every $1 invested[5].

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The cost of care is a barrier to good oral health. When Ontarians need dental care they usually have two options: pay for care out-of-pocket or, if they are fortunate to have coverage, claim it through private or third-party insurance. Only 1.3% of dental care expenditures in Ontario are publicly funded[6]. Ontario's public sector spending on dental care is $5.67 per person which is the lowest among all Canadian provinces and territories (nationally, it's $19.54 per person)[6]. Hence, it is not surprising that income and dental insurance are the most important determinants of dental care utilization[7]. These barriers to care are creating a burden on other parts of the health care system: publicly-funded hospital emergency departments and operating rooms (day surgery units) are frequently being used to treat preventable oral disorders[8]. In fact, the most common reason for day surgeries among Canadian children is treatment of tooth decay (cavities)[9].

Understanding the oral health of local populations is important. Such local evidence supports decision-making and planning, demonstrates accountability, raises awareness about local issues, and, most importantly, informs strategic spending of limited resources. The oral health of Hamiltonians is summarized in this population health assessment and surveillance report which provides a local overview of oral health status, emerging trends, and local populations with the greatest needs.

CHILD AND YOUTH ORAL HEALTH

ORAL HEALTH STATUS

Self-Reported Oral Health

According to the 2013-2014 Canadian Community Health Survey (CCHS), 89.3% of Hamilton youth (12-19) report having good, very good, or excellent oral health; this is similar to the equivalent Ontario estimate (89.7%). Additionally, 2 in 3 (66.4%) Hamilton youth said they experienced oral or facial pain or discomfort in the past month, which is greater (but not significantly different) than the equivalent Ontario estimate (55.1%). Lastly, 85.6% of Hamilton youth report brushing their teeth at least twice daily.

Tooth Decay (Cavities)

Public Health Services conducts annual oral screenings of all Kindergarten (JK and SK) and Grade 2 students at all publicly-funded schools in Hamilton. Between 2012 and 2017, over 72,000 oral screenings were completed for this student population and the results are summarized in **Table 1**; these oral screening outcomes did not change significantly during the reported time period.

Among the 14,934 Kindergarten and Grade 2 students screened in the 2016-2017 school year, the following findings were observed:

- 23% of Kindergarten and 42% of Grade 2 students had a history of tooth decay.
- 19,346 decayed, missing/extracted, or filled teeth were observed.
- 3,819 untreated cavities were observed.
- 9 schools with very high rates of untreated cavities; most were located in lower Hamilton.
- 0.1% (n=16) of Kindergarten and Grade 2 students had suspected fluorosis.

It is important to note that all untreated cavities (n=3,819) were found in just 11% of all Kindergarten and Grade 2 students (average of 2.4 untreated cavities per student).

Table 1. Oral screening results from Kindergarten (JK+SK) and Grade 2 students in Hamilton, 2012-2017.

School Year	Total Students Screened (Kindergarten and Gr 2)	% of Kindergarten students with cavity history[i]	% of Grade 2 students with cavity history[i]	Total number of untreated decayed teeth
2012-2013	14,360	22.1%	36.7%	3,719
2013-2014	14,521	23.0%	35.9%	3,800
2014-2015	14,165	22.8%	37.4%	3,604
2015-2016	14,354	23.8%	41.8%	3,763
2016-2017	14,934	22.8%	41.8%	3,819

Data Source: Oral Health Information Support System[i] (2012-2017), City of Hamilton Public Health Services.

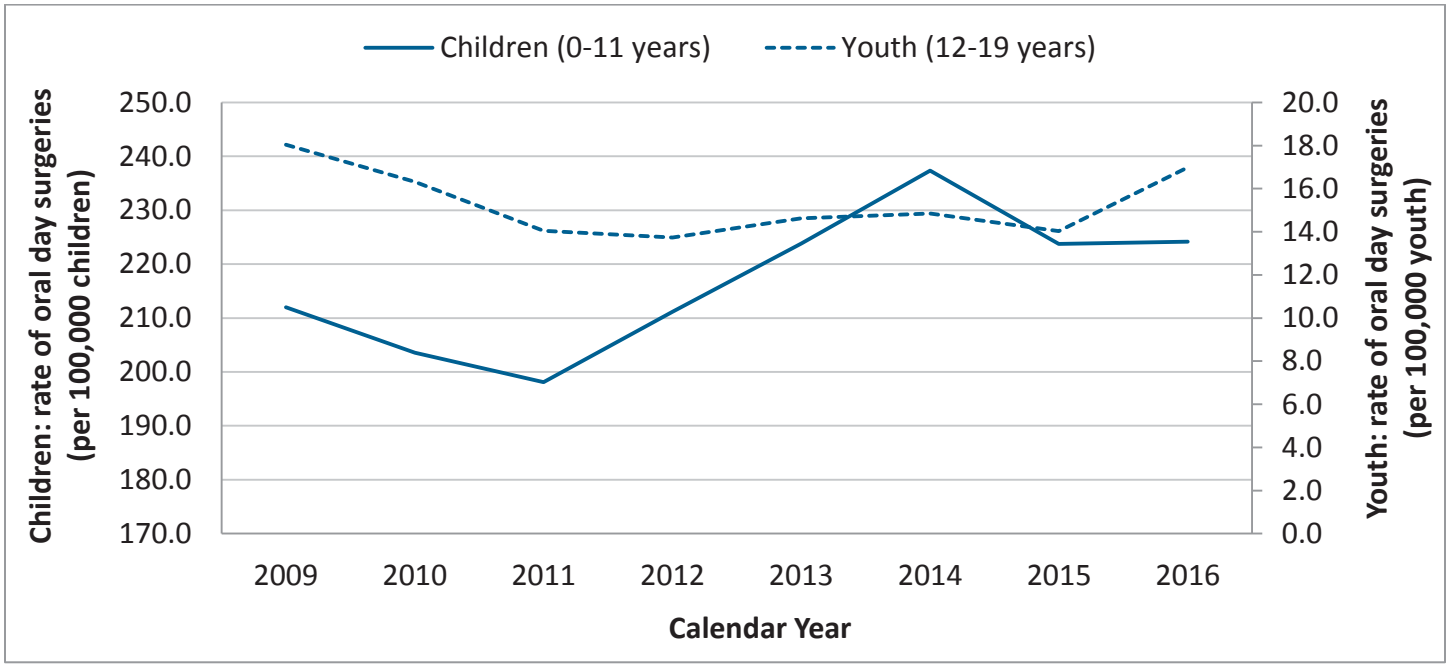
Oral Day Surgeries

Despite being largely preventable, oral day surgeries burden our healthcare system by using hospital resources ($1,408 per surgery) and contributing to prolonged wait times for other pediatric care[8]. Canadian children are more likely to have an oral day surgery if they are living in: (i) a rural or remote community, (ii) a neighbourhood with a high proportion of Aboriginal residents, or (iii) a materially-deprived neighbourhood[9].

In 2016, 148 Hamilton children (0-11 years-old) had day surgery to correct an oral health issue; this translates to a local rate of 213.7 cases per 100,000 children, which is significantly lower than the equivalent Ontario rate. Oral day surgeries are less common among Hamilton youth (12-19 years-old) with 12 cases reported in 2016; the rate for Hamilton youth (23.8 cases per 100,000 youth) is significantly lower than the Ontario rate.

The historical rates for oral day surgeries among children and youth is shown in **Figure 1** for Hamilton (2009-2016). There was an apparent, but not statistically significant, increase in the rate of oral day surgeries among children that warrants continued monitoring. The youth rate did not change significantly during this period.

Figure 1. Rate (3-year moving mean) of oral day surgeries among children and youth in Hamilton (2009-2016).



Data Source: Ambulatory Emergency External Cause[iii] [2007-2016], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [11 Oct 2017].

Oral Cancer

Oral cancer is uncommon among children and youth; in Ontario, there are usually fewer than five new cases reported annually among residents under 15 years-old. There were no new cases of oral cancer among children and youth (under 15) in Hamilton between 2004 and 2012.

ORAL HEALTH CARE

Urgent Need for Care

Public Health Services' annual oral screening program identifies children who require urgent dental care. Urgent dental needs include open obvious decay, infection, trauma, or irreversible periodontal disease. Treatment is provided to children through Public Health Services' clinics or through a community dentist.

Urgent care needs are summarized in **Table 2** for Hamilton students (2012-2017). In the 2016-2017 school year, 798 (8.5%) Kindergarten and 531 (10.3%) Grade 2 students in Hamilton required urgent dental care. Urgent dental needs did not change significantly from year to year.

Over

1 in 10

Grade 2 students in Hamilton require urgent dental care

Table 2. Urgent need for dental care for Kindergarten (JK+SK) and Grade 2 students in Hamilton, 2012-2017.

School Year	Total Kindergarten students requiring urgent dental care	% of Kindergarten students requiring urgent dental care	Total Grade 2 students requiring urgent dental care	% of Grade 2 students requiring urgent dental care
2012-2013	829	8.8%	516	10.5%
2013-2014	837	8.9%	488	9.9%
2014-2015	785	8.5%	529	10.6%
2015-2016	813	8.8%	591	11.5%
2016-2017	798	8.5%	531	10.3%

Data Source: Oral Health Information Support System (2012-2017), City of Hamilton Public Health Services.

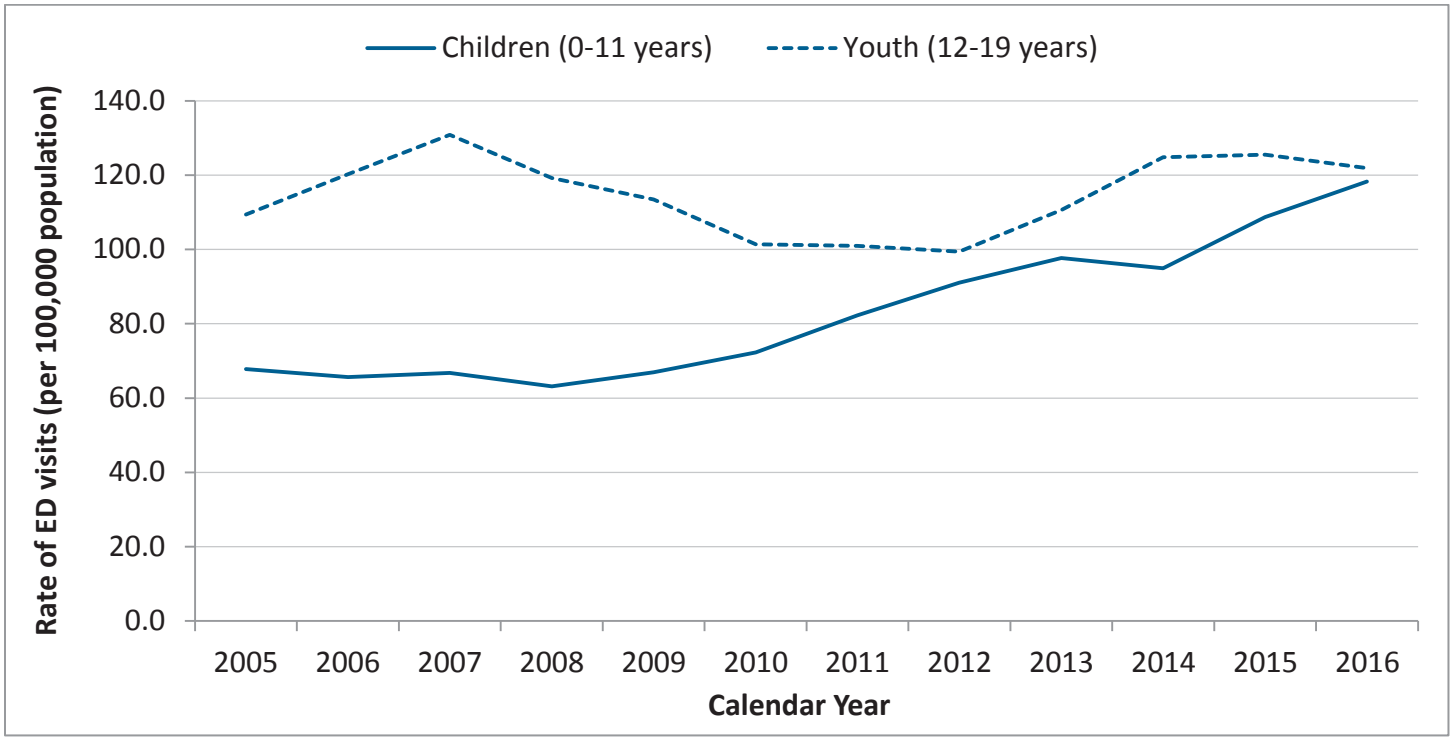
Access to Care

Hamilton children and youth commonly access dental care through a community dentist. According to local survey data, 77.1% of youth (12-19 years-old) said they usually visit the dentist for a check-up at least once per year (CCHS 2013-2014), which is lower but not statistically different than the provincial estimate (84.6%).

Another route of accessing dental services is through publicly-funded programs and clinics. Some children are eligible for the provincially-funded Healthy Smiles Ontario (HSO) program which covers dental services for those with financial hardships. There are an estimated 26,400 children eligible for the HSO program in Hamilton. As of March 2017, it is estimated that 18,390 children were enrolled in the HSO program locally; that is, HSO is not reaching an estimated 8,000 Hamilton children who are eligible and would benefit from this program (Oral Health Reporting Solution MOHLTC, 2017). In addition, dental clinics run by Hamilton Public Health Services provided preventative services to 481 children/youth and restorative services to 40 children/youth during the 2016-2017 school year.

Sometimes Hamilton children and youth will access dental care through hospital emergency departments (ED); this may be the only option for families who cannot afford care and are not covered by insurance or publicly-funded programs. In 2016, there were 143 dental-related ED visits among children and youth in Hamilton. Between 2005 and 2016, the rate of dental-related ED visits increased significantly by 63.9% for Hamilton children (see **Figure 2**). For Hamilton youth, there was no significant change in the trend over time for dental-related ED visits (values fluctuated within a range of 84.3 - 149.2 visits per 100,000 youth).

Figure 2. Rate (3-year moving mean) of dental-related emergency department (ED) visits among children and youth in Hamilton (2005-2016).



Data Source: Ambulatory Emergency External Cause[ii] [2003-2016], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [11 Oct 2017].

Barriers to Care

One barrier to dental care is cost. Ontarians not covered by private or third-party insurance must pay for their own dental care (unless they qualify for publicly-funded support). According to the 2013-2014 Canadian Community Health Survey, 73.5% of Hamilton youth (12-19 years-old) report having whole or partial dental insurance, which is similar to the equivalent provincial estimate (70.4%). Locally, this translates to an estimated 31,000 children and youth who lack dental insurance.

Lack of oral health literacy and awareness is another barrier to dental care. Among those who do not visit the dentist regularly, 80.7%[E] of Hamilton youth said that regular dental visits are not necessary (CCHS 2013-2014).

Over

80%

of Hamilton Youth who do not visit the dentist regularly say that such visits are unnecessary[E]

ADULT AND SENIOR ORAL HEALTH

ORAL HEALTH STATUS

Self-Reported Oral Health

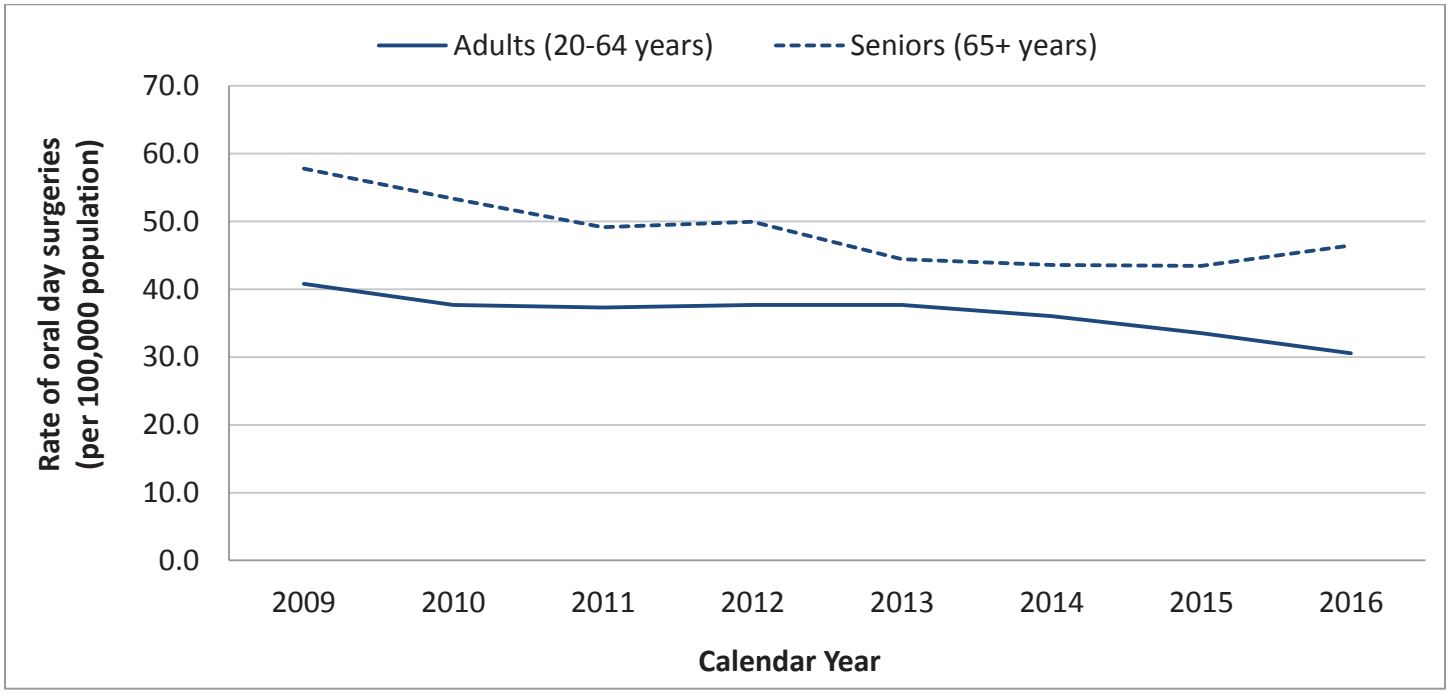
In Hamilton, 83.5% of adults (20-64 years-old) and 81.9% of seniors (65+ years-old) self-report having good, very good, or excellent oral health (CCHS 2013-2014), which were similar to the equivalent Ontario estimates. Additionally, 52.5% of adults and 38.8% of seniors in Hamilton said they experienced oral or facial pain or discomfort in the past month (CCHS 2013-2014); neither value was significantly different from the equivalent provincial estimates.

Oral Day Surgeries

There were 104 Hamilton adults (20-64 years-old) who had oral day surgery in 2016; this translates to a local rate of 30.0 cases per 100,000 adults which is significantly lower than the Ontario rate. Among Hamilton seniors (65+ years-old), 48 had an oral day surgery in 2016 which translates to a rate of 50.2 cases per 100,000 seniors (this is significantly lower than the Ontario rate).

The historical rates for oral day surgeries among adults and seniors is shown in **Figure 3** for Hamilton (2009-2016). Both rates were consistent over the reported timeframe (no statistically significant changes).

Figure 3. Rate (3-year moving mean) of oral day surgeries among adults and seniors in Hamilton (2009-2016).



Data Source: Ambulatory Emergency External Cause[iii] [2007-2016], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [11 Oct 2017].

Oral Cancer

Oral cancer is one of the top 10 most prevalent cancers among Ontario males. The incidence of oral cancer increased significantly in Ontario between 2003 and 2012, especially among males. Provincially, the five-year survival ratio for oral cancer is 82.6% for younger adults (under 45 years-old), but declines to 58.6% or less for seniors (65+ years-old)[10].

The primary causes of oral cancer are tobacco and alcohol use. Certain oral cancers are also linked to the sexually transmitted human papillomavirus (HPV)[11]. The HPV vaccine is free, but not mandatory, for all Grade 7 students in Ontario.

On average, 38 Hamilton adults (30-64 years-old) and 34 Hamilton seniors (65+ years-old) will be diagnosed with oral cancer each year (5-year average: 2008-2012). Further, oral cancer causes an average of 7 deaths among adults and 10 deaths among seniors annually in Hamilton (5-year average: 2008-2012).

ORAL HEALTH CARE

Access to Care

Community dentists are the main providers of dental care for adults and seniors. In Hamilton, 70.7% of adults (20-64 years-old) and 57.0% of seniors (65+ years-old) said they usually visit the dentist for an annual check-up (CCHS 2013-2014); both values are similar to the provincial estimates for adults (72.8%) and seniors (58.6%).

Publicly-funded emergency care is also accessible to low income adults and seniors through the City of Hamilton's Dental Clinic and Dental Health Bus. This program provides mobile dental services including x-rays, dental fillings, uncomplicated tooth extractions, and antibiotics for dental infections. The total number of clients serviced by the Dental Clinic and Dental Health Bus increased between 2013 and 2016 (see **Table 3**).

Table 3. Number of clients at the City of Hamilton's Dental Health Bus and Dental Clinic (2013-2016).

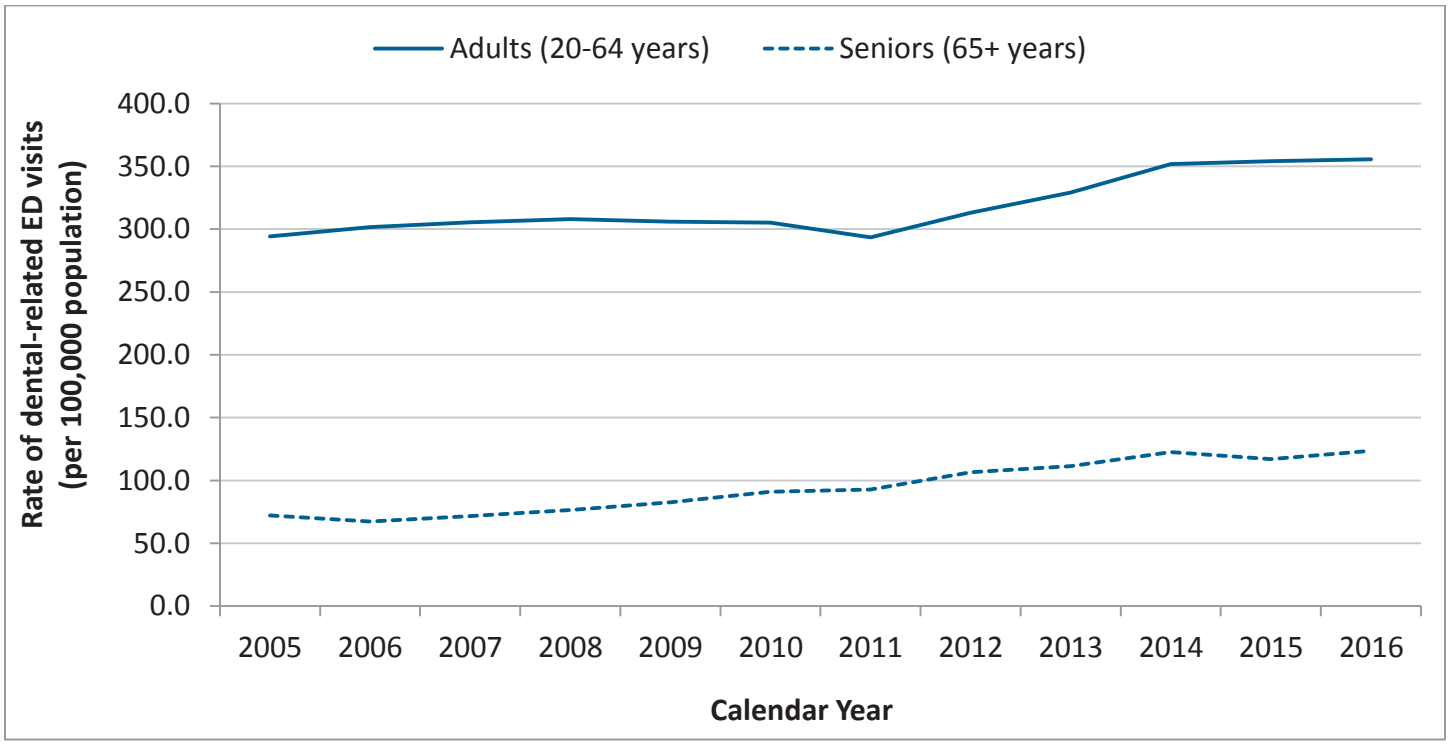
Dental Service	2013	2014	2015	2016
Total clients (received service) at Dental Health Bus	1,710	1,485	1,897	1,965
Individuals turned away from Dental Health Bus†	418	N/A	489	494
Total clients at Dental Clinics	1,675	1,480	2,561	3,227

Data Notes: (†) – Individuals were turned away due to lack of resources (staff, time, capacity).

Data Source: Dental Program (2013-2016), City of Hamilton Public Health Services.

Adults and seniors occasionally access dental care through Hamilton's emergency departments (ED). In Hamilton, there is an average of 1,202 ED visits among adults and 111 ED visits among seniors for oral health issues (5-year average: 2012-2016). The local rate of dental-related ED visits increased marginally (by 11.2%) for adults between 2005 and 2016 (see **Figure 4**). Similarly, between 2005 and 2016, the local rate for seniors doubled, from 68.7 to 139.0 dental-related ED visits per 100,000 seniors (statistically significant difference).

Figure 4. Rate (3-year moving mean) of dental-related emergency department (ED) visits among adults and seniors in Hamilton (2005-2016).



Data Source: Ambulatory Emergency External Cause[ii] [2003-2016], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [11 Oct 2017].

Barriers to Care

Cost is a common barrier to dental care, particularly for adults and seniors who lack dental insurance. In Hamilton, 71.5% of adults (20-64 years-old) and 34.1% of seniors (65+ years-old) report having whole or partial dental insurance (CCHS 2013-2014); both values are similar to equivalent provincial estimates for adults (69.8%) and seniors (35.8%). Based on this local data, it is estimated that 93,000 adults and 61,000 seniors living in Hamilton have no dental insurance. Further, among Hamilton adults who do not visit the dentist regularly, 35.7%[E] said it is due to cost (CCHS 2013-2014).

Nearly

2 in 3

Hamilton Seniors have no dental insurance

Lack of oral health literacy and awareness is another barrier to dental care. For Hamilton adults who do not visit the dentist regularly, 23.9%[E] said it isn't necessary (CCHS 2013-2014). For Hamilton seniors who do not visit the dentist regularly, 65.8% said that regular visits aren't needed because they wear dentures (CCHS 2013-2014), although regular dental visits are still recommended for anyone with dentures.

ORAL HEALTH INEQUITIES

SOCIAL DETERMINANTS OF ORAL HEALTH

Oral health is not an equal experience for everyone. It is well understood that oral health is linked to a person's socio-economic well-being; for example, oral day surgeries are more common among children from marginalized neighbourhoods[9]. These socially-produced differences in oral health are referred to as health inequities. Understanding health inequities and determining which populations have the greatest need for dental services can assist decision-makers with targeted investments that will have a greater impact.

To identify inequities, oral health survey results (CCHS 2013-2014) were reported for various income and age groups in Hamilton (see **Table 4**). In general, low income Hamiltonians had poorer oral health and less access to care compared to middle and high income Hamiltonians. Access to oral health care was particularly poor among low income seniors.

Table 4. Oral health inequities across income and age groups in Hamilton, 2013-2014.

Indicator	Youth (12-19)	Adults (20-64)	Seniors (65+)	Total
Excellent, very good, good oral health (%)				
Low income	95.6†	69.4	78.2	75.2
Middle income	83.2	86.6	84.7	85.8
High income	88.5	90.3*	83.2	89.6*
Oral or facial pain or discomfort (%)				
Low income	68.4	59.7	41.5	56.5
Middle income	59.2	50.6	40.2	49.5
High income	75.4†	49.5†	25.8[E]	49.4
Whole or partial dental insurance (%)				
Low income	71.9†	54.5†	23.5	49.4
Middle income	68.9†	72.1†*	38.0	64.9*
High income	84.0†	82.1†*	52.0*	79.8*
Regularly visits the dentist (%)				
Low income	60.2	52.0	40.0	50.2
Middle income	86.4	73.4*	65.9*	73.3*
High income	92.8*	81.5*	77.5*	81.9*

Data Notes: (*) – indicates a statistically greater value compared to another income group within the same age group; (†) – indicates a statistically greater value compared to one or more age groups within the same income group; (E) – use estimate with caution due to high sampling variability.

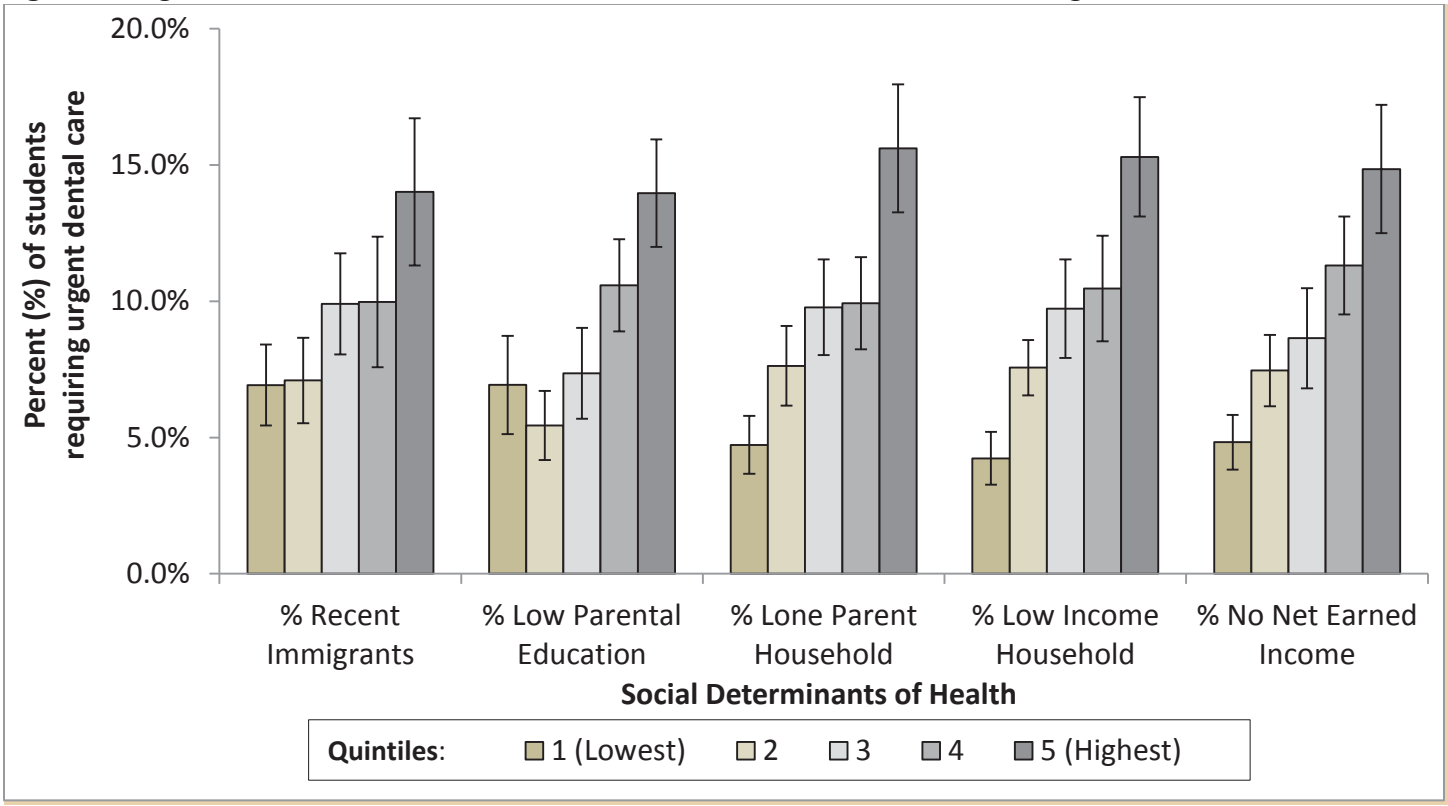
Data Source: Canadian Community Health Survey[iv] [2013-2014], Statistics Canada.

School-level measures of social determinants of health were divided into quintiles and the percent of students (Kindergarten and Grade 2) requiring urgent dental care were reported for each quintile (see **Figure 5** – the highest quintile represents the student population with the greatest socio-economic marginalization).

Need for urgent dental care was associated with the following social determinants of health: recent immigrants, low parental education, lone parent households, low income households, and households with no net earned income.

The health equity gap was greatest for students from low income households: urgent dental needs were 3.6-times greater for the least affluent compared to the most affluent student populations (note: low income is based on the after-tax low-income measure for families with school-age children in neighbourhoods served by the school).

Figure 5. Urgent dental needs associated with social determinants of health among Hamilton students.



Data Note: Socio-economic data were divided into quintiles: the lowest quintile (1) represents the bottom 20% of values and the highest quintile (5) represents the top 20% of values (e.g., the highest quintile for recent immigrants represents the schools with the greatest percent of recent immigrants).

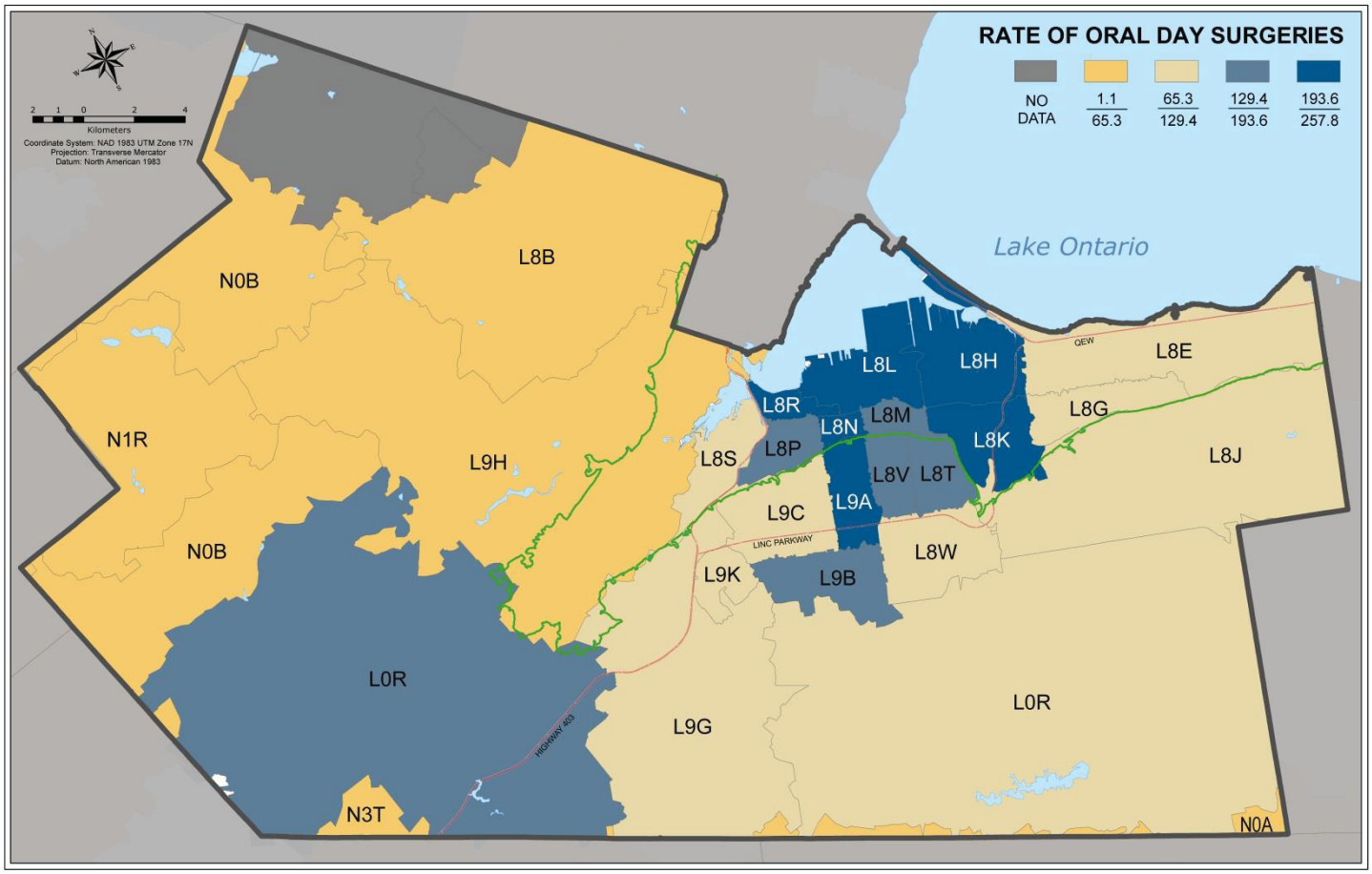
Data Sources: Oral Health Information Support System[i] [2016-2017], City of Hamilton Public Health Services; Education Opportunities Index (EOI), Ministry of Education (2014-2015). EOI is derived from three sources: the Ontario School Information System (OnSIS), 2014-2015; and Statistics Canada 2011 National Household Survey data and 2014 Taxfile data.

GEOGRAPHY OF ORAL HEALTH

Socio-economic status is not evenly distributed throughout Hamilton; rather, there is clustering of socio-economically defined populations. Given the link between socio-economic factors and oral health, it is important to map oral health across Hamilton to determine geographic variations in oral health outcomes that may align with socio-economic clustering (Note: mapping is not intended to label neighbourhoods, but rather draw attention to the needs of local populations that should be considered to ensure that public health action can be tailored to the local context).

The rate of oral day surgeries among Hamilton's children and youth was mapped by forward sortation areas (first three digits of the patient's postal code of their primary residence). Neighbourhoods with the greatest rates (in descending order) include L8R, L8N, L8L, L9A, and L8K (see **Figure 6**); most of these areas are in lower Hamilton (below the escarpment between Highway 403 and Red Hill Valley Parkway). Most oral day surgeries among children are preventable[9], and this evidence indicates a greater need for targeted preventative interventions in these neighbourhoods.

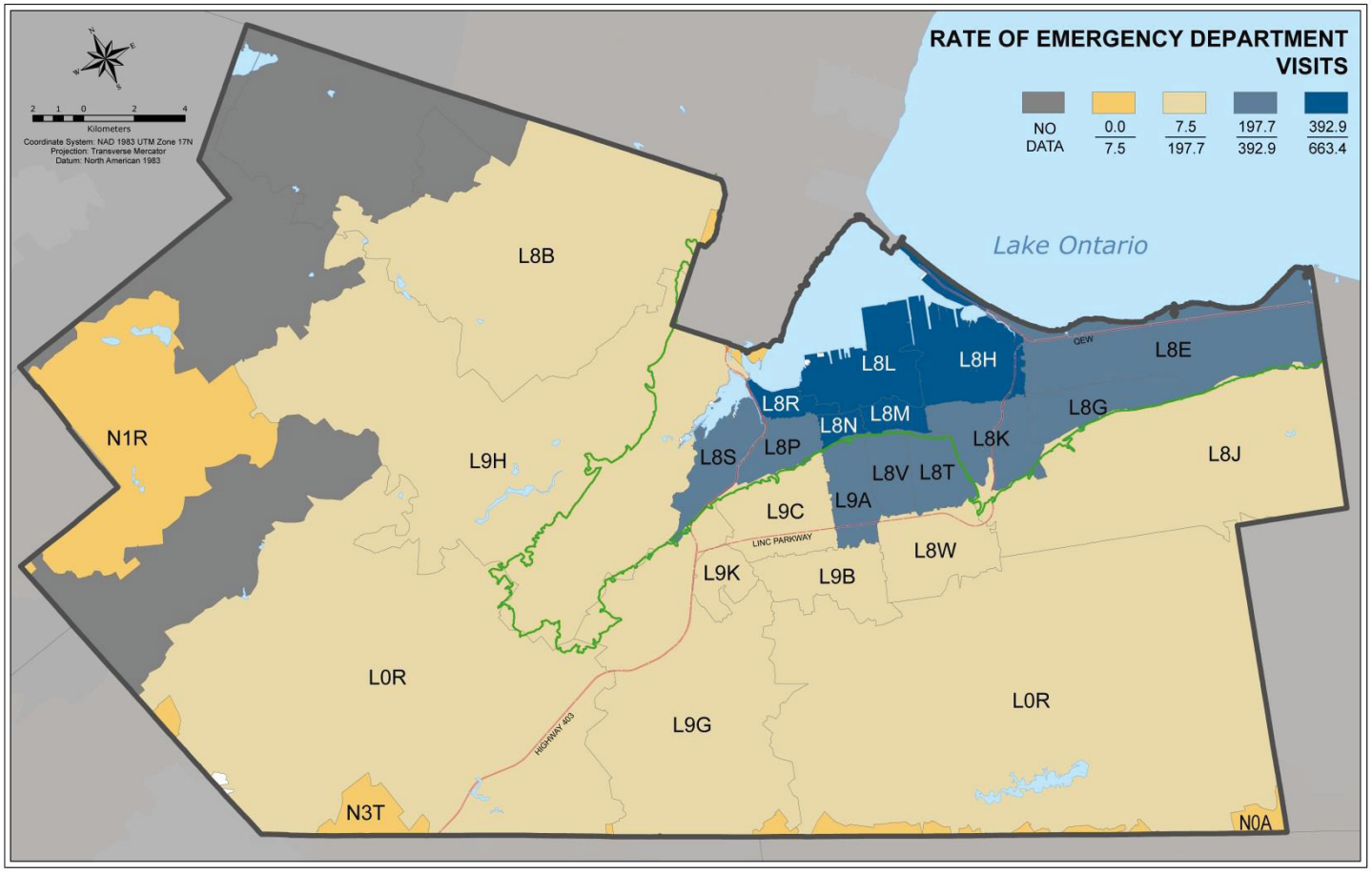
Figure 6. Map of oral day surgeries among children and youth in Hamilton (cases per 100,000 population) using the patients' residential postal code (3-year mean; 2014-2016).



Data Source: Ambulatory Emergency External Cause[ii] [2014-2016], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [11 Oct 2017].

The rate of dental-related ED visits for all Hamiltonians also was mapped by forward sortation areas (first three digits of the patient's postal code of their primary residence). Neighbourhoods with the greatest rates (in descending order) include L8M, L8L, L8N, L8H, and L8R (see **Figure 6**). Similar to oral day surgeries, the greatest rates of dental-related ED visits were found in lower Hamilton (below the escarpment between Highway 403 and Red Hill Valley Parkway). Seeking dental care through hospital emergency departments is strongly linked to a lack of access to community dental care, particularly for those who do not qualify for publicly-funded dental care subsidies (most adults and seniors)[8]. Improving access to dental care, particularly for the adults and seniors in these neighbourhoods, is warranted.

Figure 7. Map of dental-related emergency department visits in Hamilton (cases per 100,000 population) using the patients' residential postal code (3-year mean; 2014-2016).



Data Source: Ambulatory Emergency External Cause[ii] [2014-2016], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [11 Oct 2017].

In conclusion, this report provides a brief overview of oral health in Hamilton. The population health and program data show that poor oral health is common in Hamilton and unequally affects the city's most vulnerable populations. Many Hamiltonians who need dental care do not have dental insurance and cannot afford to pay out-of-pocket. Increasing awareness of and access to publicly-funded dental services for Hamiltonians with the greatest needs should be a priority.

DATA NOTES

i. **Oral Health Information Support System**: OHISS contains data collected through Public Health Services' annual oral screening of all Kindergarten and Grade 2 students in publicly-funded schools in Hamilton. Data is reported by school year (e.g., August 1, 2016 to July 31, 2017). Oral health data is not captured for children who opt out of the screening, were absent on the day of screening, or attend a private school. For schools with high rates of tooth decay, students from older grades (Grades 4, 6, and 8) also are screened; this data is not reported as it would not accurately represent oral health status due to the purposeful sampling method.

   a. **Evidence of tooth decay/cavities**: Students were determined to have a history of tooth decay or cavities (non-caries free) if they had one or more decayed, missing/extracted, or filled primary or permanent tooth (deft/DMFT>0). Screening is based on the professional judgement and training of the registered dental hygienist. Tooth decay is suspected by the registered dental hygienist and may not correspond with a diagnosis by a dentist (the screening data will contain some false positives or false negatives).

ii. **Emergency Department Visits for Oral Health Issues**: Ambulatory care visits are a source of morbidity information available through IntelliHealth (MOHLTC) originally from the National Ambulatory Care Reporting System (NACRS), Canadian Institute for Health Information (CIHI). Emergency department visits for oral health issues were defined as those with the following International Classification of Disease (ICD-10 CA) codes: impacted teeth (K01.1), dental caries (K02), acute apical periodontitis of pupal origin (K04.4), chronic apical periodontitis (K04.5), periapical abscess with sinus (K04.6), periapical abscess without sinus (K04.7), acute gingivitis (K05.0), chronic gingivitis (K05.1), acute periodontitis (K05.2), temporomandibular joint disorder, unspecified (K07.69), toothache, not otherwise specified (K08.87), disease of salivary gland, unspecified (K11.9), and cellulitis and abscess of mouth (K12.2).

iii. **Day Surgery for Oral Health Issues**: Day surgery data is available through IntelliHealth (MOHLTC) originally from the National Ambulatory Care Reporting System (NACRS) and the Discharge Abstract Database (DAD), Canadian Institute for Health Information (CIHI). Day surgeries for oral health issues were defined as those with an International Classification of Disease (ICD-10 CA) code of K02 (dental cavities) & K04.7 (periapical abscess without sinus), and with an identified surgical procedure (Canadian Classification of Health Interventions) codes of 1.FE.57.JA (tooth extraction), 1.FF.56 (removal of foreign body, root of tooth), 1.FF.89 (excision total, root of tooth), 1.FE.89 (excision total, tooth), 1.FE.29 (tooth restoration), 1.FE.53.JA-RV (implantation of internal device, tooth), 1.FF.59.JA (destruction, root of tooth), 1.FD.52 (gingival drainage), 1.FE.87.JA-H (excision partial, tooth), 1.FF.53 (implantation of internal device, root of tooth), 1.FF.80 (repair, root of tooth), and 1.FF.87 (excision partial, root of tooth)[9].

iv. **Canadian Community Health Survey:** The CCHS collects information on health status and determinants, and health care utilization. It surveys a large sample of respondents 12 years of age and older living in private dwellings. Since the CCHS only collects information from community-dwelling residents, indicators do not represent the health status of all individuals living in the community (e.g. individuals living in institutions or those who are homeless). CCHS data are self-report and, as a result, are subject to bias: individuals may have difficulty with recalling their past behaviours or may 'adjust' their responses to align with what is seen as socially desirable. Unless otherwise stated don't know, refusal and otherwise not stated responses are included in the denominator and represent less than 5% of the response. Unless otherwise stated, bootstrapping techniques provided by Statistics Canada were used to produce the 95% CIs for CCHS data, and used to compare the differences in outcomes for Hamilton residents between population groups and over time. 95% CIs accompany estimates in brackets. Normal distribution was assumed.

   a. **Income:** Health equity analysis compares income groups using the CCHS. The CCHS asks respondents about all sources of total household income before taxes and deductions in the past 12 months. This information is adjusted using Statistic Canada's low income cut-offs while accounting for household and community size. Household income data are separated into deciles which provide a relative measure of each household income. For this indicator, these deciles were then grouped into 3 categories: the lowest 30% (low income), middle 40% (mid income) and highest 30% (high income) income groups.

   b. **High sampling variability [E]:** Estimates with a high sampling variability (CV: 16.6-33.3) are denoted ("E") and should be interpreted with caution. Estimates with a very high sampling variability (CV>33.3) are not reportable.

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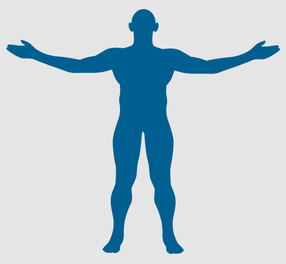
ORAL HEALTH

Hamilton

Poor oral health is linked to:

Psycho-social well-being

Heart disease



Respiratory disease

Malnutrition

Oral health problems are common in Hamilton, but preventable!

42% of Grade 2 students have a history of tooth decay

2 in 3 youth had oral or facial pain or discomfort in the past year

312 Hamiltonians had day surgery to correct an oral health issue (2016)

Oral health care is inaccessible to many Hamiltonians

185,000 Hamiltonians have no dental insurance

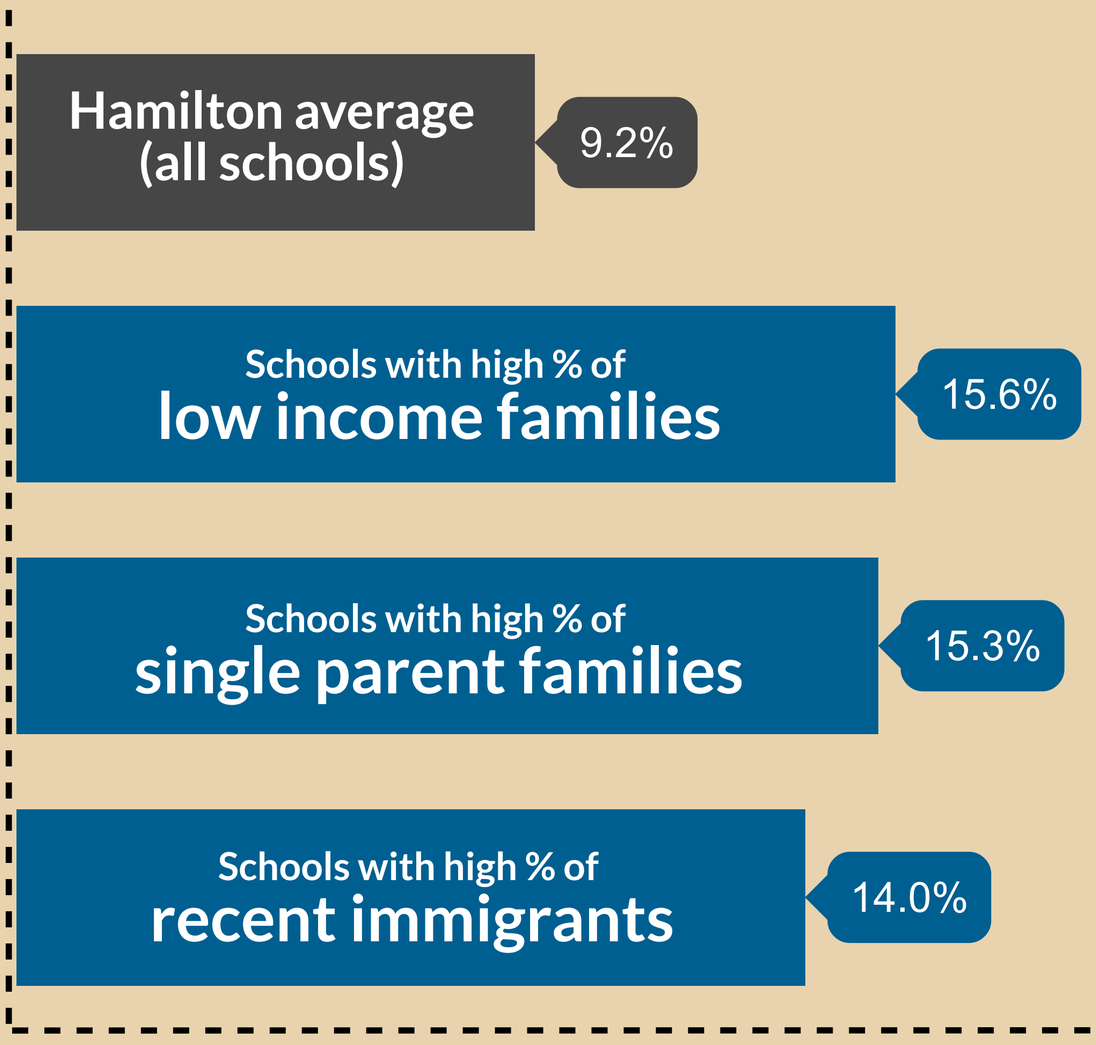
1,500 Hamiltonians went to the ER for dental care (2016)* *Rising trend for children & seniors

8,000 Eligible Hamilton children are not enrolled for publicly-funded dental services

1,965 Adults & seniors received care from Hamilton's Dental Health Bus in 2016*

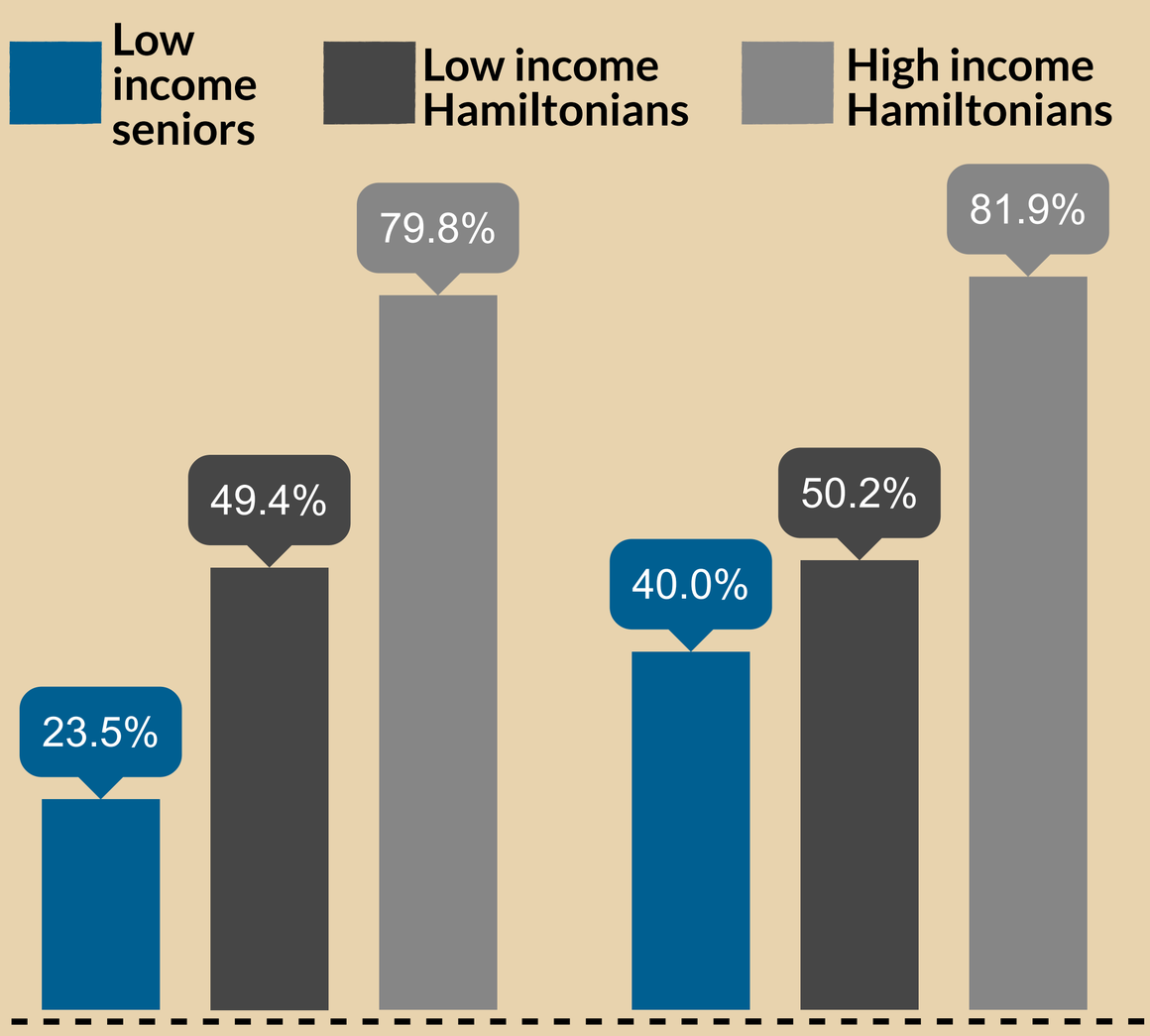
The unequal burden of oral health in Hamilton

Which children have the greatest need for dental care?



% of students who need urgent dental care

Who has the poorest access to dental care?



% with dental insurance

% who visit the dentist regularly

Produced by City of Hamilton Public Health Services. Refer to the 2017 Oral Health Report for more information.

INFORMATION REPORT

TO:	Mayor and Members Board of Health
COMMITTEE DATE:	March 19, 2018
SUBJECT/REPORT NO:	Food Waste Reduction BOH13001(h)/PW18023 (City Wide) (Outstanding Business List)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Ruby Samra (905) 546-2424, Ext. 3066 Elizabeth Smith (905) 546-2424, Ext. 3945 Raffaella Morello (905) 546-2424, Ext. 3926 Kathryn LeBlanc (905) 546-2424, Ext. 1332
SUBMITTED BY & SIGNATURES:	Kevin McDonald Director, Public Health Services Healthy Environments Division Healthy and Safe Communities Department Craig Murdoch Director, Environmental Services Public Works Department

Council Direction:

The Board of Health at its meeting on January 12, 2015 directed staff to provide information on the following:

> That the Interdepartmental Food Strategy Steering Team, in conjunction with community partners, explore what actions the City of Hamilton and other stakeholders can take to reduce food waste such as addressing food literacy and lobbying for changes to provincial and federal legislation; with a report back to the Board of Health." Outstanding Business List (Item C).

The Board of Health at its meeting on June 19, 2017 approved the following:

(a) That a copy of Millgrove Public School's presentation and business plan respecting a Food Recovery Program from Store and Farmers for the Benefit of the Food Bank be forwarded to Public Health staff for consideration and possible inclusion in their Food Strategy Priority Actions report coming to the December 4, 2017 meeting of the Board of Health, and;

(b) That staff be directed to report to Jennifer Kershaw, Millgrove Public School, with the outcomes of that Food Strategy report. Outstanding Business List (Item CC).

The purpose of this report is to address the questions raised by the Board of Health concerning food waste, and to outline potential methods for food waste reduction in the City of Hamilton. This report fulfils both of the Board of Health's requests. Outstanding Business List (Item C) and Outstanding Business List (Item CC) can be removed.

Information:

Executive Summary

Hamilton City Council and staff recognize the importance of food waste reduction to help improve environmental and social factors within Hamilton's communities. The "Hamilton Food Strategy: A Healthy, Sustainable, and Just Food System for All" includes fourteen recommendations and associated actions, with two recommendations and actions specifically related to food waste management. First, foster innovation to reduce food waste through diversion and composting. And secondly, promote a culture that values healthy, local food to reduce food waste through food literacy. Public Health Services and Public Works are working together to develop a Hamilton Food Waste Reduction Action Plan (Appendix A) that includes diversion and composting, public education and promotion related to food literacy and the green cart program. The plan also includes development and identification of best practice and methods to reduce food waste within City facilities. Staff will report back to the Board of Health in Quarter 2 of 2019.

Reduce Food Waste through Food Literacy

An interdepartmental staff team including representatives from Public Health Services and Public Works is reviewing best practices to reduce food waste through increased food literacy. Food literacy education may include tips for storing food properly to preserve freshness, understanding "best before" dates (as suggested by the Millgrove School students), using leftovers, and planned shopping e.g., plan meals, use a list, purchase appropriate amount, etc.

Staff has initiated the development of a Food Waste Reduction Action Plan which will align with the Food Strategy Recommendations and consider the following items:

- Continued support for the City's green cart program to reduce organic waste sent to landfill. This is currently promoted through the "Green Your Routine" public education campaign;
- Participation on inter-municipal stakeholder groups such as the Ontario Food Collaborative and the Municipal Waste Association's food waste reduction working group to assist the City to expand knowledge and develop best practices for food waste reduction;
- Identifying methods to reduce edible food from being wasted within the City's municipal facilities and encouraging participation in the green cart program; and,
- Public education campaign on methods to reduce food waste. This includes development of communication materials for the City's website, social media, and other community events.

Additional information on the proposed items for the Food Waste Reduction Action Plan is included in Appendix A. Hamilton's proposed Action Plan will consider studies, policies and regulations being reviewed at the Provincial and Federal level. The development of the Action Plan is supported by staff within the Public Health Department and the Public Works Department. The main activities to support the Food Waste Reduction Action Plan were reviewed by the Interdepartmental Food Strategy Steering Team, Council's Waste Management Advisory Committee, and the Food Advisory Committee.

Background

There is growing global awareness regarding food loss and food waste and the negative economic and environmental consequences of these losses. The Food and Agriculture Organization (FAO) of the United Nations estimate that at least one-third of all food produced is lost or wasted each year. In Canada, approximately $31 billion or 40% of food produced per year is wasted according to Value Chain Management International[1]. Food production requires significant environmental, economic and human resources for growing, processing, transporting and distributing food to consumers. On a global perspective, food loss and waste is a huge resource burden which impacts agricultural land, water consumption, energy requirements, and contributes to greenhouse gasses causing climate change. Food losses generally occur during harvesting, processing, and transport of food to consumers. Food waste refers to food fit for consumption that is discarded by consumers such as spoilage and plate waste. In Canada, food loss and waste occurs within all sectors including on farms, processing, retail, and consumers as indicated in Figure 1[2].

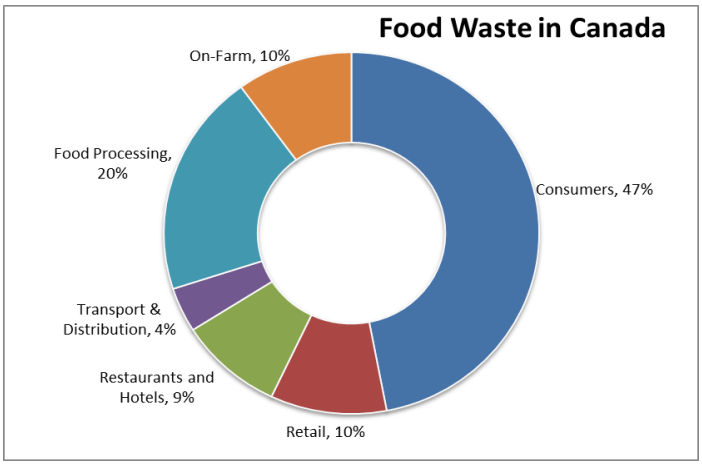


Figure 1. Source: Adapted from "The Cost of Canada's Annual Food Waste, VCM International, 2014"

Local governments historically have been responsible for managing waste. Policy initiatives to reduce food waste will require support from all levels of government as well as involvement from all sectors including food producers, retailers and consumers. Some notable actions to address food waste that are occurring internationally, nationally, and locally are identified below:

- International Actions - In 2012, the European Parliament passed a resolution to reduce food waste by 50% in the European Union by 2025. In 2015, world leaders at the United Nations General Assembly agreed that as part of Global Sustainable Development Goal (SGDs), there must be a 50% reduction of food waste at the retail and consumer level, as well as a reduction of food losses along production and supply chains by 2030. The United States of America federal government also declared a goal of 50% food waste reduction by 2030.
- National Actions - Canada's National Zero Waste Council is a cross-sector leadership initiative which operates in collaboration with the Federation of Canadian Municipalities to promote waste reduction and emerging circular economies that foster environmental sustainability. The National Zero Waste Council has developed a national, multi-year food waste reduction strategy with the objective of dramatically reducing the amount of food waste disposed in landfills while providing benefits for the Canadian economy, the environment, and communities across Canada.
- Provincial Actions – On November 16, 2017, the Ontario Government issued the proposed Food and Organic Waste Framework ("Framework") for public input on the development of the Province's plan to reduce the amount of food and organic waste being disposed in Ontario. The Framework includes two main components: (1) the Food and Organic Waste Action Plan which includes actions to be taken by the Province; and (2) a policy statement under the Resource Recovery and Circular

Economy Act which provides direction to the Province, municipalities, industries, commercial properties and institutional sectors concerning food and organic waste. The proposed Framework includes a broad range of actions including developing promotional tools to encourage food waste prevention, supporting academic research, expansion of food and organic waste recovery programs, and addressing the requirements to increase organic waste processing capacity in Ontario. Additional information on the Framework was provided to City Council through Information Update ES18001 (dated January 5, 2018).

- Ontario Municipal Actions – Several Ontario municipalities including Region of Peel and York Region have developed public education campaigns that focus on reducing household food waste by changing consumer food related behaviours through food literacy.

  In 2014, the Ontario Food Collaborative (OFC) was established which includes representation from municipalities, the Ontario Government, post-secondary institutions, and non-governmental food networks. The OFC's mission is to use a food systems approach to reduce consumer food waste while promoting healthy eating attitudes and behaviours. City of Hamilton staff recently joined the OFC as part of the development of the City's food waste reduction action plan.

Food Waste in Hamilton Households

The quantity and cost of "avoidable" food waste being disposed by Hamilton households is substantial when examining data from residential waste audits and food cost surveys. The City conducts waste audits to analyse the type and quantity of waste materials being disposed through the City's waste collection programs. Recent waste audits have examined the quantity of "avoidable" food waste being disposed by Hamilton's households. Avoidable food waste includes whole food, leftover food, or food which may have been allowed to spoil. Residential waste audits completed in 2016 and 2017 indicate that on average, single-family homes dispose of approximately 1.8 kilograms of avoidable food waste per week. On average, households are losing approximately $720 per year based on the 2017 food prices[3] from Statistics Canada surveys and the quantity of avoidable food waste being disposed as reported through the City's waste audits. The estimated value of avoidable food waste from households across the City is more than $150 Million per year. This does not include the costs associated with avoidable food waste generated by other sectors such as grocery stores, businesses, restaurants, and institutions. Information on the amount of food waste and the associated cost from the commercial and institutional sectors in Hamilton is not available since most of these properties have private waste collection services.

Hamilton's Food Waste Reduction Action Plan

Hamilton City Council and staff recognize the importance of reducing food waste to improve economic, environmental and social factors within Hamilton's communities. The "Hamilton Food Strategy: A Healthy, Sustainable, and Just Food System for All" provides direction to guide decision making about food related issues for the City and community. The Food Strategy has fourteen recommendations, including two recommendations and associated actions to address food waste management:

Recommendation #13 – Foster innovation to reduce food waste through diversion and composting.

13.1 - Expand programs to increase the use of composting in all settings.
13.2 - Explore the feasibility of food recovery programs to divert edible food from being wasted.
13.3 - Investigate the feasibility of innovative ways to deal with food waste to ensure our environment is sustainable.

Recommendation #14 – Promote a culture that values healthy, local food to reduce food waste through food literacy.

14.1 - Enhance marketing and education programs to reduce food waste at home, work, school, and other public facilities.

Reduce Food Waste through Diversion and Composting

Food recovery initiatives are one way to prevent surplus edible food from being wasted. Some food recovery methods include donations of surplus food from farmers, grocery stores, and food processors for use by not-for-profit organizations or other groups. Successful food recovery initiatives must ensure that surplus food is desired and able to be used by the receiving organization, and that the food products are safe for human or animal consumption. Food safety can be jeopardized if the donated food is improperly stored or handled, for example, food must be maintained at the appropriate temperature when being transported from the donor to the final destination. While there are liability risks with food donation, donor protection is typically cited through the Ontario Donation of Food Act, 1994. In some cases, food donation may support community food programming, for example social enterprises to repurpose donated foods; however, food donation is not a solution to household food insecurity which evidence overwhelming indicates requires an income, and not a food, solution.

Policies concerning food recovery initiatives require further development across Canada. As part of the National Food Waste Reduction Strategy, the Zero Waste Council indicates that collaboration with health authorities is necessary to create provincial guidelines to govern food safety and food donor protection. As part of the

Ontario Government's draft Framework, the Province is proposing to develop guidelines to promote the safe donation of surplus food. In addition to this, the Ontario Government has also identified the need to address the key issues causing personal and household food insecurity. As stated in the draft Framework, the Province is developing a food security strategy with the goal that "every person has dignified access to high-quality, safe, nutritious and culturally appropriate food, to support them in leading healthy and active lives."[4] As well, the Province has committed funding to support the development of an app that aims to connect businesses with excess food to other agencies are able to use the food in existing food programs.

At the Board of Health's meeting on June 19, 2017, Millgrove Public School presented their proposal for a "Food Recovery Program from Store and Farmers for the Benefit of the Food Bank". Students proposed that diverting perishable foods just past their 'sell by/best before' dates from retail grocery stores to local food banks should be considered as one possible action to reduce food waste. Although most perishable foods remain safe to eat for a period of time after their sell by/best before dates (depending on the type of food and how it is stored), an alternative approach for grocers or alternative retailers to consider is to offer perishable foods near to sell by dates (eg 1-2 days away) at reduced prices available to all. Food donation guidelines from BC Centre for Disease Control and Food Banks Canada indicate that "Food Distribution Organizations (FDOs) may receive food past the best before date (BBD) if the product has been frozen prior to the BBD and the FDO is assured the donor used proper conditions to maintain and assure product safety."[5]

Hamilton, like other jurisdictions, has existing food recovery programs that enable food processors and retailers to distribute excess perishable foods to non-profit agencies for further processing or distribution as long as appropriate food safety requirements are met. In 2017, the Hamilton Emergency Food Network and Hamilton Food Share collected and distributed 3.3 million pounds/1.5 million kg of food from various sources including grocery stores. The Emergency Food Network has indicated that in the future, the Network and Hamilton Food Share will develop a data collection tool to enable them to track and report monthly on food recovery initiatives.

Public Health Services' staff have been in contact with the students from Millgrove Public School. We have reported back to the teacher (who has moved to another school) and the Millgrove students and parent including the information regarding Hamilton Food Share and Emergency Food Network's existing food recovery. Staff also highlighted the recommendations and actions pertaining to food waste above that are in the Hamilton Food Strategy. Each of the above were informed of the date that this report was scheduled for the Board of Health and staff will attend the school to meet with students in person in March.

Appendices/Schedules Attached

Appendix A to Report BOH13001(h) – Hamilton Food Waste Reduction Action Plan

References

[1]National Food Waste Reduction Strategy, National Zero Waste Council, March 2017
[2]The Cost of Canada's Annual Food Waste. VCM International, 2014
[3]Statistics Canada Food and other selected item, average retail price, 2017 (only food prices were included in the calculation) http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/econ155a-eng.htm, accessed Oct 24 2017
[4]Proposed Food and Organic Waste Framework, Ontario Ministry of the Environment and Climate Change, November 2017
[5]Providing Nutritious and Safe Food: Guidelines for Food Distribution Organizations with Grocery or Meal Programs, BC Centre for Disease Control, 2016

Hamilton Food Waste Reduction Action Plan

Overview

Hamilton City Council and staff recognize the importance of food waste reduction to help improve environmental and social factors within Hamilton's communities. The "Hamilton Food Strategy: A Healthy, Sustainable, and Just Food System for All" includes fourteen recommendations and associated actions, with two recommendations and actions specifically related to food waste management as noted in Table 1. Table 1 includes activities which are already in progress as well as proposed actions to support the food waste management recommendations.

Table 1 – Food Waste Reduction Action Plan
Recommendation #13 – Foster innovation to reduce food waste through diversion and composting.
Recommendation 13.1 – Expand programs to increase the use of composting in all settings
Strategies 1. Continued promotion of the City's Green Bin Program The City introduced the green bin program in 2006 to help reduce the amount of organic waste being sent to the City's landfill. In June 2017, the "Green Your Routine" campaign was launched to raise awareness of the green bin program. The campaign's goal is to increase the number of households participating in the green bin program and to decrease the amount of food and organic waste being sent to the City's landfill. 2. Green Bin Program expansion to other properties The initial rollout of the green bin program focused on residential households; however, over the past few years the City has expanded the program to include multi-residential buildings, small commercial properties which receive municipal waste collection services, and schools within the Hamilton-Wentworth Catholic District School Board. Ongoing promotion is necessary so that properties continue to participate in the green bin program. The Ontario Government's proposed Food and Organic Waste Framework (Framework) outlines the Province's plan to support resource recovery of food and organic waste from a broad range of sectors including schools, multi-residential buildings, commercial, institutional, and industries. 3. Green Bin Program at City Facilities The green bin program is available at several City facilities including administrative offices, recreation centres, and Public Works yards. Participation in the green bin program varies from site to site. It is recommended that City facilities are revisited regularly to ensure these locations are actively participating in the program, especially for the facilities which have a significant source of organic waste. Mandatory

Table 1 – Food Waste Reduction Action Plan
participation may be required in the future if there are new regulatory requirements which requires food and organic waste recovery programs in office buildings, commercial, and institutional properties as directed from the Province through the Waste-Free Ontario Act, 2016. 4. Backyard composters Many residents use backyard composters to compost organic waste on their property. The City sells backyard composters at cost which are available for purchase at the City's municipal service centres.
Recommendation 13.2 - Explore the feasibility of food recovery programs to divert edible food from being wasted
Strategies 1. Advocacy on Food Waste Reduction Hamilton Staff is currently involved with inter-municipal working groups, including the Municipal Waste Association's food waste reduction working group and the Ontario Food Waste Collaborative, to work together to research and develop ideas to reduce food waste in our communities. By working collectively, these groups can help gain greater support for food waste initiatives, particularly for policies which may require advocacy at the provincial or federal level. 2. Food waste reduction pilot project at City Facilities Several City facilities have food preparation areas and serve food at special events, for example, the King's Forest golf course has banquet facilities for meetings and other events. Other City facilities such as recreation centres and arenas sell food at concession stands. Staff from Public Works and Public Health Services is planning to conduct a pilot project to review opportunities to reduce food waste through the City's food preparation operations. The pilot project will include assessing food portioning, healthy eating, and potential cost savings from food waste reduction.
Recommendation 13.3 - Investigate the feasibility of innovative ways to deal with food waste to ensure our environment is sustainable
Strategies 1. New technologies to process food waste In 2017, the City issued a Request for Information to review options to support the long term management of the City's organics management program to help process organic waste, food waste, and yard waste. These potential solutions include innovative technologies and commercial arrangements that offer a potential to maximize current infrastructure including the City's central composting facility.

Table 1 – Food Waste Reduction Action Plan

2. Research partnerships

City staff will explore research opportunities through the CityLab project with local educational institutions. Research on food waste management may align with existing courses at Mohawk College, McMaster University and Redeemer University College. The CityLab project will partner these educational institutions with City departments to provide hands on experience with policy research and project delivery.

Recommendation #14 – Promote a culture that values healthy, local food to reduce food waste through food literacy.

Recommendation 14.1 - Enhance marketing and education programs to reduce food waste at home, work, school, and other public facilities

Strategies

1. Public Education

Promotion and education are necessary to ensure the success of any type of waste management program. The following is an overview of the public education tools that are proposed to support the implementation of the food wastage reduction action plan:

- "Green Your Routine" campaign – the next phase of the "Green Your Routine" campaign will include information and tips to reduce food waste.
- City's waste management guide - This annual guide is distributed to all curbside residential homes in Hamilton which includes information on the City's waste management programs. The future guide will include information on food waste reduction.
- City's website – the City's website has a webpage on organic waste and composting. Staff is planning to add information on food waste reduction tips on the City's website to assist with public education.
- Social Media – In 2017, the City launched the "*MyWaste*" mobile App as a convenient tool to access waste management information. In 2018, messaging will be expanded to include information on food waste reduction and food literacy.
- Creative videos – Public education on food waste reduction may be shared through creative and impactful videos and advertisements through social media channels. Staff is exploring opportunities to create these videos using existing staff complement or through other partnerships.
- Community events – Staff will consider various types of promotional materials which can be distributed through community events to help educate residents on food waste reduction and food literacy.

The public education tools will include several messages to encourage food waste reduction including tips on smarter shopping, how to keep food fresh longer, food portioning, and information on food perishable dates, etc.

Infectious Disease and Environmental Health Report: July – December, 2017 (Q3/Q4)

Part 1: Mandatory Reporting

1a) Confirmed Cases of Mandatory Reportable Diseases

How It's Spread	2014	2015	2016	2017
Respiratory or Direct Contact	1238	1309	1477	1241
Enteric, Foodborne & Waterborne	301	312	264	269
Vectorborne and Zoonotic Diseases	11	17	13	19
Sexually Transmitted & Bloodborne Infections[1]	1901	2036	2244	2374
Other	35	21	29	35

1b) Confirmed Outbreaks Reportable to Public Health

Type of Outbreak	2014	2015	2016	2017
Community	8	4	6	5
Institutional	107	129	80	125

Top 3 diseases for each disease category (July – December, 2017):

Respiratory/Direct Contact:
1. Latent tuberculosis
2. Influenza A
3. Invasive streptococcus pneumoniae

Enteric, Foodborne & Waterborne:
1. Campylobacter enteritis
2. Salmonellosis
3. Giardiasis

Vectorborne and Zoonotic:
1. West Nile virus illness
2. Lyme disease
3. Malaria

Sexually Transmitted/Bloodborne:
1. Chlamydial infections
2. Gonorrhoea
3. Hepatitis C

[1]The increase in sexually transmitted and bloodborne infections in 2017 compared to 2016 was driven by an increase in chlamydia and syphilis cases. Please see Part 4 for more information about chlamydia and syphilis.

Part 2: Environmental Health

2a) Mandatory Program Services

Programs	Areas	2014	2015	2016	2017
Vectorborne Disease	Animal Bites[2]	1433	1423	1508	1543
	Ticks Submitted[3]	144	352	297	892
Food	Special Events	76	73	56	55
	Food Handler Certifications	2696	2602	2572	2390
	Red Signs Posted	26	31	25	23
Health Hazards	Heat Alerts	3	4	9	2
	Cold Alerts	13	8	8	4

[2]A higher number of reports of animal bites in 2016 and 2017 are likely from increased awareness of rabies, due to the Hamilton and Ontario raccoon rabies outbreak that began in December 2015.

[3]The number of ticks submitted to Hamilton Public Health Services (PHS) for species identification increased in 2017 from other years; this may be due to increased public awareness about ticks and/or Lyme disease or an increase in the number of ticks locally. See report BOH18013 regarding a change in risk area related to Lyme disease.

2b) Inspection and Enforcement

Categories	2014	2015	2016	2017
Smoke Free Ontario Act inspections (legal enforcement)[4]	1760	1640	1465	1271
Electronic Cigarette Act inspections (legal enforcement)[5]	n/a	n/a	544	427
City of Hamilton By-law #11-080 Prohibiting Smoking within City Owned Parks and Recreation Property	56	56	73	60
Food[6]	6524	6616	5755	6141
Water	885	853	884	884
Residential Care Facilities	567	671	615	551
Personal Service Settings	946	971	1015	1020
Day Cares[7]	558	569	608	534
Other (e.g. funeral homes)	225	201	246	275
Infection Prevention and Control Lapses	n/a	n/a	0	6

[4]Tobacco Control Enforcement is reporting a decrease in the total number of Smoke-Free Ontario Act (legal enforcement) inspections for 2017 as a result of an overall decline in the number of licensed tobacco product retailers combined with an increase in overall compliance with the Legislative Regulations concerning tobacco sales to minors. The increased compliance resulted in fewer mandatory follow-up inspections of active tobacco product retailers.

[5]The Electronic Cigarette Act came in effect on January 1, 2016. Tobacco Control Enforcement is reporting a decrease in the total number of Electronic Cigarette Act (legal enforcement) inspections for 2017 as a result of an overall decline in the number of licensed electronic cigarette retailers.

[6]Effective January 1, 2017, enforcement of the Healthy Menu Choices Act began, resulting in more food safety inspections conducted in 2017 compared to 2016.

[7]In 2017, the food premises portion of day cares were assessed using the food premise risk characterization tool. Some high risk premises (which require 3 inspections per year) were changed to moderate risk (requiring 2 inspections per year). This resulted in fewer total inspections performed in 2017. All day cares continue to receive 1 infection control inspection annually.

Part 3: Workload

3a) Complaints

Categories	2014	2015	2016	2017
Smoke Free Ontario Act	241	335	274	213
Electronic Cigarette Act	n/a	n/a	17	8
City of Hamilton By-law #11-080 Prohibiting Smoking within City Owned Parks and Recreation Property	32	39	28	25
Food	415	316	249	214
Water	47	35	37	13
Vector Borne Disease	97	102	109	126
Infection Control	119	129	64	86
Health Hazards[8]	1250	1502	1638	1429

[8]More than two-thirds of complaints to the Health Hazards program in 2017 were about pests, while the remaining majority of complaints were related to healthy housing issues (e.g., mould, indoor air quality, asbestos, etc.).

3b) Education, Requests for Non-Routine Inspections, Consults, Referrals

Categories	2014	2015	2016	2017
Food	378	440	795	661
Water	547	480	487	562
Vector Borne Disease	56	48	44	47
Infection Control[9]	409	580	1415	1097
Health Hazards[9]	234	267	637	241

[9] The database used to capture this information related to health hazards and infection control consults was modified during the second half of 2017 resulting in an inability to extract information in the same way previously. We are seeking to better understand this in order to provide this information in future reports.

Part 4: Unusual Occurrences

Chlamydial Infections and Syphilis

The rise in the number of sexually transmitted and bloodborne infections in 2017 compared to 2016 was primarily driven by an increase in chlamydia. Additionally, there was a large increase in syphilis cases in 2017 compared to previous years.

Chlamydia is the most commonly reported sexually transmitted infection to public health, representing about 70% of all sexually transmitted and bloodborne infections in 2017. The rate of chlamydia in Hamilton increased by 8% in 2017 compared to 2016. Although a similar increase was seen across the province, Hamilton's rate of chlamydia remains below the provincial average. Almost 60% of chlamydia cases are among females, and three-quarters of all cases are among people aged 15 and 29. The top three reported risk factors or behaviours among Hamilton's chlamydia cases in 2017 were: no condom was used, having a repeat sexually transmitted infection, and having a new sexual contact in the past two months.

There was a large increase in **infectious syphilis** cases reported to public health in 2017 compared to previous years: Hamilton's 2017 rate was 42% higher than the 2016 rate. In 2017, 88% of cases were male, and 45% were aged 25 to 39 years. Among the male cases, approximately half identified as being men who have sex with men. Hamilton's syphilis rates remain below the provincial average. Other commonly reported risk factors were no condom was used and anonymous sex.

INFORMATION REPORT

TO:	Mayor and Members Board of Health
COMMITTEE DATE:	March 19, 2018
SUBJECT/REPORT NO:	Infectious Disease and Environmental Health Semi-Annual Report (BOH18004) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Lydia Cheng (905) 546-2424, Ext. 7210 Ashley Vanderlaan (905) 546-2424, Ext. 4718
SUBMITTED BY: **SIGNATURE:**	Michelle Baird Director, Planning and Business Improvement Division Public Health Services Department

Council Direction:

This report fulfils the Board of Health policy on communication between the Medical Officer of Health and the Board of Health, as outlined in Report PH06038.

Information:

This is a summary report covering the period from July 1, 2017 to December 31, 2017 (Q3 and Q4, 2017). The Ontario Public Health Standards (OPHS) are the guidelines for the provision of mandatory health programs and services for Boards of Health in Ontario. Investigations completed by program areas for Infectious Diseases and Environmental Health in the OPHS are the focus for this report. These program areas are as follows:

Infectious Diseases: (Includes Reportable Diseases under the Health Protection and Promotion Act)

- Infectious Diseases Prevention and Control;
- Rabies Prevention and Control;
- Sexual Health, Sexually Transmitted Infections, and Blood-borne Infections (including HIV);
- Tuberculosis Prevention and Control; and,
- Vaccine Preventable Diseases.

Environmental Health:

- Food Safety;
- Safe Water;
- Health Hazard Prevention and Management;
- Vector Borne Diseases Control; and,
- Tobacco Control.

Reportable disease cases are from people who reside in the City of Hamilton at the time of their diagnosis. Information in Appendix A has been extracted from the Ontario Ministry of Health and Long-term Care (MOHLTC) integrated Public Health Information System (iPHIS) database, and databases maintained by Public Health Services (PHS), and are subject to change due to case follow-up procedures and/or delayed diagnosis.

Appendix A provides information to the Board of Health (BOH) in a summarized format based on issues brought commonly to staff by BOH members. Appendix A includes data for three prior years, as well as the current year, which allows for trend monitoring. It is also organized to delineate information for routine monitoring of infectious diseases and environmental health issues (Part 1 and 2, respectively), workload (Part 3), and a section that may be used for unusual occurrences of interest to the BOH (Part 4).

PROGRAM HIGHLIGHTS (July 1 – December 31, 2017)

Infectious Diseases

Food Borne Illness Outbreak Investigation

In July 2017, the Infectious Disease Program was notified of possible cases of foodborne illness following a local dinner cruise event, held aboard a ship at the Hamilton waterfront. An outbreak investigation was initiated, including interviewing attendees, analysis of food histories, and collecting clinical specimens. A Food Safety inspection was conducted both at the location of the event and the food premises of a local caterer for the event.

While not all attendees were reached for interview, Public Health Services (PHS) identified 26 cases of gastrointestinal illness. Cases had symptoms of diarrhea, lethargy, and abdominal cramps occurring within 24 hours of the event with symptoms resolving within 24 hours of onset. Due to the quick resolving and self-limiting nature of the illness, very few clinical specimens were collected and a causative organism was not identified.

The Food Safety investigation did not identify any concerns with the caterer. However, it was found that some food items were provided by the owner of the ship. These foods

were prepared in an unlicensed, uninspected, home-based kitchen. An Order under the Health Protection and Promotion Act was issued to the owner of the ship, directing they are not permitted to serve food from uninspected sources. Education was provided to the owner to address these issues and follow-up inspections were conducted to verify that food provided for future events was prepared safely, and in licensed, inspected facilities.

TB Contact Investigation in a School Setting

In late September, the Infectious Disease Program investigated a case of active tuberculosis (TB) (which is able to spread to others) in a school-aged individual. Contact identification was initiated to determine if others in prolonged, close proximity to the case had been infected with latent TB (which is not able to spread to others), as those persons can receive treatment to prevent the development of active TB.

Staff worked closely with the local school and school board to provide information to staff and students, as well as tuberculin skin testing for a group of people who spent more time with the individual with active TB, in accordance with guidelines. In addition to onsite information sessions, approximately 250 information letters were distributed to staff and students and over 70 people were identified as needing skin testing for latent TB infection. To facilitate the testing, PHS worked with the school to hold skin testing clinics onsite over lunch periods. The contract tracing and provision of health education was a large, but very successful undertaking by Infectious Disease Program staff with collaboration and support of the school and school board.

Harm Reduction

Needle Exchange Van

The Mobile Needle Exchange Van provides new needle supplies, sharps containers and naloxone kits to persons who use injection drugs. In response to an observed increase in the requests for services provided by the Van, the Board of Health approved expanded service hours including a new Sunday shift, which was implemented in 2017. This means that this important service is now available seven nights a week. The feedback from clients with respect to increased availability of this service has been very positive.

Opioid Response

In September, there was a noted increase in 911 calls related to probable opioid overdoses. PHS responded immediately by expanding the hours that Naloxone training and refills were available in the community. Overall, the Naloxone program has had a marked increase in distribution of Naloxone kits. In the last quarter of 2017, 494 Naloxone kits were distributed, reviving 148 people; this surpassed the total number of kits distributed in all of 2016 (462).

Safe Water

Lead in Drinking Water

To further protect children from lead in drinking water, revisions to Ontario Regulation 243 (Lead in Schools and Child Care Centres) under the Safe Drinking Water Act came into effect on July 1, 2017. Between July 1 and December 31, 2017, PHS received 68 lab test results for water samples with lead concentrations above the Ontario Drinking Water Quality Standard for lead in drinking water (Regulation 169 under the Safe Drinking Water Act). The Safe Water team receives, assesses and responds to these reports and implements corrective actions as necessary, in alignment with the revised regulation and guidance from the Ministry of the Environment and Climate Change.

Arsenic in Drinking Water

A lower Ontario Drinking Water Quality Standard for arsenic in drinking water came into effect on January 1, 2018. To prepare for this change, PHS worked extensively with several small drinking water system owners in 2017 to prepare for the January 1 deadline. The most notable small drinking water system is the Ancaster Well on Sulphur Springs Road, owned and operated by the Hamilton Conservation Authority.

Health Hazards

Radon Awareness

Radon is a colourless, odourless and tasteless radioactive gas formed by the breakdown of uranium, a natural radioactive material found in soil, rock and groundwater. When radon seeps from the ground into an indoor space, such as a home, it can build up to unsafe levels that can increase risk of developing lung cancer.

Health Canada recommends that radon concentrations in a home do not exceed 200 Becquerels per cubic metre (bq/m^3) per year. In 2012, the Cross-Canada Survey of Radon Concentrations in Homes conducted by Health Canada [3] found that in Hamilton, 5% (5/100) of the homes tested for radon had concentrations above 200 bq/m^3. Furthermore, in 2013, Public Health Ontario [4] reported that 16% of lung cancer deaths in Hamilton can be attributed to radon exposure; this is greater than that found in Ontario at 13%.

Given the findings, PHS has supported promotional campaigns initiating in the month of November (National Radon Action Month) since 2014, focused on increasing radon awareness and encouraging radon testing in Hamilton homes via various promotional pathways including: Transit Shelters, Bus Ads, Radio Ads, Facebook, City Hall Digital Sign, Hamilton Community Newspaper, Neighbourhood Association Newsletters and offering free Radon Test Kits.

Tobacco Control

Recent provincial amendments to the Smoke-Free Ontario Act in 2017 serve to harmonize the Regulations concerning tobacco and electronic cigarette products. Additionally, Public Health Units across Ontario are monitoring the potential impacts on enforcement related to legalized cannabis which is slated to become law in the first half of 2018. PHS will keep the City of Hamilton Board of Health apprised of any Regulatory changes and impacts resulting in service delivery changes and/or pressures.

REFERENCES

[1] TVO. (Oct 13, 2017). Ontario Hubs: Opioid Addiction. Accessed online at: https://tvo.org/video/programs/the-agenda-with-steve-paikin/ontario-hubs-opioid-addiction

[2] TVO. (Oct 19, 2017). Ontario in Crisis. Accessed online at: https://tvo.org/video/programs/ontario-hubs/ontario-in-crisis

[3] Health Canada. (2012). Cross-Canada Survey of Radon Concentrations in Homes Final Report. Accessed online at: https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/ewh-semt/alt_formats/pdf/radiation/radon/survey-sondage-eng.pdf

[4] Peterson E, Aker A, Kim J et al. (2013). Lung cancer risk from radon in Ontario, Canada: how many lung cancers can we prevent? Cancer Causes & Control 24: 2013-2020. Accessed online at: https://doi.org/10.1007/s10552-013-0278-x

APPENDICES ATTACHED

Appendix A to Report BOH18004 – Infectious Disease and Environmental Health Report: July – December, 2017

INFORMATION REPORT

TO:	Mayor and Members Board of Health
COMMITTEE DATE:	March 19, 2018
SUBJECT/REPORT NO:	Lyme Disease Risk in Hamilton (BOH18013) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Susan Harding-Cruz (905) 546-2424, Ext. 3576
SUBMITTED BY & SIGNATURE:	Kevin McDonald Director, Public Health Services Healthy Environments Division Healthy and Safe Communities Department

Information:

Based on 2017 tick surveillance, Hamilton is a newly identified 'estimated risk area' for Lyme disease. To become an estimated risk area, blacklegged ticks should be found during tick surveillance in the same location, both spring and fall, between May and October, of the same calendar year. As indicated in the Ticks and Lyme Disease Program Highlight in the September 18, 2017 Infectious Disease and Environmental Health Semi-Annual Report (BOH17029), tick dragging, or active surveillance for ticks, occurred in the fall of 2017. As a result, 10 blacklegged ticks were found, which, when combined with the spring dragging results where three (3) blacklegged ticks were found, meant that Hamilton now met the criteria for being an estimated risk area for Lyme disease. It is important to note that, as part of the dragging process, all blacklegged ticks are sent for Lyme disease testing. All ticks were negative from both the spring and fall results.

The methodology that is used by the Public Health Agency of Canada and Public Health Ontario to define risk areas for Lyme disease allows the identification of these so called "estimated risk areas". These include a 20 kilometre radius which, in Hamilton's case, covers three quarters of the city except eastern parts of Stoney Creek and Glanbrook. See Appendix A. While this is the estimated risk area, blacklegged ticks could also be found outside of this 20 km zone. A medical advisory will be sent to medical practitioners to assist them with human case investigation and testing related to this new estimated risk area.

Up to March 6, 2018 results also indicate that four of 78 local blacklegged ticks submitted to Public Health Services by the public in 2017 were positive through Lyme disease testing; 19 tick results are pending. The positivity percentage of the local blacklegged ticks submitted for testing will be calculated once all results are received. Using Toronto Public Health's "Lyme Disease Prophylaxis and Diagnosis Algorithm for Clinicians" as a guide, the result may also aid with decisions around potential post exposure prophylaxis for some patients if a person were exposed in an area of ecologic information indicating the rate of infection of ticks to be greater or equal to 20%.

There are many reasons for the expansion of blacklegged ticks in Ontario, with one of the main factors being climate change, specifically the increase in the mean annual degree days above 0°C. Other factors include land use changes with the conversion of farmland to forest, encroaching human populations and forest fragmentation as well as changes in the range of the main hosts for ticks, the white-footed mouse and white-tailed deer. Provincial and national tick surveillance indicators suggest that blacklegged tick populations are expanding in southern Ontario and will likely continue to do so as available habitat permits.

Blacklegged tick populations can also occur over a wide geographic area in Canada because larvae and nymphs readily attach to migratory birds. Birds inadvertently then help transport blacklegged ticks from areas in the US and Canada to various locations across Canada. This makes infectious tick bites possible almost anywhere in Ontario, and so human cases of Lyme disease may occur outside of known Ontario risk areas. However, the risk of exposure is much higher in identified risk areas. The risk of Lyme disease itself is highest in areas with established blacklegged tick populations which are also found to be positive for the agent of Lyme disease, *B. burgodorferi.* Evidence suggests that once blacklegged tick populations are established they will, over years, become infected with *B. burgdorferi*. The extent to which these established endemic areas expand is a key objective of active tick surveillance at the local, provincial, and national levels.

The risk of human infection from Lyme disease in Hamilton remains low, however to prevent infection, people should continue to take precautions to avoid being bitten by ticks. Ticks remain active throughout the year even in colder temperatures.

Precautions include:

After spending time outdoors in wooded or bushy areas, carefully check your full body and head for attached ticks; check your children and pets for ticks (shower to remove ticks before they become attached);

- If you find a tick on your body, remove it as soon as possible by using proper techniques such as using tweezers to pull the tick gently but firmly straight up so that the full head is also removed;
- Wear light-coloured clothing outdoors. It makes ticks easier to spot;

- Wear long pants and a long sleeved shirt;
- Wear socks and closed toe shoes. Tuck your pants into your socks; and
- Use an insect repellent containing DEET or Icaridin and follow the manufacturer's instructions.

Public Health Ontario is expected to produce an updated Lyme Disease Estimated Risk Areas map for Ontario by the spring, 2018. City of Hamilton, along with any other newly identified health units, will be added at that time. See the 2017 risk map in Appendix B.

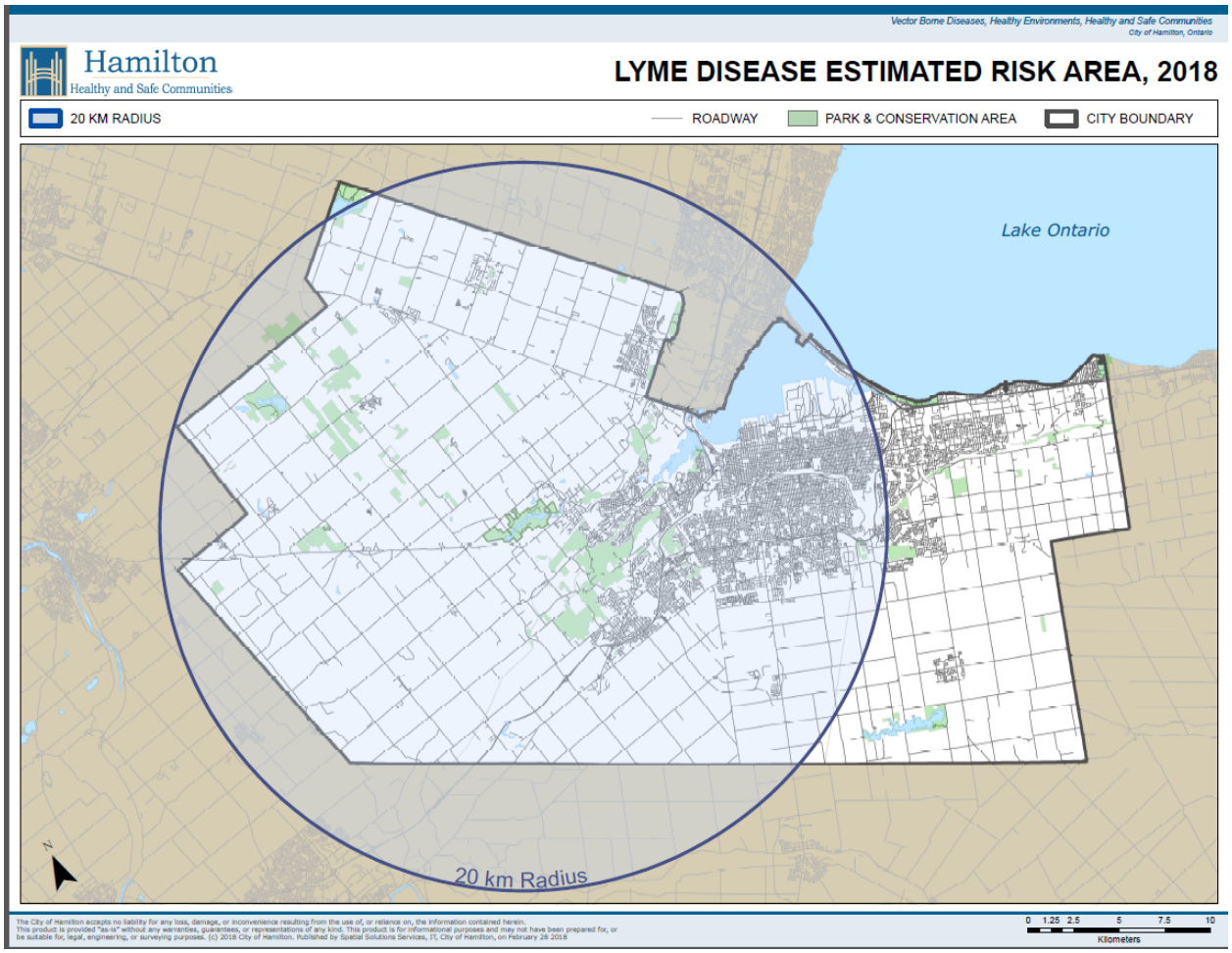
The following actions are being completed to inform our community:

- Board of Health Information Report;
- Media release regarding 20 km risk area and precautions;
- Medical advisory to Hamilton medical practitioners;
- Updates to City of Hamilton Lyme disease and tick webpages;
- Outdoor tick signage being reviewed;
- Internal messaging reminder to City staff about health and safety precautions;
- Updates to external stakeholders including adjacent health units; and
- Updates to members of the City of Hamilton Tick Management Planning Group.

Appendices/Schedules Attached

Appendix A to Report BOH18013 - City of Hamilton Lyme Disease Risk Map
Appendix B to Report BOH18013 - Public Health Ontario Lyme Disease Estimated Risk Map 2017

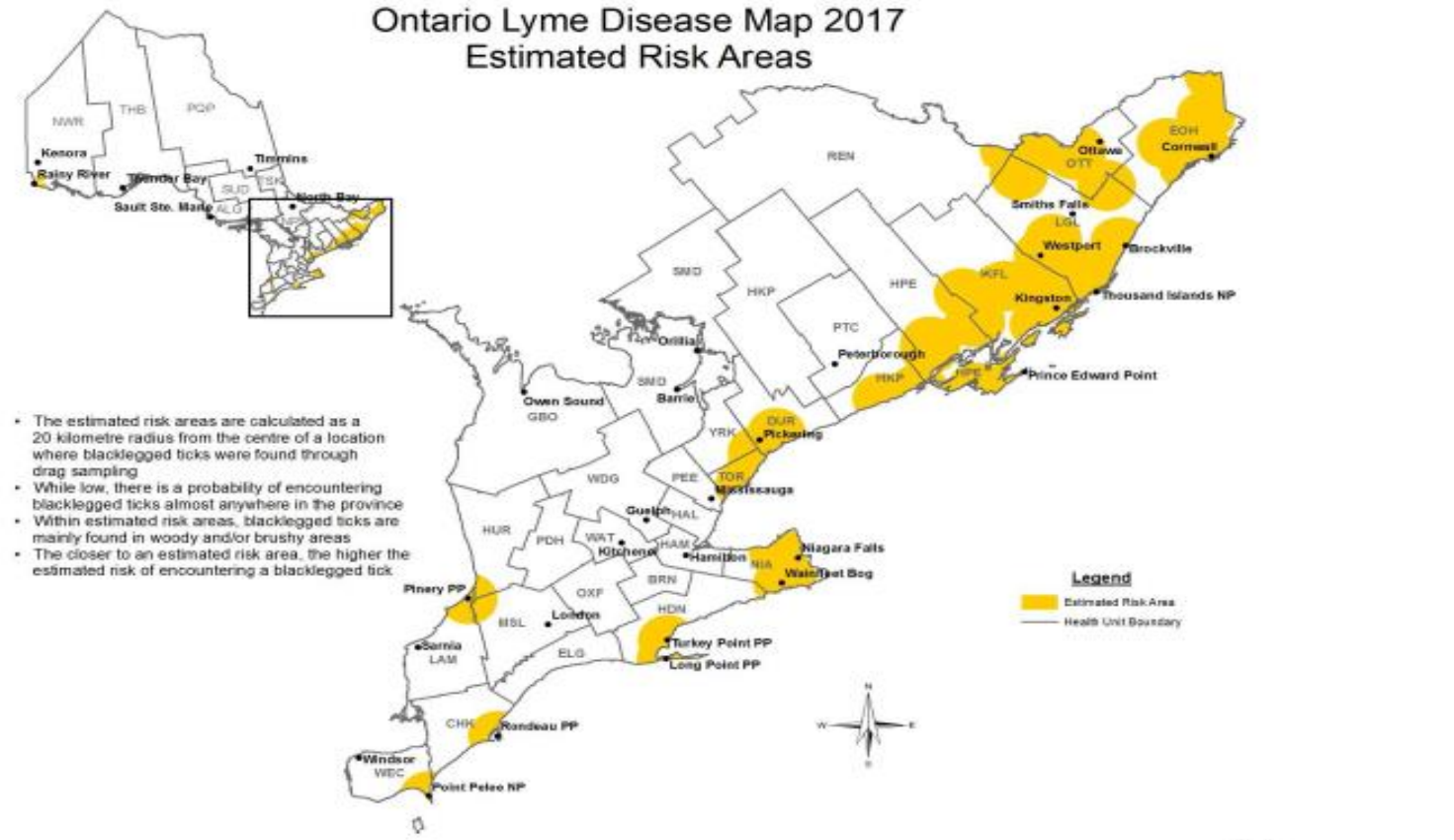
1. City of Hamilton Lyme Disease Estimated Risk Map, 2018



1. [Public Health Ontario Lyme Disease Estimated Risk Map 2017]

Public Health Ontario | Santé publique Ontario

PARTNERS FOR HEALTH | PARTENAIRES POUR LA SANTÉ



For more information, please visit www.publichealthontario.ca/lymedisease

June 2017

Ontario
Agency for Health Protection and Promotion
Agence de protection et de promotion de la santé

CITY OF HAMILTON
PUBLIC HEALTH SERVICES
Office of the Medical Officer of Health
and
HEALTHY AND SAFE COMMUNITIES DEPARTMENT
Recreation Division

TO:	Mayor and Members Board of Health
COMMITTEE DATE:	March 19, 2018
SUBJECT/REPORT NO:	Feasibility of Peanut Restrictions in City Facilities (BOH16024(a)/HSC18012) (City Wide) (Outstanding Business List Item)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Ninh Tran (905) 546-2424, Ext. 7113 Dawn Walton (905) 546-2424, Ext. 4755
SUBMITTED BY & SIGNATURES:	Ninh Tran, MD, MSc, CCFP, FRCPC Associate Medical Officer of Health, Public Health Services Office of the Medical Officer of Health Healthy and Safe Communities Department Chris Herstek Director, Recreation Division Healthy and Safe Communities Department

RECOMMENDATION

(a) That signage indicating common allergens (eg. nuts, dairy) that are contained in the food products available at concessions be posted to educate and assist with food purchase decision making for clientele;

(b) That the City of Hamilton continue to accommodate individuals based on self-identification; and,

(c) That the item respecting the Pilot-Project to Eliminate Sales of Products with Peanuts or Tree Nuts in four City of Hamilton Facilities be removed from the Outstanding Business List.

EXECUTIVE SUMMARY

This report and recommendation are in response to the Board of Health (BOH) motion dated June 13, 2016:

(a) That staff be directed to **implement a one-year pilot project** within four City of Hamilton Facilities (locations to be determined) to evaluate the revenue impacts and contractual obligations of substituting current peanut and nut-containing products with those that are free of peanuts or tree nuts;
(b) That a **report be presented** to the Board of Health at the conclusion of the one-year pilot project

The Recreation Division, Food Service Unit conducted a peanut restriction pilot within two arena concession locations and three vending machine locations. The one year pilot was conducted between February 1, 2017 and January 31, 2018.

Food service locations were selected for the pilot based on geographic location and sales volumes. Valley Park Recreation Complex concession and vending, Carlisle Arena concession and vending, as well as Sir Allan MacNab Recreation Centre vending were included in the pilot for a total of five sites at three facilities.

During the pilot, there was an estimated average 20% loss of over the counter sales. This combined with the inability to offer healthier bars containing nuts could impact the Food Service unit by $11, 500 annually and limit commission potential from vending by restricting product offerings across the operation. Additionally, on three identified occasions food service staff was notified of machines that were non-compliant. Vending operations are currently contracted to multiple third party vendors. Monitoring vending operations would be a challenge with the only recourse being vendor performance reporting and eventual termination of contract when requirements are made clear as part of the procurement process. Finally, in a climate where healthy alternatives and caloric awareness are becoming priorities, the banning of nut products reduces the availability of alternative product offerings. Nut products are one of the many identified anaphylaxis allergens identified by recreation users. Given that the Recreation Division has a comprehensive epi-pen response protocol and accommodation policy in place for participants with severe allergies, the focus on allergens in the recreation setting should be education and awareness rather than banning of products and creating a false sense of security in a public use facility.

Alternatives for Consideration – See Page 5

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: There are no financial implications associated with Report BOH16024(a).
Staffing: There are no staffingimplications associated with Report BOH16024(a).
Legal: There are no legal implications associated with Report BOH16024(a).

HISTORICAL BACKGROUND

On November 25, 2015, Council directed staff to:

a) Report to the Board of Health respecting a study of the impact of food allergies on publicly owned facilities in the City of Hamilton; and,
b) That staff consult with Dr. Doug Mack, Anaphylaxis Section Head, Canadian Society of Allergy and Clinical Immunology, respecting peanut-free City owned facilities and to report back to the Board of Health.

On June 13, 2016, PHS provided an information report on the Feasibility of Peanut Restrictions in City Facilities (BOH16024). At this meeting, the Board of Health provided the following directions:

(a) That staff be directed to **implement a one-year pilot project** within four City of Hamilton Facilities (locations to be determined) to evaluate the revenue impacts and contractual obligations of substituting current peanut and nut-containing products with those that are free of peanuts or tree nuts;
(b) That a **report be presented** to the Board of Health at the conclusion of the one-year pilot project.

The Recreation Division, Food Service Unit conducted a peanut restriction pilot within two arena concession locations and three vending machine locations. The one year pilot was conducted between February 1, 2017 and January 31, 3018.

Subsequent to the June 13, 2016 BOH, a citizen applied to the Human Rights Tribunal of Ontario to have the City of Hamilton ban/remove peanut products from its facilities. The City responded to the application. Mediation was unsuccessful and so a two-day hearing was held before the Human Rights Tribunal in the summer of 2017, with written closing submissions being exchanged and filed by the parties in September 2017. On February 16, 2018, the Human Rights Tribunal of Ontario dismissed the application to have the City of Hamilton ban/remove peanut products from its facilities.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

There are no policy implications associated with Report BOH16024(a).

RELEVANT CONSULTATION

Legal Services Division was consulted and supports the recommendations made in this report.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

Description of the pilot:

Food service locations were selected for the pilot based on geographic location and sales volumes. Facilities with average sales were chosen in order to ensure a comparable sample size based on volume while mitigating potential losses. Locations were geographically diverse to ensure a broader market reach. Valley Park Recreation Complex concession and vending, Carlisle Arena concession and vending as well as Sir Allan MacNab Recreation Centre vending were included in the pilot for a total of five sites at three facilities.

The scope of the pilot was to restrict the sale of product over a one-year period in Recreation Food Services concession and vending operations. The product restriction was limited to chocolate and energy/protein bar sales which identified peanut/tree nuts in the ingredient list. Items removed from the product line up included four out of five types of energy/protein bar with no substitution as well as five out of 10 types of chocolate bars with five available substitutions.

In order to minimize unsolicited customer feedback, based on the removal of nut products and ensure feedback based on consumer recognition of product availability, the restriction of nut products at locations was not advertised or promoted during the pilot. While the pilot identified that specific bar types not offered per the restriction were requested at locations, these requests were gathered informally and not significant enough in number to identify as a “pilot” issue. Product requests were not limited to bars containing nuts nor were product requests limited to occurring only at pilot sites. In the majority of scenarios the availability of a specific bar type did not dissuade consumers from making a purchase. The exception to this were consumers requesting energy/protein bars for which no product substitution was available; this resulted more frequently in a loss of sale.

Chocolate bars sales during the pilot were compared with the chocolate bar sales for the same period a year previous; Carlisle concession sold 322 (32%) fewer bars, Valley Park concession sold 79 (8%) fewer bars, Carlisle vending commissions increased sales by $68 (18%), Sir Allan MacNab and Valley Park vending operate on an annual flat rate commission and were not impacted during this period.

In terms of results, while concession operations recognized a decrease in chocolate bar sales these results cannot be isolated to the peanut restriction as other variables

contribute to this outcome including concession operating hours, scheduled ice program, program attendance, staff availability, access to software to document sales and customer service. It was evident that where a viable nut free product was either not available or limited, sales were impacted, the example being energy/protein bar sales where a substitute bar was not offered. Energy/protein bar sales accounted for 15% of overall bar sales in 2016; a total of $6885.

Vending commissions recognized a slight increase during the pilot however the city does not receive product specific velocity reports and cannot confirm whether the increase was specific to chocolate bars or other snack product sales. Additionally, Food Service staff identified a risk with vending operations during the pilot period. Vending operations are currently contracted to multiple third party vendors. Vendors were provided instruction to remove peanut product from identified machines during the course of the pilot. On three identified occasions food service staff were notified of machines that were non-compliant. Vendors were contacted to remedy however, it is unclear how long nut product was available in identified machines and whether these incidents were more frequent and not reported. Monitoring vending operations remains a challenge with the only recourse being vendor performance reporting and eventual termination of contract when requirements are made clear as part of the procurement process.

An average 20% loss of over the counter sales combined with the inability to offer healthier bars containing nuts could impact the Food Service unit by $11, 500 annually and limit commission potential from vending by restricting product offerings across the operation. Additionally, in a climate where healthy alternatives and caloric awareness are becoming priorities, the banning of nut products reduces the availability of alternative product offerings. Nut products are one of the many identified anaphylaxis allergens identified by recreation users. Given that the Recreation Division has a comprehensive epi-pen response protocol and accommodation policy in place for participants with severe allergies, the focus on allergens in the recreation setting should be education and awareness rather than banning of products and creating a false sense of security in a public use facility.

ALTERNATIVES FOR CONSIDERATION

The Board of Health could choose complete elimination of peanuts at all City owned recreation facilities.

As discussed in the information report on the Feasibility of Peanut Restrictions in City Facilities (BOH16024), this is not recommended given the lack of evidence regarding the effectiveness of a ban/restriction, the difficulty in monitoring and enforcing a ban/restriction, the impossibility of ensuring the complete elimination of the product, the potential risk of liability if a ban/restriction is not effectively implemented, the potential for creating a false sense of security for persons with peanut allergies, and the fact it

could lead to similar requests for bans/restrictions of other food products. Focus should be on education, access to epi-pen and accommodation where identified at specific locations.

Financial Implications:

Based on an average 20% loss of over the counter sales combined with the inability to offer healthier bars containing nuts could impact the Food Service unit by $11, 500 annually and limit commission potential from vending by restricting product offerings across the operation.

Staffing Implications:

There are no staffing implications associated with the alternative option within Report BOH16024(a).

Legal and Policy Implications:

There is the potential risk of liability if a ban/restriction is not effectively implemented, the potential for creating a false sense of security for persons with peanut allergies, and the fact it could lead to similar requests for bans/restrictions of other food products.

Pros: None identified.

Cons: Financial costs and legal implications as above.

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Healthy and Safe Communities
Hamilton is a safe and supportive city where people are active, healthy, and have a high quality of life.

APPENDICES AND SCHEDULES ATTACHED

Not Applicable.

CITY OF HAMILTON
PUBLIC HEALTH SERVICES
Communicable Disease Control and Wellness Division

TO:	Mayor and Members Board of Health
COMMITTEE DATE:	March 19, 2018
SUBJECT/REPORT NO:	Expanded Use of Naloxone on Hamilton Fire Vehicles (BOH18012) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Michelle Baird (905) 546-2424, Ext. 3529
SUBMITTED BY & SIGNATURE	Michelle Baird Director, Public Health Services, Planning & Business Improvement Division Acting Director, Public Health Services, Communicable Disease Control and Wellness Division Healthy and Safe Communities Department

RECOMMENDATION

That the Board of Health approve the expansion of Naloxone use by the Hamilton Fire Department to include the administering of intranasal Naloxone to members of the public to help reverse the effects of opioid overdoses.

EXECUTIVE SUMMARY

Overdose deaths due to medical and non-medical drug use are now the third leading cause of accidental deaths in Ontario. A significant portion of these deaths have been attributed to opioids. Drug overdose is not confined to one group of people but can affect anyone, including people taking prescribed opioids. Opioid overdose continues to be an issue in Hamilton. During 2017 there were 416 calls where paramedics responded to an opioid overdose and during 2018, January 1 to February 20, there were 30 calls.

Naloxone is a safe, highly effective medication that reverses the effects of opioids such as heroin or morphine. It is a standard treatment for opioid overdose and has a long history of use in clinical settings (approximately 40 years). Recently, in response to the opioid crisis, the Ministry of Health and Long-Term Care has initiated strategies to increase the distribution and availability of naloxone in the community. This includes distribution through pharmacies and public health units. In 2017, 1700 naloxone kits

were distributed in Hamilton by Public Health Services (PHS) staff, reviving 453 people. Naloxone is currently used by emergency departments and paramedics in responding to opioid overdoses.

In June 2016, report BOH16065 was brought forward to the Board of Health recommending that Naloxone continue to be distributed to clients via public health staff rather than on board City of Hamilton Fire and Police vehicles. Since the time of this report, the MOHLTC continued to implement strategies to support communities in addressing the opioid crisis. Effective January 28, 2018, the MOHLTC and the Ministry of Community Safety and Correctional Services launched an expansion of the Ontario Naloxone Program (ONP) to include police and fire services. Naloxone provided through this expansion would be made available to police and fire services through local public health units and could be used to prevent overdoses. It could also be used to help front-line police and firefighters in case of exposure; however, naloxone kits provided to police and firefighters cannot be distributed through these agencies.

Hamilton Fire Department (HFD) requires an estimated 66 naloxone kits with each kit containing two doses of naloxone, in order to effectively implement this expanded use of naloxone. This includes approximately three kits that would remain with supervisory staff. HFD is responsible for the storage of the naloxone after delivery from PHS.

Alternatives for Consideration – Not Applicable

FINANCIAL – STAFFING – LEGAL IMPLICATIONS (for recommendation(s) only)

Financial: No additional financial costs will be incurred as a result of these recommendations. The MOHLTC provides Naloxone kits to the public health unit and the HFD at no cost. The HFD currently maintains a supply of naloxone for occupational use and the current supply management will be used to maintain the additional supply of naloxone required to implement these recommendations.

Staffing: None identified.

Legal: None identified.

HISTORICAL BACKGROUND (Chronology of events)

Naloxone is a safe, highly effective medication that reverses the effects of opioids such as heroin or morphine. It is a standard treatment for opioid overdose and has a long track-record (~40 years) of use in clinical settings.

PHS staff currently provides naloxone to clients and naloxone is being made available to the public over the counter at pharmacies at no cost.

In June 2016, PHS brought forward report BOH16065 to the Board of Health for consideration. At that time it was recommended that HFD not administer naloxone to the general public. At the time of the report the MOHLTC guidelines with respect to naloxone did not support the provision of naloxone to HFD.

At that time, the HFD Health & Safety Committee brought forth concerns regarding the need to have measures in place to protect the well-being of staff that might, as a result of their duties, inadvertently come into contact with substances that would require the administration of Naloxone. The HFD Medical Director granted HFD suppression personnel the authority to administer Naloxone by way of a medical directive. The HFD trained all suppression staff in its administration and currently has intranasal Naloxone on all front line vehicles. Staff are trained and approved to administer Naloxone to HFD personnel should they become adversely impacted at the scene of an opioid overdose call.

The context has changed since 2016. In an effort to address the opioid crisis in the province, the MOHLTC announced that effective January 28, 2018 naloxone would be made available to all 447 municipal full-time, composite, and volunteer fire departments, all northern fire departments, as well as all First Nations fire services to prevent overdoses, and could also be used to help front-line police and firefighters in case of exposure.

Naloxone is available in multiple forms of administration including injection and intranasal. The formulation currently available to Fire personnel through PHS is an intranasal formulation. Because the intranasal formulation is now available it removes previous barriers to its administration in the field posed by the injectable formulation. Staff training is required to administer intranasal naloxone; however, this training is less significant than the training required with injectable naloxone.

There are occasions when the HFD arrives at an emergency situation in advance of paramedics. In 2017, the HFD responded to 234 calls where an overdose was suspected. Naloxone could be used by HFD personnel in these circumstances as a result of this change in practice of the recommendation is approved. PHS is now prepared to provide naloxone to HFD and both HFD and PHS support implementation of this strategy.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

RELEVANT CONSULTATION

Consultation has taken place with the following:

- Hamilton Paramedic Service,

- Hamilton Fire Department,
- Risk Management; and
- Hamilton Fire Department oversight Medical Director.

ANALYSIS AND RATIONALE FOR RECOMMENDATION
(Include Performance Measurement/Benchmarking Data if applicable)

Staff from the HFD and PHS have identified the following opportunities that support the expanded use of naloxone on HFD vehicles:

- Nasal formulation of the drug is the formulation of the drug to be provided by PHS which does not require the use of glass ampules, drawing up medication and injection, which, in turn will make the process feasible for staff within HFD;
- No costs will be incurred through the acquisition of the medication and associated supplies;
- Expansion of naloxone on fire vehicles supported by MOHLTC across Ontario; and,
- Naloxone administration is currently within the scope of practice for HFD and the current (amended July 2017) medical directive covers naloxone administration.

ALTERNATIVES FOR CONSIDERATION

(Include Financial, Staffing, Legal and Policy Implications and Pros and Cons for each alternative)

Not Applicable.

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Healthy and Safe Communities
Hamilton is a safe and supportive city where people are active, healthy, and have a high quality of life.

Our People and Performance
Hamiltonians have a high level of trust and confidence in their City government.

APPENDICES AND SCHEDULES ATTACHED

Not Applicable.

Ministry of Health and Long-Term Care

Assistant Deputy Minister's Office

Population and Public Health Division
777 Bay Street, 19th Floor
Toronto ON M7A 1S5

Telephone: (416) 212-8119
Facsimile: (416) 212-2200

Ministère de la Santé et des Soins de longue durée

Bureau du sous-ministre adjoint

Division de la santé de la population et de la santé publique
777, rue Bay, 19e étage
Toronto ON M7A 1S5

Téléphone: (416) 212-8119
Télécopieur: (416) 212-2200

February 16, 2018

MEMORANDUM

TO: Medical Officers of Health, Chief Executive Officers, and Board of Health Chairs

RE: Ontario Public Health Standards – Implementation Work Plan Updates

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Dear Colleagues,

As you know, January 1, 2018 marked the effective date of the new Ontario Public Health Standards: Requirements for Programs, Services and Accountability, and implementation will take place over the year. The ministry is working on a comprehensive work plan which includes engagement, participation and involvement with all of you, and we will provide details, in the ensuing weeks. In the meantime, please see below for some key status updates.

Protocols and Guidelines

- The first batch of protocols and guidelines were shared with you on December 29, 2017, and the second batch were released on February 5, 2018. Over the next few weeks, the Standards Implementation Task Force will review the outstanding protocols and guidelines. Please see **Appendix 1** for the complete list of protocols and guidelines and anticipated release dates for those outstanding.

Indicators

- In my December 29 memo, I announced that an Indicators Implementation Task Force will be established to support the implementation of the Ontario Public Health Standards Indicators Framework.

  I will be reaching out to individuals to participate in this critical indicators work, and I will update you on that membership and the Task Force's terms of reference shortly thereafter.

Reporting

- As we continue to work with you and your staff to complete your 2018 Annual Service Plan and Budget Submissions, we are also in the process of developing the other accountability reporting tools required under the new Public Health Accountability Framework, including the Standards Activity Reports (i.e., in year financial/programmatic reports, annual report and attestation). The content and timing for these accountability reports will be shared with Boards of Health shortly.
- The ministry will continue to consult with the field on the development of the accountability reporting tools and we are committed to provide ongoing training and support to throughout this process.

Continuous Quality Improvement

- Ten years passed between the last major update of the Ontario Public Health Standards (in 2008) and this 2018 update. I think we can agree that this is too long a time period. We need to strike a balance between ensuring that the Standards reflect critical new inputs i.e.: new evidence, research findings, learnings from monitoring and surveillance, evaluation results, and providing operational certainty for Boards of Health and staff working in local public health. The ministry is currently considering how best to keep the Standards, protocols and guidelines up-to-date, and we will seek your input into this in the coming months.

Coordinated Research Agenda

- High quality, relevant and coordinated research is needed on an ongoing basis to inform the development of policies and programs, both locally and provincially. While a significant amount of research is conducted within the sector, a coordinated approach would maximize impact by reducing duplication, leveraging capacity within the system, and ensuring that our needs and priorities are being met. As a first step in the development of a coordinated research agenda, we will embark on a consultative process to identify provincial research priorities across the range of programs and services reflected in the modernized standards.

Public Health Workforce

- Another next step with the release of the new Standards will be a process to assess how the current public health workforce is aligned to deliver these programs and services within current resources and to develop various strategies to begin addressing the gaps. We want to engage various disciplines in the field to participate in this work, so please stay tuned for further communication.

Surveillance and Monitoring Strategy and Central Repository (coordinated data backbone, centralized data collection)

- The purpose of the Surveillance and Monitoring Strategy is to provide a framework for what information will be collected and monitored, how it will be organized, captured, and made available through a central repository to support the implementation of Board of Health requirements under the Standards, as well as program reporting and population health assessment.
- The ministry is currently developing the proposed policy approach and will be engaging local public health and other key partners shortly.

Education & Training

- With the significant changes that have been made to the Standards, the *Health Protection and Promotion Act* and the new Public Health Accountability Framework, the ministry recognizes that the sector will require knowledge and awareness of all components of these changes, as well as specific training for components within certain areas. To this end, we will be developing a Coordinated Education and Training Plan, which will organize and prioritize this content over the coming year. The ministry intends to use various training modalities to make this as efficient as possible and a training calendar will be developed so that Boards of Health can plan accordingly.

Evaluation

- The ministry is committed to the systematic evaluation of all aspects of our work, including the new Standards. As we work to develop a comprehensive evaluation plan for the new standards over the next year, we will be seeking feedback and advice from the field not only on the overall plan, but also on how to specifically include local evaluation results as local public health staff also work to evaluate the programs and services they offer in accordance with the Standards.

Evidence and Best Practices

- In recognition of the important role that evidence and best practices play in policy/strategy/program development and implementation, we will consult with our public health and other key partners to explore how best to incorporate and support this critical public sector activity.

Thank you for your continued support and collaboration. If you have any questions, please do not hesitate to contact the ministry by e-mail at PHTransformation@ontario.ca.

Sincerely,

Original signed by

Roselle Martino
Assistant Deputy Minister, Population and Public Health Division

Copy: Dr. David Williams, Chief Medical Officer of Health
Jackie Wood, Director, Planning and Performance Branch
Nina Arron, Director, Disease Prevention Policy and Programs Branch
Liz Walker, Director, Accountability and Liaison Branch
Laura Pisko, Director, Health Protection Policy and Programs Branch
Dianne Alexander, Director, Healthy Living Policy and Programs Branch
Clint Shingler, Director, Health System Emergency Management Branch

Appendix 1: Summary of Protocols and Guidelines with Release Dates

Document	Release Date or Anticipated Release Date
Child Visual Health and Vision Screening Protocol	February/March 2018
Electronic Cigarettes Protocol	December 29, 2017
Food Safety Protocol	February 5, 2018
Health Hazard Response Protocol	February 5, 2018
Healthy Babies, Healthy Children Protocol	January 3, 2018
Immunization for Children in Schools and Licensed Child Care Settings Protocol	February 5, 2018
Infection Prevention and Control Complaints Protocol	February 5, 2018
Infection Prevention and Control Disclosure Protocol	February 5, 2018
Infection Prevention and Control Protocol	February 5, 2018
Infectious Diseases Protocol	February 5, 2018
Institutional/Facility Outbreak Management Protocol	February/March 2018
Menu Labelling Protocol	December 29, 2017
Oral Health Protocol	February/March 2018
Population Health Assessment and Surveillance Protocol	December 29, 2017
Qualifications for Public Health Professionals Protocol	February 5, 2018
Rabies Prevention and Control Protocol	February 5, 2018
Recreational Water Protocol	February 5, 2018
Safe Drinking Water and Fluoride Monitoring Protocol	February 5, 2018
Sexual Health and Sexually Transmitted/Blood-Borne Infections Prevention and Control Protocol	December 29, 2017
Tanning Beds Protocol	December 29, 2017
Tobacco Protocol	December 29, 2017
Tuberculosis Prevention and Control Protocol	February 5, 2018
Vaccine Storage and Handling Protocol	December 29, 2017
Board of Health and Local Health Integration Network Engagement Guideline	December 29, 2017
Chronic Disease Prevention Guideline	February 2018
Guidelines for Emergency Management	February/March 2018

Document	Release Date or Anticipated Release Date
Health Equity Guideline	February 2018
Healthy Environments and Climate Change Guideline	February 2018
Healthy Growth and Development Guideline	February 2018
Injury Prevention Guideline	February 2018
Management of Avian Chlamydiosis in Birds Guideline	February 2018
Management of Avian Influenza or Novel Influenza in Birds or Animals Guideline	February 2018
Management of Echinococcus Multilocularis Infections in Animals Guideline	February 2018
Management of Potential Rabies Exposures Guideline	February 2018
Mental Health Promotion Guideline	February 2018
Operational Approaches for Food Safety Guideline	February 2018
Operational Approaches for Recreational Water Guideline	February 5, 2018
Relationship with Indigenous Communities Guideline	February 2018
School Health Guideline	February/March 2018
Small Drinking Water Systems Risk Assessment Guideline	February 5, 2018
Substance Use Prevention and Harm Reduction Guideline	December 29, 2017
Tuberculosis Program Guideline	February 2018

Ministry of Health and Long-Term Care

Assistant Deputy Minister's Office

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Ministère de la Santé et des Soins de longue durée

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February 5, 2018

MEMORANDUM

TO: Medical Officers of Health, CEOs, and Board Chairs

RE: Ontario Public Health Standards: Requirements for Programs, Services, and Accountability

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Dear Colleagues,

Further to the December 29th memo which included the release of the official Ontario Public Health Standards: Requirements for Programs, Services and Accountability (Standards), we are now releasing a second installment of incorporated protocols and guidelines.

The Standards and incorporated protocols and guidelines are published by the Minister of Health and Long-Term Care under the authority of section 7 of the *Health Protection and Promotion Act* (HPPA) to specify the mandatory health programs and services provided by boards of health.

The following official protocols and guidelines are attached and effective immediately:

- Immunization for Children in Schools and Licensed Child Care Settings Protocol;
- Infection Prevention and Control Complaints Protocol;
- Infection Prevention and Control Disclosure Protocol;
- Infection Prevention and Control Protocol;
- Infectious Diseases Protocol;
- Rabies Prevention and Control Protocol;
- Food Safety Protocol;
- Health Hazard Response Protocol;
- Safe Drinking Water and Fluoride Monitoring Protocol;
- Tuberculosis Prevention and Control Protocol;
- Qualifications for Public Health Professionals Protocol;
- Operational Approaches for Recreational Water Guideline;
- Small Drinking Water Systems Risk Assessment Guideline; and
- Recreational Water Protocol.

The remaining incorporated protocols and guidelines will be released at a later date and will come into effect on the date of release. Please see Appendix 1 for a summary of protocols

…/2

and guidelines including those released on December 29th, those released today and those anticipated in the coming weeks. As previously communicated, it is expected that boards of health will continue to operate business as usual until the remaining new protocols and guidelines have been released. The ministry will continue to work with all our health unit partners to support you as you implement the new Standards, protocols and guidelines.

All the documents circulated today will also be available on the Ministry's website in English and French in the next few weeks, and we will provide the web link as soon as it is ready.

Thank you all for your continued support and collaboration. If you have any questions, please do not hesitate to contact the ministry by e-mail at PHTransformation@ontario.ca.

Sincerely,

Original signed by

Roselle Martino
Assistant Deputy Minister
Population and Public Health Division

c: Dr. David Williams, Chief Medical Officer of Health
Jackie Wood, Director, Planning and Performance Branch
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Tuberculosis Program Guideline	February 2018

Ministry of Health and Long-Term Care

Food Safety Protocol, 2018

Population and Public Health Division,
Ministry of Health and Long-Term Care

Effective: January 1, 2018

Ontario

Preamble

The Ontario Public Health Standards: Requirements for Programs, Services, and Accountability (Standards) are published by the Minister of Health and Long-Term Care under the authority of section 7 of the *Health Protection and Promotion Act* (HPPA) to specify the mandatory health programs and services provided by boards of health.[1,2] The Standards identify the minimum expectations for public health programs and services. Boards of health are accountable for implementing the Standards including the protocols and guidelines that are referenced in the Standards. Protocols are program and topic-specific documents incorporated into the Standards which provide direction on how boards of health shall operationalize specific requirement(s) identified within the Standards.

Purpose

The purpose of this protocol is to assist in the prevention and reduction of food-borne illness by providing direction to boards of health on the delivery of local, comprehensive food safety programs, which include, but are not limited to:

- Surveillance and inspection of food premises;
- Epidemiological analyses of surveillance data;
- Food handler training and certification; and
- Timely investigation of:
    - Reports of food-borne illnesses or outbreaks;
    - Unsafe food-handling practices, food recalls, adulteration and consumer complaints; and
    - Food-related issues arising from floods, fires, power outages or other situations that may affect food safety.

Regulations under the HPPA which are relevant to this protocol include:

- *Food Premises* Regulation;
- *Recreational Camps* Regulation; and
- *Camps in Unorganized Territory* Regulation.[2-5]

Reference to the Standards

This section identifies the standards and requirements to which this protocol relates.

Effective Public Health Practice

Requirement 9. The board of health shall publicly disclose results of all inspections or information in accordance with the *Electronic Cigarettes Protocol, 2018* (or as current); the *Food Safety Protocol, 2018* (or as current); the *Health Hazard Response Protocol, 2018* (or as current); the *Infection Prevention and Control Complaint Protocol, 2018* (or as current); the *Infection Prevention and Control Disclosure Protocol, 2018* (or as current); the *Infection Prevention and Control Protocol, 2018* (or as current); the

Recreational Water Protocol, 2018 (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); the *Tanning Beds Protocol, 2018* (or as current); and the *Tobacco Protocol, 2018* (or as current).

Food Safety

Requirement 1. The board of health shall:

a) Conduct surveillance of suspected and confirmed food-borne illnesses, food premises, and food for public consumption;

b) Conduct epidemiological analysis of surveillance data including monitoring of trends over time, emerging trends, and priority populations; and

c) Respond by adapting programs and services in accordance with the *Food Safety Protocol, 2018* (or as current); the *Operational Approaches for Food Safety Guideline, 2018* (or as current); and the *Population Health Assessment and Surveillance Protocol, 2018* (or as current).

Requirement 2. The board of health shall ensure food handlers in food premises have access to training in safe food-handling practices and principles in accordance with the *Food Safety Protocol, 2018* (or as current) and the *Operational Approaches for Food Safety Guideline, 2018* (or as current).

Requirement 3. The board of health shall increase public awareness of food-borne illnesses and safe food-handling practices and principles in accordance with the *Food Safety Protocol, 2018* (or as current) and the *Operational Approaches for Food Safety Guideline, 2018* (or as current) by:

a) Adapting and/or supplementing national/provincial food safety communications strategies where local assessment has identified a need; and/or

b) Developing and implementing regional/local communications strategies where local assessment has identified a need.

Requirement 4. The board of health shall provide all the components of the Food Safety Program in accordance with the *Food Safety Protocol, 2018* (or as current) and the *Operational Approaches for Food Safety Guideline, 2018* (or as current).

Requirement 5. The board of health shall ensure 24/7 availability to receive reports of and respond to:

a) Suspected and confirmed food-borne illnesses or outbreaks;

b) Unsafe food-handling practices, food recalls, adulteration, and consumer complaints; and

c) Food-related issues arising from floods, fires, power outages, or other situations that may affect food safety in accordance with the *Health Protection and Promotion Act*; the *Food Safety Protocol, 2018* (or as current); the I*nfectious Diseases Protocol, 2018* (or as current); and the *Operational Approaches for Food Safety Guideline, 2018* (or as current).

Operational Roles and Responsibilities

Surveillance and Inspection

Inventory of food premises

1) The board of health shall maintain a current inventory or inventories of all food premises, as defined by section 1 of the HPPA, within the health unit.[2] In addition to maintaining an inventory of food premises where the board of health has primary jurisdiction, the board of health shall:
   a) Have a procedure in place to access contact information and locations for all food premises, including those that are subject to Federal regulation or regulation under provincial statutes that are overseen by ministries other than the Ministry of Health and Long-Term Care; and
   b) Establish and maintain communications with local offices of the Ontario Ministry of Agriculture, Food and Rural Affairs and the Canadian Food Inspection Agency which may include facilitating annual meetings.

Food safety management system

2) The board of health shall implement a food safety management system utilizing a hazard identification and risk-based approach for all food premises in the health unit, and shall include, but is not limited to, the following components:
   a) An annual site-specific risk categorization process to determine the risk level, inspection frequency and other food safety strategies for the safe operation of the food premises in accordance with the *Operational Approaches for Food Safety Guideline, 2018* (or as current);
   b) An inspection process to assess risk of food safety practices and determine compliance with regulation, and provide consultation and education on food handling practices; and
   c) A monitoring and evaluation process to annually assess and measure the effectiveness of food safety strategies.[6]

3) The board of health shall, within each calendar year, conduct routine inspections of all fixed food premises, in accordance with the following minimum schedule:
   a) Not less than once every four months for high-risk food premises;*
   b) Not less than once every six months for moderate-risk food premises;†
   c) Not less than once every twelve months for low-risk food premises other than those noted in ‘d’);

* Once every four months is defined as one inspection occurring within each four month period of the calendar year, based on fixed dates (January 1 – April 30; May 1 – August 31; September 1 – December 31).
† Once every six months is defined as one inspection occurring within each six month period of the calendar year, based on fixed dates (January 1 – June 30; July 1 – December 31).

   d) Not less than once every two years for low risk premises that offer for sale only pre-packaged non-hazardous food; and
   e) Not less than once per calendar year for seasonal fixed premises that operate for six months or less.

4) The board of health shall establish and implement procedures to monitor or inspect transient and temporary food premises, including those operating at temporary special events.

5) The board of health shall incorporate the following components into the food safety inspection process:
   a) Hazard Analysis and Critical Control Point (HACCP)-based principles in assessing safe food-handling practices;[7]
   b) Inspection for compliance with regulations;
   c) Consultation with food premises management about food safety operations and practices, to minimize hazards; and
   d) On-site food safety education and/or promotion of training.[7]

6) The board of health shall promote among operators of high- and moderate-risk premises the adoption of food safety management strategies, including, but not limited to:
   a) Operational strategies to promote safe food-handling;
   b) Hazard analysis of key food items and/or processes;
   c) Identification of critical control points (CCPs) for these items and processes;
   d) Monitoring strategies to control CCPs to ensure the provision of safe foods; and
   e) Documentation to record operational strategies.

7) The board of health shall, upon being notified of or becoming aware of proposed or newly constructed or renovated food premises prior to commencement of operation, assist owners, operators or their agents in becoming compliant with applicable legislation. The board of health shall also provide information about other components of the Food Safety Program, including but not limited to the availability of food handler training and certification; and food safety resources, as appropriate.

8) The board of health shall investigate and conduct additional inspections, as necessary to address:
   a) Unsafe food-handling practices;
   b) Issues of non-compliance with regulations;
   c) Foodborne illness investigations and outbreaks;
   d) Complaints; and
   e) Other inquiries that the board of health deems appropriate, to assess potential health hazards in food premises.

9) Food safety inspections shall incorporate the use of forms or other data collection tools that are based on the minimum regulatory requirements of the Food Premises Regulation under the HPPA.[3]

Management and Response

24/7 on-call and response

1) The board of health shall have an on-call system for receiving and responding to reports in the health unit on a 24 hours per day, 7 days per week (24/7) basis, related to:
   a) Suspected and confirmed food-borne illnesses or outbreaks;
   b) Unsafe food-handling practices, food recalls, adulteration and consumer complaints; and
   c) Food-related issues arising from floods, fires, power outages or other situations and emergencies that may affect food safety.
2) The board of health shall determine the appropriate response required and act on food-related complaints and reports within 24 hours of notification of the complaint or report.
3) Where the board of health suspects that a microbiological, chemical, physical or radiological agent has been transmitted through food to a consumer, the board of health shall:
   a) Respond appropriately within 24 hours of receiving the report of the food-related incident, illness, injury or outbreak;
   b) Conduct investigations for microbiological or other suspected agents in accordance with the *Infectious Diseases Protocol, 2018* (or as current), where applicable, and
   c) Refer the concern to other lead ministries or agencies, as appropriate, if the board of health is not the primary agency responsible.[8]

Compliance and Enforcement

4) The board of health shall establish practices that promote an inspection approach that focuses on compliance. Inspection practices shall include but are not limited to:
   a) The use of compliance assistance activities;
   b) A risk based enforcement strategy; and
   c) The use of judgment.

Supporting food recalls

5) The board of health shall respond and provide support for food recall notifications, as requested by:
   a) The Ministry of Health and Long-Term Care, including when assistance is requested by The Canadian Food Inspection Agency (CFIA); and
   b) The Chief Medical Officer of Health.

Food safety awareness, education, training and certification

Community awareness and education

1) The board of health shall have available food safety information and/or educational material to raise public awareness about food safety practices, particularly targeting priority populations identified by the board of health. The food safety information and/or educational material must include, but not be limited to, information on:
   a) the role of public health in food safety;
   b) foodborne illness prevention;
   c) seasonal food safety messaging;
   d) the safe preparation and handling of food at home;
   e) the safe diversion of surplus food for donation; and
   f) new and emerging food safety risks.

Food handler training and certification

2) The board of health shall:
   a) Ensure the provision of Ministry of Health and Long-Term Care recognized food handler training program(s) within the health unit, in accordance with the *Operational Approaches to Food Safety Guideline, 2018* (or as current); and
   b) Promote additional training or recertification for food handlers whose lack of hygiene or inadequate food preparation practices have been implicated in a food-borne illness or an outbreak.[6]

Disclosure

1) The board of health shall publicly disclose a summary report on each routine and complaint based inspection of food premises. Reports:
   a) Must be posted on the board of health's website in a location that is easily accessible to the public within two weeks of a completed inspection. Reports must be posted for two years.
   b) Of inspection results must contain:
      i) The type of premises;
      ii) The name and address of the premises;
      iii) The date of inspection;
      iv) The type of inspection (e.g., routine, re-inspection, complaint based); and
      v) Inspection status (e.g., in general compliance, found to have minor infractions, infractions corrected on-site, critical infractions found requires re-inspection, other means of describing status based on existing disclosure programs).
   c) Must be revised with relevant additional information and include the date of the follow up action, or a subsequent report may be posted, where follow up action is required.

d) Reporting requirements may be adapted to match the visual style of the board of health's website. Boards are encouraged to integrate the required content areas listed above into existing public disclosure programs.
e) Must be compliant with relevant legislation including the *Accessibility for Ontarians with Disabilities Act* (AODA), the *French Language Services Act* (FLSA) (if applicable), the *Municipal Freedom of Information and Protection of Privacy Act* (MFIPPA) and the *Personal Health Information Protection Act* (PHIPA).[9-12]

References

1. Ontario. Ministry of Health and Long-Term Care. Ontario public health standards: requirements for programs, services, and accountability, 2018. Toronto, ON: Queen's Printer for Ontario; 2018. Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/default.aspx
2. *Health Protection and Promotion Act*, RSO 1990, c H.7. Available from: https://www.ontario.ca/laws/statute/90h07
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11. *Municipal Freedom of Information and Protection of Privacy Act*, RSO 1990, c M.56. Available from: http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90m56_e.htm
12. *Personal Health Information Protection Act*, SO 2004, c 3, Sched A. Available from: http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_04p03_e.htm

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Ministry of Health and Long-Term Care

Health Hazard Response Protocol, 2018

Population and Public Health Division,
Ministry of Health and Long-Term Care

Effective: January 1, 2018

Ontario

Preamble

The Ontario Public Health Standards: Requirements for Programs, Services, and Accountability (Standards) are published by the Minister of Health and Long-Term Care under the authority of section 7 of the *Health Protection and Promotion Act* (HPPA) to specify the mandatory health programs and services provided by boards of health.[1,2] The Standards identify the minimum expectations for public health programs and services. Boards of health are accountable for implementing the Standards including the protocols and guidelines that are referenced in the Standards. Protocols are program and topic-specific documents incorporated into the Standards which provide direction on how boards of health shall operationalize specific requirement(s) identified within the Standards.

Purpose

The purpose of the Health Hazard Response Protocol is to provide direction on the investigation, assessment and management of mitigation strategies to prevent or reduce the burden of illness from potential, suspected, and/or identified health hazards. The approach outlined in this protocol is consistent with the investigative and scientific approaches used by other organizations, such as the Canadian Food Inspection Agency, for assessing public health risk.

Potential health hazards may exist in the natural and built environment (the environment) at the community level or in a variety of settings where the public has access or settings that target priority populations.

The approach outlined in this protocol should include communications and sharing of information and expertise with other government agencies and community partners that have similar mandates or roles in investigating and assessing environmental conditions in the community.

Reference to the Standards

This section identifies the standards and requirements to which this protocol relates.

Effective Public Health Practice

Requirement 9. The board of health shall publicly disclose results of all inspections or information in accordance with the *Electronic Cigarettes Protocol, 2018* (or as current); the *Food Safety Protocol, 2018* (or as current); the *Health Hazard Response Protocol, 2018* (or as current); the *Infection Prevention and Control Complaint Protocol, 2018* (or as current); the *Infection Prevention and Control Disclosure Protocol, 2018* (or as current); the *Infection Prevention and Control Protocol, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); the *Tanning Beds Protocol, 2018* (or as current); and the *Tobacco Protocol, 2018* (or as current).

Healthy Environments

Requirement 1. The board of health shall:
a) Conduct surveillance of environmental factors in the community;
b) Conduct epidemiological analysis of surveillance data, including monitoring of trends over time, emerging trends, and priority populations; and
c) Use information obtained to inform healthy environments programs and services in accordance with the *Health Hazard Response Protocol, 2018* (or as current); the *Healthy Environments and Climate Change Guideline, 2018* (or as current); the *Infectious Diseases Protocol, 2018* (or as current); and the *Population Health Assessment and Surveillance Protocol, 2018* (or as current).

Requirement 5. The board of health shall collaborate with community partners to develop effective strategies to reduce exposure to health hazards and promote healthy built and natural environments in accordance with the *Health Hazard Response Protocol, 2018* (or as current) and the *Healthy Environments and Climate Change Guideline, 2018* (or as current).

Requirement 8. The board of health shall assess and inspect facilities where there is an elevated risk of illness associated with exposures that are known or suspected to be associated with health hazards in accordance with the *Health Hazard Response Protocol, 2018* (or as current).

Requirement 9. The board of health shall investigate potential health hazards and respond by preventing or reducing exposure to health hazards in accordance with the *Health Hazard Response Protocol, 2018* (or as current).

Requirement 10. The board of health shall ensure 24/7 availability to receive reports of and respond to health hazards in accordance with the *Health Hazard Response Protocol, 2018* (or as current).

Operational Roles and Responsibilities

Health Hazard Prevention and Response Management

1) The board of health shall establish procedures to effectively investigate, assess, communicate and manage health hazard investigations. The procedures shall include methods for:
   a) Risk assessment;
   b) Identification of potential hazard prevention;
   c) Monitoring and surveillance;
   d) Management and response; and
   e) Risk communication.

2) The board of health shall maintain an inventory or inventories of all Inspected facilities in the health unit as well as facilities where an investigation has occurred to assess potential or identified health hazards.

Surveillance and Risk Assessment

Risk assessment

1) The board of health shall conduct investigations and risk assessments of potential health hazards in the environment in consultation with relevant community and government agencies, ministries and experts, as appropriate, to assess the potential and/or known risks to human health and determine appropriate public health action.
2) The board of health shall conduct risk assessments by reviewing and analyzing the available scientific data and research findings and shall include, but are not limited to:
   a) Assessing the hazard to determine potential acute and/or chronic health effects;
   b) Assessing human health exposures through the identification of potential sources of the hazard, exposure routes, level and duration of exposure, number of people potentially exposed, and susceptible sub-populations; and
   c) Assessing the level of risk to human health which can include but should not be limited to a comparison with available provincial, federal, or other exposure guidelines or standards, such as the Health Canada decision-making framework for identifying, assessing and managing health risks.[3]

Monitoring and surveillance

3) The board of health shall identify health hazards in the environment through the following activities:
   a) Review and maintain evidence including relevant data on health hazards and exposures in the environment within the health unit provided by federal, provincial, local, or other government agencies;
   b) Liaise, maintain and develop partnerships with community and relevant local, provincial, and federal agencies and/or stakeholders involved in addressing and mitigating potential health hazards through regular communications, committees or other forums to share expertise and information related to addressing potential health hazards in the community;
   c) Conduct analysis and interpretation of the information collected to identify potential exposures and human health risks from health hazards in the environment; and
   d) Follow-up on reports and/or complaints from the public.

Record keeping

4) The board of health shall maintain records of investigation activities related to potential health hazards in the environment within the health unit and maintain such records in accordance with the board of health’s records retention schedule.

Management and Response

Inspection and investigation of potential public health hazards in the environment

1) For notifications, complaints and reports received by the board of health related to potential or identified health hazards in the environment, the board of health shall:
   a) Conduct an a preliminary risk assessment and carry out inspections and/or investigations where appropriate as potential or identified exposures to health hazards arise within the health unit;
   b) Implement necessary control measures to contain any potential or identified exposures to health hazards;
   c) Collaborate and consult as appropriate with local, provincial, and federal government and agencies to investigate and assess health hazards, including joint investigations;
   d) Respond to reports of a health hazard in the environment where another Government of Ontario ministry (i.e. MOL, MOECC) has primary responsibility in the matter, by carrying out the obligations under section 11 and 12 of the HPPA; and
   e) Develop communication in partnership with relevant agencies as part of the management and response to potential/confirmed health hazards in the community and surrounding environment.[2]
2) Where an investigation of a potential health hazard involves two or more health units, the boards of health shall undertake coordination of findings, management and response strategies.

Inspection and investigation of health hazards in facilities

3) The board of health shall:
   a) Conduct a minimum of one inspection per year for all recreational camps (as defined in the Recreational Camps Regulation under the HPPA) and camps in unorganized territory (as defined in The Camps in Unorganized Territory Regulation) to determine compliance with the regulation;[4,5]
   b) Conduct inspections of boarding/lodging houses (as specified in section 10(2) of the HPPA) on a complaint basis. Where the board of health determines there is an elevated health risk specific to a boarding/lodging house, additional activities may be undertaken to reduce or eliminate the risk of exposure to health hazards;
   c) Conduct annual inspections of homes for special care upon written request by the Ministry of Health and Long-Term Care for licensing purposes; and
   d) Inspect other facilities with public access and/or that serve priority or vulnerable populations in situations where they may present an elevated risk of exposure to health hazards to the public or priority populations. These facilities may include, but are not limited to ice arenas, seasonal farm workers' housing, schools, child

care centres and other childcare facilities, shelters, and other facilities that may serve priority populations.

Enforcement actions and procedures

4) The board of health shall establish procedures to take action where a health hazard is identified and may pose a risk to human health. The procedures shall take into consideration:
   a) Degree of health risk;
   b) Size and characteristics of the population potentially exposed to the possible, suspect or identified health hazard;
   c) Extent of previous contravention of the legislation, repeat and multiple infractions of the HPPA and applicable regulation;
   d) Enforcement actions available under the HPPA;
   e) Other enforcement options available through other government mechanisms (i.e. local municipal by laws); and
   f) Efforts to investigate the potential health hazard in collaboration with Ministries which have primary jurisdiction (i.e. Ministry of the Environment and Climate Change (MOECC), Ministry of Labour (MOL), Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)).

24/7 on-call and response

5) The board of health shall have an on-call system for receiving and responding to reports of potential health hazards in the health unit on a 24 hours per day, 7 days per week (24/7) basis with respect to:
   a) Incidents of adverse health effects, exposure to hazardous agents or materials, or other potential health hazards occurring in institutions, facilities, in the community or reported by a member of the public or government/community agency; and
   b) Health hazards arising from floods, fires, power outages, heat and cold temperatures and other extreme weather events or other situations that may have , an adverse effect on the community.

6) The board of health shall assess reports with respect to exposure to hazardous agents, materials and factors influencing their occurrence that originate through the public health on-call system, and provide an initial response within 24 hours.

Disclosure

7) The board of health shall publicly disclose a summary report on each routine and complaint based inspection of recreational camps. Reports must be posted on the board of health's website in a location that is easily accessible to the public within two weeks of a completed inspection. Reports:
   a) Must be posted for two years.
   b) Can be adapted to match the visual style of the board of health's website. Boards are encouraged to integrate the required content areas listed below into existing public disclosure programs.

c) Must contain:
   i) The type of premises;
   ii) The name and address of the premises;
   iii) The date of inspection;
   iv) The type of inspection (e.g., routine, re-inspection, complaint based); and
   v) Inspection status (e.g., in general compliance, found to have minor infractions, infractions corrected on-site, critical infractions found requires re-inspection).
d) Must be revised with relevant additional information and include the date of the follow up action, or a subsequent report may be posted, where follow up action is required; and
e) Must be compliant with relevant legislation including the Accessibility for Ontarians with Disabilities Act (AODA), the French Language Services Act (FLSA) (if applicable), the Municipal Freedom of Information and Protection of Privacy Act (MFIPPA) and the Personal Health Information Protection Act (PHIPA).[6-9]

Glossary

Child Care Centre: A premises operated by a person licensed under the *Child Care and Early Years Act* to operate a child care centre at the premises.

Health Hazard: (a) A condition of a premise, (b) a substance, thing, plant or animal other than man, or (c) a solid, liquid, gas or combination of any of them, that has or that is likely to have an adverse effect on the health of any person (as defined in the HPPA).

Priority Populations: Priority populations are identified by surveillance, epidemiological, or other research studies based on local assessments. They are those populations that are at risk and for which public health interventions may be reasonably considered to have a substantial impact at the population level.

Risk: The probability of an adverse health outcome resulting from exposure to a hazard and the measure of the degree of hazard, defined as a combination of the probability and severity of adverse effects on organizational performance, health, property, the environment, or other things of value.

Risk Assessment: The scientific process that characterizes the potential risk of hazards to human health, consisting of four main steps: hazard identification, dose-response assessment, exposure assessment, and risk characterization.

Seasonal Farm Workers' Housing: A building used for housing accommodations for seasonal/migrant farm workers.

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Ministry of Health and Long-Term Care

Immunization for Children in Schools and Licensed Child Care Settings Protocol, 2018

Population and Public Health Division,
Ministry of Health and Long-Term Care

Effective: January 1, 2018

Ontario

Preamble

The Ontario Public Health Standards: Requirements for Programs, Services, and Accountability (Standards) are published by the Minister of Health and Long-Term Care under the authority of section 7 of the *Health Protection and Promotion Act* (HPPA) to specify the mandatory health programs and services provided by boards of health.[1,2] The Standards identify the minimum expectations for public health programs and services. Boards of health are accountable for implementing the Standards including the protocols and guidelines that are referenced in the Standards. Protocols are program and topic-specific documents incorporated into the Standards which provide direction on how boards of health shall operationalize specific requirement(s) identified within the Standards.

Purpose

The purpose of this protocol is to provide direction to boards of health, and to promote standardized practices, with respect to the required assessment of the immunization status of school pupils ("students"), including processes associated with issuing suspensions, and the assessment of the immunization status of children in licensed child care settings.

Reference to the Standards

This section identifies the standards and requirements to which this protocol relates.

Immunization

Requirement 1. The board of health shall, in accordance with the *Immunization for Children in Schools and Licensed Child Care Settings Protocol, 2018* (or as current), assess, maintain records, and report on:

a) The immunization status of children enrolled in licensed child care settings, as defined in the *Child Care and Early Years Act, 2014*;

b) The immunization status of children attending schools in accordance with the *Immunization of School Pupils Act;* and

c) Immunizations administered at board of health-based clinics as required in accordance with the *Immunization for Children in Schools and Licensed Child Care Settings Protocol, 2018* (or as current); and the *Infectious Diseases Protocol, 2018* (or as current).

School Health

Requirement 8. The board of health shall enforce the *Immunization of School Pupils Act* and assess the immunization status of children in accordance with the *Immunization for Children in Schools and Licensed Child Care Settings Protocol, 2018* (or as current).

Operational Roles and Responsibilities

Education on Immunization and Assessment Activities

1) The board of health shall educate school operators, child care licensees, students, and their parents about the importance of immunization, the requirement to comply with the *Immunization of School Pupils Act* (ISPA) or the *Child Care and Early Years Act* (CCEYA), enforcement activities, and how to access immunization services.[3,4]
2) The board of health shall inform boards of education, school operators, and child care licensees in advance about the planned immunization assessment activities that will affect their students or attendees for that year.
3) The board of health shall maintain policies and procedures with regard to the immunization assessment, exemptions, suspension, and exclusion processes specified in this protocol.

Collection of Demographic and Immunization Information

1) The board of health shall collect demographic and immunization information for children enrolled in licensed child care settings and students in school according to specific legislative requirements.

Demographic and Immunization Information to be Collected by Boards of Health

For Children in Licensed Child Care Settings

2) The board of health shall ensure that the medical officer of health provides direction to the licensees of child care settings with respect to immunizations required for enrollment and attendance for children in a child care setting who are not in attendance at a school within the meaning of the *Education Act*.[5]
3) The board of health shall ensure that the medical officer of health includes in the direction specified in 2 above, immunization against the following vaccine preventable diseases: diphtheria, *haemophilus influenzae* type b, measles, meningococcal, mumps, pertussis, pneumococcal, poliomyelitis, rotavirus, rubella, tetanus, and varicella. This direction shall be in accordance with the current provincial publicly funded immunization schedules.[6]
4) The board of health shall request and collect information from licensees in their jurisdiction which will assist in immunization assessment processes. This information shall be collected in accordance with Ontario Regulation137/15, Section 72 subsection 6 under the CCEYA.[7]

For Students in School

5) In accordance with Ontario Regulation 645 under the ISPA, the board of health shall maintain the following information for the immunization records:[8]
   a) Student's full name, address, and telephone number;
   b) Student's alternate name, if applicable;
   c) Student's sex;
   d) Student's date of birth;
   e) Student's country of birth;
   f) School name (and school identification number, if applicable);
   g) Student's grade or class;
   h) Student's health number;
   i) Name, address, telephone number of every parent of the student;
   j) Preferred language(s) of the parents of the student;
   k) Record of the student's immunizations against the designated diseases that include type of vaccine administered, date of administration, and any reactions to the vaccine; and
   l) Statement of Medical Exemption(s) or Statement of Conscience or Religious Belief Forms for student.

Mechanisms for the Collection and Capture of Demographic and Immunization Information*

6) The board of health shall collect and capture all demographic and immunization information in the centralized provincial Digital Health Immunization Repository (DHIR) (referred to as "Panorama").

7) The board of health shall follow privacy requirements as specified in the *Personal Health Information Protection Act, 2004*,[9] and all other privacy requirements as applicable when using mechanisms to collect, use and disclose demographic and immunization data, and inputting this data into Panorama.

8) The board of health shall follow the current Panorama Data Standards and Best Practices document to:[10]
   a) Add and update student information (i.e., name, address, and other demographic information);
   b) Add and update immunization information;
   c) Verify valid exemptions; and
   d) Reconcile duplicate information (both child and immunization).

* As of January 1, 2018 section 10 of the ISPA requires proclamation by the Lieutenant Governor. When this section is proclaimed and comes into force, medical officers of health will receive required immunization information under the ISPA directly from health providers.

9) The board of health shall accept different methods for the collection of demographic and immunization information, including, but not limited to, online, verbal, and written/printed immunization records.

Conducting Assessments

1) The board of health shall conduct annual immunization assessments for children enrolled in licensed child care settings and students in school according to the specific legislative requirements.
   - Assessment of immunization records for children enrolled in licensed child care settings shall occur for those children who are not also students in school. Records for children maintained by child care licensees who are attending both licensed child care and a school are only subject to ISPA requirements.
2) The board of health shall assess the immunization status of all children by birth year and by disease.
3) The board of health shall follow the current Panorama Data Standards and Best Practices document for conducting assessment processes.[10]
4) The board of health shall consider an individual's immunization record to be complete for the purposes of legislative and regulatory requirements if at least one of the following criteria is met:
   a) Individual has received all required immunizations according to legislative and regulatory requirements.
   b) Individual has received as many required doses as is possible, and is in the process of completing their immunizations utilizing a catch-up schedule.
   c) Individual has received some of the required vaccines according to legislative and regulatory requirements and has a valid exemption for the other required vaccines.
   d) Individual has a valid exemption for all required vaccines.
5) The board of health shall identify children and students who have missing immunization information.

Notices to Parents and Students†

6) The board of health shall provide documented notification to parents (and to students who are 16 years of age or older) if immunization information is missing for a child or student. The documented notification must include the following information:

† As of January 1, 2018, section 10 of the ISPA requires proclamation by the Lieutenant Governor. When this section is proclaimed and comes into force, health care providers will be required to provide immunization information to the medical officer of health directly. Therefore, the notices provided to parents and students will need to indicate that their health provider has not provided the required information.

a) The specified disease(s) for which the child or student is overdue or for which there is missing information;
b) Options for accessing immunizations and/or processes for obtaining a valid exemption;
c) The deadline for responding to the requested information and the method(s) that can be used to submit the requested information to the board of health; and
d) **For students in school only who are subject to the ISPA**, that they may be suspended from school for up to 20 school days, or until information on the completion of previously incomplete and/or overdue immunizations is received and assessed by the board of health.

7) The board of health shall provide, at minimum, 4 weeks between the mailing of the notice and the deadline for response.

8) The board of health shall update the child's or student's record as information is received from the parent or the health provider as applicable. If the immunization information gathered is sufficient to demonstrate that their immunizations are complete as per the legislative and regulatory requirements, or in progress as defined above, the board of health need take no further action.

9) **For children in licensed child care settings**, if a parent does not respond by the deadline, the board of health shall work with the licensee to contact the parent and work towards a completed record.

   For students in schools, if the parent does not respond by the deadline, the board of health shall ensure the medical officer of health issues an order to the principal or operator of the school to suspend the child from school.

Exemptions

For Children in Licensed Child Care Settings

1) The board of health shall ensure that all statements of medical exemptions or statements of conscience or religious belief that are received by the board of health are entered in Panorama.

For Students in School

2) The board of health shall maintain medical exemption records of students for a designated disease:
   a) Medical exemptions for designated diseases shall be documented in Panorama as soon as possible; and
   b) If a medical exemption form is incomplete, the board of health shall contact the physician or the nurse practitioner as appropriate for the additional information required.

3) The board of health shall make clear to parents who are considering non-medical exemptions the requirements specified in the ISPA and Regulation 645 under the ISPA, including the requirement for a parent requesting the non-medical exemption to

attend an immunization education session prior to filing the statement of conscience or religious belief.[3,8]

4) The board of health shall deliver an in-person education session to the parent requesting the non-medical immunization exemption, necessitating face-to-face interaction. The education session shall be delivered by the medical officer of health or their delegate. The delegate shall be an employee of the board of health and be knowledgeable regarding vaccines and the process of being immunized.
   a) Alternate means of providing the education session shall only occur if the parent is:
      i) Home-bound due to illness or disability (or they have a dependent who is home-bound due to illness or disability) and is unable to travel to the board of health or another location to meet the medical officer of health or delegate.
      ii) Unable to attend the in-person education session because they live in a remote community.
   b) In the event of an identified extenuating circumstance as described above, the board of health shall deliver the education session using one of the following:
      i) Video conferencing (e.g., Skype or FaceTime); or
      ii) Telephone.
5) The board of health shall deliver the education session using the digital education module and/or transcripts, as specified by the ministry.
6) After the completion of the education session, the board of health shall provide a certificate of completion signed and dated by the medical officer of health or delegate to the parent in the form of a Vaccine Education Certificate, as specified by the ministry.
7) The board of health shall collect the following documentation from the parent prior to granting a non-medical vaccine exemption:
   a) The Statement of Conscience or Religious Belief Form that has been signed by a Commissioner for Taking Affidavits; and
   b) The Vaccine Education Certificate issued by the board of health.
8) The board of health shall notify parents that they should maintain records of these documents.
9) The board of health shall validate the Statement of Conscience or Religious Belief Form and the Vaccine Education Certificate and document the exemption in Panorama or any other method specified by the ministry.
10) The board of health shall allow the rescission of an affidavit/exemption in the event that a parent of a student wishes to rescind an affidavit that they have previously filed. The parent who requests to rescind the affidavit/exemption should be the same parent who signed the affidavit. The board of health shall follow the Panorama Data Standards and Best Practices document for capturing this information in Panorama.[10]

Orders For the Suspension of a Student

1) The board of health shall provide a written order requiring a person who operates a school to suspend a student from school where the grounds in section 6(2) of the ISPA have been met.[3]
2) The board of health shall provide at least one written notice requesting immunization information before issuing a suspension order. The board of health shall also work with school operators to determine a suitable suspension date, as feasible.
3) The following information shall be included in the suspension order:
   a) Immunization information required;
   b) Deadline for response/date of suspension;
   c) Suspension notification;
   d) How to report if/when immunizations are received;
   e) How to obtain a valid exemption;
   f) How to appeal the order; and
   g) Who to contact for questions or additional information.
4) After issuing suspension orders, the board of health shall remain in contact with schools regarding the suspension process and continue to work with schools to facilitate compliance before the suspension date. The board of health shall be in communication with school operators regarding the following:
   a) Students who have received orders for suspension in writing with information stating that they are being suspended pursuant to the ISPA;[3]
   b) Important dates related to the suspension process and the rescind process for returning to school;
   c) Updated list of students eligible for suspension prior to suspension day and as needed thereafter; and
   d) Assistance with planning suspension day, including referring schools to their board/school policy for handling student suspensions.
5) If the missing immunization information is provided before the date of suspension, the board of health shall update the student's information in Panorama and no further action is required.
6) On the day of suspension, the board of health shall:
   a) Review the suspension process with the school and update the suspension list;
   b) Assist the school with the management of their suspended students, as needed;
   c) Direct the school to inform parents and students that the student cannot return to school until the immunization information is obtained by the board of health, or a valid exemption is on file; and
   d) Continue daily contact with the school as needed until all students have returned to the classroom.
7) The board of health shall rescind the order where the circumstances for making the order no longer exist and notify the school operator and parent.

8) The board of health shall, once a student's immunization is in progress, re-admit the student to school and provide further follow-up to ensure completion of the immunization. For example, if the board of health has required tetanus/acellular pertussis/diphtheria/polio (Tdap-IPV) and measles/mumps/rubella/varicella (MMRV) immunizations and a health care provider has provided only a Tdap-IPV, choosing to wait to give MMRV, the updating of the student's immunization would be considered to be in progress and the board of health shall notify the parent or the student if 16 years of age or older that the student can be re-admitted to school but will still require the outstanding immunization(s) prior to the next school year.
9) The board of health shall record in Panorama when the student has been removed from the suspension list and admitted to school.
10) The board of health shall update all immunization information in Panorama at the completion of the assessment and suspension process, and at the latest, by the end of each school year and/or as directed by the ministry.
11) The board of health shall maintain statistical information on school suspensions in the public health unit and create a summary of suspensions for each school year.

Order of Exclusion From a Licensed Child Care Setting or School for an Outbreak or Risk of an Outbreak of a Designated Disease

1) Upon notification of an outbreak or threat of an outbreak of a designated disease at a school or licensed child care setting, the board of health shall undertake an immediate and rigorous assessment of immunization information on file to determine individuals who are at risk for the disease.
2) For children who are not complete with their immunization for designated diseases according to specific legislative requirements, the board of health shall contact the health care provider and/or parent, or student if 16 years of age or older, to request the information.
3) The board of health shall exclude children and staff without the required immunization information under section 22 of *the Health Protection and Promotion Act* (HPPA) where there is an outbreak or risk of an outbreak of a communicable disease, as required.[2]
4) The board of health shall facilitate access to immunization services for individuals whose immunizations are not complete, as required.
5) The board of health shall document any orders of exclusion in Panorama.

Glossary

Antigen: An antigen is any substance that causes your immune system to produce antibodies against it. An antigen may be a vaccine.

Assess: Involves the systematic collection and analysis of data (immunization records) in order to provide a basis for decision-making.[11]

Designated Diseases: As per the ISPA, designated diseases means diphtheria, measles, mumps, poliomyelitis, rubella, tetanus, pertussis, meningococcal and varicella and any other disease prescribed by the Minister of Health and Long-Term Care ("maladies designees").[3]

Due: The recommended age for administration of a dose of vaccine, or the recommended interval between doses, based on the recommended immunization schedule(s).

Exemptions: Medical exemptions or a statement of conscience or religious belief apply only to vaccines as designated in the ISPA.[3] For a non-medical exemption (i.e., statement of conscience or religious belief) a valid Vaccine Education Certificate is required.

Licensed Child Care: "licensed child care" means child care that:
(a) is provided at a child care centre,
(b) is home child care, or
(c) is in-home services.

Licensee: a person who holds a licence issued under the *Child Care and Early Years Act*, 2014.[4]

Overdue: For vaccines administered to school-age children, overdue parameters have been set for required antigens according to the schedule under the ISPA; this is the age or interval beyond which a child can be suspended from school.[3] Although overdue parameters are defined for doses given to those younger or older than school age, with the exception of the child care settings, only school students may be suspended if overdue for required vaccines. For vaccines that are not required under the ISPA but are recommended by the ministry, overdue triggers a reminder system.[3]

Parent: As defined in the ISPA "parent" includes an individual or a corporation that has the responsibilities of a parent.[3]

School: As defined in the ISPA – "school" means a "private school" and a "school" as defined in the *Education Act* and includes a beginners class within the meaning of the *Education Act* ("école").[3,5]

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Preamble

The Ontario Public Health Standards: Requirements for Programs, Services, and Accountability (Standards) are published by the Minister of Health and Long-Term Care under the authority of section 7 of the *Health Protection and Promotion Act* (HPPA) to specify the mandatory health programs and services provided by boards of health.[1,2] The Standards identify the minimum expectations for public health programs and services. Boards of health are accountable for implementing the Standards including the protocols and guidelines that are referenced in the Standards. Protocols are program and topic-specific documents incorporated into the Standards which provide direction on how boards of health shall operationalize specific requirement(s) identified within the Standards.

Purpose

Boards of health are required to publicly disclose (on their websites) results of all routine infection prevention and control (IPAC) inspections of personal service settings and licensed child care settings, in accordance with the *Infection Prevention and Control Protocol, 2018* (or as current) and complaint-based investigations where IPAC lapses are identified, in accordance with the *Infection Prevention and Control Complaint Protocol, 2018* (or as current).[3,4]

This protocol provides direction to boards of health about the online disclosure of all IPAC routine inspections, and IPAC complaint and lapse investigations for the following settings:

- Personal service settings including special events such as trade shows, conventions, fairs or exhibitions where personal services are provided; and
- Licensed child care settings as defined in the *Child Care and Early Years Act.*[5]

The disclosure requirements are also applicable to IPAC lapse investigations in settings that are not routinely inspected, such as:

- Facilities in which regulated health professionals operate including medi-spas;
- Unlicensed child care settings;
- Community centres;
- Recreational facilities (including sports clubs);
- Schools (all levels); and
- Temporary dwellings established for temporary or seasonal workers.

This does not include complaints specific to health hazards in the environment; please refer to the *Health Hazard Response Protocol, 2018* (or as current) under the Healthy Environments Standard.[6]

Reference to the Standards

This section identifies the standards and requirements to which this protocol relates.

Effective Public Health Practice

Requirement 9. The board of health shall publicly disclose results of all inspections or information in accordance with the *Electronic Cigarettes Protocol, 2018* (or as current); the *Food Safety Protocol, 2018* (or as current); the *Health Hazard Response Protocol, 2018* (or as current); the *Infection Prevention and Control Complaint Protocol, 2018* (or as current); the *Infection Prevention and Control Disclosure Protocol, 2018* (or as current); the *Infection Prevention and Control Protocol, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the S*afe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); the *Tanning Beds Protocol, 2018* (or as current); and the *Tobacco Protocol, 2018* (or as current).

Infectious and Communicable Disease Prevention and Control

Requirement 18. The board of health shall receive reports of complaints regarding infection prevention and control practices and respond to and/or refer to appropriate regulatory bodies, including regulatory colleges*, in accordance with applicable provincial legislation and in accordance with the *Infection Prevention and Control Complaint Protocol, 2018* (or as current) and the *Infection Prevention and Control Disclosure Protocol, 2018* (or as current).

Requirement 19. The board of health shall receive and evaluate reports of complaints regarding infection prevention and control practices in settings for which no regulatory bodies or regulatory colleges exist, particularly personal service settings. This shall be done in accordance with the *Infection Prevention and Control Complaint Protocol, 2018* (or as current) and the *Infection Prevention and Control Disclosure Protocol, 2018* (or as current).

Operational Roles and Responsibilities

Disclosure of Routine Inspection

1) The board of health shall publicly disclose a summary report of each routine inspection in accordance with the *Infection Prevention and Control Complaint Protocol, 2018* (or as current), and the *Infection Prevention and Control Protocol, 2018* (or as current).[3,4] Reports:
   a) Shall be posted on the board of health's website in a location that is easily located by the public within two weeks of the inspection. Reports must be posted for two years.

*For purposes of requirement 17, a "regulatory college" means the college of a health profession or group of health professions established or continued under a health professions Act named in Schedule 1 to the *Regulated Health Professions Act, 1991*.

b) Can be adapted to match the visual style of the board of health's websites. The board of health is encouraged to integrate the required content areas listed below to existing disclosure programs.
c) Shall contain the following:
    i) The type of premises (and the type of services inspected for personal service settings);
    ii) The name and address of the premises;
    iii) The date of the inspection;
    iv) The type of inspection (e.g., routine, re-inspection, complaint);
    v) Inspection status (e.g., pass/conditional/fail or presence of critical/non-critical infractions or closure);
    vi) A brief description of any corrective measures to be taken;
    vii) A brief description of corrective measures taken (if applicable);
    viii) The date all corrective measures were confirmed to be completed (if applicable);
    ix) The date(s) any order or directive was issued to the owner/operator (if applicable); and
    x) Contact information of the board of health for more information.
d) Shall be compliant with relevant legislation, including the Accessibility for Ontarians with Disabilities Act (AODA), the French Language Services Act (FLSA) (if applicable), the *Municipal Freedom of Information and Protection of Privacy Act* (MFIPPA) and the *Personal Health Information Protection Act* (PHIPA). No personal information or personal health information shall be disclosed in a report.[7,8,9,10]

Where follow up inspections are required, the board of health shall post a subsequent report or amend the posted report with additional information and include the date(s) of the re-inspection(s) within two weeks from the date(s) or earlier as needed. The board of health shall also consider the urgency of the new relevant information, and whether a potential risk to the public exists if there is a delay in updating the public report(s).

Disclosure of IPAC Lapse Investigation Reports

An IPAC lapse is defined as a failure to follow IPAC practice standards resulting in a risk of transmission of infectious diseases to clients, attendees or staff through exposure to blood, body fluids, secretions, excretions, mucous membranes, non-intact skin, or contaminated equipment and soiled items. IPAC practice standards include the most current guidance available from the Provincial Infectious Diseases Advisory Committee, Ontario Agency for Health Protection and Promotion (Public Health Ontario [PHO]), the Ministry of Health and Long-Term Care (the ministry), and any relevant Ontario regulatory college IPAC protocols and guidelines.

The lapse could be identified as a result of a complaint, communicable disease

surveillance, and/or referral from a regulatory college, medical officer of health, PHO the ministry.

Medical officers of health and designates may use all investigative material, including risk assessments, to determine whether an IPAC lapse should be disclosed. If the medical officer of health or designate does not believe that the lapse(s) would result in an infectious disease transmission to the premises' clients, attendees or staff, public disclosure is not required. Decisions to post are ultimately at the discretion of the medical officer of health or designate.

The flow chart in Appendix A identifies when an Initial or Final Report of a lapse identified via complaint, referral or through alternate source is required to be publicly posted.

1) If a complaint has been deemed frivolous and unsubstantiated, the board of health shall notify relevant stakeholders and a disclosure of the complaint is not required.
2) The board of health shall publicly disclose the results of investigation reports of IPAC lapses on the board of health's website, in accordance with the *Infection Prevention and Control Protocol, 2018* (or as current) and the *Infection Prevention and Control Complaint Protocol, 2018* (or as current).[3,4]
3) If the investigation involves, or is expected to involve client/patient notification, the board of health shall ensure that an Initial Report is not posted until preliminary client/patient notification has occurred. Should subsequent client/patient contact and/or testing need to take place as part of the ongoing investigation, the Final Report shall not be posted until all aspects of the investigation have been completed.
4) The board of health shall complete and post an Initial Report: in a location that is accessible to the public; within two weeks of the identification of an IPAC lapse; and containing the following information:
    a) The date the medical officer of health or designate was notified about the IPAC lapse[†] and/or the date the lapse was linked to the premises;
    b) Source of IPAC lapse information (e.g., complaint, communicable disease surveillance, referral from a regulatory college, medical officer of health, PHO or the ministry);
    c) The type of premises (e.g., dental office or premises that are multi-service such as salon/piercing/massage);
    d) The address and/or name of the premises;
    e) Summary description of the IPAC lapse identified containing a concise (4-5 sentences maximum) description of the service or concern related to the lapse. If more than one deficiency in IPAC practices is identified, the board of health shall summarize the lapses that require corrective measures and indicate those deficiencies that present the greatest risk of infectious disease transmission to clients, patients, attendees, or staff of the premises;

[†]If a lapse is traced to premises from a case of a disease, this date refers to the date that the link to the premises was confirmed.

f) Referral to a regulatory college(s) (if applicable) and other stakeholders (e.g., (the ministry or other Ministries as applicable); and
g) A concise description of the corrective measures required to address the lapse, including:
   i) The type of corrective measure(s) (e.g., following best practices for use of equipment; following best practices for cleaning, disinfection and sterilization; removal of equipment; addition of new equipment);
   ii) The method(s) used to correct identified deficiencies (e.g., education, verbal or written order); and
   iii) The date(s) any order or directive was issued to the owner/operator/ director (if applicable).

A report template example is provided in Appendix B. The format of reports can be adapted to match the visual style of board of health websites. Boards of health are encouraged to integrate the required content areas listed below into existing public disclosure programs. All posted reports shall comply with relevant legislation including the AODA, the FLSA (if applicable), MFIPPA, and PHIPA.[7,8,9,10]

5) The board of health shall update the Initial Report as more information becomes available during the course of an investigation to ensure transparency of the most relevant and current information. The date of revision(s) shall be indicated on the report. The board of health shall determine the frequency of the update(s) by considering the urgency of the new information, and whether a potential risk to the public exists in the event of delays.

6) The board of health shall replace the Initial Report with the Final Report in the same location on the board of health's website within two weeks of confirmation that all corrective measures were taken. The Final Report for disclosure of an IPAC lapse shall contain the following information in addition to the information specified in the Initial Report:
   a) A brief description of corrective measures taken, such as:
      i) The type of corrective measures (e.g., following best practices for use of equipment; following best practices for cleaning, disinfection and sterilization; removal of equipment),
      ii) The method assisting the realization of corrective measures (e.g., education, verbal, or written order), and
   b) The date all corrective measures were confirmed to be completed.

7) The board of health shall update the Final Report in the event that any information is found to be incorrect. The date of revision shall also be indicated on the report.

8) The board of health shall make all archived and full investigation reports available upon request subject to applicable law (e.g., MFIPPA/ FIPPA and PHIPA).[7,8]

9) The board of health shall establish and implement a policy to ensure that the public can access full investigation reports upon request.

10) The board of health shall include the following preamble on the web page on which reports are posted:

Preamble

"This website contains reports on premises where an infection prevention and control lapse was identified through the assessment of a complaint or referral, or through communicable disease surveillance. It does not include reports of premises which were investigated following a complaint or referral where no infection prevention and control lapse was ultimately identified.

These reports are not exhaustive, and do not guarantee that those premises listed and not listed are free of infection prevention and control lapses. Identification of lapses is based on assessment and investigation of premises at a point-in-time, and these assessments and investigations are triggered when potential infection prevention and control lapses are brought to the attention of the local medical officer of health.

Reports are posted on the website of the board of health in which the premises are located. Reports are posted on a premises-by-premises basis, i.e., will correspond with one site only. Should you wish to view a full investigation report for any posted lapse, please contact [insert appropriate contact information]."

The board of health is encouraged to consult with its legal counsel regarding the adequacy of this preamble and whether any additional legal disclaimers are required from their perspective.

Multi-Jurisdictional Investigation Reports

11) In cases where an IPAC lapse is found to have occurred at a multi-site premise (e.g., practices affiliated with one another to form a corporation, or chain of clinics/premise), the first board of health to become aware of the lapse shall conduct an investigation of the site within their jurisdiction, and, where possible, confirm IPAC concerns at additional locations within the board of health jurisdiction.

12) The board of health shall inform the ministry and PHO of the multi-jurisdictional premises in the event that multiple locations within and/or beyond the primary public health unit area are suspected of IPAC lapse(s).
    a) PHO will coordinate multi-jurisdictional teleconference(s) and, if deemed necessary (may be based on risk assessment), engage/inform other relevant boards of health that have the same multi-jurisdictional premises within their jurisdictions to follow up, as required. The ministry will provide ongoing support as necessary.

13) The board of health shall post reports as identified above for each individual site confirmed to be impacted by an IPAC lapse (i.e., reports are site specific and not only posted on the primary board of health website).

Reporting to the Ministry

1) The board of health shall:
   a) Report occurrences of significance (i.e., non-compliance issues leading to a media release) to the ministry prior to media release;
   b) Report cases of infectious/reportable diseases and outbreaks associated with premises through the integrated Public Health Information System (iPHIS) or any other method specified by the ministry; and
   c) Report all verbal and written Section.13 orders pertaining to IPAC lapse made under the HPPA to the ministry, on the day it is issued or the next business day, in the following manner:[2]
      i) Email IDPP@ontario.ca with subject line " IPAC Section 13 Order"
      ii) Content of the email shall include:
         I) The name and address of the premises;
         II) The date of the inspection;
         III) The type of inspection (e.g., routine, re-inspection, complaint);
         IV) Summary description of the IPAC lapse identified
         V) Date the Order was issued and type (verbal, written)
         VI) Contact information for additional information
      iii) An inspection report which contains the information above is also sufficient.

Glossary

Independent Health Facilities (IHFs): licensed by the ministry to provide Ontario Health Insurance Plan (OHIP) insured services in diagnostic and ambulatory care facilities. The ministry IHF program area and College of Physicians and Surgeons of Ontario (CPSO) and the College of Midwives of Ontario (CMO) jointly manage a Quality Assurance Program for services provided in IHFs.

Out-of-hospital premises (OHPs): premises overseen by the College of Physicians and Surgeons of Ontario where procedures are performed under different levels of anesthesia and sedation.

Health hazard: (a) a condition of a premises, (b) a substance, thing, plant or animal other than man, or (c) a solid, liquid, gas or combination of any of these, that has or that is likely to have an adverse effect on the health of any person.

Infection prevention and control (IPAC) lapse: failure to follow IPAC practice standards resulting in a risk of transmission of infectious diseases to clients, attendees or staff through exposure to blood, body fluids, secretions, excretions, mucous membranes, non-intact skin, or contaminated equipment and soiled items. IPAC practice standards include the most current guidance available from the Provincial Infectious Diseases Advisory Committee, Public Health Ontario, the ministry, and any relevant Ontario regulatory college IPAC protocols and guidelines.

Laboratories and specimen collection centres: licensed by the ministry and accredited/ inspected by the MOHLTC and/ or the Institute for Quality Management in Health Care's Centre for Accreditation.

Medi-spa: means any premises that: (a) is owned and/or operated by a regulated healthcare professional; and (b) offers medical aesthetics and "medi-spas" has the corresponding meaning.

"Medical aesthetics": means any service or procedure performed or delegated by a regulated healthcare professional that focuses on improving or altering any part of the body through the treatment of conditions including but not limited to scars, skin laxity, wrinkles, moles, excess fat, cellulite, unwanted hair, skin discolouration, and spider veins.

Personal services: any service done to or on the body of another person for aesthetic or cosmetic enhancement or change where there is a risk of exposure to blood, body fluids, non-intact or potentially infected skin.

Personal service settings (PSS): a premises at which personal services are offered and there is a risk of exposure to blood or bodily fluids, and includes premises at which hairdressing and barbering, tattooing, body piercing, nail services, electrolysis and other aesthetic services are offered. [2]

Risk assessment: an evaluation of the interaction of the worker, the client and the work environment to assess and analyze the potential for exposure to infectious disease, identify potential health hazards and determine the appropriate action required.

Regulatory College: college of a health profession or group of health professions established or continued under a health professions Act named in Schedule 1 to the *Regulated Health Professions Act*.[11]

References

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10. *French Language Services Act*, RSO 1990, c F.32. Available from: https://www.ontario.ca/laws/statute/90f32
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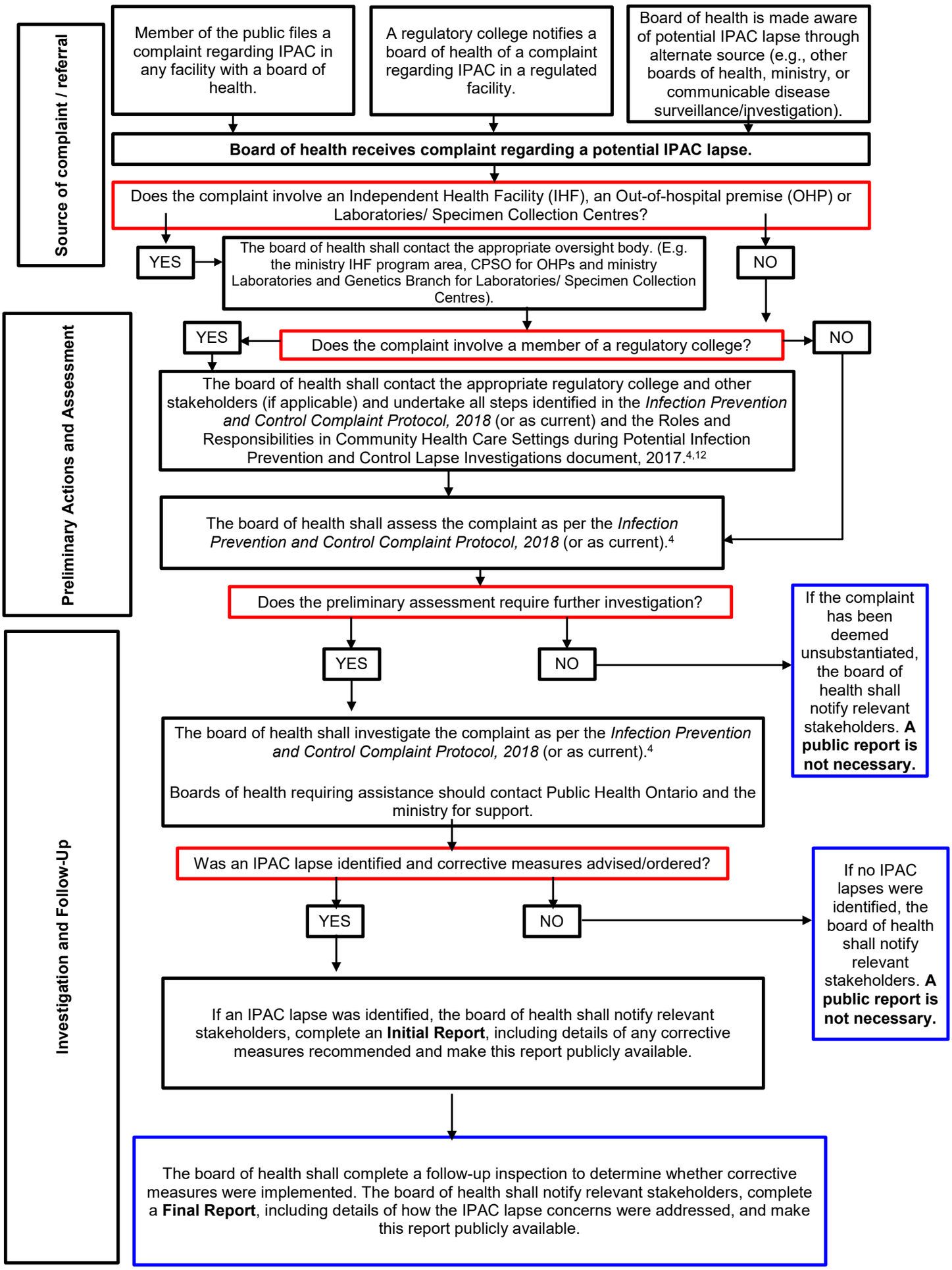
Appendix A: Flow of Information and When to Post and IPAC Lapse Identified Via a Complaint or Referral



Appendix B: Sample Initial and Final Report Template

This is a sample template of the required Initial and Final Report that must be posted once an IPAC lapse has been identified. This copy below is for information purposes only.

Please do not include any personal information or personal health information on this template. If you have any question about whether information constitutes personal health information or personal information, please consult your legal counsel.

Sample: Infection Prevention and Control Lapse Report

Public Health Unit Infection Prevention and Control Lapse			
INITIAL REPORT		**Last Updated on:**	
Premise/facility under investigation (name and address)			
Type of premise/facility: (e.g., medical clinic, multi-service PSS)			
Date Board of Health became aware of IPAC lapse			
Date IPAC lapse was linked to the premise/facility			
Date of Initial Report posting			
Date of Initial Report update(s) (if applicable)			
Source of IPAC lapse information (e.g., routine inspection, public complaint etc.)			
Summary Description of the IPAC lapse			
IPAC Lapse Investigation			
Did the IPAC lapse involve a member of a regulatory college?			
If yes, was the issue referred to the regulatory college?			
Were other stakeholders notified? (e.g. Ministry)			
Concise description of the corrective required			
Please provide further details/steps			
Date any order(s) or directive(s) were issued to the owners/operators (if applicable)			
Initial Report Comments and Contact Information			
Any additional comments (Do not include any personal information or personal health information)			
If you have any further questions, please contact:			
Name		Title	
E-mail Address		Phone Number	
FINAL REPORT		**Last Updated on:**	
Date of Final Report posting:			
Date any order(s) or directive(s) were issued to the owners/operators (if applicable)			
Brief description of corrective measures taken			
Date all corrective measures were confirmed to have been completed			
Final Report Comments and Contact Information			
Any additional comments (Do not include any personal information or personal health information)			
If you have any further questions, please contact:			
Name		Title	
E-mail Address		Phone Number	

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Ministry of Health and Long-Term Care

Infection Prevention and Control Protocol, 2018

Population and Public Health Division,
Ministry of Health and Long-Term Care

Effective: January 1, 2018

Ontario

Preamble

The Ontario Public Health Standards: Requirements for Programs, Services, and Accountability (Standards) are published by the Minister of Health and Long-Term Care under the authority of section 7 of the *Health Protection and Promotion Act* (HPPA) to specify the mandatory health programs and services provided by boards of health.[1,2] The Standards identify the minimum expectations for public health programs and services. Boards of health are accountable for implementing the Standards including the protocols and guidelines that are referenced in the Standards. Protocols are program and topic-specific documents incorporated into the Standards which provide direction on how boards of health shall operationalize specific requirement(s) identified within the Standards.

Purpose

The purpose of this protocol is to provide direction to boards of health regarding surveillance, inspection, investigation, education, enforcement and reporting requirements with respect to infection prevention and control (IPAC) in settings, to minimize the risk of contracting blood-borne and other types of infections with an emphasis on personal service settings and licensed child care settings.

Personal service settings

This protocol applies to personal service settings (as defined by the HPPA) including special events such as trade shows, conventions, fairs or exhibitions where personal services are provided, and applies to any person delivering personal services.[2]

This protocol does not apply to medi-spas, as defined in this protocol.

The responsibility of boards of health to investigate IPAC complaints related to "controlled acts" under the *Regulated Health Professions Act, 1991*,[3] or any other regulated health profession-specific legislation delivered by regulated health professionals is outlined in the *Infection Prevention and Control Complaint Protocol, 2018* (or as current).[4]

Licensed child care settings

Boards of health shall support the *Child Care and Early Years Act, 2014* (CCEYA), and its associated regulations, and make themselves aware of the sections that reference the medical officer of health or designate which are enforced by the Ministry of Education.[5]

Reference to the Standards

This section identifies the standards and requirements to which this protocol relates.

Effective Public Health Practice

Requirement 9. The board of health shall publicly disclose results of all inspections or information in accordance with the *Electronic Cigarettes Protocol, 2018* (or as current); the *Food Safety Protocol, 2018* (or as current); the Health Hazard Response Protocol, 2018 (or as current); the *Infection Prevention and Control Complaint Protocol, 2018* (or as current); the *Infection Prevention and Control Disclosure Protocol, 2018* (or as current); the *Infection Prevention and Control Protocol, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); the *Tanning Beds Protocol, 2018* (or as current); and the *Tobacco Protocol, 2018* (or as current).

Infectious and Communicable Diseases Prevention and Control

Requirement 20. The board of health shall inspect settings associated with risk of infectious diseases of public health importance in accordance with the *Healthy Environments and Climate Change Guideline, 2018* (or as current); the *Infection Prevention and Control Complaint Protocol, 2018* (or as current); and the *Infection Prevention and Control Protocol, 2018* (or as current).

Operational Roles and Responsibilities

Surveillance and inspection

Inventory

1) The board of health shall maintain a current inventory of all licensed child care settings, as defined by section 2 of the CCEYA, and all personal service settings (organized by setting type) within the health unit and update annually or more frequently, as required. This inventory shall include operator contact information and location of the premises.

Inspection and assessment

2) The board of health shall:
   a) Inspect all licensed child care and personal service settings no less than once every 12 months for adherence to IPAC practices;
   b) Use a risk-based approach to determine the priority and need for additional inspections; to investigate complaints and/or reports related to IPAC practice standards in accordance with the *Infection Prevention and Control Complaint Protocol, 2018* (or as current);[4]
   c) Respond to requests from operators for consultation or inspections related to IPAC policies and practices;

d) Conduct inspections for the purposes outlined in the *Food Safety Protocol*, *2018* (or as current) and the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current);[6,7]and
e) Respond to food safety and environmental health issues in accordance with the requirements of the *Food Safety Protocol, 2018* (or as current) and *Health Hazard and Response Protocol, 2018* (or as current).[6,8]

3) The board of health shall:
   a) Determine if a health hazard exists and there is non-compliance with IPAC practices.
   b) Conduct a risk-based approach to determine the adequacy of IPAC measures in place and recommend measures, as required, for all identified risks.

Personal service settings

4) Inspections for personal service settings shall incorporate a risk assessment, which shall include, but not be limited to, the consideration of:
   a) The extent of exposure to blood, bodily fluids and/or potentially infectious lesions from service(s) provided, especially as these risks relate to the invasiveness of the service(s) offered;
   b) The degree of adherence to IPAC practices;
   c) The degree of adherence to best practices for cleaning, disinfection and/or sterilization in the setting or named in the complaint;
   d) Failed or missing biological indicator; and,
   e) Requesting information related to:
      i) Invasive procedures performed by the setting and items used in such procedures that are sterilized on-site;
      ii) Documentation of blood and body fluid exposures;
      iii) Complete client records for invasive services/procedures;
      iv) Sterilizer monitoring logs;
      v) Biological indicator results; and
      vi) Supplier information for items purchased as pre-packaged and sterile.

5) Inspection of personal service settings that offer tanning bed services shall determine whether the setting is compliant with the *Skin Cancer Prevention Act (Tanning Beds), 2013* and the *Tanning Beds Protocol, 2018* (or as current).[9]

Licensed child care settings

6) Inspections for licensed child care settings shall include:
   a) Attention to factors that may increase risk in the licensed child care setting environment, including, but not limited to:
      i) The age group(s) and developmental stage of the children, which include factors such as their standard of hygiene, toileting/diapering practices, and cognitive ability;
      ii) The environment, which includes frequency and length of program (full day/half day), design features of the licensed child care setting, toileting and

diapering facilities, pest control, meal preparation, and environmental cleaning and disinfection;
   iii) Activities such as water/sensory play tables, sandboxes, sleeping, tooth brushing, storage/use of personal items, and resident or visiting animals;
   iv) The licensed child care setting's past history of adherence to IPAC practices, including the management of sick children and staff; and
   v) The licensed child care setting's past history of outbreaks and the response of the child care setting to these outbreaks.

b) Assessment of compliance with statutory and regulatory requirements under the HPPA,[2] including the following sections:
   i) The duty of a licensed child care setting to comply with a written order issued by the medical officer of health with respect to health hazards (s.13);
   ii) The duty of a licensed child care setting to comply with a written order issued by the medical officer of health with respect to a communicable disease (s. 22); and
   iii) The duty of a licensed child care setting to report known or suspected cases of a reportable disease to the medical officer of health (s. 27). Reporting obligations are specified in Ontario Regulation 559/91*, Specification of Reportable Diseases* and Ontario Regulation 569*, Reports* under the HPPA.[11,12]

c) Assessments in licensed child care settings to:
   i) Ensure that the licensed child care setting has site-specific IPAC policies that adhere to board of health recommendations; and,
   ii) Identify risks of infectious disease transmission, provide guidance to the licensed child care setting in developing strategies and policies to mitigate these risks, and ensure the licensed child care setting adheres to these strategies and policies.

Management and response

24/7 on-call and response

1) The board of health shall:
   a) Have an on-call system for receiving and responding to public health issues on a 24 hours per day, 7 days per week (24/7) basis; and
   b) Determine the appropriate response required and reports within 24 hours of notification of the complaint or report.

Enforcement

2) The board of health shall take action under the HPPA to decrease the effect of, or eliminate, a health hazard that has been identified. The action(s) may include a number of educational, procedural, and re-inspection measures to effect the necessary correction, up to and including the issuance of an order under the HPPA.[2]

Personal service settings

3) The board of health shall communicate:
   a) Within their jurisdiction to client(s) at risk when an investigation has identified a health hazard that poses a potential risk of transmission of blood-borne illness or other infections.
   b) With the general public when an investigation has identified a health hazard that poses a public health risk to unidentified clients of the setting.

Licensed child care settings

4) The board of health shall assist the operator in the mitigation of the health hazard and/or infectious disease outbreak as per the *Institutional/Facility Outbreak Management Protocol*, *2018* (or as current).[13]

Data collection and reporting

1) The board of health shall:
   a) Maintain a record of all inspections conducted and complaints received.
   b) Disclose publicly a summary of the inspection results in accordance with the *Infection Prevention and Control Disclosure Protocol, 2018* (or as current),[14] regarding:
      i) Routine inspections; and
      ii) Complaint-based investigations where IPAC lapses are identified as per the *Infection Prevention and Control Complaint Protocol*, *2018* (or as current).[4]
   c) Report cases of infectious/reportable diseases and outbreaks associated with the premises in accordance with their role under Part IV of the HPPA, through the integrated Public Health Information System (iPHIS) or any other method specified by the Ministry of Health and Long-Term Care (the “ministry”).[2]
   d) Review findings of premises inspections to assist in understanding epidemiological/disease trends, inform future education and response activities, and to develop corrective actions.
   e) Report to the ministry situations in which a section 13 order under the HPPA is issued, on the day it is issued.

Personal service settings

2) The board of health shall report occurrences of significance (i.e., non-compliance issues leading to a media release) to the ministry prior to media release.

Licensed child care settings

3) The board of health shall provide written information to licenced child care settings to specify reporting requirements of cases of reportable diseases and outbreaks to the medical officer of health.

Education and health promotion

1) The board of health shall provide education to operators and staff on appropriate IPAC practices. Education shall be relevant to the setting and the needs identified through inspection or consultation with the setting.

Personal service settings

2) The board of health shall offer education to the general public in regard to IPAC best practices for personal service settings and any other setting that the board of health deems appropriate.

Licensed child care settings

3) The board of health shall:
   a) Provide education, including educational resources, to licenced child care operators to assist them in implementing and maintaining appropriate IPAC policies and practices and preparing for outbreaks, including the detection of outbreaks.
   b) Consult with licensed child care setting operators in implementing IPAC policies, programs and practices using a risk-based approach. The consultation on the development of IPAC policies and procedures shall include, but is not limited to:
      i) Advising on signs and symptoms of communicable disease;
      ii) General environmental hygiene and cleaning and disinfection practices;
      iii) Hand hygiene;
      iv) Appropriate diapering and toileting practices;
      v) Prevention of occupationally acquired infections, including surveillance and management;
      vi) Communication with parents and staff with respect to IPAC practice standards in the licensed child care setting; and
      vii) Response to outbreaks of communicable diseases of public health importance.
   c) Assist child care setting operators with preparing and establishing IPAC policies with respect to exposure to resident and visiting animals as per the principles within the *Recommendations for the Management of Animals in Child Care Settings, 2018* (or as current).[15] Policies shall include, but are not limited to, the provision of educational resources for:
      i) The management of any resident animals and animals visiting the child care setting, including the types of visiting and resident animals that should not be permitted;
      ii) The risk of communicable diseases and other risks associated with visiting/resident animals, including strategies to mitigate these risks; and
      iii) IPAC measures with respect to exposures to petting zoos, visiting zoos, animal exhibits, fairs and farms for children enrolled in a licensed child care setting, including but not limited to *Recommendations to prevent disease and injury associated with petting zoos in Ontario, 2011*(or as current).[16]

d) Assist licensed child care settings in developing and maintaining policies to address:
   i) Up-to-date immunization (or an appropriate exemption) for every child prior to being admitted to a child care setting and licensed child care setting staff prior to commencing employment in accordance with s.35 and s.57, respectively, of *Ontario Regulation 137/15* under the CCEYA;[17]
   ii) Maintenance of up-to-date immunizations and immunization records (or an appropriate exemption) for all enrolled children and for staff. For additional information, refer also to the *Immunization for Children in Schools and Licensed Child Care Settings Protocol, 2018* (or as current);[18]
   iii) Required reporting of cases of reportable diseases and outbreaks to the medical officer of health;
   iv) Management of and response to infectious diseases in the child care setting. For additional information, refer also to the *Infectious Diseases Protocol, 2018* (or as current);[19]
   v) Exclusion of sick children, staff, parents, and/or volunteers. For additional information, refer to the appropriate disease-specific chapters under Appendix A of the *Infectious Diseases Protocol, 2018* (or as current);[19] and
   vi) Required communication with parents with regard to communicable diseases.

Glossary

Health hazard: (a) a condition of a premises, (b) a substance, thing, plant or animal other than man, or (c) a solid, liquid, gas or combination of any of these, that has or that is likely to have an adverse effect on the health of any person.[1]

Infection prevention and control (IPAC) lapse: failure to follow IPAC practice standards resulting in a risk of transmission of infectious diseases to clients, attendees or staff through exposure to blood, body fluids, secretions, excretions, mucous membranes, non-intact skin, or contaminated equipment and soiled items.

IPAC practice standards: includes the most current guidance available from the Provincial Infectious Diseases Advisory Committee, Public Health Ontario, the ministry, and any relevant Ontario regulatory college IPAC protocols and guidelines.[13]

Licensed child care setting: A premises operated by a person licensed under the *Child Care and Early Years Act, 2014.*[5]

"**Medi-spa"**: any premises that: (a) is owed and/or operated by a regulated healthcare professional; and (b) offers medical aesthetics; and "medi-spas" has the corresponding meaning.

"Medical aesthetics": any service or procedure performed or delegated by a regulated healthcare professional that focuses on improving or altering any part of the body through the treatment of conditions including but not limited to scars, skin laxity, wrinkles, moles, excess fat, cellulite, unwanted hair, skin discolouration, and spider veins.

Personal service: any service done to or on the body of another person for aesthetic or cosmetic enhancement or change where there is a risk of exposure to blood, body fluids, non-intact or potentially infected skin.

Personal service setting: A premises at which personal services are offered and there is a risk of exposure to blood or bodily fluids, and includes premises at which hairdressing and barbering, tattooing, body piercing, nail services, electrolysis and other aesthetic services are offered.[2]

Regulatory College: The College of a health profession or group of health professions established or continued under a health professions Act named in Schedule 1 to the *Regulated Health Professions Act, 1991.*[3]

Risk: The probability of an adverse health outcome resulting from exposure to a hazard.

Risk assessment: An evaluation of the interaction of the worker, the client and the work environment to assess and analyze the potential for exposure to infectious disease, identify potential health hazards and determine the appropriate action required.

Risk-based approach: The application of a risk assessment(s) to identify priorities for making decisions and taking action by directing proportionate resources to the hazard(s) with the greatest likelihood of adverse effect on the health of any person.

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Resources

For more information and best practices related to IPAC*, IPAC in licensed child care settings, and IPAC in personal service settings refer to:

- *Well-Beings: A Guide to Health in Child Care, 2015* (or as current).[20]
- *Best Practices for Hand Hygiene in All Health Care Settings, April 2014.*[21]
- *Best Practices Manual: Environmental Cleaning for Prevention and Control of Infections, 2012.*[22]
- *Best Practices Manual: Routine Practices and Additional Precautions in All Health Care Settings, 2012.*[23]

* The PIDAC-IPAC documents, addressing IPAC best practices, are intended for health care settings. However, in the absence of more applicable reference documents, they may be used as a resource for the principles of IPAC.

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Ministry of Health and Long-Term Care

Infectious Diseases Protocol, 2018

Population and Public Health Division,
Ministry of Health and Long-Term Care

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Ontario

Preamble

The Ontario Public Health Standards: Requirements for Programs, Services, and Accountability (Standards) are published by the Minister of Health and Long-Term Care under the authority of section 7 of the *Health Protection and Promotion Act* (HPPA) to specify the mandatory health programs and services provided by boards of health.[1,2] The Standards identify the minimum expectations for public health programs and services. Boards of health are accountable for implementing the Standards including the protocols and guidelines that are referenced in the Standards. Protocols are program and topic-specific documents incorporated into the Standards which provide direction on how boards of health shall operationalize specific requirement(s) identified within the Standards.

Purpose

The purpose of this protocol is to provide direction to boards of health with respect to the prevention, detection and management of infectious diseases of public health importance. This protocol should be considered as an overarching protocol to support the other infectious disease and infection prevention related protocols and disease-specific appendices, and should be utilized in conjunction with the *Population Health Assessment and Surveillance Protocol, 2018* (or as current), where applicable.[3]

This protocol is intended to provide direction regarding minimum responsibilities for analyzing, interpreting, responding to, and communicating about infectious disease events to reduce the burden of infectious diseases of public health importance. This protocol is also intended to ensure emergency service workers (ESWs) are notified by the medical officer of health, or designate, in the event that s/he may have been exposed to an infectious disease of public health importance so that appropriate action can be taken.

The protocol provides direction regarding:

- The establishment of rates of infectious diseases of public health importance and factors that influence their occurrence;
- The identification of emerging trends and changes in infectious disease rates;
- The identification of trends and changes in factors that influence the rate of infectious diseases;
- The provision of timely communications with respect to infectious disease incidence rates that are above expected rates;
- The assessment of population health status with respect to infectious diseases;
- The planning of evidence-based public health policies, programs, interventions and services to prevent, detect and control infectious diseases in the community and in high-risk settings;
- The evaluation of public health policies, programs, interventions and services related to the prevention and control of infectious diseases; and,

- The responsibilities of boards of health with regard to notifying ESWs of possible exposures to infectious diseases of public health importance where:
    - Diseases are not limited to those named under the *Mandatory Blood Testing Act*, 2006 (MBTA) (currently restricted to hepatitis B, hepatitis C and HIV/AIDS.);[4] or
    - An ESW has not made an application under the MBTA, but the board of health and/or medical officer of health or designate suspects that an ESW may have been exposed to an infectious disease of public health importance.

Appendix A, *Disease Specific Chapters*, provides information on the pathogenicity, epidemiology and public health management of all infectious disease of public health significance in Ontario. Appendix B, *Provincial Case Definitions*, provides the provincial surveillance case definitions for infectious disease of public health significance, in addition to disease-specific information, including current laboratory technologies and clinical signs and symptoms.

Further direction, with respect to sexually transmitted infections, rabies and tuberculosis prevention and control can also be found in the *Sexual Health and Sexually Transmitted/Blood-Borne Infections Prevention and Control Protocol, 2018 (or as current); the Rabies Prevention and Control Protocol, 2018* (or as current); and the *Tuberculosis Prevention and Control Protocol, 2018* (or as current).[5-7]

This protocol does not address requirements of boards of health under the MBTA which is administered by the Ministry of Community Safety and Correctional Services.[4]

Reference to the Standards

This section identifies the standards and requirements to which this protocol relates.

Population Health Assessment

Requirement 2. The board of health shall interpret and use surveillance data to communicate information on risks to relevant audiences in accordance with the *Healthy Environments and Climate Change Guideline, 2018* (or as current); the *Infectious Diseases Protocol, 2018* (or as current); and the *Population Health Assessment and Surveillance Protocol, 2018* (or as current).

Food Safety

Requirement 5. The board of health shall ensure 24/7 availability to receive reports of and respond to:

a) Suspected and confirmed food-borne illnesses or outbreaks;

b) Unsafe food-handling practices, food recalls, adulteration, and consumer complaints; and

c) Food-related issues arising from floods, fires, power outages, or other situations that may affect food safety in accordance with the *Health Protection and Promotion Act*;

the *Food Safety Protocol, 2018* (or as current); the *Infectious Diseases Protocol, 2018* (or as current); and the *Operational Approaches for Food Safety Guideline, 2018* (or as current).

Healthy Environments

Requirement 1. The board of health shall:

a) Conduct surveillance of environmental factors in the community;

b) Conduct epidemiological analysis of surveillance data including monitoring of trends over time; emerging trends; and priority populations; and

c) Use information obtained to inform healthy environments programs and services

in accordance with the *Health Hazard Response Protocol, 2018* (or as current); the *Healthy Environments and Climate Change Guideline, 2018* (or as current); the *Infectious Diseases Protocol, 2018* (or as current); and the *Population Health Assessment and Surveillance Protocol, 2018* (or as current).

Immunization

Requirement 1. The board of health shall, in accordance with the *Immunization for Children in Schools and Licensed Child Care Settings Protocol, 2018* (or as current), assess, maintain records and report on:

a) The immunization status of children enrolled in licensed child care settings, as defined in the *Child Care and Early Years Act, 2014*;[8]

b) The immunization status of children attending schools in accordance with the *Immunization of School Pupils Act*; and

c) Immunizations administered at board of health-based clinics as required in accordance with the *Immunization for Children in Schools and Licensed Child Care Settings Protocol, 2018* (or as current) and the *Infectious Diseases Protocol, 2018* (or as current).

Requirement 2. The board of health shall conduct epidemiological analysis of surveillance data for vaccine preventable diseases, vaccine coverage, and adverse events following immunization, including monitoring of trends over time, emerging trends and priority populations in accordance with the *Infectious Diseases Protocol, 2018* (or as current) and the *Population Health Assessment and Surveillance Protocol, 2018* (or as current).

Requirement 10. The board of health shall:

a) Promote reporting of adverse events following immunization by health care providers to the local board of health in accordance with the *Health Protection and Promotion Act*; and

b) Monitor, investigate, and document all suspected cases of adverse events following immunization that meet the provincial reporting criteria and promptly report all cases.

Infectious and Communicable Diseases Prevention and Control

Requirement 1. The board of health shall conduct population health assessment and surveillance regarding infectious and communicable diseases and their determinants. These efforts shall include:

a) Reporting data elements in accordance with the *Health Protection and Promotion Act; the Infectious Diseases Protocol, 2018* (or as current); the *Rabies Prevention and Control Protocol, 2018* (or as current); the *Sexual Health and Sexually Transmitted/Blood-Borne Infections Prevention and Control Protocol, 2018* (or as current); and the *Tuberculosis Prevention and Control Protocol, 2018* (or as current);

b) Conducting surveillance and epidemiological analysis, including the monitoring of trends over time, emerging trends, and priority populations in accordance with the *Infectious Diseases Protocol, 2018* (or as current); the *Population Health Assessment and Surveillance Protocol, 2018* (or as current); the *Rabies Prevention and Control Protocol, 2018* (or as current); the *Sexual Health and Sexually Transmitted/Blood-Borne Infections Prevention and Control Protocol, 2018* (or as current); and the *Tuberculosis Prevention and Control Protocol, 2018* (or as current);

c) Responding to international, Federal/Provincial/Territorial and local changes in diseases epidemiology by adapting programs and services; and

d) Using the information obtained through assessment and surveillance to inform program development regarding communicable diseases and other infectious diseases of public health importance.

Requirement 11. The board of health shall provide public health management of cases, contacts, and outbreaks to minimize the public health risk in accordance with the *Infectious Diseases Protocol, 2018* (or as current); the *Institutional/Facility Outbreak Management Protocol, 2018* (or as current); the *Management of Potential Rabies Exposures Guideline, 2018* (or as current); the *Rabies Prevention and Control Protocol, 2018* (or as current); the *Sexual Health and Sexually Transmitted/ Blood-Borne Infections Prevention and Control Protocol, 2018* (or as current); and the *Tuberculosis Prevention and Control Protocol, 2018* (or as current).

Requirement 16. The board of health shall develop a local vector-borne management strategy based on surveillance data and emerging trends in accordance with the *Infectious Diseases Protocol, 2018* (or as current).

Requirement 21. The board of health shall ensure 24/7 availability to receive reports of and respond to:

a) Infectious diseases of public health importance in accordance with the *Health Protection and Promotion Act*; the *Mandatory Blood Testing Act, 2006*; the *Infectious Diseases Protocol, 2018* (or as current); and the *Institutional/ Facility Outbreak Management Protocol, 2018* (or as current);

b) Potential rabies exposures in accordance with the *Health Protection and Promotion Act*; the *Management of Potential Rabies Exposures Guideline, 2018* (or as current); and the *Rabies Prevention and Control Protocol, 2018* (or as current); and

c) Animal cases of avian chlamydiosis, avian influenza, novel influenza, or Echinococcus multilocularis infection, in accordance with the *Health Protection and Promotion Act*, the *Management of Avian Chlamydiosis in Birds Guideline, 2018* (or as current); the *Management of Avian Influenza or Novel Influenza in Birds or Animals Guideline, 2018* (or as current); and the *Management of Echinococcus Multilocularis Infections in Animals Guideline, 2018* (or as current).

Safe Water

Requirement 1. The board of health shall:

a) Conduct surveillance of:

- Drinking water systems and associated illnesses, risk factors, and emerging trends;
- Public beaches and water-borne illnesses associated with recreational water, risk factors, and emerging trends, and
- Recreational water facilities;

b) Conduct epidemiological analysis of surveillance data, including monitoring of trends over time, emerging trends, and priority populations; and

c) Use the information obtained to inform safe water programs and services

in accordance with the *Infectious Diseases Protocol, 2018* (or as current); the *Population Health Assessment and Surveillance Protocol, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); and the *Small Drinking Water Systems Risk Assessment Guideline, 2018* (or as current).

Requirement 8. The board of health shall ensure 24/7 availability to receive reports of and respond to:

a) Adverse events related to safe water, such as reports of adverse drinking water of drinking water systems, governed under the *Health Protection and Promotion Act* or the *Safe Drinking Water Act, 2002*;

b) Reports of water-borne illnesses or outbreaks;

c) Safe water issues arising from floods, fires, power outages, or other situations that may affect water safety; and

d) Safe water issues relating to recreational water use including public beaches in accordance with the *Infectious Diseases Protocol, 2018* (or as current); *Operational Approaches for Recreational Water Guideline, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring*

Protocol, 2018 (or as current); and the *Small Drinking Water Systems Risk Assessment Guideline, 2018* (or as current).

Operational Roles and Responsibilities

Interpretation, Use and Communication of Infectious Disease Surveillance Data

1) In compliance with relevant privacy legislation (e.g., HPPA, *Personal Health Information Protection Act* [PHIPA], *Municipal Freedom of Information and Protection of Privacy Act* [MFIPPA]), the board of health shall communicate public health surveillance information, and findings on infectious diseases of public health significance and factors related to the acquisition and transmission of such diseases, to relevant audiences and stakeholders including, but not limited to: local, provincial and federal partners, health care practitioners, the general public, media, and community partners.
2) The board of health shall develop a strategy for reporting and communicating infectious diseases surveillance information and findings that outlines:
   a) The target audience for each communication;
   b) The communication format;
   c) The frequency of communication; and
   d) The characteristics and limitations of source data and information.
3) On an annual basis, the board of health shall review its public health infectious diseases communication strategy to ensure that key messages are relevant, current, and appropriate for its target audience(s), and that the communication channels used, including the frequency, are appropriate.
4) The board of health shall develop and disseminate information products on infectious diseases, their risk factors, and appropriate preventive measures in a format that is suitable given the target audiences. This may include collaboration with other boards of health, government agencies, regulatory bodies, non-governmental organizations, and community partners.
5) As appropriate, the board of health shall employ media communications such as news conferences and other public releases when information is critical, time sensitive and must be communicated as broadly as possible.

Reporting of Infectious Diseases

1) The board of health shall provide instructions as often as is necessary to persons required under the HPPA to report information to the medical officer of health with respect to infectious diseases of public health significance, reportable events (i.e., adverse events following immunization) and deaths from such diseases and events. These instructions shall specify:[2]

a) The diseases and events that must be reported;
b) The method or process for reporting;
c) Required information as specified in Reg. 569 under the HPPA:[9] and
d) The time or times when, or the period or periods of time within which to report.

2) The board of health shall forward reports to the Ministry of Health and Long-Term Care (the "ministry"), or as specified by the ministry, to the Ontario Agency for Health Protection and Promotion (Public Health Ontario [PHO]) using the integrated Public Health Information System (iPHIS), or any other method specified by the ministry, with respect to:
   a) Infectious diseases of public health significance, and deaths from such diseases;
   b) Any other infectious diseases that the ministry may specify from time to time; and
   c) Reportable events that may be related to the administration of an immunizing agent as defined in the HPPA.[2]

3) Reports as specified in 2) above shall comply with the minimum data elements identified in:
   a) Reg. 569 under the HPPA;[9]
   b) Disease-specific User Guides published by PHO; and
   c) Bulletins and directives issued by PHO.

4) The ministry or, as specified by the ministry, PHO, may request specific information to investigate and respond to infectious diseases or events of public health importance.

5) The board of health shall forward reports to the ministry or, as specified by the ministry, to PHO with respect to immunization coverage in accordance with the *Immunization for Children in Schools and Licensed Child Care Settings Protocol, 2018* (or as current).[10]

6) The board of health shall comply with ministry requests or, as specified by the ministry, PHO requests for immunization data and board of health-based immunization clinic data.

7) The board of health shall comply with ministry or PHO requests for vector surveillance and non-human host surveillance data using a method and format specified by the ministry.

8) A report made to the ministry or, as specified by the ministry, to PHO, using iPHIS or any other method specified by the ministry shall comply with:
   a) Enhanced Surveillance Directives (ESD) that are active at the time the report is being made;
   b) Case classifications set out in the Ontario surveillance case definitions (Appendix B) published by the ministry;
   c) Disease/event-specific User Guides published by PHO; and
   d) Timely entry of case requirements as set out in the *iPHIS Bulletin "Timely entry of cases and outbreaks" or* as current.[11]

Interpretation and Application of Surveillance Data

1) The board of health shall use infectious diseases surveillance data, immunization and reportable events data, and animal and vector surveillance data to:
   a) Establish and compare rates (incidence and prevalence) for infectious diseases and monitor trends for emerging diseases of public health importance including factors that influence their occurrence;
   b) Identify trends and changes in immunization coverage rates and monitor vaccine safety;
   c) Identify trends and changes in disease vector, animal reservoir, and host surveillance data;
   d) Identify populations at risk of exposure to infectious diseases;
   e) Develop evidence-based public health policies, programs and services to prevent and control infectious diseases in the community, in high-risk settings, and in insect vector populations; and
   f) Evaluate and/or review public health policies, programs, surveillance activities and services related to the prevention and control of infectious diseases.

2) The board of health shall analyze and interpret infectious disease data, and data related to factors influencing their occurrence, in an annual report to its target audience that describes, at a minimum, the following:
   a) The incidence (morbidity and mortality) of diseases of public health significance;
   b) The distribution of demographic and disease-specific factors influencing infectious disease incidence, including vector data;
   c) Populations at risk of exposure to infectious diseases in the community and in specific settings such as long-term care homes, hospitals, and child care centres (as defined in the *Child Care and Early Years Act, 2014*);[8] and
   d) Trends over time in the incidence of diseases of public health importance, which may include antimicrobial resistant indicators.

3) The board of health shall undertake timely monitoring, analysis, interpretation and communication of information pertaining to infectious diseases, and factors influencing their occurrence, including incidence and prevalence in animal reservoirs and insect vector species for zoonotic and vector-borne diseases. This should be done in consultation with the ministry, the Canadian Food Inspection Agency (CFIA), the Ministry of Natural Resources and Forestry, and the Ontario Ministry of Agriculture, Food, and Rural Affairs. The timing and frequency of these activities shall be determined by one or more of the following factors:
   a) Temporal/seasonal patterns of exposure or infectious disease occurrence;
   b) Likelihood of detecting meaningful change in the rate of infectious disease between monitoring intervals;
   c) The availability of data;
   d) The urgency of implementing necessary prevention and control measures;

e) The potential influence on decision-making; and
f) The characteristics of the target audience.

4) The board of health shall use provincial standard definitions of variables and health indicators where available, to conduct data analyses and interpret infectious diseases data.

5) The board of health shall use information from inspection reports of premises associated with risk of infectious diseases to plan further inspections of these premises, to assess disease transmission risks, infection prevention and control (IPAC) lapses and required interventions, and to tailor IPAC support and education to these premises (*Infection Prevention and Control Complaint Protocol, 2018* [or as current]).[12]

Public Health On-Call System

1) The board of health shall have a 24 hours per day, seven days per week (24/7) public health on-call system for receiving and responding to reports with respect to:
   a) Confirmed and suspected outbreaks of infectious diseases of public health importance occurring in institutions, premises, facilities, or in the community;
   b) Confirmed or suspected cases of, and exposures to, infectious diseases of public health significance reported by persons required under the HPPA to report information to the medical officer of health;[2]
   c) Suspected exposures to, and reports of, infectious diseases among ESWs (see the section on Exposure of Emergency Service Workers to Infectious Diseases) that occur during the course of their work and in accordance with the MBTA;[4]
   d) Confirmed or suspected cases of, and exposures to, infectious diseases reported by a member of the public;
   e) Health hazards, including IPAC lapses, that have, or that are likely to have, an adverse effect on the health of any person;
   f) Food or other product recalls issued by the ministry, the CFIA, other provincial or national regulatory agencies, or manufacturers; and
   g) Public complaints with respect to the risk of transmission of infectious diseases (*Infection Prevention and Control Complaint Protocol, 2018* [or as current])[12]
   h) Animal cases of avian chlamydiosis, avian influenza, novel influenza, or *Echinococcus multilocularis* infection.

2) The board of health shall ensure that the public and persons required under the HPPA to report information to the medical officer of health with respect to diseases of public health significance, are informed of the public health on-call system and how to access it.[2]

3) The board of health shall assess reports with respect to infectious diseases and factors influencing their occurrence that originate through the public health on-call system within 24 hours of receipt.

4) The board of health's initial response to reports with respect to infectious diseases and factors influencing their occurrence that originate through the public health on-call system, shall include the following:
   a) Review and assessment of the information provided as well as appropriate action, based on the initial assessment, to prevent, control or manage exposure to, or transmission of the infectious disease;
   b) Contacting the reporting person, facility/institution or organization to obtain additional information for the purpose of undertaking further assessment of the risk of exposure to, or transmission of, the infectious disease;
   c) Contacting the case(s) and/or contact(s) named in the report to obtain additional information for the purpose of making an assessment pertaining to the risk of exposure to, or transmission of, the infectious disease; and
   d) Conducting a site visit or an inspection where appropriate.
5) The public health on-call system shall reference standard policies and procedures for responding to health hazards including those associated with the risk of exposure to, and transmission, of infectious diseases.
6) The board of health shall transfer reports received through its on-call system to another appropriate board of health, if required, in a timely manner based on the urgency and public health risk of the incident.
7) The public health on-call system shall be documented and reviewed at least annually, or as needed, and shall include:
   a) An up-to-date schedule that specifies board of health staff, including contact information, responsible for receiving and responding to reports received through the public health on-call system;
   b) Contact information of community partners, regulatory bodies, and government agencies involved in the control and prevention of exposures to, and transmission of, infectious diseases;
   c) Contact information of the lead government body, regulatory body, or other agencies involved in the response to specific types of reports received through the public health on-call system;
   d) Contact information of all medical officers of health for the purpose of transferring reports received through the public health on-call system as well as a process for transferring reports to other boards of health;
   e) Contact information for the Population and Public Health Division of the ministry's on-call system (24/7 Health Care Provider Hotline, 1-866-212-2272);
   f) A distribution mechanism for mass notification, (as well as a back-up communications capability) of board of health staff, the ministry, community partners, other government ministries, regulatory bodies and other government agencies involved in the control and prevention of exposures to, and transmission of, infectious diseases;
   g) Information on the timeframe within which the board of health shall provide an initial response or forward an out of jurisdiction report; and

h) A process for reporting back to persons or organizations that make reports through the public health on-call system, where required.

Management of Infectious Diseases – Sporadic Cases

1) The board of health shall provide public health management of cases and contacts of infectious diseases of public health importance in accordance with this protocol.

2) The public health management of cases and contacts of infectious diseases (see Appendix A – Disease-Specific Chapters) of public health importance shall be comprised of, but not be limited to:
   a) Case management including, and where applicable: the determination of the source of disease, risk factors, exposures, and the provision of disease prevention counseling, facilitation of chemoprophylaxis, immunization or immuno-globulin and/or advice to seek medical care and submission of clinical specimens;
   b) Contact identification, tracing and notification (where appropriate);
   c) Contact management including, and where applicable: the provision of disease prevention counseling, facilitation of chemoprophylaxis, immunization or immuno-globulin and/or advice to seek medical care and submission of clinical specimens;
   d) Investigation of suspected sources of infection including environmental exposures;
   e) If the board of health's investigation indicates that an IPAC lapse has been identified, post an Initial and a Final Report online in accordance with the *Infection Prevention and Control Disclosure Protocol, 2018* (or as current);[13]
   f) Where warranted, inspection of institutions, premises or facilities where cases and/or disease transmission is suspected; and
   g) Reporting of cases of infectious diseases to the ministry using iPHIS or any other method specified by the ministry, and in accordance with the reporting criteria for infectious diseases of public health significance set out in this protocol.

Investigation and Management of Infectious Diseases Outbreaks

1) The board of health shall provide public health management of confirmed or suspected local outbreaks of infectious diseases of public health importance, as well as cross-jurisdictional collaboration when more than one jurisdiction is involved, in accordance with this protocol. Support is provided to boards of health by the ministry and PHO, as follows:
   a) The ministry and/or PHO support the investigation and management of the outbreak/incident as needed.
   b) Any request for assistance from Public Health Agency of Canada's Canadian Field Epidemiology Program, should be directed to the ministry who will then submit on behalf of the board of health or PHO.

c) For single jurisdiction outbreaks/incidents in Ontario, PHO provides epidemiological, scientific, and technical support to the board of health as requested by the local medical officer of health or the ministry.
d) For multi-jurisdictional outbreaks/incidents, PHO coordinates the investigation and management when confined to Ontario and participates with other provinces/territories in national outbreaks led by the Public Health Agency of Canada.
e) The ministry provides ongoing support, public health oversight, and policy and legislative direction as needed.
f) Specific to zoonotic disease outbreaks involving animals or potential animal exposures, the ministry coordinates the response and provides support in the management of all animal health related issues and collaborates with PHO regarding human clinical cases arising from exposure to infected animals.

2) The public health management of confirmed or suspected outbreaks of infectious diseases of public health importance shall be comprised of, but not be limited to:
   a) Verification of the outbreak;
   b) Consideration of declaration of an outbreak by the medical officer of health or designate;
   c) Creation of an Outbreak Management Team (OMT), where required;
   d) Development of an outbreak case definition;
   e) Case management including the determination of exposure history and the provision of disease prevention counselling, facilitation of chemoprophylaxis, immunization or immuno-globulin (where indicated) and/or advice to seek medical care and submission of clinical specimens where applicable;
   f) Contact identification, tracing and notification;
   g) Contact management including the provision of disease prevention counselling, facilitation of chemoprophylaxis, immunization or immuno-globulin (where indicated) and/or advice to seek medical care and submission of clinical specimens where applicable;
   h) Epidemiological analysis including, but not limited to, analyses to determine population(s) at risk, the time period at risk and most likely source(s) of infection;
   i) Outbreak notification and communication of outbreak information to the ministry, regulatory bodies and other government agencies involved in the prevention and control of exposures to and transmission of the outbreak disease;
   j) Outbreak notification and communication of information to the population at risk, including persons in settings associated with the outbreak, in addition to, community partners that have an identified role in the outbreak including the diagnosis, treatment and management of infectious diseases outbreaks.
   k) Maintenance of ongoing surveillance for new cases and/or implementation of enhanced or active surveillance to identify new cases;
   l) Implementation of infection prevention and control measures, taking into consideration the etiologic agent and the epidemiology of the outbreak;

m) Issuance of public health alerts or bulletins where infection prevention and control efforts require public compliance with implemented and/or recommended control measures;
n) Issuance of public health alerts or bulletins where necessary to advise unidentified contacts of potential exposures and the appropriate follow-up action that is required;
o) Investigation of potential exposures of infection including but not limited to collection of exposure histories, inspection of institutions, premises or facilities that have been epidemiologically linked to the outbreak (where appropriate), environmental samples and clinical specimen product trace-back;
p) If the board of health's investigation indicates that an IPAC lapse has been identified, post an Initial and a Final Report online in accordance with the *Infection Prevention and Control Disclosure Protocol, 2018* (or as current);[13] and
q) Coordination of and/or collection of clinical specimens and environmental samples in a timely manner for testing to verify etiology as well as the exposure source. Boards of health should refer to the most recent PHO labstract and test information sheets for information on pathogen specific specimen collection requirements, and testing procedures.

3) The board of health shall develop a written outbreak protocol that specifies the composition of the OMT, the use of Incident Management System, if appropriate, and their roles and responsibilities.
4) The board of health shall comply with all active ESDs and other directives with respect to ongoing provincial or multi-jurisdiction outbreaks that are issued by PHO.
5) In consultation with PHO, the board of health shall notify the ministry as soon as possible of any evidence of increased virulence based on unusual clinical presentation/outcomes, the possibility of multi-jurisdictional involvement, suspicion of a novel or emerging strain, or other novel outbreak findings in the outbreak.
6) Where, in the opinion of the medical officer of health or designate, a delay would not pose a risk of harm to individuals, the board of health shall notify the ministry and PHO in advance of any notification of the media.
7) The board of health shall report outbreaks of infectious diseases and/or cases that are linked to an outbreak to the ministry after receiving notification of an outbreak or determining that an outbreak is occurring/has occurred that has not been reported.
8) The board of health shall complete data entry and close reported outbreaks once the outbreak is declared over (as listed in disease-specific user guides).
9) A report made using iPHIS, or any other method specified by the ministry, shall comply with the data reporting criteria for infectious diseases of public health significance set out in this protocol.
10) The ministry and PHO may request additional information with respect to reports of outbreaks of infectious diseases, hospitalizations, and related deaths.

11) The medical officer of health or designate in collaboration with the OMT, where one has been established, shall determine when to declare an outbreak over, taking into consideration the etiologic agent and the epidemiology of the outbreak.

Prevention and Management of Zoonotic Diseases

1) The board of health shall provide public health management of (animal) cases and contacts of zoonotic infectious diseases of public health importance in accordance with this protocol, including but not limited to rabies, avian chlamydiosis (infection of birds with the causative agent of psittacosis), avian influenza, novel influenza and *Echinococcus multilocularis* infections, in accordance with the HPPA; the *Management of Avian Chlamydiosis in Birds Guideline, 2018* (or as current); the *Management of Avian Influenza or Novel Influenza in Birds or Animals Guideline, 2018* (or as current); and the *Management of Echinococcus Multilocularis Infections in Animals Guideline, 2018* (or as current).
2) The board of health shall ensure that all veterinarians within its jurisdiction are aware of public health reporting requirements for animal cases of avian chlamydiosis, avian influenza, novel influenza and *Echinococcus multilocularis* infection, as well as potential rabies exposures, and disseminate detailed information, at least annually, about how these cases are to be reported to the board of health.
3) Upon the receipt of a report of an animal case of avian chlamydiosis, avian influenza, novel influenza or *Echinococcus multilocularis* infection, the board of health shall notify the ministry.
4) The board of health shall ensure that human and public health risks related to exposure to the infected animal(s) are effectively minimized by the appropriate management of the infected animal(s).
5) The board of health shall consult with the ministry and any attending or primary care veterinarians to determine the most effective and appropriate management of the animal(s). In accordance with the *Health Protection and Promotion Act*, management of the animal(s) may include, but not be limited to:
   a) Ordering the isolation of the animal(s);
   b) Ordering the treatment of the animal(s);
   c) Ordering physical or laboratory diagnostic examinations of the animal(s); and
   d) Ordering the cleaning and disinfection of premises currently or previously housing the animal(s).
6) The public health management of contacts of infected animals shall be comprised of, but not limited to:
   a) Contact management including, and where applicable: assessment of risk factors, exposures to infected animals, and the provision of disease prevention counseling, facilitation of chemoprophylaxis, immunization or immuno-globulin and/or advice to seek medical care and submission of clinical specimens;

b) Identification of other human contacts of the infected animal, tracing and notification (where appropriate);
c) Contact management including, and where applicable: the provision of disease prevention counseling, facilitation of chemoprophylaxis, immunization or immuno-globulin and/or advice to seek medical care and submission of clinical specimens;
d) Where warranted, inspection of premises or facilities where infected animals and/or disease transmission are suspected; and
e) Reporting of human cases of infectious diseases to the ministry using iPHIS or any other method specified by the ministry, and in accordance with the reporting criteria for infectious diseases of public health significance set out in this protocol.

Prevention and Management of Vector-Borne Diseases

1) The board of health shall develop, implement, and review at least annually, an integrated vector-borne diseases management strategy based on local risk assessment and other scientific evidence with respect to effective and efficient prevention and control measures.

2) The board of health shall conduct local West Nile virus risk assessments, on an annual basis, in accordance with the ministry's West Nile Virus Preparedness and Prevention Plan, or as current.[14]

3) The board of health shall develop an integrated vector-borne management plan comprised of:
   a) Vector surveillance, including surveillance of both mosquito and tick populations;
   b) Non-human host surveillance (when applicable);
   c) Human surveillance;
   d) Public education on personal preventive measures; and
   e) Vector control programs (e.g., larviciding and/or adulticiding) where required.

4) The board of health shall promptly notify Trillium Gift-of-Life of any positive results of vector-borne diseases from humans with a history of organ donation or receipt.

Exposure of Emergency Service Workers to Infectious Diseases

1) The board of health shall have a medical officer of health or designate available on a 24/7 basis to receive and respond to reports of infectious diseases of public health significance in accordance with this protocol to ensure that:
   a) Reports of a possible exposure of an ESW are received, assessed, and responded to as soon as possible, but not later than 48 hours (depending on situation and disease, response may be required sooner) after receiving notification; and

b) Reports of all infectious diseases of public health significance are received and assessed, with particular consideration given to potential exposures of ESWs.

2) The board of health shall contact emergency services in their health unit and request that they identify designated officers for their respective emergency service (i.e., police, firefighters, ambulance) in order to facilitate the exposure notification process.

3) The board of health* shall advise designated officers in their health unit regarding the possible exposure of an ESW to an infectious disease of public health significance when made aware by:
   a) Having the medical officer of health or designate actively seek out contacts of cases with infectious diseases of public health importance, even if a designated officer has not contacted the medical officer of health or designate regarding the possible exposure and no application has been made by an individual under the MBTA;[4]
   b) Informing the respective designated officer that an ESW might have been exposed to an infectious disease of public health significance during his/her work. This is not dependent on laboratory confirmation (e.g., the case can exhibit clinical signs and symptoms of a particular infectious disease); and
   c) Informing the designated officer regarding any specific actions to be taken based on the designated officer's report, including advising ESWs to seek medical attention and the initiation of post-exposure prophylaxis if applicable.

4) When a designated officer makes an incident report of a possible exposure to an infectious disease of public health significance to the board of health, the board of health shall:
   a) Review and assess the information provided;
   b) Contact health care facilities and other persons (e.g., infection control practitioners and/or attending physicians) to obtain additional information on the specific case, as necessary, based on the assessment of the incident by the medical officer of health, or designate; and
   c) Inform the designated officer as soon as possible and no later than 48 hours after receiving notification (depending on the disease) of advised actions to be taken, including accessing medical care by the ESW.
      i) Advice shall include, but is not limited to assessing the possible risk of occupational exposure and setting standards of practice, appropriate use of personal protective equipment, and training for employees to prevent possible exposures; and
      ii) Follow up with the designated officer to ascertain what action has been taken.

5) In the event that there is a disagreement between the designated officer and the medical officer of health or designate regarding a possible exposure, the designated officer may refer the matter to the Chief Medical Officer of Health or designate.

* A decision by the board of health to contact the designated officer can be made on a case-by case basis, based on clinical assessment which could include, but is not limited to degree of risk, type of exposure, etc.

Glossary

Designated officer: A person identified in an emergency service (i.e., police officer, firefighters, etc.) who is responsible for receiving and assessing reports regarding the possible exposure of an emergency service worker to an infectious disease of public health importance and then contacting the medical officer of health or designate.

Emergency service worker: A person working in an emergency service (e.g., police, firefighters, etc.).

Enhanced Surveillance Directive: PHO may issue enhanced surveillance directives for infectious diseases of public health significance in response to a variety of circumstances including, but not limited to:

- Increased case reports of diseases of public health significance;
- Reports of emerging disease(s);
- Diseases with seasonal variation; and
- Food contamination alerts.

Each enhanced surveillance directives are mandatory when issued and will include the following:

- Situation background and current status;
- Start and end dates (if known);
- Detailed data requirements;
- Step-by-step guide for data entry into iPHIS;
- Data field definitions;
- Screenshots of data field locations; and
- Information on whom to contact for assistance.

Facility: In this protocol, facility includes facilities that are under the authority of the HPPA and/or its regulations and other facilities that are not regulated under the HPPA.

Health Hazard: (a) a condition of a premises, (b) a substance, thing, plant or animal other than man, or (c) a solid, liquid, gas or combination of any of these, that has or that is likely to have an adverse effect on the health of any person.[2]

Infection Prevention and Control (IPAC) Lapse: A lapse is defined as a failure to follow IPAC practice standards resulting in a risk of transmission of infectious diseases to clients, attendees or staff through exposure to blood, body fluids, secretions, excretions, mucous membranes, non-intact skin, or contaminated equipment and soiled items. IPAC practice standards include the most current guidance available from the Provincial Infectious Diseases Advisory Committee, Public Health Ontario, the ministry, and any relevant Ontario regulatory college IPAC protocols and guidelines.

Infectious diseases of public health importance: Infectious diseases of public health importance include, but are not limited to; those specified as diseases of public health significance as set out by regulation under the HPPA and include zoonotic and vector-borne diseases.[15] Emerging infectious diseases may be considered of public health

importance based on a variety of criteria, including their designation as an emerging disease by international, Federal, and/or Provincial/Territorial health authorities, their potential for preventability or public health action, and the seriousness of their impact on the health of the population and potential spread.

Institution: In this protocol, institution has the same meaning as Section 21(1) of the HPPA.[2]

Labstract: Labstracts provide important information to health care practitioners about clinical or operational changes in laboratory testing. These can include updates in specimen collection, handling, testing or interpretation.

Reportable event: In this protocol, reportable event has the same meaning as Section 38(1) of the HPPA.[2]

Sporadic Cases: A sporadic case is an instance of disease which appears to be unrelated to a community or institutional outbreak. It can be one or more cases that do not share an epidemiological link.

Surveillance: The continuous, systematic collection, analysis and interpretation of health-related data needed for the planning, implementation, and evaluation of public health practice. Such surveillance can:

- serve as an early warning system for impending public health emergencies;
- document the impact of an intervention, or track progress towards specified goals; and
- monitor and clarify the epidemiology of health problems, to allow priorities to be set and to inform public health policy and strategies.[16]

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Ministry of Health and Long-Term Care

Infection Prevention and Control Complaint Protocol, 2018

Population and Public Health Division,
Ministry of Health and Long-Term Care

Effective: January 1, 2018

Ontario

Preamble

The Ontario Public Health Standards: Requirements for Programs, Services, and Accountability (Standards) are published by the Minister of Health and Long-Term Care under the authority of section 7 of the *Health Protection and Promotion Act* (HPPA) to specify the mandatory health programs and services provided by boards of health.[1,2] The Standards identify the minimum expectations for public health programs and services. Boards of health are accountable for implementing the Standards including the protocols and guidelines that are referenced in the Standards. Protocols are program and topic-specific documents incorporated into the Standards which provide direction on how boards of health shall operationalize specific requirement(s) identified within the Standards.

Purpose

This protocol provides direction to boards of health with respect to the investigation, management and reporting of infection prevention and control (IPAC) complaints. This does not include complaints specific to health hazards in the environment; please refer to the *Health Hazard Response Protocol, 2018* (or as current) under the Healthy Environments Standard.[3]

Examples of settings covered by this protocol include, but are not limited to:

- Temporary dwellings established for temporary or seasonal workers;
- Schools (all levels);
- Child care settings as defined in the *Child Care and Early Years Act, 2014,* including: unlicensed child care, including home-based; home child care providers contracted by a licensed agency; licensed home child care agencies; and licensed child care settings;[4]
- Recreational facilities (including sports clubs);
- Personal service settings (as defined by the HPPA), including special events such as trade shows, conventions, fairs or exhibitions where personal services are provided, and any person providing personal services;[2]
- Community centres; and
- Facilities in which regulated health professionals operate (including medi-spas).

Reference to the Standards

This section identifies the standards and requirements to which this protocol relates.

Effective Public Health Practice

Requirement 9. The board of health shall publicly disclose results of all inspections or information in accordance with the *Electronic Cigarettes Protocol, 2018* (or as current); the *Food Safety Protocol, 2018* (or as current); the *Health Hazard Response Protocol,*

2018 (or as current); the *Infection Prevention and Control Complaint Protocol, 2018* (or as current); the *Infection Prevention and Control Disclosure Protocol, 2018* (or as current); the *Infection Prevention and Control Protocol, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); the *Tanning Beds Protocol, 2018* (or as current); and the *Tobacco Protocol, 2018* (or as current).

Infectious and Communicable Diseases Prevention and Control

Requirement 18. The board of health shall receive reports of complaints regarding infection prevention and control practices and respond to and/or refer to appropriate regulatory bodies, including regulatory colleges*, in accordance with applicable provincial legislation and in accordance with the *Infection Prevention and Control Complaint Protocol, 2018* (or as current) and the *Infection Prevention and Control Disclosure Protocol, 2018* (or as current).

Requirement 19. The board of health shall receive and evaluate reports of complaints regarding infection prevention and control practices in settings for which no regulatory bodies or regulatory colleges exist, particularly personal service settings. This shall be done in accordance with the *Infection Prevention and Control Complaint Protocol, 2018* (or as current) and the *Infection Prevention and Control Disclosure Protocol, 2018* (or as current).

Requirement 20. The board of health shall inspect settings associated with risk of infectious diseases of public health importance in accordance with the *Healthy Environments and Climate Change Guideline, 2018* (or as current); the *Infection Prevention and Control Complaint Protocol, 2018* (or as current); and the *Infection Prevention and Control Protocol, 2018* (or as current).

Operational Roles and Responsibilities

Response

1) The board of health shall:
    a) Have an on-call system for receiving and responding to public health issues on a 24 hours per day, 7 days per week (24/7) basis; and
    b) Determine the appropriate response required and make reports as per the disease-specific chapters under Appendix A of *the Infectious Diseases Protocol, 2018* (or as current) or otherwise as directed by the ministry within 24 hours of notification of the complaint or report.[5]

*For the purposes of requirement 18, a “regulatory college” means the college of a health profession or group of health professions established or continued under a health professions Act named in Schedule 1 to the *Regulated Health Professions Act, 1991*.

2) The board of health shall develop and maintain written policies and procedures for responding to IPAC complaints. The policies and procedures shall address, but not be limited to:
   a) Steps for managing a complaint investigation; and
   b) Communication with the premises involved in the complaint, provincial and/or federal agencies providing oversight or support (including regulatory colleges if applicable), and/or the public (if necessary).

Investigation

3) The board of health investigation shall include, but may not be limited to a review of communicable disease surveillance data available to the board of health to assess any epidemiological link of a communicable and/or infectious disease to the premises named in the complaint.

4) In the event that a communicable and/or infectious disease transmission risk is, or may be, linked to the professional conduct of a regulated healthcare professional governed by a regulatory college (e.g., nurse, physician, dentist), the board of health shall:
   a) Contact the regulatory college directly as soon as possible and provide any relevant information about the member(s) and the reported non-adherence to IPAC practices;
   b) Provide information to the complainant to contact the respective regulatory college; and
   c) Consider a collaborative approach with the regulatory college and applicable stakeholders in any ongoing assessment of the complaint and any subsequent investigation deemed necessary.

5) The board of health shall advise the regulatory college if the board of health's assessment indicates that an IPAC lapse has been identified in the premises named in the complaint and is linked to the conduct of a regulated healthcare professional.

6) The board of health shall conduct an assessment which shall focus on identifying if an IPAC lapse has occurred in the premises named in the complaint/inquiry.
   a) The assessment of the complaint shall include, but may not be limited to:
      i) Determining whether previous complaints/inquiries or IPAC lapses have been reported to the board of health and what actions, if any, were taken;
      ii) Visiting the premises named in the complaint for the purpose of conducting a risk assessment;
      iii) Interviewing staff of the premises directly involved in the practice under assessment, including identification of any prior history of complaints/inquiries;
      iv) Observing IPAC practices;
      v) Reviewing relevant documentation, which includes policies, procedures, records, and logs (e.g., reprocessing practices); and

vi) Reviewing evidence/previous experience to determine whether a previous IPAC lapse or the premises named in the complaint/inquiry has been associated with previous communicable and/or infectious disease transmission.

b) Information obtained during the assessment shall be evaluated based on:
   i) The implementation of appropriate IPAC practices, where applicable;
   ii) The extent to which routine IPAC practices have been adhered to; and
   iii) Adherence to best practices for reprocessing recommended in the premises named in the complaint.

7) In the event that an IPAC lapse has occurred at a multi-jurisdictional premise(s) (i.e., a premises that spans two or more sites or jurisdictions):
   a) The first board of health to become aware of the lapse shall conduct an investigation of the setting that is located within their jurisdiction (including confirming IPAC concerns at a second location where possible).
   b) The first board of health to become aware of the lapse shall inform the Ministry of Health and Long-Term Care (the "ministry") and the Ontario Agency for Health Protection and Promotion (Public Health Ontario [PHO]).
   c) PHO shall coordinate a multi-jurisdictional teleconference and, if deemed necessary (based on risk assessment), engage with/inform other relevant boards of health that have the same multi-jurisdictional premises within their jurisdictions to follow up as required.
   d) The ministry and PHO shall provide support, as required.

8) The board of health shall take necessary action(s) if the board of health's investigation indicates that an IPAC lapse has been identified in the premises named in the complaint. The action(s) shall include, but may not be limited to:
   a) Requiring the implementation of appropriate IPAC procedures in accordance with current best practices;
   b) Providing education to ensure adherence to current best practices, which may include completion of IPAC training modules;
   c) Ordering corrective action based on the findings of the investigation including having the medical officer of health or public health inspector issue written orders under the HPPA;[2]
   d) Advising the owner/operator of the premises under investigation of their responsibility to take corrective action and the consequences of failing to do so;
   e) Developing a risk-communication strategy for notification of identified cases in collaboration with the affected premises, as required;
   f) Engaging in formal look-back case-finding studies where the initial investigation raises concerns about a communicable and/or infectious disease outbreak related to improper IPAC practices; and
   g) Conducting re-inspection(s) to ensure corrective action and adherence to IPAC and other current best practices has been taken.

Data collection and reporting

9) The board of health shall:
   a) Maintain a record of all complaints received, any investigation and/or referral action undertaken, and responsive actions undertaken.
   b) Report occurrences of significance (i.e., non-compliance issues leading to a media release) to the ministry prior to media release.
   c) Report cases of infectious/reportable diseases and outbreaks associated with premises through the integrated Public Health Information System (iPHIS) or any other method specified by the ministry.
   d) Disclose publicly a summary of the results of complaint-based investigations where IPAC lapses are identified and in accordance with *Infection Prevention and Control Disclosure Protocol, 2018* (or as current).[6]
   e) Notify the ministry of all verbal and written Section 13 orders pertaining to IPAC lapse under the HPPA on the day it is issued or the next business day.

Glossary

Health hazard: (a) a condition of a premises, (b) a substance, thing, plant or animal other than man, or (c) a solid, liquid, gas or combination of any of them, that is likely to have an adverse effect on the health of any person (as defined in the HPPA).

Infection prevention and control (IPAC) lapse: failure to follow IPAC practice standards resulting in a risk of transmission of infectious diseases to clients, attendees or staff through exposure to blood, body fluids, secretions, excretions, mucous membranes, non-intact skin, or contaminated equipment and soiled items.

IPAC practice standards: include the most current guidance available from the Provincial Infectious Diseases Advisory Committee, Public Health Ontario, the ministry, and any relevant Ontario regulatory college IPAC protocols and guidelines.

Medi-spa: means any premises that: (a) is owned and/or operated by a regulated healthcare professional; and (b) offers medical aesthetics and “medi-spas” has the corresponding meaning.

“Medical aesthetics”: means any service or procedure performed or delegated by a regulated healthcare professional that focuses on improving or altering any part of the body through the treatment of conditions including but not limited to scars, skin laxity, wrinkles, moles, excess fat, cellulite, unwanted hair, skin discolouration, and spider veins.

Personal service settings: A premises at which personal services are offered and there is a risk of exposure to blood or bodily fluids, and includes premises at which hairdressing and barbering, tattooing, body piercing, nail services, electrolysis and other aesthetic services are offered.

Regulatory College: The College of a health profession or group of health professions established or continued under a health professions Act named in Schedule 1 to the *Regulated Health Professions Act.*[7]

Risk: The probability of an adverse health outcome resulting from exposure to a hazard.

Risk assessment: An evaluation of the interaction of the worker, the client and the work environment to assess and analyze the potential for exposure to infectious disease, identify potential health hazards and determine the appropriate action required.

Risk-based approach: The application of a risk assessment(s) to identify priorities for making decisions and taking action by directing proportionate resources to the hazard(s) with the greatest likelihood of adverse effect on the health of any person.

Resources

For more information when an IPAC lapse is, or may be, linked to the professional conduct of a regulated health professional, refer to the Roles and Responsibilities in Community Health Care Settings during Potential Infection Prevention and Control Lapse Investigations, 2017.[8]

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Ontario

Ministry of Health and Long-Term Care

Operational Approaches for Recreational Water Guideline, 2018

Population and Public Health Division,
Ministry of Health and Long-Term Care

Effective: January 1, 2018

Ontario

Table of Contents

Preamble

The Ontario Public Health Standards: Requirements for Programs, Services, and Accountability (Standards) are published by the Minister of Health and Long-Term Care under the authority of section 7 of the *Health Protection and Promotion Act* (HPPA) to specify the mandatory health programs and services provided by boards of health.[1,2] The Standards identify the minimum expectations for public health programs and services. Boards of health are accountable for implementing the Standards including the protocols and guidelines that are referenced in the Standards. Guidelines are program and topic-specific documents which provide direction on how boards of health shall approach specific requirement(s) identified within the Standards.

Purpose

The purpose of this guideline is to provide direction on how boards of health must approach requirements outlined in the Safe Water Standard and the *Recreational Water Protocol, 2018* (or as current) to reduce the risk of water-borne illness and injury related to recreational water use at public beaches and waterfronts used by recreational camps, and achieve consistency for specific program requirements.[3]

Reference to the Standards

This section identifies the standard and requirements to which this guideline relates.

Safe Water

Requirement 3. The board of health shall ensure the availability of education and training for owners/operators of small drinking water systems and recreational water facilities in accordance with the *Operational Approaches for Recreational Water Guideline, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); and the *Small Drinking Water Systems Risk Assessment Guideline, 2018* (or as current).

Requirement 5. The board of health shall provide all the components of the Safe Water Program in accordance with:

a) The *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current) and all applicable statutes and regulations to protect the public from exposure to unsafe drinking water; and
b) The *Operational Approaches for Recreational Water Guideline, 2018* (or as current) and the *Recreational Water Protocol, 2018* (or as current), to reduce the risks of illness and injuries at public beaches and recreational water facilities.

Requirement 8. The board of health shall ensure 24/7 availability to receive reports of and respond to:

a) Adverse events related to safe water, such as reports of adverse drinking water of drinking water systems, governed under the *Health Protection and Promotion Act* or the *Safe Drinking Water Act, 2002*;

b) Reports of water-borne illnesses or outbreaks;
c) Safe water issues arising from floods, fires, power outages, or other situations that may affect water safety; and
d) Safe water issues relating to recreational water use including public beaches in accordance with the *Infectious Diseases Protocol, 2018* (or as current); *Operational Approaches for Recreational Water Guideline, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); and the *Small Drinking Water Systems Risk Assessment Guideline, 2018* (or as current).

Seasonal Beach Monitoring Program

Seasonal Program Planning

1) To support the requirements for monitoring public beaches under the *Recreational Water Protocol, 2018* (or as current),[3] the board of health shall establish procedures to:
   a) Confirm the inventory of public beaches within their jurisdiction;
   b) Establish the commencement and duration of the monitoring season in consultation with operators;
   c) Conduct environmental surveys before the start of the bathing season to collect and assess environmental conditions that may influence recreational water quality; and
   d) Assess the quality of recreational water using the geometric mean approach (see the Geometric Mean for Recreational Water Monitoring section below) and *the Guidelines for Canadian Recreational Water, 2012* (or as current) for threshold values to guide public health actions, including communicating risk to the public.[4]

Pre-season Assessment of Public Beaches

2) The board of health shall carry out a review and analysis of water sampling data and observations made during the previous season to identify factors that may predict influences on water quality (e.g., heavy rainfall). This information may also inform predictive modelling analysis that lead to more timely assessments and communications to the public.

3) The board of health shall carry out pre-season environmental surveys of all public beaches to:
   a) Identify possible sources of contamination to reduce or eliminate potential impact on recreational water quality;
   b) Record observations of environmental factors that may influence recreational water quality using the *Environmental Survey – Field Data Report* (Appendix A) or equivalent tool; and
   c) Collect water samples to assess recreational water quality prior to the commencement of the bathing season.

Surveillance

4) The board of health shall use a routine checklist or reporting tool to document observations and data when recreational water quality samples are collected throughout the season. This information will assist in identifying correlations or trends between environmental factors and bacterial water quality. These conditions shall be observed and recorded during routine public beach sampling to support data analysis. Environmental factors to be observed include:
   a) Water and ambient air temperature;
   b) Rainfall within 24 and 48 hours;
   c) Rain intensity;
   d) Weather conditions (e.g. cloudy, sunny);
   e) Wind speed and direction;
   f) Water clarity/turbidity;
   g) Wave height;
   h) Pollution sources, such as waterfowl, industrial waste discharges, storm water outflows, septic system discharges, algal blooms and agricultural run-off; and
   i) Other environmental factors that may be locally significant.

The *Environmental Survey – Field Data Report* (Appendix A) may be used to record this information.

Sampling Methods

Public Health Ontario Laboratory Services

5) The board of health shall consult with Public Health Ontario Laboratories (PHOL) prior to the start of the sampling program and follow established procedures for submitting samples and communicating test results. Water samples must be labelled and stored in insulated or refrigerated coolers for delivery to the nearest laboratory within one (1) day of collection. For further guidance on sample collection and submission, refer to Public Health Ontario's *Public Health Inspector's Guide to Environmental Microbiological Laboratory Testing, 2017* (or as current).[5]

Water Sample Collection

6) The board of health shall ensure public health unit staff are trained and adhere to all health and safety precautions to prevent injury or illness when collecting recreational water samples at public beaches.

7) Where the depth of water is 1 to 1.5 meters, the board of health shall obtain samples for bacteriological analysis 15 to 30 centimeters below the water surface. When the depth of water is less than 1 meter, samples shall be obtained as far offshore as possible within the bathing area. Water samples for bacteriological analysis shall be collected using sterile bottles provided by PHOL. For consistent analysis of water quality, samples should be collected at the same general locations, on the same day of the week, at approximately the same time of day. A diagram of the public beach may be used to ensure the program is consistently applied and includes:

a) Approximate length of beach;
b) Approximate depth of the water in the public beach area;
c) Possible sources of pollution and the distances to the bathing area; and
d) Numbered sampling points and the sequence the samples are collected.

Table 1: Water sampling points are determined by the length of the beach

Length of beach	Number of sampling points
1000 meters or less	5 points
Over 1000 meters	1 point per 200 meters
Over 5000 meters	1 point per 500 meters

Sampling Frequency

8) For the purposes of water testing, the board of health shall identify a minimum of five sampling points for each beach. Additional sampling points and more frequent sampling may be carried out as determined by the medical officer of health. Sampling frequency may be reduced to once per month where historical data of the geometric mean and environmental surveys indicate water quality was consistently within the water quality threshold for the previous bathing season and confirmed through the pre-season sampling results. Sampling may also be reduced to once per month for public beaches that historically fail to meet water quality thresholds for previous or entire bathing seasons. In this case, the medical officer of health shall implement a communication strategy to minimize use of the beach by the public (i.e. permanent posting).

Geometric Mean for Recreational Water Monitoring

1) The board of health shall review the bacterial test results, as calculated using the geometric mean, along with other environmental factors, to determine appropriate actions. For sample calculations on how to calculate the geometric mean refer to *Calculating the Geometric Mean (*Appendix B).

   The geometric mean is a calculation used to average the bacterial levels of *E. coli* in samples collected from recreational water. Monitoring public beaches for *E. coli* bacteria and the use of the geometric mean approach permits more meaningful statistical evaluations. Assessment of the bacterial quality of recreational water requires more than a single result. Due to the uneven distribution of bacteria throughout a liquid medium, the count of microorganisms in a single "grab sample" does not represent the average concentration in a particular body of water. A random sample may demonstrate a concentration that is far above or below the average. To obtain an accurate assessment of the quality of recreational water, the results of a number of samples shall be combined in such a way that a random, unrepresentative sample will not unduly influence the average. Using the *Guidelines for Canadian Recreational Water Quality, 2012*,[4] the following values apply:

- Geometric mean concentration (minimum of five samples): ≤ 200 *E. coli* / 100 mL
- Single-sample maximum concentration: ≤ 400 *E. coli* / 100 mL

Predictive Modeling

2) Predictive modeling is a statistical equation tool that the board of health may use to predict *E. coli* levels of recreational water based on turbidity, rainfall, wave height, wind speed, ambient air and water temperatures, etc. Predictive modelling, with sufficient data and observations, may allow public health inspectors to assess conditions at public beaches in real time. While the application of predictive modelling may not be suitable for all beaches, boards of health are encouraged to refer to the *Feasibility of Predictive Modeling for Beach Management in Ontario, 2013.*[6]

Communication to the Public

1) The board of health shall communicate the outcomes of recreational water sampling test results to owners/operators of public beaches as soon as possible and provide advice for appropriate action. Regular communication channels that provide information and the status of public beaches to the public shall be updated as new results are received. These communication channels to the public may include website announcements, media releases, automated phones/hotlines, public health unit disclosure systems, on-site postings at public beaches, etc.

Responding to Adverse Events at Public Beaches

2) A board of health that receives complaints or reports of adverse events related to recreational water use at public beaches shall assess the issue within 24 hours of notification, to determine the level of potential impact and the appropriate response required.

3) The board of health shall establish communication strategies with partner agencies to provide clear and timely information to the public regarding potential risks associated with the use of public beaches. Communications may include, but are not limited to: posting information on the board of health website, disseminating written materials, issuing media releases, and informing local stakeholders, including municipalities.

Potential adverse events at public beaches may include:

- Exceedance of recreational water threshold for bacteria;
- Chemical, oil, sewage or other waste spill;
- Waste water treatment plant bypass (unintentional or controlled);
- Blue-green algae bloom (confirmed by visual observation or laboratory test);
- Heavy algae growth or accumulation other than blue-green algae;
- Fish or other wildlife die-off at the beach; and
- Visible debris, metal, or sharp objects in the water or beach area.

Waterfront Areas at Recreational Camps

1) The board of health shall assess waterfronts used for aquatic activities at recreational camps during routine inspections and re-inspections to minimize the risks to the health and safety of the users. As part of the assessment, public health inspectors shall collect the following information:
   a) A description of aquatic activities undertaken at the waterfront and applicable supervision procedures;
   b) Identification of designated swimming areas by visual markers, including precautionary signs;
   c) Available safety equipment (reaching pole or other rescue devices as recommended by recreational water safety associations); and
   d) Availability of emergency communication procedure, including communication devices.
2) Should the operator of the recreational camp wish to implement a recreational water sampling program, the public health inspector shall provide advice to assist in developing the program based on the approach used by the board of health for public beaches.

Operators of recreational camps with waterfronts should be encouraged to consult with industry water safety experts to develop internal policies and procedures for the safe operation of recreational camps and waterfront areas.

Glossary

Adverse Condition: a situation that may be potentially harmful to the health and safety of beach and recreational water users.

Advisory: a precautionary notice that informs members of the public about specific risks to health and safety to allow them to take measures to protect themselves.

Bathing Area: the area at a public beach used for bathing. The bathing area should be determined in collaboration with the beach owner/operator.

Bathing Season: the period of time each year that a public beach is used for bathing. Bathing season generally begins in June and ends early September. The duration of the recreational water quality sampling program may vary depending on local needs as determined by the operators, primarily municipalities.

Beach Closure: to cause restriction/elimination of public access to a beach or specific beach areas where a significant risk to health and safety has been identified. The board of health will direct the owner/operator of the beach to post signage and/or erect barriers/barricades at appropriate locations to reduce the risk of public exposure to the health hazard.

Beach Posting: to communicate advisories and/or place signs in response to a

swimming advisory or beach closure. Postings are typically communicated through an update on the local health unit's website or through local media/newspapers. Beach postings inform the public about potential risks to health and safety, based on an assessment of those risks. The owner/operator of the beach is primarily responsible for posting and removing the advisory/signs as conditions warrant.

Environmental Survey: an inspection of the physical beach area to identify changes to existing structures, installation of new structures (e.g., drainage lines, storm water outfalls, signs, etc.), changes in beach landscape that affects runoff, potential pollution sources, garbage or debris collection, and any other environmental factor that has the potential to impact water quality, water safety, and/or public health.

Geometric Mean Calculation: for the purposes of this guideline, the geometric mean is a calculation used to average the bacterial levels of *E. coli* in samples collected from recreational water.

Public Beach: includes any public bathing area owned/operated by a municipality to which the general public has access, and where there is reason to believe that there is recreational use of the water (e.g., beach signage, sectioned off swimming area, water safety/rescue equipment, lifeguard chairs, etc.), which may result in waterborne illness or injury as determined by the local medical officer of health.

Recreational Camp Waterfront: a waterfront area that is used for aquatic activities as part of a Recreational Camp, as defined in the Recreational Camps Regulation under the HPPA.

Swimming Advisory: may be issued when beach water quality is not suitable for recreational use. For example, exceedance of the recreational water accepted value for *E. coli* bacteria.

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6. Ontario. Ministry of Health and Long-Term Care. The feasibility of predictive modeling for beach management in Ontario, 2013 [unpublished]. Toronto, ON: Queen's Printer for Ontario; 2013.

Appendix A: Sample Report

Environmental Survey - Field Data Report	
Name of Beach:	Beach ID Number:
Surveyor Name:	Posted at Time of Sampling: □Yes □No
Address/Location:	Latitude: Longitude:
Date of Sampling:	Time at Sampling:
Name of Water Body:	Length of Bathing Area (m):
Are maps of the beach area attached? □Yes □No Are maps of the watershed attached? □Yes □No	Owner/Operator:
Part I: General Beach Conditions	
Air Temperature:_____ □°C □°F	Water Temperature:___ □°C □°F
Rain Intensity: □Light (<2.5mm/hr.) □Medium (2.6-7.5mm/hr.) □ Heavy (>7mm/hr.) □None	Rainfall: □ <24 hrs. ____ cm rainfall measured/reported □ <48 hrs. ____ cm rainfall measured/reported □ <72 hrs. ____ cm rainfall measured/reported □ >72 hrs. ____ cm rainfall measured/reported
Water Clarity (Turbidity): □<100 cm □>100 cm Value (NTU):	
Wave Height (cm):_____	
Sky Conditions: □Sunny □Mostly Sunny □Partly Cloudy □Mostly Cloudy □Cloudy	
Wind Direction: □None □Away from Shore □Toward Shore □Parallel to Shore Wind Speed:_____	
Beach Materials/Sediments: □Sandy □Mucky □Rocky □Other (specify) _____	
Subsurface Conditions: Does the bottom consist of material that is easily stirred up? □Yes □No Are the slopes gentle? □Yes □No Is the bottom free of large rocks, sharp objects and other obstructions? □Yes □No Is the bottom free of weeds? □Yes □No Is the beach susceptible to undertows or rip currents? □Yes □No	
Comments/Observations:	

Part II: Use of Beach			
Type: □Residential □Industrial □Commercial □ Agricultural □Other (specify)_____			
Water Body Uses: □Boating □Fishing □Windsurfing □ Bathing/Swimming □Recreational Camp □Aquatic Classes □Scuba Diving □Other (specify)_____			
Approximate number of people observed in the water:__		Approximate number of people using the beach but not in the water at time of observation:_____	
Part III: Potential Pollutants			
Type of Source	**Concern**		**Describe how this source might contribute to beach pollution and its frequency of contribution**
Wildlife/Waterfowl	□Yes	□No	
Domestic Animals	□Yes	□No	
Waterwaste Discharges	□Yes	□No	
Sewage Overflows	□Yes	□No	
Septic Systems	□Yes	□No	
Stormwater/Natural Outfalls	□Yes	□No	
Agricultural/Urban Runoff	□Yes	□No	
Watercraft Access/Boat Dockage	□Yes	□No	
Seasonal Watercourse	□Yes	□No	
Chemical Hazards	□Yes	□No	
Prone to Algal blooms	□ Yes	□ No	

Part IV: Water Quality			
Sample Number	Sample Point	Parameter: □E. coli □Other (specify)	Comments
Geometric Mean:			
Surveyor Signature:			

Part V: Diagram of Sampling Location and Pollution Sources
Include location of: sample points, pollution sources, marinas, boat dockage, fishing, bathing/swimming, jetty, sanitary facilities, restaurants/bars, playground, parking lot(s), etc. *Remember to show North

Appendix B: Calculating the Geometric Mean

Definition of Geometric Mean: An averaging method used to reduce the effect of a single high reading.

Mathematical Definition: the n^{th} root of the product of n values.

Practical Definition: the average of the logarithmic values of a data set, converted back to a base 10 number.

The geometric mean could be thought of as the average of the logarithmic values, converted back to a base 10 number.

The formula for the geometric mean is:

Geometric Mean = $((X_1)(X_2)(X_3).....(X_n))^{1/n}$

where X_1, X_2, etc. represent the individual data points and n is the total number of data points used in the calculation.

Calculating the Geometric Mean

To calculate a geometric mean:

1. Compute the natural logarithm (ln) of each sample result.
2. Add the logarithm of each sample result together.
3. Divide the result by the number of samples.
4. Convert this product (logarithm of the geometric mean) back to an arithmetic value by computing the antilog of the product.

The formula for the logarithm of the geometric mean is:

Logarithm of Geometric Mean = $((\ln X_1) + (\ln X_2) + (\ln X_3) +.....+ (\ln X_N))/n$

The following example illustrates how this is done:

Where <10, >1000, <10, 30, and 240 are sample data results of colony-forming units (cfu) per 100 ml of water, calculate the geometric mean. This calculation can be performed on a scientific calculator using the “log” key. For example, enter “10” on the calculator and then press the “log” key.

Table 3: Example Geometric Mean Calculation

Sample #	Sample Result	Logarithms
Sample 1	<10	ln(10) = 2.303
Sample 2	>1000	ln(1000) = 6.908
Sample 3	<10	ln(10) = 2.303
Sample 4	30	ln(30) = 3.401
Sample 5	240	ln(240) = 5.481

Average of logarithms = 4.079

Antilog of average = 59

In this example, the geometric mean for the data is 59 cfu/100ml of water. Public health inspectors would use this value in addition to other public health factors to determine the necessity for posting or other advisory actions.

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Ministry of Health and Long-Term Care

Qualifications for Public Health Professionals Protocol, 2018

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Preamble

The Ontario Public Health Standards: Requirements for Programs, Services, and Accountability (Standards) are published by the Minister of Health and Long-Term Care under the authority of section 7 of the *Health Protection and Promotion Act* (HPPA) to specify the mandatory health programs and services provided by boards of health.[1,2] The Standards identify the minimum expectations for public health programs and services. Boards of health are accountable for implementing the Standards including the protocols and guidelines that are referenced in the Standards. Protocols are program and topic-specific documents incorporated into the Standards which provide direction on how boards of health shall operationalize specific requirement(s) identified within the Standards.

Purpose

The purpose of this protocol is to provide direction to boards of health with respect to required qualifications for certain public health professionals employed by the board of health.

This protocol is not exhaustive of all classifications of public health professionals that may be employed by boards of health. Boards of health may have additional criteria that are important to their organization when hiring public health professionals. These additional criteria are not considered in this protocol.

Qualifications for Medical Officer of Health (MOH), Associate Medical Officer of Health (AMOH), and Public Health Nurse are specified in legislation and regulation, and remain unchanged.

- For MOH and AMOH qualifications, refer to section 64 of the HPPA and to section 1 of Regulation 566 (Qualifications of Boards of Health Staff) under the HPPA.
- For Public Health Nurse qualifications, refer to section 71 (3) of the HPPA and to section 6 of Regulation 566 (Qualifications of Boards of Health Staff) under the HPPA.

Reference to the Standards

This section identifies the standards and requirements to which this protocol relates.

This protocol relates to the Public Health Practice Domain within the Organizational Requirements, specifically:

Requirement 4. The board of health shall employ qualified public health professionals in accordance with the *Qualifications for Public Health Professionals Protocol, 2018* (or as current).

Operational Roles and Responsibilities

Dentist

1) The board of health shall only employ Dentists with the following qualification:
   a) General or Specialty certificate of registration from the Royal College of Dental Surgeons of Ontario.

Public Health Dentist

2) The board of health shall only employ Public Health Dentists with the following qualification:
   a) Specialty certificate of registration in public health dentistry (Dental Public Health) from the Royal College of Dental Surgeons of Ontario.

Dental Hygienist

3) The board of health shall only employ Registered Dental Hygienists with the following qualification:
   a) General or Specialty certificate of registration from the College of Dental Hygienists of Ontario.

Registered Dietitian

4) The board of health shall only employ Registered Dietitians with the following qualification:
   a) General certificate of registration from the College of Dietitians of Ontario

Public Health Inspector

5) The board of health shall only employ Public Health Inspectors with the following qualification:
   a) Certificate granted by the Board of Certification of Public Health Inspectors of The Canadian Institute of Public Health Inspectors; or
   b) Certificate issued prior to the 1st day of July, 1979 by The Canadian Public Health Association.

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1. Ontario. Ministry of Health and Long-Term Care. Ontario public health standards: requirements for programs, services, and accountability, 2018. Toronto, ON: Queen's Printer for Ontario; 2018. Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/default.aspx
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Ministry of Health and Long-Term Care

Rabies Prevention and Control Protocol, 2018

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Preamble

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Purpose

This protocol has been developed to provide direction to boards of health in the implementation of specific requirements of the Infectious and Communicable Diseases Prevention and Control Standard. The purpose of this protocol is to prevent a human case of rabies by standardizing animal rabies surveillance and the management of potential human rabies exposures.

Further direction is also articulated, with respect to human rabies case and contact management, in the disease-specific chapter for rabies which is included in Appendix A of the most current version of the Infectious Diseases Protocol.

Reference to the Standards

This section identifies the standards and requirements to which this protocol relates.

Infectious and Communicable Diseases Prevention and Control

Requirement 1. The board of health shall conduct population health assessment and surveillance regarding infectious and communicable diseases and their determinants. These efforts shall include:

a) Reporting data elements in accordance with the *Health Protection and Promotion Act*; the *Infectious Diseases Protocol, 2018* (or as current)*;* the *Rabies Prevention and Control Protocol, 2018* (or as current)*;* the *Sexual Health and Sexually Transmitted/Blood-Borne Infections Prevention and Control Protocol, 2018* (or as current)*;* and the *Tuberculosis Prevention and Control Protocol, 2018* (or as current);
b) Conducting surveillance and epidemiological analysis, including the monitoring of trends over time, emerging trends, and priority populations in accordance with the *Infectious Diseases Protocol, 2018* (or as current); the *Population Health Assessment and Surveillance Protocol, 2018* (or as current); the *Rabies Prevention and Control Protocol, 2018* (or as current); the *Sexual Health and Sexually Transmitted/Blood-*

Borne Infections Prevention and Control Protocol, 2018 (or as current); and the *Tuberculosis Prevention and Control Protocol, 2018* (or as current);

c) Responding to international, Federal/Provincial/Territorial and local changes in diseases epidemiology by adapting programs and services; and
d) Using the information obtained through assessment and surveillance to inform program development regarding communicable diseases and other infectious diseases of public health importance.

Requirement 4. The board of health shall work with appropriate partners to increase awareness among relevant community partners, including correctional facilities, health care, and other service providers, of:

a) The local epidemiology of communicable diseases and other infectious diseases of public health importance;
b) Infection prevention and control practices; and
c) Reporting requirements for diseases of public health significance, as specified in the Health Protection and Promotion Act. Reporting requirements for reportable diseases, as specified in the *Health Protection and Promotion Act*.[2]

Requirement 5. The board of health shall communicate, in a timely and comprehensive manner, with all relevant health care providers and other partners about urgent and emerging infectious diseases issues.

Requirement 6. The board of health shall, based on local epidemiology, supplement provincial efforts in managing risk communications to appropriate stakeholders on identified risks associated with infectious diseases and emerging diseases of public health importance.

Requirement 11. The board of health shall provide public health management of cases, contacts, and outbreaks to minimize the public health risk in accordance with the *Infectious Diseases Protocol, 2018* (or as current); the *Institutional/Facility Outbreak Management Protocol, 2018* (or as current); the *Management of Potential Rabies Exposures Guideline, 2018* (or as current); the *Rabies Prevention and Control Protocol, 2018* (or as current); the *Sexual Health and Sexually Transmitted/ Blood-Borne Infections Prevention and Control Protocol, 2018* (or as current); and the *Tuberculosis Prevention and Control Protocol, 2018* (or as current).

Requirement 13. The board of health shall receive and respond to all reported cases of potential rabies exposures received from the public, community partners, and health care providers in accordance with the *Health Protection and Promotion Act*; the *Management of Potential Rabies Exposures Guideline, 2018* (or as current); and the *Rabies Prevention and Control Protocol, 2018* (or as current).

Requirement 14. The board of health shall address the prevention and control of rabies threats as per a local Rabies Contingency Plan and in consultation with other relevant

agencies* and orders of government, in accordance with the *Management of Potential Rabies Exposures Guideline, 2018* (or as current) and the *Rabies Prevention and Control Protocol, 2018* (or as current).

Requirement 21. The board of health shall ensure 24/7 availability to receive reports of and respond to:

a) Infectious diseases of public health importance in accordance with the *Health Protection and Promotion Act*; the *Mandatory Blood Testing Act, 2006*; the *Infectious Diseases Protocol, 2018* (or as current); and the *Institutional/ Facility Outbreak Management Protocol, 2018* (or as current);
b) Potential rabies exposures in accordance with the *Health Protection and Promotion Act*; the *Management of Potential Rabies Exposures Guideline, 2018* (or as current); and the *Rabies Prevention and Control Protocol, 2018* (or as current); and
c) Animal cases of avian chlamydiosis, avian influenza, novel influenza, or *Echinococcus multilocularis* infection, in accordance with the *Health Protection and Promotion Act*, the *Management of Avian Chlamydiosis in Birds Guideline, 2018* (or as current); the *Management of Avian Influenza or Novel Influenza in Birds or Animals Guideline, 2018* (or as current); and the *Management of Echinococcus Multilocularis Infections in Animals Guideline, 2018* (or as current).

Operational Roles and Responsibilities

This protocol shall be followed in accordance with the ministry's *Management of Potential Rabies Exposures Guideline* and the Rabies Vaccine chapter of the *Canadian Immunization Guide* (or any National Advisory Committee on Immunization statements published since the most recent edition of the immunization guide), as current.[3,4] The board of health shall consult the *Canadian Immunization Guide* for information on vaccine schedule, dose, route of administration, considerations for immunocompromised persons, and products licensed for rabies post-exposure prophylaxis (PEP) use in Canada.

Animal surveillance and contingency planning

1) The board of health shall monitor case numbers of rabies positive animals in its jurisdiction. This information shall be collected from animal test reports from the Canadian Food Inspection Agency (CFIA), the Ministry of Natural Resources and Forestry, and the Canadian Wildlife Health Cooperative. The board of health shall monitor case numbers of rabies positive animals in bordering health units in order to assess potential rabies threats locally. This information shall be collected from the Ministry of Natural Resources and Forestry's quarterly publication, the Rabies Reporter. With respect to rabies positive animals, the board of health shall obtain information on:

*Currently these agencies include the Ministry of Natural Resources and Forestry (MNRF), the Canadian Food Inspection Agency (CFIA) and the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA).

a) The number of rabies positive animals;
b) The type of animal; and
c) The location of the animal, by county or district.

The information shall be monitored over time.

2) At the request of the ministry, the board of health shall develop and maintain a Rabies Contingency Plan within the timeline prescribed by the ministry. The ministry will provide a situation-specific template to the board of health at the time of the request.

Management of potential rabies exposures

Notification

3) Section 2(1) of Regulation 557 (Communicable Diseases-General) under the HPPA states that "a physician, registered nurse in the extended class, veterinarian, police officer, or any other person who has information concerning either or both of the following shall, as soon as possible, notify the medical officer of health and provide the medical officer of health with the information, including the name and contact information of the exposed person:
   a) Any bite from a mammal
   b) Any contact with a mammal that is conducive to the potential transmission of rabies to persons".[5]

   The board of health shall communicate the reporting/notification process outlined in Section 2(1) of Regulation 557 under the HPPA in writing annually to physicians, veterinarians, police officers, and nurses in the extended class (i.e., nurse practitioners).[5] The reporting/notification process shall allow for and provide an on-call system for receiving and responding on a 24 hours per day, 7 days a week (24/7) basis to any potential rabies exposures.

Investigation

4) The board of health shall have a written procedure for the investigation of human exposures to animals with the potential to transmit rabies, as follows:
   a) The board of health shall, upon receiving notification of a potential rabies exposure, initiate investigation of the incident within 24 hours of the notification.
   b) The board of health shall collect data from the investigation of an individual exposed to an animal suspected of having rabies. The data shall include information pertaining to:
      i) Person exposed:
         - Name, gender, date of birth, age;
         - Address and telephone number;
         - Whether the person has been examined by a healthcare provider; and,
         - Full name of healthcare provider.
      ii) Exposure incident:
         - Date of exposure to the animal;

- Animal species involved in the exposure;
- Geographical location of the exposure incident;
- Type of exposure (i.e., bite, non-bite, bat);
- The anatomical location of the exposure;
- Exposure circumstances (i.e., was the exposure provoked or unprovoked); and
- Animal behaviour (i.e., was behaviour normal or abnormal).

iii) Animal owner (if owned):
- Name, gender; and
- Address and telephone number.

iv) Animal:
- Species and description (animal breed, colour, markings, general size/weight);
- Name of animal (if animal has a name);
- Age of animal;
- Origin of animal (e.g., acquired from breeder, shelter/rescue, pet store, internet purchase, etc.);
- Length of time the animal has been in the care of the present owner;
- Presence/evidence of any recent wounds or scars that would suggest the animal has itself been recently bitten;
- Animal's travel history, both domestic and international (including city, province/state/region, and country of all destinations);
- Previous contact with wild animals or potential for such (e.g., animal allowed to roam unsupervised or out of sight, bats found in the house, etc.);
- Previous contact with other domestic animals of unknown rabies immunization status (e.g., in dog parks, etc.)
- Rabies immunization status of the animal or, if the animal is a puppy or kitten younger than three months of age, the immunization status of the animal's mother; and
- Rabies immunization status of other animals residing with the animal involved in the biting incident.

Risk assessment

5) The board of health shall conduct a risk assessment on all individuals with potential rabies exposures to determine the required actions. A recommendation regarding the need for PEP, based on the outcome of the risk assessment, shall be communicated to the attending healthcare provider. The attending healthcare provider ultimately decides whether PEP will be administered.

   The risk assessment shall include consideration of:
   a) Type of exposure (i.e., bite, non-bite, bat);
   b) The anatomical location of the exposure;
   c) The risk of rabies in the animal species involved;

d) The presence of rabies in the area where the incident occurred;
e) Risk of rabies exposure in the implicated animal (travel history, exposure to wildlife/other domestic animals of unknown rabies status, etc.)
f) The behaviour and health status of the implicated animal;
g) Exposure circumstances (i.e., provoked or unprovoked exposure); and
h) Rabies immunization status of the animal or the animal's mother, if the animal is a puppy or kitten younger than three months of age.

6) In situations where the risk assessment leads to a recommendation for the administration of PEP, and the healthcare provider has decided to administer PEP, the following additional information shall also be collected from the exposed individual in order to inform appropriate PEP dose and schedule recommendations:
   a) Residency status in Ontario;
   b) Weight;
   c) Rabies immunization status, including date of last immunization, type of vaccine used (human diploid vaccine, purified chick embryo cell vaccine, or other), information on compliance with vaccine administration schedules, and/or any rabies antibody titre levels available; and
   d) Immunocompetency - Refer to Part 3 of the *Canadian Immunization Guide* for an overview of which individuals are considered immunocompromised.[6]

Animal management

7) The board of health shall ensure that when a dog, cat, or ferret requires a 10-day observation period, the animal is confined and isolated from all animals and persons (except the person caring for the dog, cat, or ferret) for at least 10 days from the date of exposure (day zero) in accordance with section 3(2) of Regulation 557 under the HPPA.[5]

   The board of health shall ensure that when horse, cow, bull, steer, calf, sheep, pig or goat requires a 14-day observation period, the animal is confined and isolated from all animals and persons (except the person caring for the horse, cow, bull, steer, calf, sheep, pig or goat) for at least 14 days from the date of exposure (day zero) in accordance with section 3(2.1) of Regulation 557 under the HPPA.[5]

   The potential for observation periods for other animals (e.g., exotic pets) shall be determined on a case-by-case basis, in consultation with the ministry.

   The board of health shall advise owners of animals under an observation period that the animal(s) cannot be vaccinated prior to the completion of the observation period.

8) The board of health shall check the rabies vaccination status of any animal involved in a human exposure incident, as well as any other animals residing with that animal. The boards of health that are listed in Regulation 567 (Rabies Immunization) under the HPPA,[7] shall ensure that animals identified as not being up to date on their rabies vaccination status are vaccinated for rabies after the observation period is completed. Animals over 3 months of age should be brought up to date on their rabies vaccinations within 14 days of the completion of the observation period. Animals

under 3 months of age at the time of an exposure should be vaccinated for rabies by the time they are 3.5 months of age.

9) Where the board of health has reason to believe that an animal involved in a human exposure is rabid or has been in contact with another animal known or strongly suspected of having rabies, the board of health shall notify and furnish particulars to the ministry

10) Where the board of health determines that an animal requires rabies testing following a potential human exposure, the board of health shall submit a Request for rabies specimen collection to the Ontario Association of Veterinary Technicians Rabies Response Program (OAVT RRP).

11) The board of health shall order dedicated animal specimen shipping supplies from the Ontario Government Pharmacy and Medical Supply Service, and shall ensure that adequate stocks of shipping supplies are on hand at all times. Shipping supplies shall be made available to Registered Veterinary Technicians specified by the OAVT RRP, who will be dispatched to collect, process, and ship any animal specimens requiring rabies testing at the board of health's request.

Vaccine management

12) The board of health shall follow vaccine handling guidelines as outlined in the *Vaccine Storage and Handling Protocol, 2018* (or as current).[8]

13) If a board of health provides rabies vaccine and rabies immune globulin (RabIg) on a contingency basis to institutions, then the board of health shall arrange annually with those institutions to notify the board of health within one business day of beginning a course of rabies PEP with vaccine and RabIg in order for the board of health to meet its requirements as per section 22) below.

Rabies prophylaxis administration

14) The board of health shall ensure individuals requiring prophylaxis have access to rabies PEP within 24 hours of receiving a request for PEP made by a healthcare provider.

15) The board of health shall limit access to publicly-funded rabies PEP biologicals (RabIg and vaccine) to:
   a) residents of Ontario with a potential rabies exposure acquired either domestically or while travelling internationally; or
   b) residents of Canada with a potential rabies exposure acquired while in Ontario, or requiring completion of PEP initiated within their home province or territory (with appropriate documentation of initiation of PEP within that province or territory)

   The board of health shall direct non-residents of Canada requesting rabies PEP while in Ontario to obtain rabies biologicals from a healthcare provider at their own cost. Healthcare providers shall, in turn, be directed to order rabies biologicals for non-

residents from a pharmacy. Access to publicly-funded rabies PEP biologicals shall only be granted to non-residents of Canada under extenuating circumstances.

16) If recommended on the basis of a risk assessment, PEP shall be started as soon as possible after exposure and shall be offered to exposed individuals regardless of the elapsed interval.

17) Based on the outcome of a risk assessment, PEP may be withheld until the Fluorescent Antibody Test (FAT) result is available. The FAT report can be obtained within six to 24 hours of receipt of an animal specimen at the laboratory.

18) If the suspect animal is a cat, dog, ferret or domestic livestock species and is available for observation, then PEP may be withheld pending the animal's status during the observation period. If the animal shows signs of rabies during the observation period, PEP should be initiated, and the animal shall be examined by a veterinarian as soon as possible in order to determine whether euthanization and submission for rabies testing is warranted. If the animal rabies test results are negative, then PEP can be discontinued.

19) Incubation periods of less than one week have been reported after severe bites to the face, head, and neck. For bite wounds to the head and neck region, prophylaxis should generally begin immediately and not be delayed for laboratory testing or the observation period (for this situation, the board of health shall deliver the PEP to the health care facility immediately, *i.e.* sooner than the 24 hour period identified in 14) above).

    In certain cases, prophylaxis following severe bites to the face head and neck may be delayed pending the outcome of observation periods or animal testing. Considerations that may support delaying initiation of prophylaxis include:

    - If the animal is a domestic pet;
    - If the animal is fully vaccinated;
    - If the bite was provoked; and
    - If there is very low prevalence of rabies in the area.

20) Postexposure prophylaxis that has been initiated may be discontinued after consultation with public health/infectious disease experts if the brain of the animal tests negative on the Fluorescent Antibody Test for rabies.

21) If a rabies exposure is considered likely, such as exposure to a raccoon, skunk or fox within a Rabies Surveillance and Control Zone established by the Ministry of Natural Resources and Forestry, or exposure to a dog in a country with endemic canine rabies, then PEP should never be delayed.

Reporting

22) The board of health shall report data for individuals receiving PEP as specified in the integrated Public Health Information System (iPHIS) or any other method specified by the ministry, and shall comply with the minimum data elements identified in:
    a) Regulation 569 (Reports) under the HPPA;[9]

b) Disease specific user guides published by the Ontario Agency for Health Protection and Promotion (herein referred to as Public Health Ontario (PHO)); and
c) Bulletins and directives issued by PHO.

The data shall be entered into iPHIS or reported using any other method specified by the ministry within five business days after the initiation of the PEP.

Human case management

23) The board of health, upon receiving a report of a suspect or confirmed human case of rabies, shall immediately report by telephone to the ministry. The notification shall be made verbally. In addition, data pertaining to the case shall be reported in iPHIS or any other method specified by the ministry within one business day of notification.

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Ontario

Ministry of Health and Long-Term Care

Recreational Water Protocol, 2018

Population and Public Health Division,
Ministry of Health and Long-Term Care

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Ontario

Preamble

The Ontario Public Health Standards: Requirements for Programs, Services, and Accountability (Standards) are published by the Minister of Health and Long-Term Care under the authority of section 7 of the *Health Protection and Promotion Act* (HPPA) to specify the mandatory health programs and services provided by boards of health.[1,2] The Standards identify the minimum expectations for public health programs and services. Boards of health are accountable for implementing the Standards including the protocols and guidelines that are referenced in the Standards. Protocols are program and topic-specific documents incorporated into the Standards which provide direction on how boards of health shall operationalize specific requirement(s) identified within the Standards.

Purpose

The purpose of this protocol is to assist in the prevention and reduction of water-borne illness and injury related to recreational water use by providing direction to boards of health on the delivery of local, comprehensive recreational water programs, which include, but are not limited to:

- Surveillance and inspection of public recreational water facilities, public beaches and waterfronts that are part of a recreational camp;
- Investigation of, and response to, adverse events and complaints at public recreational water facilities, public beaches and waterfronts that are part of a recreational camp, and communication strategies for the public and facility owner/operators;
- Promoting awareness of safe use and operation of public recreational water facilities, public beaches and waterfronts that are part of a recreational camp, and training of owner/operators of public recreational water facilities and camps; and

Legislation and regulations that are relevant to this protocol include:

- *Public Pools* regulation under the HPPA including spas and other recreational water;[2-4]
- *Recreational Camps* under HPPA;[2,5]
- *Health Protection and Promotion Act*, RSO 1990, c H.7, s 1 (1);[2] and
- Ontario *Building Code* regulation, c.1, s.1.4.1.[6]

Reference to the Standards

This section identifies the standards and requirements to which this protocol relates.

Effective Public Health Practice

Requirement 9. The board of health shall publicly disclose results of all inspections or information in accordance with the *Electronic Cigarettes Protocol, 2018* (or as current); the *Food Safety Protocol, 2018* (or as current); the *Health Hazard Response Protocol,*

2018 (or as current); the *Infection Prevention and Control Complaint Protocol, 2018* (or as current); the *Infection Prevention and Control Disclosure Protocol, 2018* (or as current); the *Infection Prevention and Control Protocol, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); the *Tanning Beds Protocol, 2018* (or as current); and the *Tobacco Protocol, 2018* (or as current).

Safe Water

Requirement 1. The board of health shall:

a) Conduct surveillance of:
   - Drinking water systems and associated illnesses, risk factors, and emerging trends;
   - Public beaches and water-borne illnesses associated with recreational water, risk factors, and emerging trends; and
   - Recreational water facilities;

b) Conduct epidemiological analysis of surveillance data, including monitoring of trends over time, emerging trends, and priority populations; and

c) Use the information obtained to inform safe water programs and services

in accordance with the *Infectious Diseases Protocol, 2018* (or as current); the *Population Health Assessment and Surveillance Protocol, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); and the *Small Drinking Water Systems Risk Assessment Guideline, 2018* (or as current).

Requirement 3. The board of health shall ensure the availability of education and training for owners/operators of small drinking water systems and recreational water facilities in accordance with the *Operational Approaches for Recreational Water Guideline, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); and the *Small Drinking Water Systems Risk Assessment Guideline, 2018* (or as current).

Requirement 5. The board of health shall provide all the components of the Safe Water Program in accordance with:

a) The *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current) and all applicable statutes and regulations to protect the public from exposure to unsafe drinking water; and

b) The *Operational Approaches for Recreational Water Guideline, 2018* (or as current) and the *Recreational Water Protocol, 2018* (or as current), to reduce the risks of illness and injuries at public beaches and recreational water facilities.

Requirement 8. The board of health shall ensure 24/7 availability to receive reports of and respond to:

a) Adverse events related to safe water, such as reports of adverse drinking water of drinking water systems, governed under the Health Protection and Promotion Act or the Safe Drinking Water Act, 2002;

b) Reports of water-borne illnesses or outbreaks;
c) Safe water issues arising from floods, fires, power outages, or other situations that may affect water safety; and
d) Safe water issues relating to recreational water use including public beaches in accordance with the Infectious Diseases Protocol, 2018 (or as current); Operational Approaches for Recreational Water Guideline, 2018 (or as current); the Recreational Water Protocol, 2018 (or as current); the Safe Drinking Water and Fluoride Monitoring Protocol, 2018 (or as current); and the Small Drinking Water Systems Risk Assessment Guideline, 2018 (or as current).

Operational Roles and Responsibilities

Surveillance and inspection

Inventory of public recreational water facilities, public beaches and recreational camp waterfronts

1) The board of health shall maintain a current inventory or inventories of all public recreational water facilities and recreational camp waterfront areas within the health unit, and public beaches within the health unit, as defined in this protocol:
   a) Public recreational water facilities;
   b) Recreational camp waterfront areas;
   c) Public beaches;[*] and
   d) Public beach areas within provincial parks.[†]

Assessment and inspection of public recreational water facilities and public beaches

1) Inspections of public recreational water facilities carried out by boards of health shall include but are not limited to:
   a) Observations to determine compliance with applicable facility and water safety regulations under the HPPA; including the review of test logs and response procedures;[2]
   b) Testing water quality parameters and collection of water samples, as applicable and as deemed necessary; and
   c) Communication of inspection results and, if applicable, requirements to the owner or operator of the recreational water facility.

Public pools and public spas

1) The board of health shall:

[*] The board of health is not responsible for routine monitoring of private residential beaches.
[†] Public beach areas within provincial parks are monitored and managed by the Ministry of Natural Resources and Forestry in consultation with the board of health.

a) Upon notification, inspect public pools and public spas prior to opening or reopening after construction, alteration, or closure of more than four weeks to determine compliance with Ontario regulation 565 and 428/05 respectively;[3,4]
b) Inspect public pools, and public spas that are open year-round at least once every three months while operating to determine compliance with Ontario regulation 565 and 428/05 respectively;‡, [3,4]
c) Inspect seasonal public pools and public spas that are open only part of the year at least once every three months while operating to determine compliance with Ontario regulation 565 and 428/05 respectively;[3,4]
d) Inspect public pools and public spas that are open for a short period of time (i.e., less than 4 weeks) at least once per year to determine compliance with Ontario regulation 565 and 428/05 respectively;[3,4] and
e) Conduct additional inspections of public pools and public spas as necessary to address non-compliance with Ontario regulation 565 and 428/05 respectively, observed during previous inspection(s); to investigate complaints and/or reports of illness, injury or death; and/or to monitor the safety of the facilities.[3,4]

Public wading pools, spray/splash pads and other public recreational water facilities (e.g., waterslide receiving basins)

1) The board of health shall:
   a) Inspect new public wading pools, spray/splash pads and other public recreational water facilities prior to opening or reopening after construction, alteration.
   b) Inspect public wading pools; splash pads/spray pads and other public recreational water facilities (e.g., water slide receiving basins) at least once per year while operating to monitor the safety of these facilities. The board of health shall conduct these inspections in accordance with the most current version of the *Operational Approaches for Recreational Water Guideline, 2018* (or as current);[7] and
   c) Conduct additional inspections of public wading pools, spray/splash pads and other public recreational water facilities (e.g., waterslide receiving basins) as necessary to follow up on observations from previous inspection(s) to investigate complaints and/or reports of illness, injury or death; and/or to monitor the safety of the facilities.

Public beaches

1) The board of health shall undertake the following activities using the *Operational Approaches for Recreational Water Guideline, 2018* (or as current):[7]

‡ Once every three months is defined as one inspection occurring within each three month period of the calendar year, based on fixed dates (January 1 – March 31; April 1 – June 30; July 1 – September 30; October 1 – December 31).

a) Conduct an assessment of all public beaches annually, including an environmental survey and review of historical and epidemiological data, to:
   i) Confirm the inventory of beaches that require monitoring as per this protocol;
   ii) Determine the suitability of the site for public recreational use supported by a water sampling program and appropriate level of surveillance, in collaboration with the owner/operator;
b) Conduct routine beach surveillance of all public beaches, including inspection of public beaches after operations commence at least once a week during the period of operation or use, to adequately monitor the safety of public bathing areas and establish strategies for management of health hazards. Exceptions to this are as follows:
   i) Based on a risk assessment as described in the *Operational Approaches for Recreational Water Guideline*, sampling frequency may be reduced to once per month where historical data of the geometric mean and environmental surveys indicate water quality was consistently within the water quality threshold for the previous bathing season and confirmed through the pre-season sampling results.
   ii) Sampling may also be reduced to once per month for public beaches that historically fail to meet water quality thresholds for previous or entire bathing seasons. In this case, the medical officer of health shall implement a communication strategy to minimize use of the beach by the public (i.e. permanent posting).
c) Where weekly sampling is unduly challenging (e.g., remote north) the board of health should implement a communication strategy to reduce risk (i.e. permanent posting) and where possible, leverage resources of the local municipality to assist in monitoring public beaches; provide ongoing communication of test results and recommend actions to public beach owners or operators; and
d) Communicate to the public, information on the status of public beaches including, but not limited to, beach postings and promotion of strategies to prevent illness and injury.

Table 2: Summary of Inspection Frequency for Public Recreational Water

	Pools and Spas			Wading Pools, Spray/Splash Pads, Waterslide Receiving Basins	Beaches	Recreational Camp Waterfronts
	YEAR-ROUND	SEASONAL	≤4 WEEKS PER YEAR			
Pre-opening	Prior to opening or reopening after construction, alteration, or closure of >4wks			New and/or renovated facilities	Annual survey & data review	Once per year * **See Health Hazard Response Protocol for recreational camp inspection requirements.*
Minimum frequency* **Includes pre-opening inspection, where applicable; balance must be while operating (and for single annual inspections).*	Once every 3 months	Once every 3 months while in operation	In addition to the opening inspection for the season, re-inspections to address any outstanding compliance issues	Once per year	Once a week* **Or based on a risk assessment in accordance with the Operational Approaches for Recreational Water Guideline.*	
Additional inspections may be conducted as needed (e.g., follow-up; complaints; monitoring)						

Management and response

24/7 on-call and response policy

1) The board of health shall have an on-call system for receiving and responding to reports of water-related emergencies, reports of injury, illness or death, outbreaks and incidents in the health unit on a 24 hours per day, 7 days per week (24/7) basis related to recreational water use.
2) The board of health shall act on reports related to recreational water use at public recreational water facilities and public beaches/recreational camp waterfront areas, within 24 hours of notification of the report to determine the appropriate response.

Enforcement actions and procedures

1) The board of health shall establish policies and procedures to address non-compliance with the HPPA and applicable regulations and take action with respect to recreational water use at public recreational water facilities and public beaches/recreational camp waterfront areas, where a health hazard exists or may exist during recreational water use.[2]

   The policies and procedures shall include but are not limited to:
   - Interagency collaboration, where appropriate;
   - Consideration of existing, repeat and multiple infractions of regulation; and
   - Enforcement actions under the HPPA.[2]

Liaison with owners, operators

1) The board of health shall, upon being notified or becoming aware of new public recreational water facilities, public beaches and recreational camps with a waterfront area to be used for aquatic activities, liaise with the owners/operators, to make them aware of applicable regulatory requirements and operational best practices.

Public awareness and education of operators

Community awareness and owner/operator education

1) The board of health shall work with other organizations/agencies as needed to ensure the availability of information and/or educational material to private citizens regarding the safe use of recreational water facilities referred to in this protocol.
2) The board of health shall ensure the availability of:
   a) Information and/or educational material to owners and operators, through the inspection process and at other available opportunities, regarding applicable regulations and operational procedures relevant to public recreational water facilities, public beaches and recreational camp waterfronts; and
   b) Training material, and shall promote recreational water facility training to owners and operators of public recreational water facilities. Components of a recreational water facility training program may include, but are not limited to:
      i) Public health legislation and regulations, as applicable;
      ii) Prevention of illness, injury or death;
      iii) Pool water chemistry;
      iv) Sanitary operation of other amenities in the facility;
      v) Provision of safety equipment;
      vi) Emergency communication and procedures;
      vii) Safety supervision;
      viii) Admission Standards, as applicable; and
      ix) Record keeping.

Disclosure

Public Disclosure of Inspection Results for Pools, Spas and Splash Pads

1) The board of health shall publicly disclose a summary report on each routine and complaint based inspection of all pools, spas and splash pads. Reports:

a) Must be posted on the board of health's website in a location that is easily accessible to the public within two weeks of a completed inspection. Reports must be posted for two years.
b) Can be adapted to match the visual style of the board of health's website. Boards are encouraged to integrate the required content areas listed below into existing public disclosure programs.
c) Of inspection results, must contain:
    i) The type of premises;
    ii) The name and address of the premises;
    iii) The date of inspection;
    iv) The type of inspection (e.g., routine, re-inspection, complaint based); and
    v) Inspection status (e.g., in general compliance, found to have minor infractions, infractions corrected on-site, critical infractions found requires re-inspection).
d) Must be revised with relevant additional information and include the date of the follow up action, or a subsequent report may be posted, where follow up action is required.
e) Must be compliant with relevant legislation including the *Accessibility for Ontarians with Disabilities Act* (AODA), the *French Language Services Act* (FLSA) (if applicable), the *Municipal Freedom of Information and Protection of Privacy Act* (MFIPPA) and the *Personal Health Information Protection Act* (PHIPA).[8-11]

Public Disclosure of Inspection Results for Public Beaches

1) The board of health shall publicly disclose the status of beach water quality on a weekly basis at minimum, during the operating season. The status of the public beaches will be determined by the geometric mean of water test results, predictive modelling outcomes and/or onsite observations. Reports:
    a) Must be posted on the board of health's website in a location that is easily accessible to the public immediately as they become available and must be updated whenever the beach status changes between weekly reports.
    b) Must be maintained on the website or other public disclosure program during the calendar year in which the public beach was monitored.
    c) Can be adapted to match the visual style of the board of health's website. Boards are encouraged to integrate the required content areas listed below into existing public disclosure programs.
    d) Of inspection results, must contain:
        i) The name and address of the public beach;
        ii) The date of the public beach status update (posting of results either on site or website);
        iii) The type of inspection (e.g., routine monitoring, complaint based); and
        iv) Public beach status (e.g., safe for swimming, precautionary, unsafe for swimming).

e) Must be compliant with relevant legislation including *the Accessibility for Ontarians with Disabilities Act* (AODA), the *French Language Services Act* (FLSA) (if applicable), in the *Municipal Freedom of Information and Protection of Privacy Act* (MFIPPA) and the *Personal Health Information Protection Act* (PHIPA).[8-11]

Glossary

Environmental survey: An inspection of the physical beach area to identify changes to existing structures, installation of new structures (e.g., drainage lines, storm water outfalls, signs, etc.), changes in beach landscape that affect runoff, potential pollution sources, garbage or debris collection, and any other environmental factor that has the potential to impact water quality, water safety, and/or public health.

Public wading pool: Any structure, basin, chamber, or tank containing or intended to contain an artificial body of water having a depth of water equal to 75 centimetres (30 inches) or less at any point that is provided for the recreational or instructive use of young children, other than a private residential wading pool or a wading pool for display or promotional purposes only.[5]

Public recreational water facilities include public pools, spas, wading pools, splash pads/spray pads and water slide receiving basins.

As defined in Section 1 of the HPPA, a public pool means a structure, basin, chamber or tank containing, or intended to contain, an artificial body of water for swimming, water sport, water recreation or entertainment, but does not include:[2]

i) one that is located on a private residential property, (e.g., backyard pool), under the control of the owner or occupant and that is limited to use for swimming or bathing by the owner or occupant, members of their family and their visitors; or
ii) one that is used solely for commercial display and demonstration purposes.

Recreational camp waterfront is a waterfront area that is used for aquatic activities as part of a recreational camp, as defined in Reg. 568 (Recreational Camps) under the HPPA.[2,5]

Seasonal public pools and public spas: Public pools and spas that are open only part of the year, usually during the summer months (typically located outdoors).

Public beaches include any public bathing area owned/operated by a municipality to which the general public has access, and where there is reason to believe that there is recreational use of the water (e.g., beach signage, sectioned off swimming area, water safety/rescue equipment, lifeguard chairs, etc.), which may result in waterborne illness or injury as determined by the local medical officer of health.

References

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2. *Health Protection and Promotion Act,* RSO 1990, c H.7. Available from: https://www.ontario.ca/laws/statute/90h07
3. *Public Pools,* RRO 1990, Reg 565. Available from: https://www.ontario.ca/laws/regulation/900565
4. *PUBLIC SPAS,* O Reg 428/05. Available from: https://www.ontario.ca/laws/regulation/050428
5. *Recreational Camps,* RRO 1990, Reg 568. Available from: https://www.ontario.ca/laws/regulation/900568
6. *BUILDING CODE,* O Reg 332/12, s 1.4.1. Available from: https://www.ontario.ca/laws/regulation/120332
7. Ontario. Ministry of Health and Long-Term Care. Operational approaches for recreational water guideline, 2018. Toronto, ON: Queen's Printer for Ontario; 2018. Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/protocolsguidelines.aspx
8. *Accessibility for Ontarians with Disabilities Act*, *2005,* SO 2005, c 11. Available from: https://www.ontario.ca/laws/statute/05a11
9. *French Language Services Act,* RSO 1990, c F.32. Available from: https://www.ontario.ca/laws/statute/90f32
10. *Municipal Freedom of Information and Protection of Privacy Act,* RSO 1990, c M.56. Available from: https://www.ontario.ca/laws/statute/90m56
11. *Personal Health Information Protection Act*, *2004*, SO 2004, c 3, Sched. A. Available from: https://www.ontario.ca/laws/statute/04p03

Resources

The following resources provide supplementary information and guidance regarding issues related to recreational water quality. This is not an exhaustive list and the documents listed below are subject to change.

Health Canada. Guidelines for Canadian recreational water quality. 3rd ed. Ottawa, ON: Her Majesty the Queen in Right of Canada, represented by the Minister of Health; 2012 Available from: https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidelines-canadian-recreational-water-quality-third-edition.html

Ontario. Ministry of Health and Long-Term Care. The feasibility of predictive modeling for beach management in Ontario, 2013 [unpublished]. Toronto, ON: Queen's Printer for Ontario; 2013.

Ontario. Ministry of the Environment. Technical bulletin: Is your beach a candidate for predictive modeling? [unpublished]. Toronto, ON: Queen's Printer for Ontario; 2012.

Ontario. Ministry of Health and Long-Term Care, Ontario Ministry of Natural Resources. Memorandum of understanding: Protocol for reporting adverse water quality – Provincial Parks, 2004 [unpublished]. Toronto, ON: Queen's Printer for Ontario; 2004.

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Ontario

Ministry of Health and Long-Term Care

Safe Drinking Water and Fluoride Monitoring Protocol, 2018

Population and Public Health Division,
Ministry of Health and Long-Term Care

Effective: January 1, 2018

Ontario

Preamble

The Ontario Public Health Standards: Requirements for Programs, Services, and Accountability (Standards) are published by the Minister of Health and Long-Term Care under the authority of section 7 of the *Health Protection and Promotion Act* (HPPA) to specify the mandatory health programs and services provided by boards of health.[1,2] The Standards identify the minimum expectations for public health programs and services. Boards of health are accountable for implementing the Standards including the protocols and guidelines that are referenced in the Standards. Protocols are program and topic-specific documents incorporated into the Standards which provide direction on how boards of health shall operationalize specific requirement(s) identified within the Standards.

Purpose

The purpose of this protocol is to provide direction to boards of health on the components of the Safe Water Program for the prevention and reduction of illness related to drinking water which include, but are not limited to:

- Surveillance and inspection of drinking water systems;
- Timely response to drinking water adverse events, reports of water-borne illnesses or outbreaks, and other drinking water-related issues arising from emergencies;
- Education and training of owners/operators of small drinking water systems;
- Informing the public about unsafe drinking-water conditions and providing information to respond appropriately; and
- For boards of health whose jurisdiction includes municipal water systems to which fluoride is added, monitoring community water fluoride levels and taking specific action in accordance with the level of fluoride in the water. It outlines the action(s) required when fluoride levels are below the therapeutic range (TR) of 0.6 to 0.8 ppm. *Note: Exceedances of fluoride above the Maximum Acceptable Concentration (MAC) of 1.5 ppm (mg/L) for all municipal water systems follow the same process for any exceedance of a drinking water quality standard.*

Regulations under the HPPA that are relevant to this protocol include:[2]

- Food Premises Regulation;[3]
- Recreational Camps Regulation;[4]
- Camps in Unorganized Territory Regulation;[5] and
- Small Drinking Water Systems Regulation.[6]

Other legislation and regulations that are relevant to this protocol include:

- *Safe Drinking Water Act, 2002* (SDWA);[7]
- Drinking Water Systems Regulation under the SDWA;[8]
- Drinking Water Testing Services Regulation under the SDWA;[9]
- Ontario Drinking Water Quality Standards Regulation under the SDWA;[10]
- Schools, Private Schools and Child Care Centres Regulation under the SDWA;[11]
- *Ontario Water Resources Act* (OWRA);[12] and
- *Clean Water Act* (CWA).[13]

Reference to the Standards

This section identifies the standards and requirements to which this protocol relates.

Effective Public Health Practice

Requirement 9. The board of health shall publicly disclose results of all inspections or information in accordance with the *Electronic Cigarettes Protocol, 2018* (or as current); the *Food Safety Protocol, 2018* (or as current); the *Health Hazard Response Protocol, 2018* (or as current); the *Infection Prevention and Control Complaint Protocol, 2018* (or as current); the *Infection Prevention and Control Disclosure Protocol, 2018* (or as current); the *Infection Prevention and Control Protocol, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); the *Tanning Beds Protocol, 2018* (or as current); and the *Tobacco Protocol, 2018* (or as current).

Safe Water

Requirement 1. The board of health shall:

a) Conduct surveillance of:
   - Drinking water systems and associated illnesses, risk factors, and emerging trends;
   - Public beaches and water-borne illnesses associated with recreational water, risk factors, and emerging trends; and
   - Recreational water facilities;

b) Conduct epidemiological analysis of surveillance data, including monitoring of trends over time, emerging trends, and priority populations; and

c) Use the information obtained to inform safe water programs and services in accordance with the *Infectious Diseases Protocol, 2018* (or as current); the *Population Health Assessment and Surveillance Protocol, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); and the *Small Drinking Water Systems Risk Assessment Guideline, 2018* (or as current).

Requirement 3. The board of health shall ensure the availability of education and training for owners/operators of small drinking water systems and recreational water facilities in accordance with the *Operational Approaches for Recreational Water Guideline, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); and the *Small Drinking Water Systems Risk Assessment Guideline, 2018* (or as current).

Requirement 5. The board of health shall provide all the components of the Safe Water Program in accordance with:

a) The *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current) and all applicable statutes and regulations to protect the public from exposure to unsafe drinking water; and
b) The *Operational Approaches for Recreational Water Guideline, 2018* (or as current) and the *Recreational Water Protocol, 2018* (or as current), to reduce the risks of illness and injuries at public beaches and recreational water facilities.

Requirement 6. The board of health shall inform the public about unsafe drinking water conditions and provide the necessary information to respond appropriately in accordance with the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current) and the *Small Drinking Water Systems Risk Assessment Guideline, 2018* (or as current).

Requirement 7. The board of health shall review drinking water quality reports for its municipal drinking water supplies where fluoride is added in accordance with the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current).

Requirement 8. The board of health shall ensure 24/7 availability to receive reports of and respond to:

a) Adverse events related to safe water, such as reports of adverse drinking water of drinking water systems, governed under the *Health Protection and Promotion Act* or the *Safe Drinking Water Act, 2002*;
b) Reports of water-borne illnesses or outbreaks;
c) Safe water issues arising from floods, fires, power outages, or other situations that may affect water safety; and
d) Safe water issues relating to recreational water use including public beaches in accordance with the *Infectious Diseases Protocol, 2018* (or as current); *Operational Approaches for Recreational Water Guideline, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); and the *Small Drinking Water Systems Risk Assessment Guideline, 2018* (or as current).

Operational Roles and Responsibilities

Inventory

1) The board of health shall maintain an inventory or inventories of all drinking water systems in the health unit that are regulated under the HPPA and the SDWA;[2,7] and include in the inventory, at minimum:
   a) Information to identify the drinking water systems including contact information of the owners/operators of those systems in the event of emergencies or adverse results or observations.
   b) Municipal systems fluoridated and not-fluoridated, including date when fluoridation commenced and /or when discontinued; and/or if the system receives water from a fluoridated system(s).

Inspections of Drinking Water Systems

2) The board of health shall utilize a risk management approach for addressing water-related public health issues regarding drinking water systems that are required to provide potable water under the HPPA or as required by the medical officer of health.[2]

3) The board of health shall inspect drinking water systems regulated under the HPPA.[2] These inspections shall include, at minimum:
   a) Observations to determine compliance with regulations, where applicable;
   b) Arrangements for testing water-quality parameters and collection of water samples as deemed necessary; and
   c) Communication of results or findings of the inspection and requirements or recommendations, if applicable, to the owner/operator of the drinking water system.

4) The board of health shall conduct additional inspections of drinking water systems regulated under the HPPA as necessary.[2]

Inspections of Small Drinking Water Systems

5) When conducting a risk assessment of small drinking water systems that meet the criteria of Small Drinking Water Systems Regulation under the HPPA[6] the board of health shall:
   a) Conduct site visits of small drinking water systems;
   b) Use the most current version of the ministry-approved risk categorization (RCat) tool in accordance with any ministry instructions relating to that version;
   c) Assign a risk category of “high,” “moderate,” or “low” for each system[*];

[*]Risk category is determined based on water source, treatment, and distribution criteria. High-risk small drinking water systems may have a significant level of risk and are routinely inspected every two years. Low and moderate risk small drinking water systems may have negligible to moderate risk and are routinely inspected every four years.

d) Issue a written directive to the owner of each system outlining the site-specific requirements for the system following an initial risk assessment; and
e) Issue a written amendment to a directive to the owner of each system outlining the site-specific requirements for the system following any subsequent inspection of the system.

6) The board of health shall issue directives on small drinking water systems in accordance with the most current version of the *Small Drinking Water Systems Risk Assessment Guideline, 2018 (or as current)*.[14]

7) Following the initial risk assessment, the board of health shall conduct risk assessments during inspections of small drinking water systems, as outlined in 6 above, based on the following frequencies:
   a) Not less than once every two years for systems categorized as high-risk; and
   b) Not less than once every four years for systems categorized as moderate or low-risk.

8) The board of health shall re-evaluate the requirements outlined in the site-specific directive relating to a small drinking water system during inspections carried out at the frequencies noted 7 above and confirm or update the risk category using RCat. In addition to the above requirement, a review of the risk category may be undertaken when:
   a) The owner/operator requests a re-assessment of the system in writing;
   b) Water sampling test results or other information indicates a possible change in the operation or the safety of the small drinking water system (e.g., complaints, adverse results, adverse observations, illnesses);
   c) There is a change in the premises being served by the small drinking water system (e.g., expansion, alteration); or
   d) A review of an appeal by the medical officer of health changes the requirements outlined in the site-specific directive.

9) As part of general inspection responsibilities, the board of health shall:
   a) Notify owners/operators of small drinking water systems in a timely manner following each inspection of: the risk category assigned to their system, the findings arising out of the inspection, recommendations relating to the operation of the system, any issue relating to compliance, and the site-specific directives;
   b) Inform owners that they may request a review of the risk category assigned to their small drinking water system and/or the contents of the directives in accordance with the Small Drinking Water Systems Regulation under the HPPA;[6]
   c) Carry out ongoing compliance monitoring of small drinking water systems through the use of the most current version of the Laboratory Results Management Application (LRMA) every three months, at minimum, or more frequently as determined by the medical officer of health; and
   d) Assess each system's compliance with the Small Drinking Water Systems Regulation under the HPPA.[6]

Surveillance, Management and Response

24/7 On-Call and Response Policy

1) The board of health shall have an on-call system on a 24/7 basis for receiving and responding to reports in the health unit related to:
   a) Suspected or confirmed waterborne illnesses or outbreaks; and
   b) Complaints, adverse test results, and adverse observations.
2) The board of health shall initiate response on drinking water-related complaints and reports within 24 hours of notification to determine the potential public health risk and take appropriate action as required.

Municipal Drinking Water Systems and Fluoride

3) The board of health shall:
   a) Advise all operators of municipal drinking-water systems of the board of health's responsibility to monitor fluoride levels of municipal drinking water systems that add fluoride to their system. Operators shall also be requested to provide fluoride concentration data (based on a monthly average) to the board of health on a monthly basis.
   b) Have a procedure in place for receiving and reviewing upon receipt, all reports of fluoride concentrations in municipal drinking water supplies that add fluoride.
   c) Consult with the operator of the water system and institute a contingency water-monitoring plan if the reported monthly average fluoride levels are below the Therapeutic Range (TR). The monthly average fluoride levels should reflect only those days when fluoride was added to the system. If the drinking water system was down for maintenance, or other reasons, the number of days it was offline should be identified and incorporated into the calculation.
   d) Implement the following if the fluoride concentration is below 0.6 ppm for more than 90 consecutive days:
      i) The medical officer of health notifies the board of health and the municipality affected;
      ii) Determine the need to notify all primary health care providers about the low fluoride concentration and inform the public through the media;
      iii) Using current scientific evidence and local surveillance data, determine whether segments of the community at high risk for dental decay require fluoride alternatives, and provide or ensure the provision of such alternatives on a temporary basis until the issue is resolved; and
      iv) Request notification from the operator of the water system when the fluoride concentration is returned to 0.6 to 0.8 ppm, and notify primary health care providers and the public.

Enforcement Actions and Procedures

4) The board of health shall address non-compliance with the HPPA and related regulations and take action where water that is intended for human consumption may not be safe.[2] In the event of an adverse test result (including but not limited to exceedances of an Ontario Drinking Water Quality Standard in the Ontario Drinking Water Quality Standard Regulation, under the *Safe Drinking Water Act*), the respective process for responding to adverse drinking water results shall be followed.[10]

Liaison with Agencies and Ministries

5) The board of health shall:
   a) Provide information to the Ministry of the Environment and Climate Change and other governmental agencies as requested by the ministry;
   b) Engage in activities within the community that increase the safety of drinking water and decrease the potential for adverse effects on health (e.g., participate on committees and assist in the identification of vulnerable areas and threats to drinking water systems);
   c) Collaborate with the local office of the Ministry of the Environment and Climate Change through participation in meetings held at least semi-annually on matters of:
      i) Existing drinking water systems in the health unit, including specific review of drinking water systems that add fluoride;
      ii) Applications to issue, amend, suspend, or revoke an approval, permit, or license of a drinking water system; and
      iii) Regulatory oversight and sharing expertise regarding the inspection of drinking water systems.
   d) Notify the local office of the Ministry of the Environment and Climate Change, when possible, of any small drinking water system that is expected to change from the authority of a regulation under the HPPA to the authority of the Drinking Water Systems Regulation under the SDWA;[2,8] and
   e) Participate in local steering groups for the purpose of developing drinking water–related emergency response plans for the control of, or response to, infectious diseases, outbreaks, and other public health hazards. The groups may consist of representatives from organizations including local hospitals, municipalities, and local offices of the Ministry of the Environment and Climate Change.

Drinking Water Awareness and Education

Community and Owner/Operator Awareness and Education

1) The board of health shall:
   a) Engage in activities to ensure the sustainability and safety of source water and water supplies through collaboration with stakeholders such as local conservation authorities, community groups and municipalities.
   b) Increase public awareness and promote the advancement of healthy public policy for safe water supplies related to the effects of climate change such as severe weather events.
   c) Ensure the availability of information and/or educational material on safe drinking water practices to private citizens and owners/operators of drinking water systems who provide potable water under the HPPA;[2]
   d) Ensure the availability of information and/or educational material to owners/operators of small drinking water systems regarding:
      i) Available training programs pertaining to the operation of small drinking water systems;
      ii) Relevant public health legislation and regulations; and
      iii) Directive requirements.
   e) Make available for owners of private water supplies for private/personal use (e.g., private wells, etc.) sample bottles, forms, and information provided by the Public Health Ontario Laboratories to promote water sampling and testing.
   f) Provide, upon request:
      i) Assistance in the interpretation of water analysis reports; and
      ii) Information on potential health effects.

Public Disclosure of Inspection Results

1) The board of health shall publicly disclose a summary report on each routine and complaint based inspection, and drinking water advisories of small drinking water systems. Reports:
   a) Must be posted on the board of health's website in a location that is easily located by the public within two weeks of the inspection. Reports must be posted for two years for high risk drinking water systems and for four years for all other small drinking water systems. Reports of new and existing drinking water advisories must be posted for the duration of the advisory.
   b) Can be adapted to match the visual style of the board of health's websites. The board of health is encouraged to integrate the required content areas listed below to existing public disclosure programs.
   c) Of inspection results must contain:
      i) The type of premises;
      ii) The name and address of the premises;
      iii) The date of inspection;

iv) The type of inspection (e.g., routine, re-inspection, complaint-based);
v) The risk category of the small drinking water system; and
vi) Inspection status (e.g., change in risk category, amendments to the site specific directive, in general compliance with Small Drinking Water Systems Regulation under the HPPA, found to have minor infractions, infractions corrected on-site, critical infractions found requires re-inspection).[6]

d) Of drinking water advisories must contain:
i) The type of premises;
ii) The name and address of the premises;
iii) The date the drinking water advisory was issued; and
iv) The reason(s) for the drinking water advisory being issued.

e) Must be revised with relevant additional information and include the date of the follow up action, or a subsequent report may be prepared and posted, where follow up action is required.

f) Must be compliant with relevant legislation including the *Accessibility for Ontarians with Disabilities Act* (AODA), the *French Language Services Act* (FLSA) (if applicable), the *Municipal Freedom of Information and Protection of Privacy Act* (MFIPPA) and the *Personal Health Information Protection Act* (PHIPA).[15-18]

Glossary

Inspection: A scheduled on-site visit for the purpose of conducting one or all activities that may occur during the visit:

- Observation of system performance for compliance with the Small Drinking Water Systems Regulation under the HPPA;[6]
- Conducting risk assessments and assigning (or re-assigning) a risk category;
- Collecting drinking water samples;
- Identifying upgrades or deficiencies to the SDWS that may affect the risk category; or
- Providing education and supporting information to the SDWS operator.

The inspection may also be referred to as “routine inspection,” “scheduled inspection,” “compliance inspection,” or “mandatory inspection”.

Re-Assessment: Any assessment being done for the purposes of follow-up to outstanding items or review of an intervention from a previously conducted risk assessment or re-assessment.

Re-Inspection: Means an activity carried out for the purpose of follow-up to outstanding items from a prior inspection or re-inspection.

Risk Assessment: An activity to appraise or investigate the operation and performance of a SDWS system that assigns or changes a risk level category.

References

1. Ontario. Ministry of Health and Long-Term Care. Ontario public health standards: requirements for programs, services, and accountability, 2018. Toronto, ON: Queen's Printer for Ontario; 2018. Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/default.aspx
2. *Health Protection and Promotion Act*, RSO 1990, c H.7. Available from: https://www.ontario.ca/laws/statute/90h07
3. *Food Premises,* RRO 1990, Reg 562. Available from: https://www.ontario.ca/laws/regulation/900562
4. *Recreational Camps*, RRO 1990, Reg 568. Available from: https://www.ontario.ca/laws/regulation/900568
5. *Camps in Unorganized Territory*, RRO 1990, Reg 554. Available from: https://www.ontario.ca/laws/regulation/900554
6. *Small Drinking Water Systems*, O Reg 319/08. Available from: https://www.ontario.ca/laws/regulation/080319
7. *Safe Drinking Water Act, 2002*, SO 2002, c 32. Available from: https://www.ontario.ca/laws/statute/02s32
8. *Drinking Water Systems*, O Reg 170/03. Available from: https://www.ontario.ca/laws/regulation/030170
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10. *Ontario Drinking Water Quality Standards*, O Reg 169/03. Available from: https://www.ontario.ca/laws/regulation/030169
11. *Schools, Private Schools and Child Care Centres*, O Reg 243/07. Available from: https://www.ontario.ca/laws/regulation/070243
12. *Ontario Water Resources Act*, RSO 1990, c O.40. Available from: https://www.ontario.ca/laws/statute/90o40
13. *Clean Water Act, 2006*, SO 2006, c 22. Available from: https://www.ontario.ca/laws/statute/06c22
14. Ontario. Ministry of Health and Long-Term Care. Small drinking water systems risk assessment guideline. Toronto, ON: Queen's Printer for Ontario; 2018. Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/protocolsguidelines.aspx

15. *Accessibility for Ontarians with Disabilities Act, 2005,* SO 2005, c 11. Available from: https://www.ontario.ca/laws/statute/05a11
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18. *Personal Health Information Protection Act, 2004*, SO 2004, c 3, Sched. A. Available from: https://www.ontario.ca/laws/statute/04p03

Resources

The following resources provide supplementary information and guidance regarding issues related to drinking water systems. This is not an exhaustive list and the documents listed below are subject to change.

Health Canada. Findings and recommendations of the Fluoride Expert Panel (January 2007). Ottawa, ON: Her Majesty the Queen in Right of Canada, represented by the Minister of Health; 2008 [cited 2017 Nov 9]. Available from: https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/findings-recommendations-fluoride-expert-panel-january-2007.html

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Overview

The Ministry of Health and Long-Term Care (the ministry) oversees the *Small Drinking Water Systems Regulation* under the *Health Protection and Promotion Act* (HPPA).[2,3] This regulation sets out the requirements that must be followed by the owners and operators of each small drinking water system (SDWS), such as minimum water testing for *Escherichia coli* and total coliforms.[3] Owners and operators of SDWS are responsible for keeping drinking water safe and meeting their regulatory requirements.

Under the SDWS Regulation, public health inspectors (PHIs) are responsible for conducting site-specific risk assessments of every SDWS in the province.[3] Based on the assessment, PHIs determine what owners and operators must do to keep their drinking water safe and issue a directive for each system, which may include requirements such as water testing, treatment and training. This reflects the use of a customized approach for each SDWS depending on the level of risk, rather than a set of “one-size-fits-all” requirements.

Purpose

The purpose of this document is to provide guidance to boards of health and, in particular, to PHIs, in developing and issuing directives to owners of SDWS in accordance with section 7 of the SDWS Regulation.[3] The site-specific requirements outlined in the directives are in addition to the minimum requirements specified in the SDWS Regulation under the HPPA.[2,3]

This document is not intended to provide legal advice or to be a substitute for the professional judgment of public health inspectors. Public health inspectors should consult with legal counsel as appropriate when issuing directives to owners of Small Drinking Water Systems.

Reference to the Standards

This section identifies the standards and requirements to which this guideline relates.

Safe Water

Requirement 1: The board of health shall:

a) Conduct surveillance of:
   - Drinking water systems and associated illnesses, risk factors, and emerging trends;
   - Public beaches and water-borne illnesses associated with recreational water, risk factors, and emerging trends; and
   - Recreational water facilities;

b) Conduct epidemiological analysis of surveillance data, including monitoring of trends over time, emerging trends, and priority populations; and

c) Use the information obtained to inform safe water programs and services in accordance with the *Infectious Diseases Protocol, 2018* (or as current); the *Population Health Assessment and Surveillance Protocol, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); and the *Small Drinking Water Systems Risk Assessment Guideline, 2018* (or as current).

Requirement 3: The board of health shall ensure the availability of education and training for owners/operators of small drinking water systems and recreational water facilities in accordance with the *Operational Approaches for Recreational Water Guideline, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); and the *Small Drinking Water Systems Risk Assessment Guideline, 2018* (or as current).

Requirement 6: The board of health shall inform the public about unsafe drinking water conditions and provide the necessary information to respond appropriately in accordance with the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current) and the *Small Drinking Water Systems Risk Assessment Guideline, 2018* (or as current).

Requirement 8: The board of health shall ensure 24/7 availability to receive reports of and respond to:

a) Adverse events related to safe water, such as reports of adverse drinking water of drinking water systems, governed under the *Health Protection and Promotion Act* or the *Safe Drinking Water Act, 2002*;
b) Reports of water-borne illnesses or outbreaks;
c) Safe water issues arising from floods, fires, power outages, or other situations that may affect water safety; and
d) Safe water issues relating to recreational water use including public beaches in accordance with the *Infectious Diseases Protocol, 2018* (or as current); *Operational Approaches for Recreational Water Guideline, 2018* (or as current); the *Recreational Water Protocol, 2018* (or as current); the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current); and the *Small Drinking Water Systems Risk Assessment Guideline, 2018* (or as current).

1. Risk Assessment Process

The public health approach to protecting drinking water is based on assessing and identifying potential risks associated with a SDWS. Following a risk assessment, basic requirements are set to assist the owner/operator in adequately maintaining and supervising the provision of drinking water. As described in the *Safe Drinking Water and Fluoride Monitoring Protocol, 2018* (or as current),[4] the activities which must be conducted as part of the risk assessment process of a small drinking water system include: Conduct a site-specific visit of the small drinking water system;

- Use the most current version of the ministry-approved risk categorization (RCat) tool in accordance with any ministry instructions relating to that version;
- Assign a risk category of “high”, “moderate” or “low” for each system;
- Issue a written directive to the owner of each system outlining the site-specific requirements for the system following an initial risk assessment; and
- Issue a written amendment to a directive to the owner of each system outlining the site-specific requirements for the system following any subsequent inspection of the system, where deemed necessary.[4]

As part of the risk assessment process, other activities may include:

- Collecting water samples, as deemed necessary;
- Reviewing the system’s past water sampling history; and
- Maintaining water sampling records.

The board of health shall ensure that the following approach is used in the assessment of Small Drinking Water Systems. This includes:

a) Using the Risk Categorization (RCat) Tool to assess SDWS;
b) Determining the appropriate water treatment actions that are necessary under specific conditions;
c) Sampling and testing requirements for operators;
d) Conducting operational checks;
e) Posting of warning signage;
f) Requesting records; and
g) Providing training to owners/operators of SDWS.

1.1 Content and Format of Directives

Directives must include, at minimum, the following sections:

- Name and address of owner (i.e., sufficient for serving of legal notices);
- Location and legal description of the small drinking water system;
- Reason for the directive;
- Risk category;
- Notice of the right to a review by the local medical officer of health and process for requesting such a review in accordance with Section 38 of the SDWS Regulation;

- Notice of penalty for non-compliance;
- Date and location of service; and
- Signature of public health inspector.[3]

The directive may be organized in the following format:

- Part 1 – Risk Assessment Process
- Part 2 – Treatment Equipment
- Part 3 – Sampling and Testing
- Part 4 – Operational Checks
- Part 5 – Posting of Warning Signage
- Part 6 – Records
- Part 7 – Operator Training

1.2 Risk Categorization (RCat) Tool

The Risk Categorization (RCat) tool was developed by the ministry specifically for site-specific risk assessments of small drinking water systems. The tool is intended to assist PHIs in conducting on-site risk assessments for the purposes of determining whether SDWS are operating in a manner which provides safe water. The RCat tool is comprised of a series of questions which identify the security of the water source and system, and results in risk ratings of the source of water, treatment system and distribution system. It has been designed to consider all parts of the SDWS from source water to consumer, using a multi-barrier approach to protecting drinking water.

The ratings are used to assign one of following risk categories for the system:

- High = Significant level of risk
- Moderate = Medium level of risk
- Low = Negligible level of risk

2. Water Treatment

The requirements for water treatment are based on the findings of the risk assessment and inspection process, the possibility of contamination in the source water and a history of water test results. This section describes the water treatment actions which are required in each situation to ensure the safety of the drinking water supply.

2.1 Secure Ground Water Source

For small drinking water systems that provide drinking water that is derived from a secure ground water source, and where the water sampling and testing results indicate a condition of 0 total coliforms per 100 millilitres and no *Escherichia coli*, for multiple samples, treatment may not be required.

2.2 Ground Water Source

For small drinking water systems that use a ground water source that may contain bacteria and viruses but is not likely to contain cysts or oocysts, the necessary actions are to:

a) Provide filtration or other treatment necessary to allow for proper functioning of the disinfection equipment or disinfection chemical; and/or
b) Provide disinfection using either disinfecting equipment or disinfection chemicals that would normally result in providing water that, when sampled and tested, have no total coliforms and no *Escherichia coli*.

2.3 Ground and Surface Water Source

For small drinking water systems that use a ground water source that may contain bacteria, viruses, cysts or oocysts and surface water is suspected of entering the well, the necessary actions are to:

a) Provide filtration that is designed to be capable of achieving at all times at least 99 per cent removal or inactivation of Cryptosporidium oocysts, at least 99.9 per cent removal or inactivation of Giardia cysts and at least 99.99 per cent removal or inactivation of viruses; and/or
b) Provide filtration or other treatment as necessary to remove water contaminants or chemicals to allow for proper functioning of the disinfecting equipment or disinfection chemical; and/or
c) Provide disinfection using either disinfecting equipment or disinfection chemicals that would normally result in providing water that, when sampled and tested, have no total coliforms and no Escherichia coli.

2.4 Surface Water Source

For small drinking water systems that use a surface water source that may contain bacteria, viruses, cysts or oocysts, the necessary actions are to:

a) Provide filtration that is designed to be capable of achieving at all times at least 99 per cent removal or inactivation of Cryptosporidium oocysts, at least 99.9 per cent removal or inactivation of Giardia cysts and at least 99.99 per cent removal or inactivation of viruses; or
b) Provide other water treatment if the owner/operator can provide evidence that the equipment is designed to be capable of producing water of equal or better quality than described in a) above.

If applicable, the owner/operator may also have to:

a) Provide filtration or other treatment as necessary to remove water contaminants or chemicals to allow for proper functioning of the disinfecting equipment or disinfection chemical; and/or

b) Provide disinfection using either disinfecting equipment or disinfection chemicals that would normally result in providing water that, when sampled and tested, have no total coliforms and no *Escherichia coli*.

2.5 Point of Entry or Point of Use

Where point of entry or point of use treatment devices are used in addition to treatment outlined in section 2.2 to 2.4, the necessary actions are to:

a) Filter and disinfect as necessary to ensure that the water being treated by the point of entry or point of use treatment equipment will be capable of providing water that, when sampled and tested, will have no total coliforms and no *Escherichia coli.* This may include the provision of filtration that is designed to be capable of achieving at all times at least 99 per cent removal or inactivation of Cryptosporidium oocysts, at least 99.9 per cent removal or inactivation of Giardia cysts and at least 99.99 per cent removal or inactivation of viruses. and/or
b) Provide filtration or other treatment as necessary to remove water contaminants or chemicals to allow for proper functioning of the disinfecting equipment or disinfection chemical.

2.6 Distribution System

a) For small drinking water systems that provide water through distribution piping, the necessary actions are to have the water treated with a disinfectant that would provide a residual of that disinfectant in accordance with the requirements for secondary disinfection in Section 14(1) 4 of the SDWS Regulation.[3]
b) Where a distribution system serves less than 10 connections, secondary disinfection may not be required if:
   - Access to the drinking water is sufficiently restricted; and
   - Sampling is done at a frequency in accordance with Tables 2 and Table 3.

2.7 Other Sources

For small drinking water systems that use other sources (e.g., hauled water), treatment requirements are to be used in accordance with sections 2.1 to 2.4.

2.8 NSF/ANSI 55 Class A UV Systems

For small drinking water systems that use NSF/ANSI 55 Class A UV Systems that have a built-in fail-safe design that terminates the discharge of water if the system is not performing to the NSF standard, the frequency of testing required as per Table 2 may be reduced by up to 50%.[*]

[*]The enhanced safety requirements of NSF/ANSI 55 Class A UV Systems help to reduce sampling requirements as: the manufacturer's performance claims are verified by an independent organization; NSF audits manufacturing, including their quality control and quality assurance, materials and testing procedures; and NSF verifies UV-dose and/or inactivation claims.

3. Sampling and Testing

3.1 Sampling and Testing Requirements for Primary Parameters – Bacteriological

This section will assist in determining the required scheduling of sampling and testing for bacteria (total coliforms and *Escherichia coli*) to be included in a directive where the entire system is not posted. In determining the schedule and frequency of sampling, the following factors shall considered:

- History of water sampling results;
- Whether the drinking water is provided with treatment;
- Whether the drinking water source is secure ground water, ground water or surface water; and
- The risks identified through use of the RCat tool.

3.2 Sampling History

Where there is a new small drinking water system or where a system has less than one year's history of sampling and testing, it is necessary to take samples at the minimum rate of one sample per month or at a frequency greater than one sample per month as indicated in Table 2 and Table 3.

Table 2: Recommended frequency of bacterial sampling for *Escherichia coli* and total coliforms for all small drinking water systems without testing history

Risk Category	Treatment Provided	Frequency of sampling water after being treated or otherwise directed for consumption
Low	No	One sample every three months
Low	Yes	One sample every three months
Moderate	No	One sample monthly
Moderate	Yes	One sample every two months
High	No	One sample every week
High	Yes	One sample every two weeks

3.3 Sampling Requirements for Distribution Systems

Table 3 is to be used in addition to Table 2 to determine the required frequency of sampling for small drinking water systems with distribution systems.

Table 3: Recommended sampling frequency for systems with distribution systems, by level of risk

Applies to	Secondary Treatment	Number and Frequency of Sampling		
		Low Risk	Moderate Risk	High Risk
*2-10 Connections**	Yes or no	One sample monthly	One sample monthly	One sample monthly
11-100 Connections	Yes	One sample monthly	One sample monthly	One sample ***every two weeks***
≥ 101 Connections	Yes	One sample from the treated water supply and one sample for every 100 connections or part thereof from the distribution system monthly	One sample from the treated water supply and one sample for every 100 connections or part thereof from the distribution system ***every two weeks***	One sample from the treated water supply and one sample for every 100 connections or part thereof from the distribution system ***every week***

* "Number of connections" means the number of drinking water access points either single or grouped. "Access points" means:

a) Single access point refers to a single standalone access point which may have one or more spouts, such as a drinking water fountain or tap or a trailer park site hook-up.
b) Grouped access point refers to a system of plumbing within a single building.

Other factors to consider:

Samples are required to be collected at locations where the sampling would be representative of the water quality of the majority of the system.

Unless the PHI provides otherwise, for a system that uses point of entry treatment units and has more than one unit, samples are to be taken from locations downstream of the point of entry treatment units on a rotational basis. The rotation is to be set so that after a sample is taken from a location downstream of a particular point of entry treatment unit, another sample is not taken from that same unit, until samples have been taken from locations downstream of all the other point of entry treatment units.

3.4 Sampling and Testing Requirements for Secondary Parameters – Chemical or Radiological

For any water supply where a chemical or radiological agent is suspected, further assessment of the potential sources of the contaminant and additional testing for the suspected chemical or radiological agent is required.

However, where testing results indicate that the level of chemical or radiological agent is below the limits in the Ontario Drinking Water Quality Standards or where the contaminants are naturally occurring and not expected to increase, no further sampling is required of the small drinking water system. Appropriate notification of users of the conditions of the drinking water must be provided.

Where contaminants are identified and have the potential to fluctuate in a manner that may cause an increased risk to the health of the users, a schedule for regular sampling and testing is required. This information provides surveillance data to monitor any potential increased risk to the users of the water supply.

4. Operational Checks

Where filtration is to be used on a system, turbidity is to be tested at a frequency in accordance with the risk level and configuration of the system.

Where primary or secondary disinfection is to be used, the chlorine residual is to be tested at a frequency of once every 24 hours or adjusted in accordance with the risk level and configuration of the system.

5. Posting of Warning Signage (Posted System)

Subsection 7 (6) of the SDWS Regulation provides that directives may require the posting and maintenance of warning signs.[3] Direction may be given which requires the placement of a sign that states: "Public Notice: Do not drink this water" when posting the entire small drinking water system or specific service connections. The owner/operator should be informed that they are expected to conduct routine checks to confirm signs continue to be posted, in a good state of repair and they are easily readable.

6. Records

Subsection 10 (2) of the SDWS Regulation requires that records of maintenance and operational tests be made available to the PHI on request.[3] The PHI may request additional records as deemed necessary.

7. Training

Training for operators is important because it ensures they are aware of their responsibilities under the regulations and are able to maintain the supply of safe water to users.

At a minimum, training must include awareness of the normal operation of the system in order to respond appropriately to adverse test results or other conditions that may affect the safety of the drinking water. Table 4 describes the minimum recommendations for core competencies and training requirements for operators of different types of systems.

Table 4: Operator Training in Core Competencies

Knowledge Areas	**System Source and Treatment Type**				
	Posted System (Signage)	**Secure Groundwater** (no treatment required)	**Ground Water and/or Surface Water** (UV light, filtration* and chemical disinfection)	**Distribution System** (secondary disinfection)	**Other Sources** (e.g. water haulage vehicle)
	*Recommended Courses (based on knowledge areas)***				
	Educational Materials Only	*Intro Course for 319 (online or half day)*	*Basics for 319 or equivalent*	*Advanced for 319 or equivalent*	*Educational Materials Only*
Knowledge of general protection requirements (notification of users).	✓				✓
Knowledge of ground water basics, well basics, best management practices.		✓			
Knowledge of general protection requirements (water source, source water protection issues, potential of system failure, impacts of system failure, notification of users).			✓	✓	

Knowledge Areas	System Source and Treatment Type				
	Posted System (Signage)	**Secure Groundwater** (no treatment required)	**Ground Water and/or Surface Water** (UV light, filtration* and chemical disinfection)	**Distribution System** (secondary disinfection)	**Other Sources** (e.g. water haulage vehicle)
	*Recommended Courses (based on knowledge areas)***				
	Educational Materials Only	*Intro Course for 319 (online or half day)*	*Basics for 319 or equivalent*	*Advanced for 319 or equivalent*	*Educational Materials Only*
Knowledge of proper sampling techniques and lab submission process (why the sample is taken, where it is to be taken, when and who to call if an adverse result/observation happens, what the sample results mean).		✓	✓	✓	
Ability to operate and understand why and how the treatment equipment works and what to do if the treatment fails.			✓	✓	
Ability to maintain the operation of the equipment to, at minimum, manufacturer's recommended instructions.			Required if the system is not supported by a service company with appropriately trained staff		
Knowledge of distribution systems (how to sample, maintenance, and manage what to do if a distribution system breaks).				✓	

* Where filtration is required for chemical or radiological parameters, the PHI should determine if additional training is required for the adequate operation of the system.

** Operators must take training in order to obtain the required knowledge to operate their SDWS. This includes courses offered/recommended by a manufacturer of treatment devices or by the public health unit; MOECC courses; courses offered through local community colleges, professional associations or private providers; and/or government agency training courses.

Additional Resources

1. Walkerton Clean Water Centre (WCWC) [Internet]. Toronto, ON: Queen's Printer for Ontario; c2011 [cited 2018 Jan 8]. Available from: https://www.wcwc.ca
2. Ontario Water Works Association (OWWA) [Internet]. Toronto, ON: Ontario Water Works Association; c2018 [cited 2018 Jan 8]. Available from: https://www.owwa.ca/

3. Fleming College [Internet]. Peterborough, ON: Sir Sandford Fleming College; c2018 [cited 2018 Jan 8]. Available from: https://flemingcollege.ca/
4. Conestoga College [Internet]. Kitchener, ON: Conestoga College; c2018 [cited 2018 Jan 8]. Available from: http://www.conestogac.on.ca/

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2. *Health Protection and Promotion Act*, RSO 1990, c H.7. Available from: https://www.ontario.ca/laws/statute/90h07
3. *Small Drinking Water Systems*, O Reg 319/08. Available from: https://www.ontario.ca/laws/regulation/080319
4. Ontario. Ministry of Health and Long-Term Care. Safe drinking water and fluoride monitoring protocol, 2018. Toronto, ON: Queen's Printer for Ontario, 2018. Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/protocolsguidelines.aspx

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Tuberculosis Prevention and Control Protocol, 2018

Population and Public Health Division,
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Ontario

Preamble

The Ontario Public Health Standards: Requirements for Programs, Services, and Accountability (Standards) are published by the Minister of Health and Long-Term Care under the authority of section 7 of the *Health Protection and Promotion Act* (HPPA) to specify the mandatory health programs and services provided by boards of health.[1,2] The Standards identify the minimum expectations for public health programs and services. Boards of health are accountable for implementing the Standards including the protocols and guidelines that are referenced in the Standards. Protocols are program and topic-specific documents incorporated into the Standards which provide direction on how boards of health shall operationalize specific requirement(s) identified within the Standards.

Purpose

The purpose of this protocol is to provide direction to boards of health to reduce the burden of tuberculosis (TB) through prevention and control.

To further support the clinical and public health management of TB cases and contacts, it is recommended that other published materials be utilized for further information, relevant definitions, and guidance, such as the most current version of the tuberculosis disease-specific chapter of the *Infectious Diseases Protocol, 2018* (or as current), the *Canadian Tuberculosis Standards, 2014* (or as current), and the *Tuberculosis Program Guideline, 2018* (or as current).[3-5]

Reference to the Standards

This section identifies the standard and requirements to which this protocol relates.

Infectious and Communicable Diseases Prevention and Control

Requirement 1. The board of health shall conduct population health assessment and surveillance regarding infectious and communicable diseases and their determinants. These efforts shall include:

a) Reporting data elements in accordance with the *Health Protection and Promotion Act; the Infectious Diseases Protocol, 2018* (or as current); the *Rabies Prevention and Control Protocol, 2018* (or as current); the *Sexual Health and Sexually Transmitted/Blood-Borne Infections Prevention and Control Protocol, 2018* (or as current); and the *Tuberculosis Prevention and Control Protocol, 2018* (or as current);
b) Conducting surveillance and epidemiological analysis, including the monitoring of trends over time, emerging trends, and priority populations in accordance with the *Infectious Diseases Protocol, 2018* (or as current); the *Population Health Assessment and Surveillance Protocol, 2018* (or as current); the *Rabies Prevention and Control Protocol, 2018* (or as current); the *Sexual Health and*

Sexually Transmitted/Blood-Borne Infections Prevention and Control Protocol, 2018 (or as current); and the *Tuberculosis Prevention and Control Protocol, 2018* (or as current);

c) Responding to international, Federal/Provincial/Territorial and local changes in diseases epidemiology by adapting programs and services; and
d) Using the information obtained through assessment and surveillance to inform program development regarding communicable diseases and other infectious diseases of public health importance.

Requirement 11. The board of health shall provide public health management of cases, contacts, and outbreaks to minimize the public health risk in accordance with the *Infectious Diseases Protocol, 2018* (or as current); the *Institutional/Facility Outbreak Management Protocol, 2018* (or as current); the *Management of Potential Rabies Exposures Guideline, 2018* (or as current); the *Rabies Prevention and Control Protocol, 2018* (or as current); the *Sexual Health and Sexually Transmitted/ Blood-Borne Infections Prevention and Control Protocol, 2018* (or as current); and the *Tuberculosis Prevention and Control Protocol, 2018* (or as current).

Requirement 12. The board of health shall facilitate timely identification of active cases of TB and referrals of persons through immigration medical surveillance in accordance with the *Tuberculosis Prevention and Control Protocol, 2018* (or as current) and *Tuberculosis Program Guideline, 2018* (or as current), and shall provide or ensure access to TB medication at no cost to clients or providers.

Operational Roles and Responsibilities

Data collection and reporting of data elements

1) The board of health shall:

General

a) On an annual basis, advise health care providers who have a duty to report diseases under the HPPA (including physicians, nurses, pharmacists and optometrists), hospital administrators, superintendents of institutions, school principals, and operators of a laboratory about the requirement to report cases of tuberculosis (TB), according to the HPPA.[2]
b) Ensure that the information entered into the integrated Public Health Information System (iPHIS) or any other method specified by the Ministry of Health and Long-Term Care and/or Public Health Ontario (“ministry/PHO”) is complete and accurate and includes the final case disposition (see current iPHIS Guide Tuberculosis Module – Section I to VII or any other guide specified by the ministry and/or PHO).

Confirmed and suspect cases

c) Create a record for the person as a suspect or confirmed case in iPHIS or any other method specified by the ministry/PHO within one business day of receiving the initial report.

Additional information on cases

d) Enter into iPHIS or any other method specified by the ministry/PHO all initial laboratory (including drug sensitivities) and radiological reports within one business day of receipt.
e) Enter into iPHIS or any other method specified by the ministry/PHO any additional data elements as specified in Regulation 569 (Reports), and the current iPHIS Tuberculosis (TB) User Guide, as soon as possible, but in any event no later than 30 calendar days from the date of receipt.[6,7]

Information for TB contacts

f) Create a record for any suspected or confirmed contact and enter into iPHIS or any other method specified by the ministry/PHO, all demographics, episode status, and the link to the source case as soon as possible, but no later than 30 calendar days of identification of the contact.
g) Enter into iPHIS or any other method specified by the ministry/PHO any additional data elements as soon as possible, but in any event no later than 30 calendar days of receipt.

Immigration medical surveillance

h) Enter into iPHIS or any other method specified by the ministry, the demographics (if client self-reported), episode status, and additional data elements, as outlined in iPHIS TB User Guide – Section II: Medical Surveillance for persons on immigration medical surveillance as soon as possible, but no later than 30 calendar days of the person reporting.[7]

Latent TB infection (LTBI)

i) Enter all required data elements in accordance with the current iPHIS Tuberculosis (TB) User Guide into iPHIS or any other method specified by the ministry/PHO as soon as possible, but in any event no later than 30 calendar days of receipt.[7]

Surveillance

2) The board of health shall on an annual basis:
   a) Conduct epidemiological analysis of TB data on, but not limited to, the following:
      i) For cases:
         - Age
         - Gender
         - Risk factors
         - Risk settings
         - Clinical, laboratory and radiological findings
         - Drug resistance
         - Country of origin
         - Proportion completing treatment
         - Mortality
      ii) For LTBI in locally-identified high-risk groups:
         - Age
         - Gender
         - Risk factors
         - Risk settings
         - Country of origin
         - Proportion initiating treatment
         - Proportion completing treatment
   b) Prepare a detailed summary of any outbreaks of TB occurring in its jurisdiction.
   c) Disseminate relevant epidemiological analyses of TB data to relevant health care and community stakeholders.
   d) Utilize the results of epidemiological analyses of TB data, including outbreak summaries, for program planning.

Early identification of TB cases, including referrals of persons with inactive TB through immigration medical surveillance

3) The board of health shall:

Early identification of TB cases

   a) Implement strategies to promote the early identification and treatment of persons with TB.
   b) Provide annual education to health care providers and/or community stakeholders, as needed, based on local epidemiology, as outlined in the *Tuberculosis Program Guideline, 2018* (or as current), about the following:
      i) Considering TB in persons with compatible symptoms;
      ii) Reporting suspect and confirmed cases of TB according to the HPPA;[2] and

iii) Screening of high-risk groups, as per the *Canadian Tuberculosis Standards, 2014* (or as current).[4,5]

Referrals for medical surveillance

c) Have a process in place to prioritize timely initiation of medical surveillance for urgent referrals (i.e., clients required by Immigration, Refugees, and Citizenship Canada (IRCC) to report for medical surveillance upon arrival in Canada), as outlined in d), in accordance with minimum guidelines set in the *Tuberculosis Program Guideline, 2018* (or as current) to:
   i) Locate these persons; and
   ii) Refer and facilitate the process for medical assessment of these persons upon receipt of the urgent notification or immediately if they have signs or symptoms of active TB.
   iii) Once active TB is ruled out continue to follow these persons as per Regular Immigration Medical Surveillance (see d) iii and d) iv).[5]

d) Have a process in place for managing referrals for immigration medical surveillance (i.e., clients required by IRCC to report for medical surveillance), in accordance with minimum guidelines set in the *Tuberculosis Program Guideline, 2018* (or as current), to:
   i) Contact these persons;
   ii) Conduct preliminary assessment for symptoms of active TB;
   iii) Provide TB education at first contact with these persons, which would include:
      - Symptom recognition and the need to notify the board of health should symptoms occur;
      - IRCC requirements of medical surveillance;
      - Instructions for obtaining Ontario Health Insurance Program (OHIP) coverage; and
      - Availability of TB for Uninsured Persons Program (TB-UP) as required.
   iv) Facilitate medical assessment for active TB disease and/or LTBI, including laboratory and radiological testing as determined by the attending health care provider, according to the *Tuberculosis Program Guideline, 2018* (or as current).[5]
   v) Utilize strategies to facilitate the early identification of active TB in individuals referred for medical surveillance (e.g., base follow-up on risk level, outlined in the *Tuberculosis Program Guideline, 2018* (or as current)).[5]

Management of TB cases

4) The board of health shall, in accordance with relevant/applicable documents:
   a) Initiate contact with persons who have suspected/confirmed respiratory TB and their health care providers, within 24 hours of receipt of the notification.
   b) Direct the person to be in respiratory isolation if respiratory TB is suspected/confirmed.
   c) Conduct public health investigation of all suspected/confirmed cases and report

via iPHIS by obtaining details including, but not limited to:
   i) Demographics;
   ii) Symptoms;
   iii) Date of onset of symptoms;
   iv) Level of infectiousness;
   v) Radiological and laboratory results (including drug sensitivity);
   vi) Assessment of risk factors for acquisition and transmission; and
   vii) Identification of contacts.

d) Recommend that all persons with newly diagnosed TB who are not already known to be seropositive should undergo informed HIV serologic testing in accordance with the *Canadian Tuberculosis Standards, 2014* (or as current).[4]
e) Strongly recommend a drug treatment regimen in accordance with the *Canadian Tuberculosis Standards, 2014 (or as current)*.[4]
f) Contact persons with respiratory TB, who are no longer on Directly Observed Therapy (DOT), at a minimum of once every month to monitor the treatment response, adherence and drug toxicity until the completion and outcome of therapy. The frequency of monitoring all nonrespiratory cases shall be based on clinical judgment.
g) Utilize a DOT assessment tool and clinical judgement to prioritize cases and duration for DOT, as per DOT Assessment form in the *Tuberculosis Program Guideline, 2018* (or as current).[5] Have a mechanism in place to provide DOT for, at minimum, and not limited to:
   i) All respiratory cases for as long as the case is infectious;
   ii) All cases (respiratory or nonrespiratory TB) resistant to two or more first line drugs for the duration of treatment;
   iii) All cases (respiratory or nonrespiratory TB) with treatment failure or recurrence of TB for the duration of treatment; and
   iv) All cases (respiratory or nonrespiratory TB) while they are being treated on an intermittent therapy regimen.
h) As appropriate, the board of health should strongly recommend that a physician and/or team experienced in the management of drug-resistant TB provides treatment for, or is consulted on all cases resistant to two or more drugs, as well as all cases determined to be treatment failures, in accordance with the Canadian Tuberculosis Standards, 2014 (or as current).[4]
i) Ensure that respiratory isolation is discontinued only when a case is considered to be no longer infectious. While a TB specialist/physician should be consulted as necessary, the decision and responsibility for discontinuing isolation for outpatients with pulmonary TB rests with the board of health.
j) Have a mechanism in place to ensure the provision of TB medications at no cost to the person with TB or the provider.
k) Review drug regimens and sensitivity results to ensure appropriateness and adequacy of therapy.
l) Monitor sputum culture conversion for pulmonary TB (or chest X-ray improvement if no respiratory specimens can be obtained for microbiological culture).

m) Report to PHO all cases who leave the province of Ontario, as per the *Tuberculosis Program Guideline, 2018* (or as current).[5]
n) Issue orders to persons with suspect/confirmed TB according to criteria specified in Section 22 of the HPPA.[2]
o) Report to the ministry all cases who are being considered for a section 35 order from the Ontario Court of Justice under the HPPA.[2]

Identification, assessment, and management of contacts of respiratory TB

5) The board of health shall:
   a) Use an organized and systematic approach to prioritize contact follow-up as recommended by the *Canadian Tuberculosis Standards, 2014* (or as current), including:
      i) Considering the infectiousness of the source case, extent of exposure, and immunologic vulnerability of those exposed;
      ii) Identifying high priority contacts within 48 hours of notification of the source case or as soon as possible thereafter. The highest priority contacts are those with the most exposure and the highest risk of progression to active TB if infected;
      iii) Facilitating assessment of high priority contacts to detect or rule out active TB as soon as possible, to identify secondary cases and those with LTBI, and to facilitate treatment;
      iv) For high priority contacts with no history of TB or documented positive Tuberculin Skin Test TST, facilitating initial TST and, if negative, repeat TST eight weeks after the last exposure; and
      v) Considering infectiousness of the case, results of initial high priority contact investigation, and nature of exposure of additional contacts to inform decision-making about whether to expand contact investigation.[4]
   b) Recommend follow-up for other identified contacts;
   c) Review the results of contact follow-up for each index case and expand contact follow-up as required;
   d) Recommend window period prophylaxis (i.e., treat for eight weeks post break in contact) for high priority contacts <5 years of age with a negative baseline TST, in accordance with the *Canadian Tuberculosis Standards, 2014* (or as current).[4]

Identification and management of individuals with LTBI

6) The board of health shall:
   a) Implement strategies to promote the identification and treatment of persons with LTBI, as per the *Canadian Tuberculosis Standards, 2014* (or as current).[4] This shall include providing annual education to health care providers and/or community stakeholders, as needed based on local epidemiology, about:
      i) Considering LTBI in those with increased risk of TB exposure and/or risk factors for progression to active TB disease, in accordance with the *Canadian Tuberculosis Standards, 2014* (or as current);[4]
      ii) At board of health's discretion, reporting persons with LTBI;
      iii) Screening of high-risk groups, in accordance with the *Canadian Tuberculosis Standards, 2014* (or as current);[4]
      iv) The need to offer treatment for those with LTBI as appropriate and ensure treatment completion; and
      v) Recommending all persons with LTBI undergo HIV serologic testing according to established guidelines.
   b) Have a mechanism in place to ensure the provision of TB medications for persons on LTBI therapy at no cost to the person with LTBI or the provider.

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