BUREAU DE SANTÉ DE MIDDLESEX-LONDON HEALTH UNIT
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AGENDA
MIDDLESEX-LONDON BOARD OF HEALTH

Thursday, January 23, 2020, 7:00 p.m.
399 Ridout Street North, London, Ontario
Side Entrance, (recessed door)
MLHU Boardroom

MISSION - MIDDLESEX-LONDON HEALTH UNIT

The mission of the Middlesex-London Health Unit is to promote and protect the health of our community.

MEMBERS OF THE BOARD OF HEALTH

Ms. Maureen Cassidy
Mr. John Brennan
Mr. Michael Clarke
Ms. Aina DeViet
Ms. Kelly Elliott
Ms. Tino Kasi
Ms. Arielle Kayabaga
Mr. Bob Parker
Mr. Ian Peer
Mr. Matt Reid

SECRETARY-TREASURER

Dr. Christopher Mackie

ACKNOWLEDGEMENT OF INDIGENOUS PEOPLES AND TRADITIONAL CEREMONY

MEETING PROCEDURES

DISCLOSURE OF CONFLICTS OF INTEREST

APPROVAL OF AGENDA

MINUTES

Approve: December 12, 2019 – Board of Health meeting

Item #	Delegation	Recommendation	Information	Report Name and Number	Link to Additional Information	Overview and Lead
Meeting Procedures						
1	**x**	**x**		Election of 2020 Board of Health Executive and Other Procedures (Report No. 001-20)	Appendix A Appendix B Appendix C Appendix D Appendix E	To fulfill the requirements of the first Board of Health meeting of each year, e.g., election of Chair/Vice Chair and standing comittees for 2020. Lead: Dr. Chris Mackie, Medical Officer of Health / CEO
Reports and Agenda Items						
2	**x**	**x**	**x**	FoodNet Canada Ontario Sentinel Site Update and Memorandum of Agreement (Report No. 002-20)	Appendix A Appendix B Appendix C	To provide an update on the FoodNet Canada program and advise the Board of Health on the renewal of the Memorandum of Agreement for another one-year term. Lead: Mr. Stephen Turner, Director, Environmental Health and Infectious Diseases Delegation: Mr. Stephen Parker, Director, Foodborne Disease and Antimicrobial Resistance Surveillance Division
3			**x**	Medical Officer of Health/CEO Activity Report for January (Report No. 003-20)		To provide an update on the Medical Officer of Health/CEO activities for January. Lead: Dr. Chris Makie, Medical Officer of Health/CEO
Correspondence						
4			**x**	January 2020 Correspondence		To receive correspondence items a) though l).

OTHER BUSINESS

- Association of Local Public Health Agencies 2020 Winter Symposium February 20 and 21, 2020 in Toronto. Board of Health meeting in February will be reschedule to February 27 to accommodate this conference.

- Next Finance and Facilities Committee Meeting: February 6, 2020 @ 9:00 a.m.
- Special Meeting of the Board of Health, February 6, 2020 at 12:00 p.m.
- Next Governance Committee Meeting: February 27, 2020 @ 6:00 p.m.

- Next Regular Board of Health Meeting: February 27, 2020 @ 7:00 p.m.

CONFIDENTIAL

The Board of Health will move in-camera to consider matters regarding identifiable individuals and to approve confidential minutes from its December 12, 2019 meeting.

ADJOURNMENT

PUBLIC SESSION – MINUTES
MIDDLESEX-LONDON BOARD OF HEALTH

Thursday, December 12, 2019, 5:30 p.m.
399 Ridout Street North, London, Ontario
Side Entrance (recessed door)
MLHU Boardroom

MEMBERS PRESENT: Ms. Trish Fulton (Chair)
Ms. Maureen Cassidy (Vice-Chair)
Mr. Ian Peer
Mr. Matt Reid
Mr. Michael Clarke
Ms. Arielle Kayabaga
Ms. Aina DeViet
Ms. Tino Kasi
Ms. Kelly Elliott

REGRETS: Mr. John Brennan

OTHERS PRESENT: Dr. Christopher Mackie, Secretary-Treasurer
Ms. Elizabeth Milne, Executive Assistant to the Board of Health and Communications Coordinator (Recorder)
Mr. Joe Belancic, Manager, Procurement and Operations
Mr. Jeff Cameron, Manager, IT
Ms. Laura Di Cesare, Director, Healthy Organization
Mr. Brian Glasspoole, Manager, Finance
Mr. Dan Flaherty, Communications Manager
Ms. Heather Lokko, Director, Healthy Start
Ms. Svetlana Mutlak, Executive Assistant
Ms. Melissa McCann, Acting Manager, Program Planning and Evaluation
Mr. David Pavletic, Manager, Food Safety and Healthy Environments
Ms. Kendra Ramer, Manager, Strategic Projects
Ms. Maureen Rowlands, Director, Healthy Living
Dr. Alex Summers, Associate Medical Officer of Health
Ms. Linda Stobo, Manager, Chronic Disease Prevention and Tobacco Control
Mr. Stephen Turner, Director, Environment Health and Infectious Diseases
Mr. Alex Tyml, Online Communications Coordinator
Ms. Lana Rothfels, Medical Student, Western University
Mr. John Cameron, Medical Student, Western University
Ms. Amanda Harvey, Project Coordinator, Strategic Projects

Chair Fulton called the meeting to order at 5:35 p.m.

Dr. Mackie noted that this would be Chair Fulton's last Board meeting, and thanked her for her contributions to the Board of Health over the past seven years.

Vice-Chair Cassidy also offered her remarks, thanking Ms. Fulton for her time and commitment to the Board, the Middlesex-London Health Unit, and the community.

Mr. Peer provided an overview of some of the major public health milestones that Chair Fulton has supported and overseen during her time on the Board of Health. He noted, specifically, that Ms. Fulton served as chair of the Finance & Facilities Committee for five years – since the committee's formation – and spent one year as vice-chair of the Board before agreeing to serve as Board of Health chair.

Chair Fulton thanked Board members for their thoughtful comments and their support over the years. She spoke of the educational value of volunteering and the experience she has gained through working with the Board of Health.

DISCLOSURE OF CONFLICT OF INTEREST

Chair Fulton inquired if there were any disclosures of conflicts of interest. None were declared.

APPROVAL OF AGENDA

It was moved by Ms. DeViet, seconded by Ms. Elliott, *that the **AGENDA** for the December 12, 2019 Board of Health meeting be approved, as amended.*

Carried

MINUTES

It was moved by Mr. Peer, seconded by Mr. Reid, *that the **MINUTES** of the November 21, 2019 Board of Health meeting be approved.*

Carried

It was moved by Ms. Kayabaga, seconded by Mr. Clarke, *that the **MINUTES** of the December 5, 2019 Special Meeting of the Board of Health be approved.*

Carried

It was moved by Mr. Peer, seconded by Ms. Cassidy, *that the Board of Health receive the December 5, 2019 Relocation Advisory Committee meeting minutes.*

Carried

It was moved by Mr. Peer, seconded by Ms. Cassidy, *that the Board of Health receive the December 5, 2019 Finance & Facilities Committee meeting minutes.*

Carried

It was moved by Mr. Peer, seconded by Ms. Cassidy, *that the **MINUTES** of the November 21, 2019 Governance Committee meeting be received.*

Carried

DELEGATIONS AND REPORTS

December 5, 2019 – Finance & Facilities Committee Meeting Update (Report No. 074-19)

Mr. Reid introduced and provided context for each of the reports that the Finance & Facilities Committee considered on December 5, 2019.

Update – Transfer of Services to Thames Valley Children's Centre (Report No. 036-19FFC)

It was moved by Mr. Reid, seconded by Ms. DeViet, *that the Board of Health receive Report No. 036-19FFC re: "Update – Transfer of Services to Thames Valley Children's Centre" for information.*

Carried

Update – Great-West Life Benefits Renewal (Report No. 037-19FFC)

It was moved by Mr. Reid, seconded by Ms. Cassidy, *that the Board of Health approve the extension of the current renewal period of the group insurance rates administered by Great-West Life as described in Report No. 037-18FFC re: "Great-West Life Benefits – Renewal Update."*

Carried

2020–23 Board of Health Budget Submission (Report No. 038-19FFC)

It was moved by Mr. Reid, seconded by Ms. Cassidy, *that the Board of Health:*
1) Receive Report No. 038-19FFC re: "2020–23 Board of Health Budget Submission" for information; and
2) Direct Health Unit staff to work with the City of London to determine appropriateness of applying for Assessment Growth Funding in future years.

Carried

December 5, 2019 – Relocation Advisory Committee Meeting Update (Verbal)

Mr. Peer noted that the Relocation Advisory Committee approved its October 17, 2019 meeting minutes and the next meeting will be held in 2020.

Public Health Services in Middlesex County – Update (Report No. 075-19)

Chair Fulton introduced the report. She observed that some new board members may not have had an opportunity to review the "Public Health Services in Middlesex County" report, and opened the floor to comments and discussion, given that the report is new territory for most of the Board.

Discussion ensued on the following items:

- Where comments, suggestions, and feedback in regard to the report may be directed.
- The data which the comparators used in the report – specifically, how Middlesex County compares to the City of London versus the provincial data used in this report.
- If work is being done to disaggregate County data by municipality, as the municipalities are so diverse and as there are many different populations within the County.
- That comparing Middlesex County to provincial data was a strategic decision and a more objective comparator.
- That staff are currently considering and working toward developing health and community planning areas that will divide the County into geographic units more useful for purposes of data collection.
- How this work relates to the collection of data for the Community Health Status Resource.

Dr. Mackie noted that Health Unit staff would also accept an invitation to send a delegation to County Council to provide an update on the status of action items and this report.

It was moved by Ms. Elliott, seconded by Mr. Clarke, *that the Board of Health:*
1) Receive Report No. 075-19 re: "Public Health Services in Middlesex County – Update" for information; and
2) Direct staff to forward the update to Middlesex County Council.

Carried

Public Health Modernization Update – Consultation and Response (Report No. 076-19)

Dr. Mackie introduced the report. Dr. Summers then provided context, with an update on the consultation process, and outlined the steps that will be taken to conduct consultations with staff, Board, and community partners. Dr. Summers noted that the submission date for feedback is February 10, 2020.

Discussion ensued on the following items:

- How different ideas may be shared with the Board to ensure that all voices are heard/filtered/reviewed.
- What the consultation process might look like, how information and data from the discussion paper will be shared in order to generate discussion, and who will facilitate such discussions.

Mr. Clarke noted that he will respond to the consultation as an individual, not as a member of the Board – representing himself only – and encouraged others to do the same.

It was moved by Mr. Peer, seconded by Mr. Clarke, *that the Board of Health:*
1) Receive Report No. 076-19 re: "Public Health Modernization Update – Consultation and Response" for information;
2) Direct staff to conduct consultations with internal and external stakeholders to develop a comprehensive and unified Middlesex-London Health Unit response;
3) Direct staff to arrange for a focused off-site retreat in January 2020 for Board of Health consultation; and
4) Direct staff to arrange for a special board meeting in early February 2020 for approval of the MLHU response in anticipation of the submission deadline on February 10, 2020.

Carried

Summary Information Report for December 2019 (Report No. 077-19)

Mr. Stephen Turner, Director, Environment Health and Infectious Diseases, introduced Mr. David Pavletic, Manager, Food Safety and Healthy Environments, who answered questions regarding:

- Changes in food premise regulations that may have the potential to increase risk levels in certain situations, and how might the Health Unit respond to these risks.
- That all Public Health Inspectors work on risk-based assessments.
- Risks associated with the changes to food premise amendments. Mr. Pavletic emphasized that the areas proposed are low-risk food areas where prepackaged foods are present, and that staff have addressed the level of risk based on feedback from this consultation.

It was moved by Ms. Kayabaga, seconded by Ms. DeViet, *that the Board of Health receive Report No. 077-19 re: "Summary Information Report for December 2019" for information.*

Carried

Medical Officer of Health/CEO Activity Report for December (Report No. 078-19)

Dr. Mackie provided an update for the Board regarding the recent Land Planning and Appeals Tribunal (LPAT) decision, which was successful in allowing the Health Unit to move forward with establishing a Consumption and Treatment Centre at 446 York Street. Dr. Mackie noted that there have been two separate appeals to the decision, but staff are optimistic nonetheless that everything will proceed in a timely manner.

Mr. Belancic provided further context and an update regarding these appeals.

It was moved by Ms. Elliott, seconded by Ms. Cassidy, *that the Board of Health receive Report No. 077-19 re: "Medical Officer of Health/CEO Activity Report for December" for information.*

Carried

CORRESPONDENCE

It was moved by Ms. Kayabaga, seconded by Ms. Elliott, *that the Board of Health receive correspondence items a) through l).*

Carried

OTHER BUSINESS

Chair Fulton reviewed the revised 2020 Board of Health meeting schedule, noting the dates of the January and February meetings.

It was moved by Ms. DeViet, seconded by Mr. Reid, *that the Board of Health approve the revised 2020 Board of Health and standing committee meeting dates.*

Carried

- Next Finance & Facilities Committee meeting: February 6, 2020 @ 9:00 a.m.
- Next Governance Committee meeting: February 27, 2020 @ 6:00 p.m.
- Next Board of Health meeting: January 23, 2020 @ 7:00 p.m.

Chair Fulton also noted that there would be a Special Meeting of the Board of Health in early February to provide feedback on modernization consultations.

CONFIDENTIAL

At 6:20 p.m., it was moved by Ms. Elliott, seconded by Mr. Peer, that the Board of Health *move in-camera to consider matters regarding a trade secret or scientific, technical, commercial, financial, or labour-relations information, supplied in confidence to the local board, which, if disclosed, could reasonably be expected to prejudice significantly the competitive position or interfere significantly with the contractual or other negotiations of a person, group of persons, or organization; a trade secret or scientific, technical, commercial, or financial information that belongs to the local board and has monetary value or potential monetary value.*

Carried

At 6:43 p.m., it was moved by Ms. Elliott, seconded by Mr. Clarke, *that the Board of Health rise and return to public session.*

Carried

At 6:43 p.m., the Board of Health returned to public session.

ADJOURNMENT

At 6:44 p.m., it was moved by Ms. Cassidy, seconded by Ms. DeViet, *that the meeting be adjourned.*

Carried

_____ _____

TRISH FULTON
Chair

CHRISTOPHER MACKIE
Secretary-Treasurer

MIDDLESEX-LONDON HEALTH UNIT

REPORT NO. 001-20

TO: Chair and Members of the Board of Health

FROM: Christopher Mackie, Medical Officer of Health / CEO

DATE: 2019 January 23

ELECTION OF 2020 BOARD OF HEALTH EXECUTIVE AND OTHER PROCEDURES

Recommendations

It is recommended that the Board of Health:

1. ***Elect a Chair and a Vice-Chair for the current term;***
2. ***Appoint the Medical Officer of Health/Chief Executive Officer as Secretary-Treasurer for 2020; and***
3. ***Recognize and appoint members to the Finance & Facilities Committee, the Governance Committee, and the Relocation Advisory Committee.***

Board Membership Update

The Board of Health consists of the following Members:

1. **Five provincial appointees:** Mr. Ian Peer, Ms. Tino Kasi, Mr. Michael Clarke, and Mr. Robert Parker (plus one vacancy);
2. **Three City of London appointees**: Ms. Maureen Cassidy, Ms. Arielle Kayabaga, and Mr. Matt Reid; and
3. **Three Middlesex County appointees:** Ms. Aina DeViet, Ms. Kelly Elliott, and Mr. John Brennan.

The terms of reference for Board of Health membership can be found in Appendix A.

Procedures for the First Meeting of the Year

Board of Health Bylaw No. 3 regulates the proceedings of the Board. Section 18.0 of this Bylaw addresses Elections and the Appointment of Committees:

18.1 At the first meeting of each calendar year the Board shall elect by a majority vote a Chair, Vice-Chair, and Secretary-Treasurer for that year.

18.2 The Chair of the Board shall be elected for one year with a possible renewal of an additional year. The Chair shall rotate among the City, County and Provincial appointees.

18.3 The Vice-Chair and Secretary-Treasurer shall be elected for a one-year term.

18.4 The Secretary-Treasurer function is customarily performed by the Medical Officer of Health/Chief Executive Officer.

18.5 At the first meeting of each calendar year, the Board shall appoint the representative or representatives required to be appointed annually at the first meeting by the Board to other Boards, bodies, or commissions where appropriate.

18.6 The Board may appoint committees from time to time to consider such matters as specified by the Board (e.g., Finance and Facilities, Governance, etc.).

Election of Executive Officers

Chair: As per the current Bylaw No. 3, Section 18.2, as stated above, the Chair is elected for one year with a possible renewal of one additional year. The position rotates among the three representative bodies. The Chair for 2019 was Ms. Trish Fulton, a provincial appointee.

Vice-Chair: Bylaw No. 3, Section 18.3 stipulates that the Vice-Chair is elected for a one-year term. Ms. Maureen Cassidy, a City of London appointee, was the 2019 Vice-Chair.

Secretary-Treasurer: Bylaw No. 3, Section 18.4 states that the Secretary-Treasurer function is customarily performed by the Medical Officer of Health/Chief Executive Officer.

Establishment of Standing Committees

Under Section 1.3 (ii) of Board of Health Policy No. 1-010 (Structure and Responsibilities of the Board of Health), the Board determines whether it wishes to establish one or more standing committees at its first meeting of the year. In 2013, the Board of Health created the Finance & Facilities Committee, a standing committee that meets the first Thursday of each month and/or at the call of the Committee Chair. At its December 2013 meeting, the Board created the Governance Committee, a standing committee that has been meeting quarterly, or at the call of the Committee Chair, immediately preceding the Board of Health meeting. At its September 2018 meeting, the Board created the Relocation Advisory Committee (RAC), which meets on an ad hoc basis or at the call of the Committee Chair, Mr. Ian Peer, who was appointed at the RAC's October 2018 meeting to serve until the committee ceases to exist.

1. Finance & Facilities Committee (terms of reference attached as Appendix B)

The membership of the Committee will consist of a total of five voting members. The members shall include the Chair and Vice-Chair of the Board of Health, and at least one Middlesex County Board Member, one City of London Board Member, and two provincial Board Members.

2. Governance Committee (terms of reference attached as Appendix C)

The membership of the Committee will consist of a total of five voting members. The members shall include the Chair and Vice-Chair of the Board of Health, and at least one Middlesex County Board Member, one City of London Board Member, and two provincial Board Members.

3. Ad Hoc Committee: Relocation Advisory Committee (terms of reference attached as Appendix D)

The membership of the Committee will consist of a total of five voting members. The members shall include the Chair of the Board of Health and at least one Middlesex County Board Member, one City of London Board Member, and one provincial Board Member. Members will be selected notwithstanding their membership on any other standing committee. The Chair of the Relocation Advisory Committee (Mr. Ian Peer) was appointed at the Committee's first meeting and will serve until the committee ceases to exist. All additional RAC members, including the individuals previously appointed (Mr. Michael Clarke, Mr. Matt Reid, and Mr. John Brennan), will require (re)appointment at the January Board of Health meeting.

All Board of Health members may attend meetings of the Finance & Facilities Committee, Governance Committee, and Relocation Advisory Committee, but only Committee members may vote.

Meeting Schedule for 2020

The 2020 Revised Board of Health and Standing Committee Meeting Schedule was approved by the Board of Health at its December 12, 2019 meeting (attached as Appendix E).

This report was prepared by the Office of the Medical Officer of Health and the Healthy Organization Division.

Christopher Mackie, MD, MHSc, CCFP, FRCPC
Medical Officer of Health / CEO

MIDDLESEX-LONDON HEALTH UNIT

Middlesex-London Board of Health

Appendix A to Report 001-20

Title	First Name	Last Name	Appointed By	First Appointed	Term Expires on
Ms.	Arielle	Kayabaga	City of London	November 26, 2019	November 15, 2022
Mr.	Matt	Reid	City of London (Citizen Appointee)	December 1, 2018	November 15, 2022
Ms.	Maureen	Cassidy	City of London	September 27, 2016	November 15, 2022
Mr.	John	Brennan	County of Middlesex	December 18, 2018	November 30, 2022
Ms.	Kelly	Elliott	County of Middlesex	December 18, 2018	November 30, 2022
Ms.	Aina	DeViet	County of Middlesex	December 18, 2018	November 30, 2022
Ms.	Tino	Kasi	Province of Ontario	November 2, 2016	December 31, 2020
Mr.	Ian	Peer	Province of Ontario	November 14, 2012	December 31, 2020
Mr.	Michael	Clarke	Province of Ontario	March 1, 2017	February 29, 2020
Mr.	Robert	Parker	Province of Ontario	January 9, 2020	December 31, 2020

Last updated 1/15/2020

MIDDLESEX-LONDON HEALTH UNIT
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Appendix C
Policy G-290

FINANCE & FACILITIES COMMITTEE
TERMS OF REFERENCE

PURPOSE

The committee serves to provide an advisory and monitoring role. The committee's role is to assist and advise the Board of Health, the Medical Officer of Health /Chief Executive Officer (MOH / CEO), and the Manager, Finance in the administration and risk management of matters related to the finances and facilities of the organization.

REPORTING RELATIONSHIP

The Finance & Facilities Committee is a committee reporting to the Board of Health of the Middlesex-London Health Unit. The Chair of the Finance & Facilities Committee, with the assistance of the Manager, Finance and the MOH / CEO, will make reports to the Board of Health as a whole following each of the meetings of the Finance & Facilities Committee.

MEMBERSHIP

The membership of the Committee will consist of a total of five (5) voting members. The members will include the Chair and Vice-Chair of the Board of Health and in total, the membership will contain at least one Middlesex County Board Member, one City of London Board Member and two provincial Board Members.

The Secretary-Treasurer will be an ex-officio non-voting member.

Staff support includes:

- Director, Corporate Services;
- Manager, Finance; and
- Executive Assistant to the Board of Health and Communications or the Executive Assistant to the Medical Officer of Health depending on availability.

Other Board of Health members are able to attend the Finance & Facilities Committee but are not able to vote.

CHAIR

The Finance & Facilities Committee will elect a Chair at the first meeting of the year to serve for a one or two-year term. The Chair of the Committee may be appointed for additional terms following the completion of an appointment to enhance continuity of the Committee.

TERM OF OFFICE

At the first Board of Health meeting of the year the Board will review the committee membership. At this time, if any new appointments are required, the position(s) will be filled by majority vote. The appointment will be for at least one year, and where possible, staggered terms will be maintained to ensure a balance of new and continuing members. A member may serve on the committee as long as he or she remains a Board of Health member.

DUTIES

The Committee will seek the assistance of and consult with the MOH / CEO, the Director, Corporate Services and the Manager, Finance for the purposes of making recommendations to the Board of Health on the following matters:

1. Reviewing detailed financial statements and analyses.
2. Reviewing the annual cost-shared and 100% funded program budgets, for the purposes of governing the finances of the Health Unit.
3. Reviewing the annual financial statements and auditor's report for approval by the Board.
4. Reviewing annually the types and amounts of insurance carried by the Health Unit.
5. Reviewing periodically administrative policies relating to the financial management of the organization, including but not limited to, procurement, investments, and signing authority.
6. Monitoring the Health Unit's physical assets and facilities.
7. Reviewing annually all service level agreements.
8. Reviewing all funding agreements.
9. Review governance-related financial policies.
10. Enquire into the financial risks faced by the organization, and the appropriateness of related controls to minimize their potential impact.

FREQUENCY OF MEETINGS

The Committee will meet monthly between Board of Health meetings, if a meeting is deemed to be not required it shall be cancelled at the call of the Chair of the Committee.

AGENDA & MINUTES

1. The Chair of the committee, with input from the Manager, Finance and the Medical Officer of Health & Chief Executive Officer (MOH / CEO), will prepare agendas for regular meetings of the committee.
2. Additional items may be added at the meeting if necessary.
3. The recorder is the Executive Assistant to the Board of Health and Communications.
4. Agenda & minutes will be made available at least 5 days prior to meetings.
5. Agenda & meeting minutes are provided to all Board of Health members.

BYLAWS:

As per Section 19.1 of Board of Health By-Law No. 3, the rules governing the proceedings of the Board shall be observed in the Committees insofar as applicable. This will include rules related to conducting of meetings; decision making; quorum and self-evaluation.

REVIEW

The terms of reference will be reviewed every 2 (two) years.

Implementation Date: June 20, 2013
Revision Date: April 7, 2016

MIDDLESEX-LONDON HEALTH UNIT
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Appendix A
Policy G-290

GOVERNANCE COMMITTEE

TERMS OF REFERENCE

PURPOSE

The committee serves to provide an advisory and monitoring role. The committee's role is to assist and advise the Board of Health, the Medical Officer of Health / Chief Executive Officer (MOH / CEO), and the Director, Healthy Organization in the administration and risk management of matters related to Board membership and recruitment, Board self-evaluation and governance policy.

REPORTING RELATIONSHIP

The Governance Committee is a committee reporting to the Board of Health of the Middlesex-London Health Unit. The Chair of the Governance Committee, with the assistance of the Director, Corporate Services and the MOH / CEO, will make reports to the Board of Health as a whole following each of the meetings of the Governance Committee.

MEMBERSHIP

The membership of the Committee will consist of a total of five (5) voting members. The members will include the Chair and Vice-Chair of the Board of Health and in total, the membership will contain at least one Middlesex County Board Member, one City of London Board Member and two provincial Board Members.

The Secretary-Treasurer will be an ex-officio non-voting member.

Staff support includes:

- Director, Healthy Organization;
- Executive Assistant to the Board of Health and Communications or the Executive Assistant to the Medical Officer of Health depending on availability; and
- Manager, Strategic Projects.

Other Board of Health members are able to attend the Governance Committee but are not able to vote.

CHAIR

The Governance Committee will elect a Chair at the first meeting of the year to serve for a one or two-year term. The Chair of the Committee may be appointed for additional terms following the completion of an appointment to enhance continuity of the Committee.

TERM OF OFFICE

At the first Board of Health meeting of the year the Board will review the committee membership. At this time, if any new appointments are required, the position(s) will be filled by majority vote. The appointment will be for at least one year, and where possible, staggered terms will be maintained to ensure a balance of new and continuing members. A member may serve on the committee as long as he or she remains a Board of Health member.

DUTIES

The Committee will seek the assistance of and consult with the MOH / CEO and the Director, Healthy Organization for the purposes of making recommendations to the Board of Health on the following matters:

1. Assist with the recruitment of suitable Board members.
2. Oversee Board member succession planning and make recommendations regarding recruitment of new Board members.
3. Provide advice regarding orientation and training of Board members.
4. Direct and oversee the assessment of the Board and Board committees and make recommendations to the Board regarding ways in which governance performance and contributions can be enhanced.
5. Oversee performance indicators that are reported to the Board and provide advice regarding the biennial Board retreat.
6. Compliance with the Board of Health Code of Conduct.
7. Performance evaluation of the MOH / CEO.
8. Governance policy and by-law review and development.
9. Compliance with the Organizational Standards.
10. Strategic Planning.
11. Review and make recommendations on the direction of the Privacy program.
12. Review and make recommendations on the direction of the Risk Management program.
13. Advise the Board on implications of significant developments in privacy legislation.
14. Review the annual privacy report.
15. Oversee the principles of the recruitment/retention strategy for employees.
16. Provide oversight related to occupational health and safety.

FREQUENCY OF MEETINGS

The Committee will meet quarterly or at the call of the Chair of the Committee.

AGENDA & MINUTES

1. The Chair of the committee, with input from the Director, Healthy Organization and the MOH / CEO, will prepare agendas for regular meetings of the committee.
2. Additional items may be added at the meeting if necessary.
3. The recorder is the Executive Assistant to the Board of Health.
4. Agenda & minutes will be made available at least 5 days prior to meetings.
5. Agenda & meeting minutes are provided to all Board of Health members.

BYLAWS:

As per Section 19.1 of Board of Health By-Law No. 3, the rules governing the proceedings of the Board shall be observed in the Committees insofar as applicable. This will include rules related to conducting of meetings; decision making; quorum and self-evaluation.

REVIEW

The terms of reference will be reviewed every 2 (two) years.

Implementation Date: June 20, 2013
Revision Date: April 21, 2016

RELOCATION ADVISORY AD HOC COMMITTEE

PURPOSE

The committee serves to provide an advisory and monitoring role. The committee's role is to assist and advise the Board of Health, the Medical Officer of Health / Chief Executive Officer (MOH / CEO), and the Director, Healthy Organization in the administration and risk management of matters related to the design, build, move and commissioning of the new location.

REPORTING RELATIONSHIP

The new Relocation Advisory Committee is an ad hoc committee reporting to the Board of Health of the Middlesex-London Health Unit. The Chair of the Relocation Advisory Committee, with the assistance of the Director, Healthy Organization and the MOH / CEO, will make reports to the Board of Health as a whole following each of the meetings.

MEMBERSHIP

The membership of the Committee will consist of a total of five (5) voting members. The members will include the Chair of the Board of Health and will contain at least one Middlesex County Board Member, one City of London Board Member and one provincial Board Member. Members will be selected notwithstanding their membership in any other standing committee.

The Secretary-Treasurer will be an ex-officio non-voting member.

Staff support include:

- Director, Healthy Organization;
- Executive Assistant to the Board of Health and Communications Coordinator or the Executive Assistant to the Medical Officer of Health depending on availability; and
- Manager, Strategic Projects
- Manager, Procurement and Operations

Other Board of Health members are invited to attend the Relocation Advisory Committee but do not hold voting rights.

CHAIR

The Relocation Advisory Committee will elect a Chair at the first meeting to serve until the committee ceases to exist.

DUTIES

The Committee will seek the assistance of and consult with the MOH / CEO and the Director, Healthy Organization for the purposes of providing oversight and making recommendations to the Board of Health on the following matters:

1. Reviewing proposals for the allocation of funds and resources in relation to the Location Project.
2. Monitoring the Health Unit's physical assets and facilities in relation to the Location Project.

RELOCATION ADVISORY AD HOC COMMITTEE

3. Reviewing all funding agreements related to the Location Project.
4. Reviewing governance-related policies impacted by the Location Project.
5. Enquiring into the financial and reputational risks faced by the organization related to the design, build, move and commissioning of the new facility and the appropriateness of related controls to minimize their potential impact.
6. Reviewing variances in overall project timelines greater than 1 month.
7. Reviewing negative variances in approved budgets of greater than 15%.
8. Receiving updates from Architect and Construction Project Manager.

FREQUENCY OF MEETINGS

The Committee will meet at the call of the Chair of the Committee.

AGENDA & MINUTES

1. The Chair of the committee, with input from the Director, Healthy Organization and the MOH / CEO, will prepare agendas for regular meetings of the committee.
2. Additional items may be added at the meeting if necessary.
3. The recorder is the Executive Assistant to the Board of Health and Communications Coordinator.
4. Agenda & minutes will be made available at least 5 days prior to meetings.
5. Agenda & meeting minutes are provided to all Board of Health members.

BYLAWS:

As per Section 19.1 of Board of Health By-Law No. 3, the rules governing the proceedings of the Board of Health shall be observed in the Committees insofar as applicable. This will include rules related to conducting of meetings; decision making; quorum and self-evaluation.

Implementation Date: October 1, 2018

2020 Board of Health, Governance Committee and Finance & Facilities Committee meeting dates

2020 Board of Health and Governance Committee Meeting Dates	
Thursday, January 23	Inaugural meeting
Thursday, February 27	Also Governance Committee
Thursday, March 19	
Thursday, April 16	
Thursday, May 21	
Thursday, June 18	Also Governance Committee
Thursday, July 16	
Thursday, August 20	***usually cancelled**
Thursday, September 17	
Thursday, October 15	Also Governance Committee
Thursday, November 19	
Thursday, December 10	

2020 Finance & Facilities Committee Meeting Dates
Thursday, February 6 *half-day budget meeting, 9:00 a.m. - 12 noon
Thursday, February 13 *half-day budget meeting, 9:00 a.m. - 12 noon
Thursday, March 5
Thursday, April 2
Thursday, May 7
Thursday, June 4
Thursday, July 2
Thursday, August 6 ***usually cancelled**
Thursday, September 3
Thursday, October 1
Thursday, November 5
Thursday, December 3

MIDDLESEX-LONDON HEALTH UNIT

REPORT NO. 002-20

TO: Chair and Members of the Board of Health

FROM: Christopher Mackie, Medical Officer of Health / CEO

DATE: 2020 January 23

FOODNET CANADA ONTARIO SENTINEL SITE UPDATE AND MEMORANDUM OF AGREEMENT

Recommendations

It is recommended that the Board of Health:

1. ***Receive Report No. 002-20 re: "FoodNet Canada Ontario Sentinel Site Update and Memorandum of Agreement"; and***
2. ***Direct staff to renew the contract with FoodNet Canada for an additional one-year term.***

Key Points

- Since 2014, the Health Unit has successfully participated in the Public Health Agency of Canada's FoodNet Canada program as the sentinel site for Ontario. This partnership has been mutually beneficial for the Health Unit, provincial public health stakeholders, and the Public Health Agency of Canada.
- FoodNet Canada is a multi-partner sentinel surveillance program for food- and water-borne illnesses. Surveillance results have generated information that changed federal food regulations.
- Renewal of the FoodNet Canada Memorandum of Agreement is sought for another one-year term (2020–21), with associated federal funding in an amount of up to $138,842.

Background

MLHU has been the Ontario sentinel site for the Public Health Agency of Canada's (PHAC) FoodNet Canada (FNC) program since 2014. Currently there are a total of four sentinel sites across Canada; these are located in British Columbia, Alberta, Ontario, and Quebec.

FNC is a multi-partner, enhanced surveillance program for food- and water-borne illnesses with the purpose of determining what foods and other sources are making Canadians ill. FNC is the PHAC surveillance program with the ability to examine trends in enteric illness and to assess risk over time to determine public health impact. FNC considers enteric illnesses from a unique perspective which integrates enhanced follow-up of human cases of selected enteric diseases, testing of retail food products of interest for infectious agents that can cause illness, and sampling of manure from local farms and surface water for infectious agents that can cause illnesses.

MLHU is responsible for carrying out two of the FNC program's four components: enhanced follow-up of human cases reported among Middlesex-London residents, and purchase of retail food items to be tested for infectious pathogens. Participation in FNC has been deemed a great success, and one that continues to be mutually beneficial for MLHU, its provincial public health partners, and PHAC. Health Unit staff collaborate with an expanded network of local, provincial, and federal public health partners, enhancing knowledge and practice through access to evidence-based research and knowledge exchange activities. MLHU continues to be recognized as a provincial leader in infectious disease surveillance.

Access to FNC's enhanced surveillance data, including expanded laboratory analysis, has allowed the Health Unit the opportunity to better understand the nature and causes of food-borne illnesses in the Middlesex-London region, and was used in the investigation of a local *Salmonella* outbreak in 2018.

Food Safety Success

In recent years, Canadian outbreaks of *Salmonella* infection have been linked to the consumption of frozen breaded chicken products (nuggets and strips). FNC data, collected through enhanced case follow-up and ongoing retail product sampling, have provided compelling evidence regarding the possible burden of illness associated with these products. FNC presented this evidence, whereupon the Canadian Food Inspection Agency (CFIA) announced new industry standards whereby instance of *Salmonella* must be below detectable limits in all frozen breaded chicken products. FNC's surveillance activities will continue and will be used to assess the effectiveness of this new food safety policy.

For a more comprehensive account of the work performed by FNC, please consult the 2018 Annual Report (Appendix A) and summary info-graphic (Appendix B) attached herewith for reference.

Next Steps

In March 2020, MLHU's site coordinator, in partnership with a PHAC Epidemiologist, will present an overview of the FoodNet Canada program, with an analysis of the 2019 data, at The Ontario Public Health Convention (TOPHC).

PHAC is pleased with MLHU's ongoing success as the program's Ontario sentinel site and has offered to extend funding until March 31, 2021. PHAC funding to MLHU includes a 1.0 FTE Site Coordinator and a 0.2 FTE Retail Sampler to conduct weekly food sampling across the Middlesex-London region. Funding is also provided for office expenses, administration, and staff training, as outlined in the Memorandum of Agreement (see Appendix C). Total federal funding for the entire program is $138,842.

Conclusion

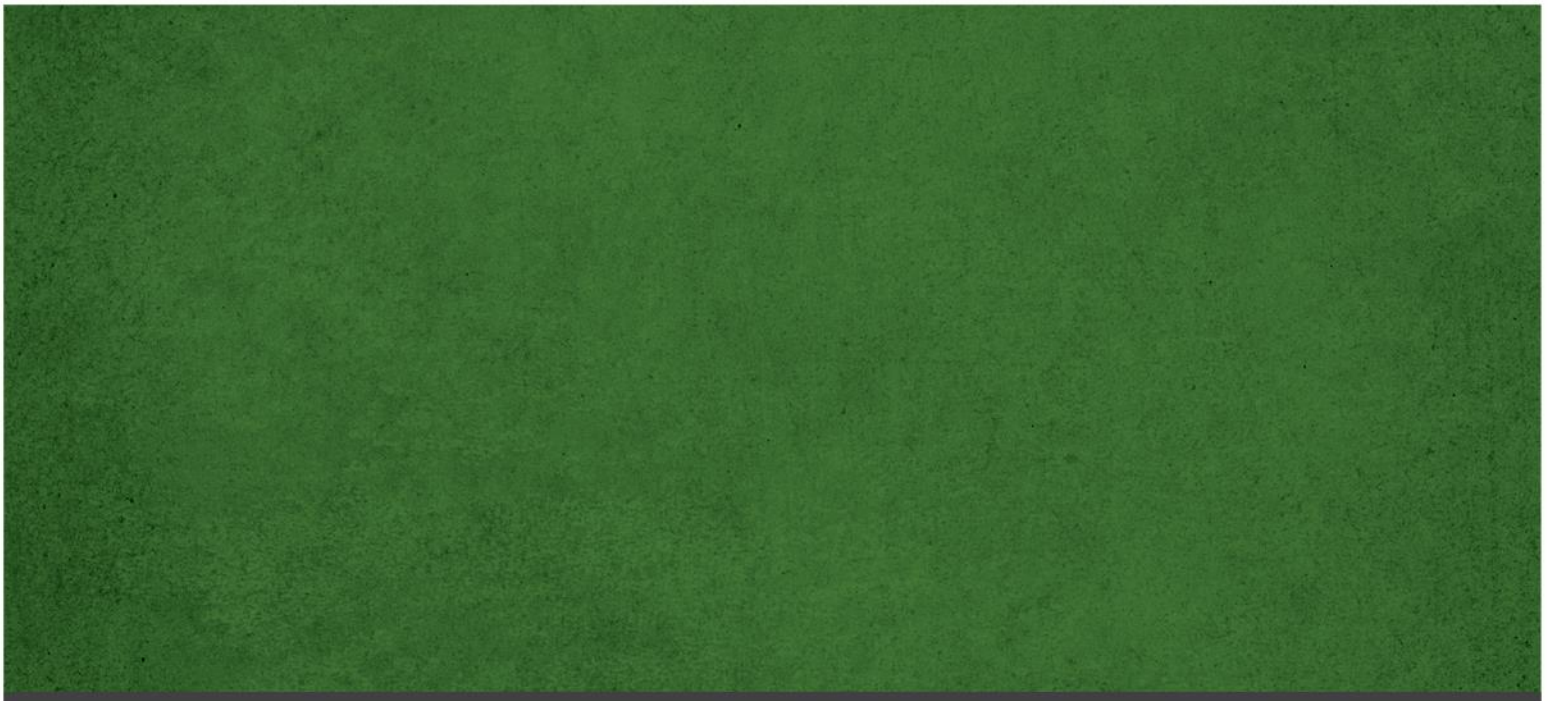
In serving as the FNC Ontario sentinel site, MLHU will continue to collect high-quality data and make an important contribution to reducing the burden of food- and water-borne illnesses at the local, provincial, and federal levels.

This report was prepared by the Environmental Health and Infectious Disease Division.

Christopher Mackie, MD, MHSc, CCFP, FRCPC
Medical Officer of Health / CEO

Appendix A to Report No. 002-20

FOODNET CANADA ANNUAL REPORT 2018



PROTECTING AND EMPOWERING CANADIANS TO IMPROVE THEIR HEALTH

Public Health Agency of Canada
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Canada

TO PROMOTE AND PROTECT THE HEALTH OF CANADIANS THROUGH LEADERSHIP, PARTNERSHIP, INNOVATION AND ACTION IN PUBLIC HEALTH.

—Public Health Agency of Canada

Également disponible en français sous le titre:
FoodNet Canada Rapport annuel 2018

To obtain additional information, please contact:

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FOREWORD

The Public Health Agency of Canada's (PHAC) FoodNet Canada surveillance system is pleased to present the latest annual report which outlines the results of our surveillance activities conducted in 2018.

The report highlights FoodNet Canada findings from its sentinel sites in British Columbia, Alberta and Ontario. It focuses on trends in enteric pathogen disease rates, as well as trends in the prevalence of these pathogens found on potential disease sources: retail meats, manure from food producing animals and water. We also highlight the impact of enteric pathogen trends on public health.

It is our hope that this report will be used to inform and shape discussions on food safety issues regarding enteric diseases and their sources.

ACKNOWLEDGEMENTS

PHAC acknowledges the significant investments made by FoodNet Canada partners in the three sentinel sites, our provincial and federal government agency colleagues, and academic and industry collaborators who help to make this program a continued success.

EXECUTIVE SUMMARY

The endemic incidence rate of campylobacteriosis in FoodNet Canada's three sentinel sites was not significantly different from 2017 to 2018. *Campylobacter* was frequently detected in 2018 on retail chicken breasts, and on farm it was found on broiler chicken, swine, turkey and feedlot beef manure. *Campylobacter jejuni* was the primary subtype identified in human cases, retail chicken samples, broiler chicken farms and turkey farms across all sentinel sites. Among human cases, *Campylobacter coli* is less commonly associated with disease. In 2018, it was also identified that pork sausage products pose little risk of campylobacteriosis to Canadians.

The overall endemic *Salmonella* incidence rate decreased in 2018. The incidence of *Salmonella* Enteritidis (SE), which is the most common *Salmonella* serovar reported in humans in Canada, also decreased in 2018 to the lowest overall incidence observed since 2015. This decrease seems to be driven by a significant decrease in the incidence of human SE illness in the British Columbia sentinel site. Regional differences in SE prevalence across all the surveillance components continued to be observed in 2018. Among human endemic cases, higher incidence rates of SE infections were observed in the British Columbia and Alberta sites, however, both rates decreased in 2018. The lowest incidence rate was reported in the Ontario site, which increased slightly since 2017. In the Ontario site, the prevalence of SE from chicken breast samples significantly increased since 2017, while the prevalence of SE in broiler chicken manure significantly increased between 2015 and 2018. As in 2017, the majority of human clusters identified through whole genome sequencing (WGS) that contained a non-clinical isolate were for SE strains. While the number of clusters containing turkey manure increased since 2017, the majority of clusters continued to be those including a combination of human isolates and frozen raw breaded chicken products. We will continue to track the burden of illness associated with frozen raw breaded chicken products in 2019, with new requirements in place to ensure *Salmonella* is not detectable in these products.

The majority of clinical cases of shigatoxigenic *Escherichia coli* (STEC) were domestically acquired in 2018, with a significant increase in both travel and endemic incidence rates. The increase in incidence was primarily driven by the Alberta sentinel site, which began testing all STEC-confirmed stool samples for non-O157 serogroups starting June 11, 2018 in addition to continuing O157 testing. Six serogroups have been prioritized with regards to human health: O26, O45, O103, O111, O121 and O145. Serogroups O26 and O121 were identified among both human cases and irrigation water, representing potential environmental exposure sources. There was also overlap with subtype O157 among human isolates and feedlot beef manure, and an O157:H7 positive ground beef sample collected from a farmers' market. Retail pork sausage had significantly higher prevalence of STEC as compared with ground beef. Retail meat samples collected from farmers' markets had higher STEC as compared with samples collected from independent and chain grocery stores.

Despite the significant increase in *L. monocytogenes* detected in frozen raw breaded chicken products between 2016 and 2017, the proportion in 2018 remained consistent with the previous year. However, the proportion of ground beef samples testing positive for *L. monocytogenes* continued to be high in 2018. Targeted consumer education efforts, particularly towards high risk populations (i.e. pregnant women, the elderly, and those who are immunocompromised) to increase awareness of raw or undercooked ground beef as a potential source of listeriosis, are warranted. Of the routinely sampled retail products (i.e. from independent or chain grocery stores), the proportion of both ground beef and pork sausage samples testing positive for *L. monocytogenes* was found to be significantly higher among samples collected from independent stores compared to chain grocery stores.

As in the previous year, travel-acquired infections constituted the majority of *Cyclospora* cases in 2018. Among these travel cases, 67% reported travel to the Americas (Central, South and Caribbean) region. Mexico was the most common destination reported (83%) among these cases. Education regarding safe food practices continues to be the best strategy to reduce the risk of *Cyclospora* infections in Canadian travelers.

INFORMATION TO THE READER

FoodNet Canada is a multi-partner sentinel site surveillance system led by the Public Health Agency of Canada (PHAC) that monitors trends in enteric pathogens in Canada.

In collaboration with public health jurisdictions and provincial public health laboratories, FoodNet Canada conducts continuous and episodic surveillance activities in three sentinel sites collecting information across four components: human, retail (meat and produce), on-farm (farm animals), and water. Continuous surveillance occurs throughout the year to identify trends in human disease occurrence, exposure sources, and attributes illnesses to sources and settings for targeted enteric pathogens. Information on the potential sources of risk to human health helps direct food and water safety actions and programming as well as public health interventions, and to evaluate their effectiveness. Specifically, FoodNet Canada's core objectives are to:

- determine what food and other sources are making Canadians ill;
- determine significant risk factors for enteric illness;
- accurately track enteric disease rates and risks over time; and
- provide practical prevention information to assist local and provincial public health officials to:
  - prioritize risks;
  - compare interventions, direct actions and advance policy; and
  - assess effectiveness of food safety activities / public health interventions and measure performance.

This report draws on knowledge from a variety of sources to present a comprehensive and meaningful interpretation of trends and issues identified through FoodNet Canada data, as well as from collaborating programs within PHAC. Examples include:

- Centre for Foodborne, Environmental and Zoonotic Infectious Diseases (CFEZID):
  - Foodborne Disease and Antimicrobial Resistance Surveillance Division (FDASD):
    - Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS)
    - National Enteric Surveillance Program (NESP),
    - Enhanced National Listeriosis Surveillance Program
  - Outbreak Management Division (OMD)
- National Microbiology Laboratory (NML)

Information from these programs is used to support and enhance findings through the integration and assessment of relationships observed over time between human illness, contamination levels in retail foods, food-animal farm manure and water. Known interventions implemented within the food industry were also considered when interpreting surveillance trends.

For information on data collection and reporting and surveillance strategy please see Appendix A.

DEFINITIONS

Endemic: Endemic case of disease are affected individuals who had an infection that was considered sporadic and domestically acquired (i.e. within Canada).

Exposure: Point along the water-borne, food-borne, animal-to-person, or person-to-person transmission route at which people were suspected to have been exposed to a given pathogen.

Travel: Travel-related cases of disease (excludes non-endemic cases) are individuals who travelled outside of Canada, and where the travel dates overlap with the expected disease incubation period (varies depending on the pathogen).

Lost to follow-up: Includes cases that could not be followed up with an interview by public health.

Non-endemic: Includes immigration-related cases where illness was acquired outside of Canada.

Outbreak: Outbreak-related cases of disease are one of a number of affected individuals associated with an increased occurrence of the same infectious disease, whose illness is confirmed through a public health partner (ON, AB, and BC sentinel sites) on the basis of laboratory and/or epidemiological evidence.

Shigatoxigenic Escherichia coli (STEC): *Escherichia coli* are normal intestinal inhabitants in humans and animals, and most strains do not cause enteric disease. However, the group of shigatoxigenic *E. coli* includes certain toxin-producing strains that can cause severe diarrhea and, in some people (particularly young children), a form of acute kidney failure called hemolytic uremic syndrome.

Significant*:* The term “significant” in this report has been reserved for statistically significant findings (i.e. $p < 0.05$).

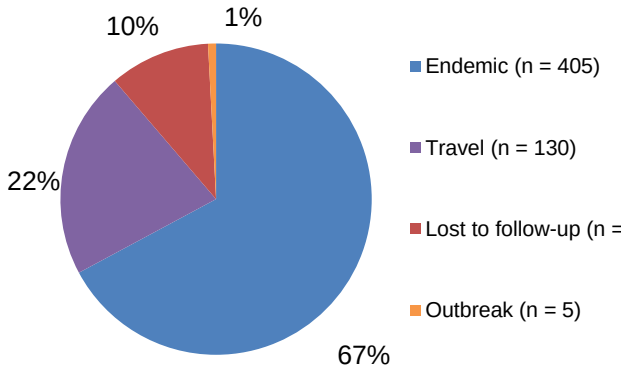
CAMPYLOBACTER

HUMAN SURVEILLANCE SUMMARY

Table 1.1: Annual incidence rates (per 100,000 population) of *Campylobacter* spp. by case classification and FoodNet Canada sentinel site, 2018 (with 2017 shown for reference).

	Ontario site		Alberta site		British Columbia site		All sites	
	2017	2018	2017	2018	2017	2018	2017	2018
Endemic	15.69	12.98	19.36	22.81	24.29	19.13	19.67	19.57
Travel	5.37	4.87	5.85	5.12	9.68	10.16	6.66	6.28
Outbreak	0	0	0	0.47	0	0	0	0.24
Non-endemic	0	0	0.19	0	0	0	0.10	0
Lost to follow-up	4.96	3.65	2.97	2.98	4.32	2.59	3.77	3.04
Total	26.01	21.49	28.37	31.37	38.29	31.88	30.20	29.14

Figure 1.1: Relative proportion of *Campylobacter* by case classification.



Isolates with species information: 534/603 (88.6%)

- *jejuni*: 88%
- *coli*: 7%
- *upsaliensis*: 3%
- *lari*: <1%
- *fetus*: <1%
- *rectus/curvus*: <1%

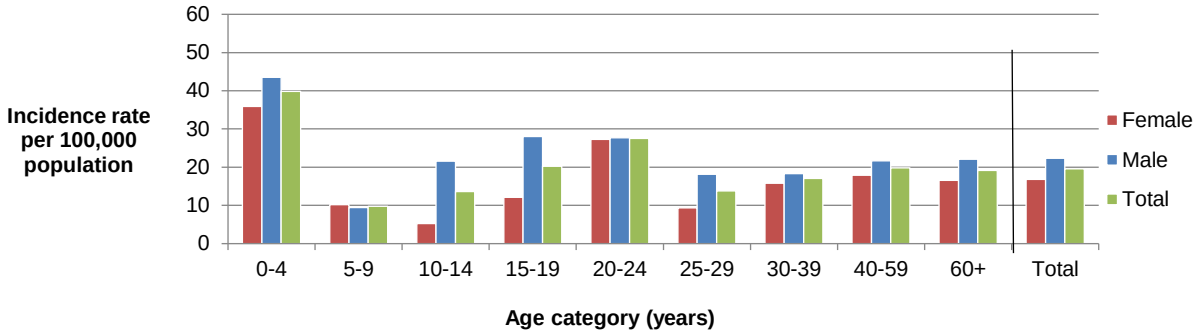
Significant changes in endemic, travel, and total incidence rates:

- There were no significant changes from 2017 to 2018

Clinical profile (endemic cases only):

- **Most commonly reported symptoms:**
  - Diarrhea: 99%
  - Abdominal pain: 83%
  - Fatigue and weakness: 78%
  - Fever: 66%
  - Anorexia: 60%
- **Indicators of severity:**
  - Bloody diarrhea: 43%
  - Emergency room visits: 61%
  - Hospitalizations: 9%
  - Antimicrobial prescriptions: 54%

Figure 1.2: Age- and gender-specific annual incidence rates (per 100,000 population) for endemic *Campylobacter* spp. cases within FoodNet Canada sentinel sites, 2018.



FOOD, ANIMAL AND ENVIRONMENTAL SURVEILLANCE SUMMARY

Table 1.2: Prevalence of *Campylobacter* spp. by sample type and FoodNet Canada sentinel site, 2018.

Sample type		Ontario site	Alberta site	British Columbia site	All sites
Chicken breast		26.19% (33/126)	41.11% (53/129)	53.79% (71/132)	40.57% (157/387)
Pork sausage		0% (0/125)	0% (0/107)	1.03% (1/97)	0.30% (1/329)
Broiler chicken manure	**Sample-level**	5.26% (4/76) ↓	34.17% (41/120)	38.33% (46/120)	28.79% (91/316)
	Farm-level	5.26% (1/19) ↓	36.67% (11/30)	40.00% (12/30)	30.38% (24/79)
Swine manure	**Sample-level**	80.65% (150/186)	73.02% (92/126)	NT	77.56% (242/312)
	Farm-level	96.77% (30/31)	95.24% (20/21)	NT	96.15% (50/52)
Turkey manure	**Sample-level**	51.79% (58/112)	35.00% (14/40)	78.99% (94/119)	61.25% (166/271)
	Farm-level	53.57% (15/28)	40.00% (4/10)	80.00% (24/30)	63.24% (43/68)
Feedlot beef manure	**Sample-level**	NT	77.05% (94/122) ↑	NT	NT
	Farm-level	NT	95.24% (20/21)	NT	NT
Irrigation water		NT	15.63% (5/32)	2.22% (1/45)	7.79% (6/77)

NT-not tested.
↑/↓Indicates a significant increase/decrease in prevalence compared to 2017.

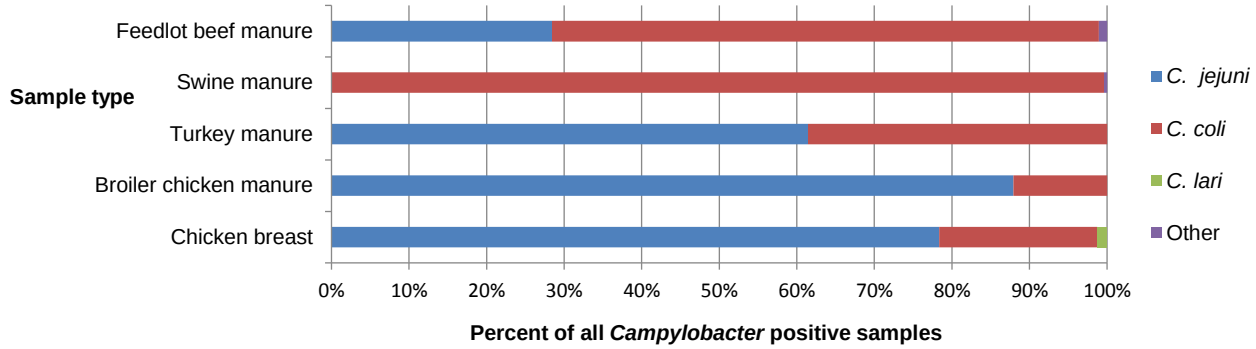
Significant difference in prevalence since 2017:

- Broiler chicken manure (sample-level): ON significantly decreased to 5.26% in 2018 from 38% in 2017.
- Broiler chicken manure (farm-level): ON significantly decreased to 5.26% in 2018 from 47% in 2017.
- Feedlot beef manure (sample-level): significantly increased to 77.05% in 2018 from 57% in 2017 in AB.
- Irrigation water: AB increased to 15.63% in 2018 from 0% in 2017. BC increased to 7.79% in 2018 from 1.4% in 2017. Although these were not significant.

Regional differences:

- Chicken breast in ON had significantly lower *Campylobacter* prevalence compared to AB and BC.
- Broiler chicken manure in ON had significantly lower *Campylobacter* prevalence compared to BC and AB.
- Turkey manure (sample-level) in ON and AB had significantly lower *Campylobacter* than BC.

Figure 1.3: Distribution of *Campylobacter* spp. among food, animal and environmental samples, FoodNet Canada, 2018.



INTEGRATED FINDINGS

The overall annual incidence rate and the endemic incidence rate of *Campylobacter* has remained consistent since 2010 and there were no significant changes from 2017 to 2018 in any of the sentinel sites. *Campylobacter jejuni* was the primary subtype identified in human cases, retail chicken breast samples, broiler chicken farms and turkey farms across all sentinel sites (Figure 1.3). Among human cases, *Campylobacter coli* is less commonly associated with disease, representing 7.1% of all subtyped human infections. By contrast, *C. coli* represented 99.6% of *Campylobacter* isolated from swine manure samples, 70.5% from feedlot beef manure samples and 38.6% from turkey manure samples. A study by FoodNet Canada looked at source attribution of *Campylobacter* cases and identified chicken meat as a primary source of human campylobacteriosis with 65–69% of cases being attributed to chicken meat, followed by cattle manure (14-19%)[1].

There are multiple sources of exposure at the farm level and the proportion of *Campylobacter* identified by farm type is presented in Figure 1.4. Prevalence rates of feedlot beef increased significantly in 2018 compared to 2017, although this prevalence is similar to that seen in 2016. The feedlot beef sampling in 2018 was clustered during the fall and winter season, which could explain the higher prevalence. A significant decrease in *Campylobacter* in broiler chicken manure was seen in 2018 compared to 2017 in the ON site. Many factors can affect the prevalence of *Campylobacter* from year to year, including disinfection practices, production type, or the age of the flock[2]. There was also a significant difference in *Campylobacter* prevalence identified between each site for chicken breast, broiler chicken manure and turkey manure samples. This may be related to varying on-farm practices by region, such as vertical transmission, animal and human movement factors, in addition to environmental and water sources of contamination[3].

The incidence of Campylobacteriosis among FoodNet Canada cases in 2018 was not significantly different from 2017:

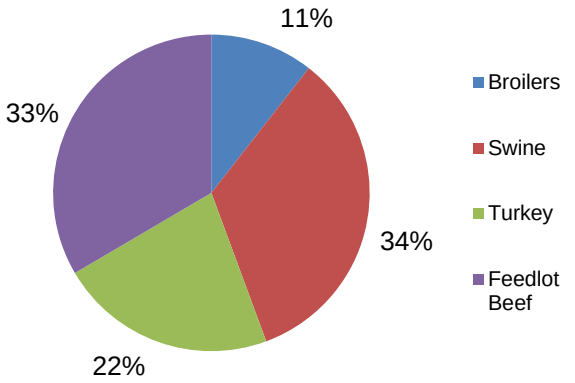
- *Campylobacter jejuni* was the primary species affecting human cases (88% in 2018), which was also commonly found in retail chicken breast, broiler chicken manure and turkey manure samples in 2018.

Regional and seasonal differences were identified among human cases and food, animal and environmental samples:

- Regional differences were present among chicken breast, broiler chicken and turkey manure samples, which may reflect regional differences in on-farm management practices.
- An increased incidence of *Campylobacter* cases was seen in the summer months, while an increased prevalence was identified in both the summer and fall for retail chicken breast samples in ON and AB.

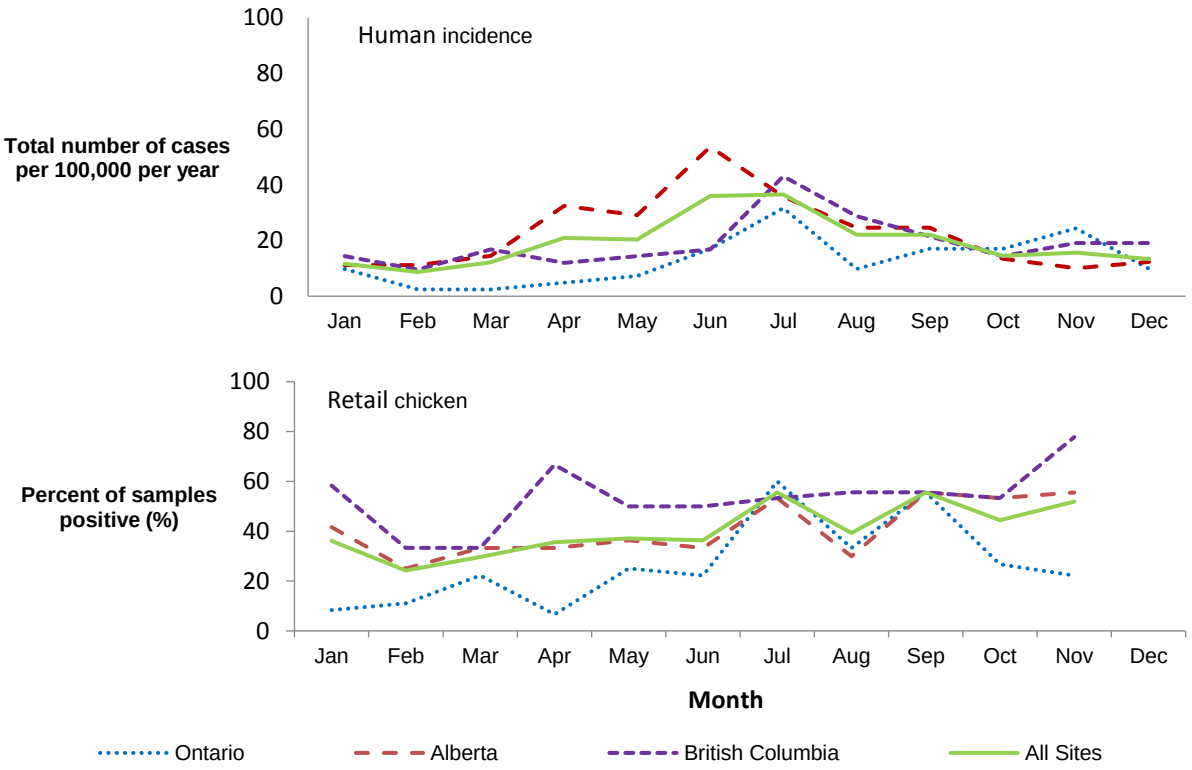
In 2018, no significant changes were observed in *Campylobacter* in irrigation canal sampling in the BC sentinel site. In Alberta, the overall *Campylobacter* prevalence increased to 15.63% in 2018 compared to 0% in 2017. Temperature and rainfall could be an important factor in the increase in *Campylobacter* in Alberta. A Canadian study in 2015 noted that temperature is an important factor for the survival of *Campylobacter jejuni* in water and that water temperature of 4–24°C allowed for better survival of the pathogen[3]. When temperature was explored during the Alberta sentinel site sampling dates in 2018, it was noted that outdoor temperatures were below 25°C the day of sampling and two days prior to sampling which could potentially influence water temperature. Of note, both *Campylobacter jejuni* and *lari* were found in the water samples with 33% of samples being *C. jejuni*, 50% *C. lari* and 17% with both *C. jejuni* and *C. lari*.

Figure 1.4. Proportion of manure samples positive for *Campylobacter* spp. by farm type across FoodNet Canada's sentinel sites, 2018.



In 2018, an increased incidence of *Campylobacter* cases was seen in the summer months (May to August). There was no seasonal pattern seen in chicken breast by month but there were two small peaks seen in the summer and fall for both Ontario and Alberta. British Columbia had a peak in May and the proportion of positive samples held constant for the rest of the year (Figure 1.5).

Figure 1.5 Human monthly incidence rate (per 100,000 population) for endemic *Campylobacter* spp. cases by onset month of illness and proportion of retail chicken samples positive for *Campylobacter* spp. by month across FoodNet Canada's sentinel sites, 2018.



PUBLIC HEALTH IMPACT

Overall, when comparing the human and food trend information, it is clear that there are other potential sources of exposure resulting in human illness beyond retail chicken products. If retail chicken were to be the only source of exposure, the trends in human illness would be expected to mirror those of retail chicken products and continue to be reported at higher levels after the summer season. However, human illness rates start to decrease after the summer months while retail chicken samples testing positive for *Campylobacter* continue to be elevated. Literature suggests that the summer peak can be due in part to improved survival and replication of some bacteria during warm weather and to seasonal changes in our eating behaviours (e.g. summer BBQs).[4]

Continuing surveillance of other retail products, such as pork, farm animals and the environment for *Campylobacter* will allow us to better identify and understand the contribution of multiple sources to Canadian illnesses as well as to guide future surveillance activities.

SALMONELLA

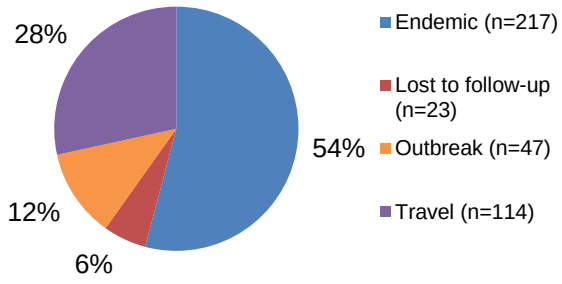
HUMAN SURVEILLANCE SUMMARY

Table 2.1: Annual incidence rates (per 100,000 population) of *Salmonella* spp. by case classification and FoodNet Canada sentinel site, 2018 (with 2017 shown for reference).

	Ontario site		Alberta site[a]		British Columbia site		All sites	
	2017	2018	2017	2018	2017	2018	2017	2018
Endemic	6.40	7.50	16.01	11.73↓	17.70	10.76↓	14.11	10.49↓
Travel	4.75	5.07	6.04	5.21	9.47	6.58	6.56	5.51
Outbreak	0.62	5.27	0.29	1.02	0.62	1.99	0.45	2.27
Non-endemic	0	0	0	0	0.41	0	0.10	0
Lost to follow-up	0.62	0.61	2.59	1.40	2.26	0.10	2.04	1.11
Total	12.39	18.45↑	24.92	19.36↓	30.47	20.32↓	23.25	19.38↓

[a] Typhi and Paratyphi not reported by AB site, except Paratyphi B var Java, which is reported by AB site.
↑/↓ indicates a significant increase/decrease in incidence since 2017

Figure 2.1: Relative proportion of *Salmonella* by case classification.



Isolates with serovar information: 401/401 (100.0%)

Top 5 *Salmonella* serovars:

- Enteritidis: 43%
- Heidelberg: 9%
- Typhimurium: 6%
- Newport: 3%
- Saintpaul: 3%

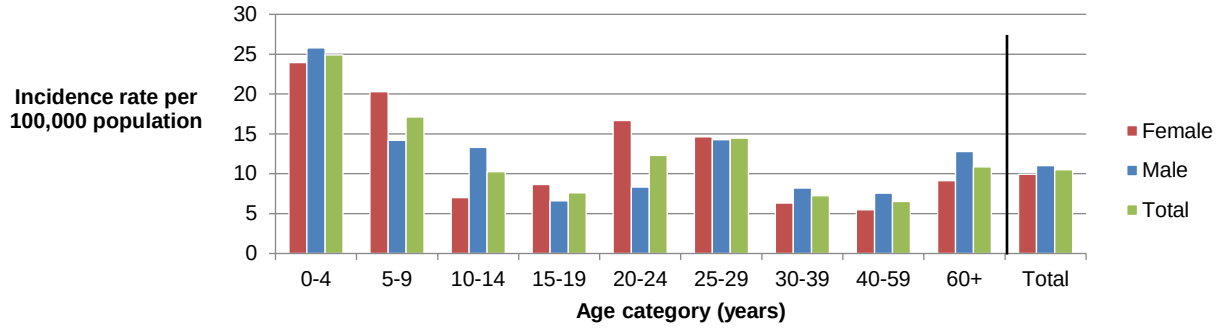
Significant changes in endemic, travel, and total incidence rates:

- There were significant decreases in the endemic and total incidence rates for all sites (combined) between 2017 and 2018, as well as in the BC and AB sites' endemic and total incidence rates. There was however a significant increase in the ON site's total incidence rate.

Clinical profile (endemic cases only):

- **Most commonly reported symptoms:**
  - Diarrhea: 92%
  - Abdominal pain: 80%
  - Fatigue and weakness: 74%
  - Anorexia: 69%
  - Fever: 68%
- **Indicators of severity:**
  - Bloody diarrhea: 36%
  - Emergency room visits: 62%
  - Hospitalizations: 19%
  - Antimicrobial prescriptions: 45%

Figure 2.2: Age- and gender-specific annual incidence rates (per 100,000 population) for endemic *Salmonella* spp. cases within FoodNet Canada sentinel sites, 2018.



FOOD, ANIMAL AND ENVIRONMENTAL SURVEILLANCE SUMMARY

Table 2.2: Percent of samples positive for *Salmonella* spp. by sample type and FoodNet Canada sentinel site, 2018.

Sample type		Ontario site	Alberta site	British Columbia site	All sites
Chicken breast		13% (15/114)	22% (26/118)	23% (30/132)	20% (76/387)
Frozen raw breaded chicken products		21% (24/114)	23% (27/120)	37% (49/131) ↑	27% (100/365)
Pork sausage		6% (7/114)	3% (4/123)	5% (6/132)	5% (21/413)
Broiler chicken manure	**Sample-level**	39% (30/74)	64% (77/120)↑	50% (60/120)	53% (167/316)
	Farm-level	47% (9/19)	80% (24/30)	67% (20/30)	67% (53/79)
Swine manure	**Sample-level**	26% (49/186)	9% (11/126)	NT	19% (60/312)
	Farm-level	58% (18/31)	24% (5/21)	NT	44% (23/52)
Turkey manure	**Sample-level**	82% (92/112)↑	78% (31/40)	56% (66/119)	70% (189/271)↑
	Farm-level	96% (27/28)	90% (9/10)	73% (22/30)	85% (58/68)↑
Feedlot beef manure	**Sample-level**	NT	1% (2/122)	NT	1% (2/122)
	Farm-level	NT	5% (1/21)	NT	5% (1/21)
Irrigation water		NT	13% (4/32)	4% (2/45)	8% (6/77)

NT – not tested.
↑/↓Indicates a significant increase/decrease in prevalence compared to 2017.

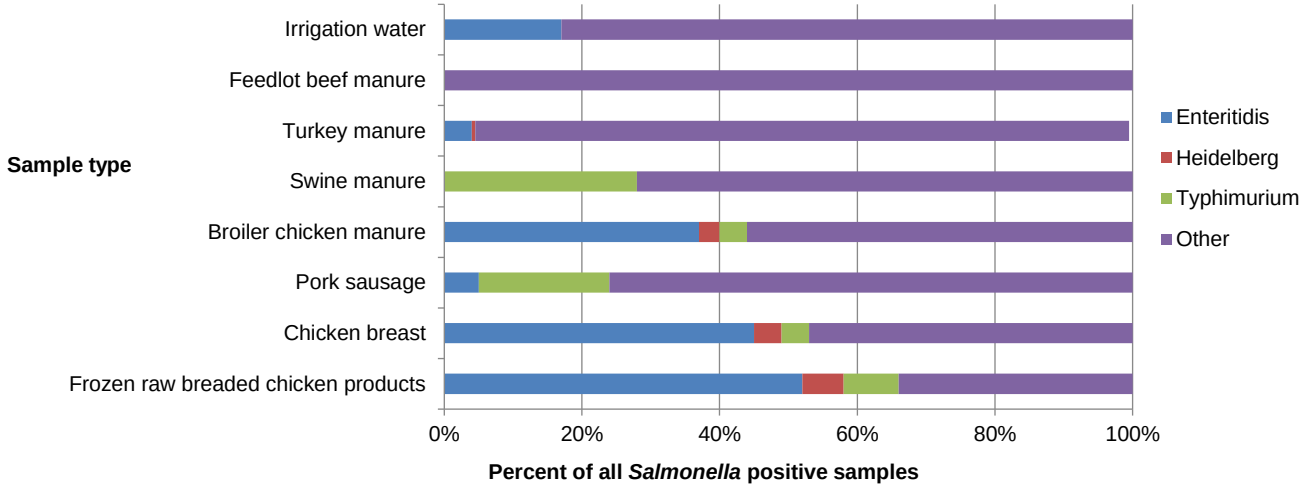
Significant differences in prevalence since 2017:

- *Salmonella* prevalence in frozen raw breaded chicken products in the BC site increased significantly to 37% in 2018 from 27% in 2017.
- *Salmonella* prevalence in broiler chicken manure samples collected in the AB site increased significantly to 64% in 2018 from 50% in 2017.
- *Salmonella* prevalence in turkey manure samples collected in the ON site increased significantly to 82% in 2018 from 70% in 2017.
- *Salmonella* prevalence in turkey manure in all sites increased significantly
    - At the sample level to 70% in 2018 from 56% in 2017.
    - At the farm level to 85% in 2018 from 69% in 2017.

Regional differences:

- *Salmonella* prevalence in frozen raw breaded chicken products was significantly higher in the BC site compared with the ON and AB site.
- At the sample-level, *Salmonella* prevalence in broiler chicken manure was significantly higher in the AB site compared with the ON and BC sites.
- At the sample-level, *Salmonella* prevalence in swine manure was significantly higher in the ON site compared with the AB site.
- At the sample-level, *Salmonella* prevalence in turkey manure was significantly higher in the ON and AB sites compared with the BC site.

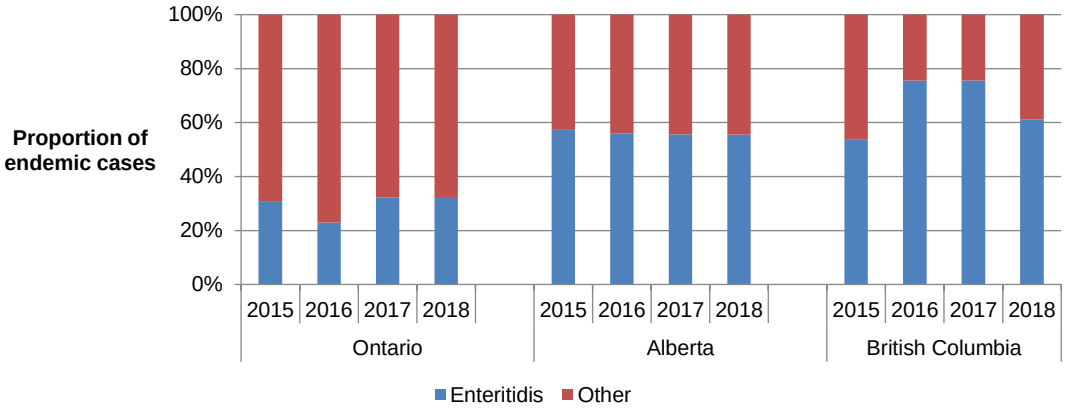
Figure 2.3: Distribution of *Salmonella* spp. serovars among food, animal and environmental samples, FoodNet Canada, 2018.



SALMONELLA ENTERITIDIS

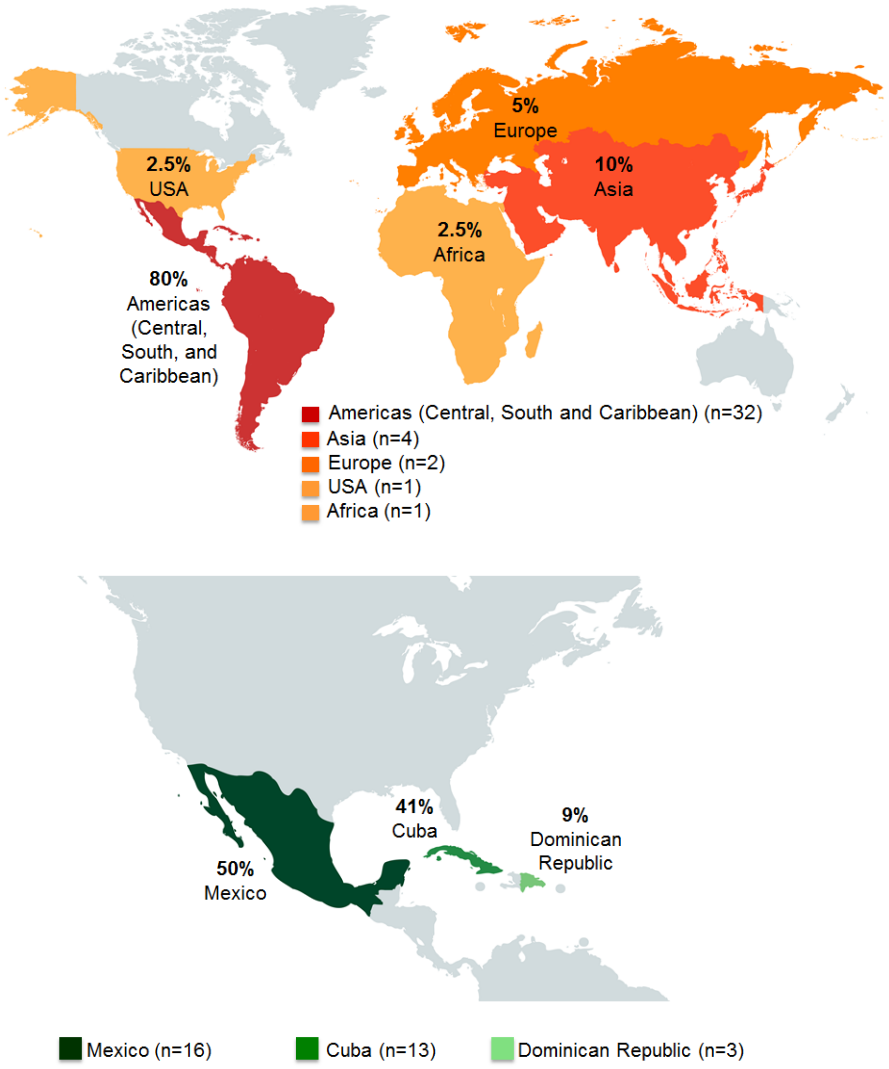
In 2018, *S.* Enteritidis (SE) remained the most commonly identified serovar among FoodNet Canada human endemic cases (Tables 2.3a, 2.3b, 2.3c). Although SE was the top serovar across all sentinel sites, differences in the proportion of endemic SE were observed by site, ranging from 32% in the ON site to 56% and 61% in the AB and BC sites, respectively (Figure 2.4).

Figure 2.4: Proportion of endemic human *Salmonella* spp. cases classified as *S.* Enteritidis and other serovars in 2018, FoodNet Canada.



Among SE cases in 2018, 23% (40/172) were related to international travel. The majority of these cases reported travel to the Americas (Central, South and Caribbean), with Mexico (50%), Cuba (41%) and the Dominican Republic (9%) being the destinations most often reported within this region (Figure 2.5).

Figure 2.5: Region of travel reported in 2018 among *Salmonella* Enteritidis cases classified as international travel-related (source: https://mapchart.net/world.html).



After remaining relatively stable from 2015 to 2017, the annual incidence rate for endemic SE cases for the combined sites (ON, BC, and AB) dropped in 2018 to 5.6 cases per 100,000 population (Figure 2.6). However, regional differences continued to be observed across the sites. While higher annual incidence rates of endemic SE were again observed in the BC and AB sites, both rates decreased in 2018, in particular in the BC site where it dropped from 13.4 cases in 2017 to 6.6 cases per 100,000 population in 2018. The ON site continued to observe lower rates than the other two sites, however, the incidence rate of endemic SE increased slightly in 2018 compared to 2017.

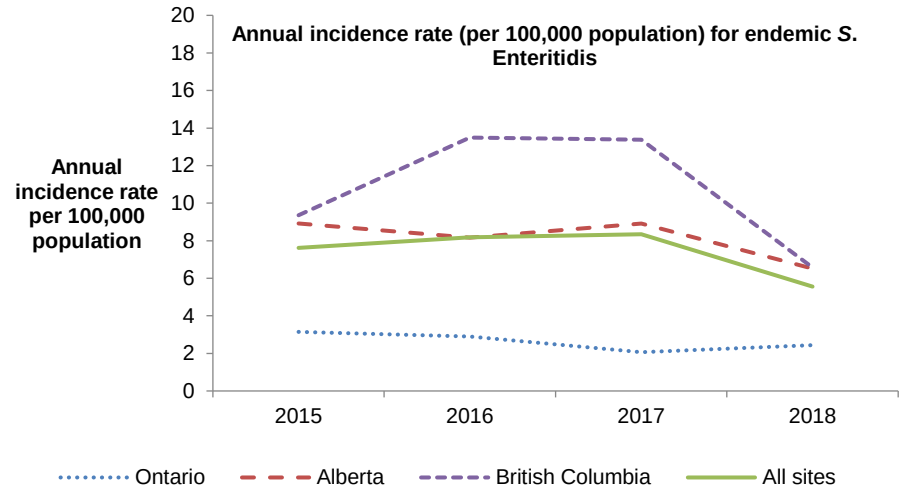
For retail chicken breast, the combined site proportion of samples testing positive for SE remained stable from 2015 to 2018, although regional differences were observed (Figure 2.6). In the BC and AB sites, a higher proportion of retail chicken breast samples were positive for SE compared with the ON site. However, in 2018, a significant decrease in the proportion of raw chicken breast samples positive for SE was observed in the BC site, decreasing from 17% (23/132) in 2017 to 8% in 2018 (11/132). Whereas, a significant increase in the proportion of raw chicken breast samples positive for SE was observed in the ON site, increasing from 0% (0/132) in 2017 to 3% (4/114) in 2018 (Figure 2.6). Consistent regional trends were also observed for broiler chicken manure, with a higher proportion of samples positive for SE

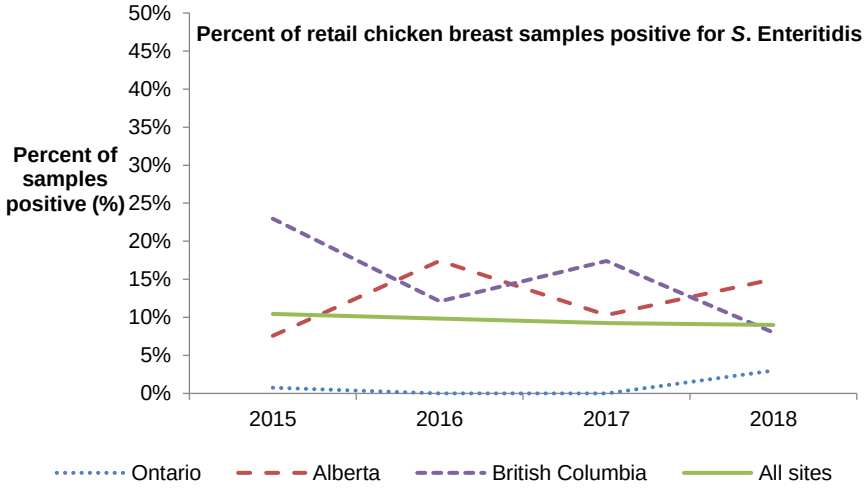
in the BC and AB sites compared with the ON site, where very few samples were found positive between 2015 and 2018. However, in the ON site, a steady increase in the proportion of samples positive for SE has occurred, with a significant increase observed in 2018 (7%; 5/76) when compared to 2015 (0%; 0/88). Unlike retail chicken breast and broiler chicken manure from 2015 to 2018, regional differences were not observed for retail frozen raw breaded chicken products. The proportion of these products positive for SE has slightly increased in 2018 across the sites when compared with 2017. Similar trends seen across the sites (for the frozen raw breaded chicken products) is likely a reflection of product distribution as these products have been found to be produced and distributed widely across the country with distribution not typically limited to a single province. As in 2017, SE remained the most commonly identified serovar across all three sites for these products in 2018.

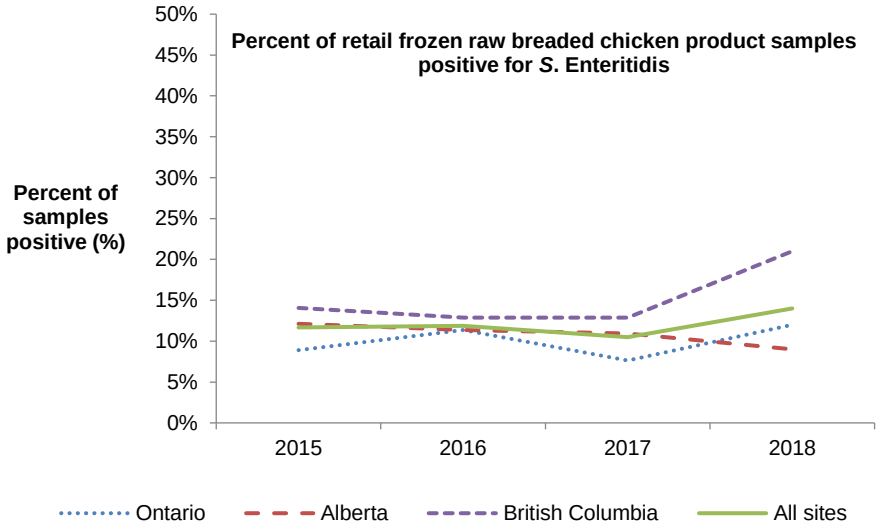
According to the Canadian Food Inspection Agency (CFIA), as of April 1, 2019, all manufacturers of frozen raw breaded chicken products will be required to ensure that *Salmonella* is not detectable on these products[5]. In 2019, FoodNet Canada will continue to track the impact of this intervention.

In 2018, SE was also identified in turkey manure, irrigation water, and pork sausage samples. Although only a small proportion of samples were positive for SE (3% for turkey manure, 1% for irrigation water and 0.2% for pork sausage), these sources represent potential causes of human illness as demonstrated through whole genome sequencing analysis (Table 2.4 and Table 2.5).

Figure 2.6: Annual human incidence rate (per 100,000 population) for endemic *Salmonella* Enteritidis cases and percent of retail chicken breast samples, retail frozen raw breaded chicken product samples and broiler chicken manure samples positive for *S.* Enteritidis across FoodNet Canada's sentinel sites, 2015-2018.







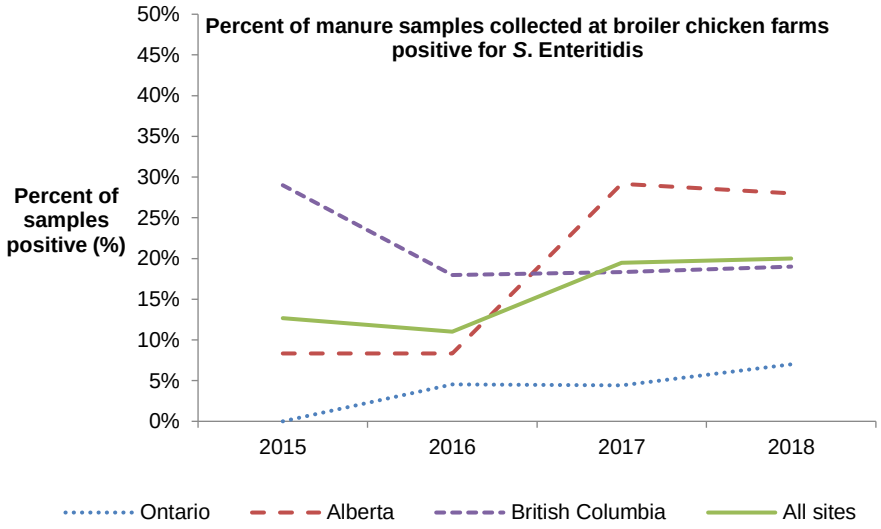


Table 2.3a: Top 5 *Salmonella* spp. serovars identified in 2018 across the human endemic cases, retail, farm, and environmental surveillance components in the Ontario sentinel site, FoodNet Canada.

<table>
<tr><th rowspan="2">Human endemic cases (n=37)</th><th colspan="3">Retail</th><th colspan="4">Farm</th><th rowspan="2">Irrigation water</th></tr>
<tr><th>Chicken breast (n=15)</th><th>Frozen raw breaded chicken products (n=24)</th><th>Pork sausage (n=7)</th><th>Broiler chicken (n=30)</th><th>Swine (n=49)</th><th>Beef cattle</th><th>Turkey (n=92)</th></tr>
<tr><td>Enteritidis (32%)</td><td>Kentucky (40%)</td><td>Enteritidis (58%)</td><td rowspan="3">Derby, Infantis, Typhimurium (28%)</td><td>Litchfield (27%)</td><td>Typhimurium (35%)</td><td rowspan="5">No sampling conducted</td><td>Uganda (51%)</td><td rowspan="5">No sampling conducted</td></tr>
<tr><td>Typhimurium (14%)</td><td>Enteritidis (27%)</td><td>Infantis (13%)</td><td>Enteritidis, Hadar (17% each)</td><td>Infantis (16% each)</td><td>Muenchen, Schwarzengrund (14%)</td></tr>
<tr><td>Oranienburg and Saintpaul (8% each)</td><td rowspan="2">Heidelberg, Typhimurium (13% each)</td><td>Kentucky, Typhimurium (8% each)</td><td rowspan="2">Livingstone, Typhimurium, Uganda (10% each)</td><td>Derby, Worthington (12%)</td><td>Agona, Albany, Hadar (4%)</td></tr>
<tr><td>Agona and Heidelberg (5% each)</td><td rowspan="2">Anatum, Heidelberg, Livingstone (4%)</td><td rowspan="2">Brandenburg (14%)</td><td>Brandenburg (10% each)</td><td rowspan="2">Livingstone (3% each)</td></tr>
<tr><td>Agbeni, Bareilly, Durban, Hvittingfoss, Infantis, Javiana, Kottbus, Mbandaka, Paratyphi B var Java, San Diego (3% each)</td><td>Newport (7%)</td><td>Infantis (3%)</td><td>I:4,[5],12:i:- (8%)</td></tr>
</table>

Table 2.3b: Top 5 *Salmonella* spp. serovars identified in 2018 across the human endemic cases, retail, farm, and environmental surveillance components in the Alberta sentinel site, FoodNet Canada.

Human endemic cases (n=126)	Retail			Farm				Irrigation water (n=4)
	Chicken breast (n=26)	Frozen raw breaded chicken products (n=27)	Pork sausage (n=4)	Broiler chicken (n=77)	Swine (n=11)	Beef cattle (n=2)	Turkey (n=31)	
Enteritidis (56%)	Enteritidis (69%)	Enteritidis (41%)	Derby (50%)	Enteritidis (44%)	Livingstone (45%)	Schwarzengrund (100%)	Reading (45%)	Rubislaw (50%)
Typhimurium (10%)	Kentucky (19%)	Heidelberg (19%)		Kentucky (27%)			Uganda (39%)	
Heidelberg (6%)	Infantis (17%)	Infantis (15%)		Schwarzengrund (14%)	Brandenburg, Derby (18% each)		Schwarzengrund (10%)	IIIb:16:z10:e,n,x,z15 (33%)
Saintpaul (4%)	Schwarzengrund (4% each)	Kentucky (8%)		Typhimurium (5%)				
I 4,[5],12:b:-, I 4, [5],12:i:-, Newport (2% each)		Braenderup, I:4,[5],12:i:-, I:8,20:-:z6, Livingstone, Typhimurium (4% each)	Krefeld, Muenchen (25% each)	Heidelberg (4%)	I:4,[5],12:i:-, Mbandaka (9%)		Senftenberg (7%)	Give (17%)

Table 2.3c: Top 5 *Salmonella* spp. serovars identified in 2018 across the human endemic cases, retail, farm, and environmental surveillance components in the British Columbia sentinel site, FoodNet Canada.

<table>
<tr><th rowspan="2">Human endemic cases (n=54)</th><th colspan="3">Retail</th><th colspan="4">Farm</th><th rowspan="2">Irrigation water (n=2)</th></tr>
<tr><th>Chicken breast (n=30)</th><th>Frozen raw breaded chicken products (n=49)</th><th>Pork sausage (n=6)</th><th>Broiler chicken (n=60)</th><th>Swine</th><th>Beef cattle</th><th>Turkey (n=66)</th></tr>
<tr><td>Enteritidis (61%)</td><td>Kentucky (40%)</td><td>Enteritidis (55%)</td><td rowspan="5">Alachua, Bovismorbificans, Enteritidis, Ohio, Typhimurium, Uganda (17% each)</td><td>Kentucky (50%)</td><td rowspan="5">No sampling conducted</td><td rowspan="5">No sampling conducted</td><td>Reading (28%)</td><td rowspan="5">Enteritidis, Daytona (50% each)</td></tr>
<tr><td>Heidelberg and I 4, [5], 12:i:- (6% each)</td><td>Enteritidis (37%)</td><td>Infantis (16% each)</td><td>Enteritidis (38%)</td><td>Hadar (26%)</td></tr>
<tr><td>Typhimurium (4%)</td><td>Anatum (7%)</td><td>Kentucky, Typhimurium (10%)</td><td>Infantis (5%)</td><td>Uganda (12%)</td></tr>
<tr><td rowspan="2">Brandenburg, Daytona, Hadar, Hvittingfoss, I 4,5,12:H Nonmotile, Idikan, Infantis, Montevideo, Newport, Reading, Rissen, Stanley, Urbana (2% each)</td><td rowspan="2">Hadar, Heidelberg, Infantis, Newport, Oranienburg (3%)</td><td>Thompson (4%)</td><td rowspan="2">Heidelberg, Senftenberg (3%)</td><td>Enteritidis (11%)</td></tr>
<tr><td>Braenderup, Liverpool (2%)</td><td>Agona (8% each)</td></tr>
</table>

WHOLE GENOME SEQUENCING (WGS)

In 2018, *Salmonella* isolates recovered from retail, farm and water samples were sequenced and analysed against human strains from *Salmonella* cases both inside and outside of the FoodNet Canada sentinel sites in order to determine their relatedness and inform the assessment of human WGS clusters. *Salmonella* WGS clusters typically contain two or more isolates grouping together within 0 and 10 alleles, however, in some cases the allele range can be greater than 10 depending on the epidemiological data. *Salmonella* isolated from retail chicken products, pork sausage, chicken manure, turkey manure, and irrigation water samples were related to a total of 60 human clusters in 2018 (Table 2.4). As in 2017, no matches were observed with *Salmonella* recovered from swine and cattle manure samples (Table 2.5).

Similar to what occurred in 2017, the majority of *Salmonella* clusters containing FoodNet Canada isolates in 2018 included a combination of isolates recovered from frozen raw breaded chicken products and human cases only (34%) (Table 2.4). These clusters were primarily *S*. Enteritidis clusters, in addition to *S*, Typhimurium, *S*. Heidelberg, *S*. Infantis, and *S*. Thompson. The next most common combination of samples included turkey manure samples and human cases only (20%), which was an increase compared with the proportion identified in 2017 (8%) (Table 2.4). Clusters of this combination included serovars *S*. Reading, *S*. Hadar, *S*. Muenchen, *S*. Enteritidis, *S*. Uganda, and *S*. Schwarzengrund.

In 2018, *S*. Enteritidis was the most common serovar which represented 44% of the WGS clusters containing FoodNet Canada isolates. Other serovars which clustered with FoodNet Canada isolates in 2018 included *S*. Heidelberg (8%), *S*. Typhimurium (8%), and *S*. Hadar (7%). Of all clusters, *S*. Enteritidis and *S*. Reading contained the greatest number of genetically related human *Salmonella* isolates.

Table 2.4. Breakdown of the number of *Salmonella* WGS clusters in which a non-clinical sample collected through the FoodNet Canada surveillance system was identified to be related to human cases, 2018.

60 *Salmonella* WGS clusters					
Number of *Salmonella* WGS clusters containing **only** the following samples	Frozen raw breaded chicken 21 clusters	Skinless chicken breast 11 clusters	Pork sausage 1 cluster	Chicken manure 6 clusters	Turkey manure 12 clusters
Number of *Salmonella* WGS clusters containing a **combination of** the following samples	Frozen raw breaded chicken & skinless chicken breast 2 clusters	Skinless chicken breast & chicken manure 3 clusters	Frozen raw breaded chicken, skinless chicken breast, and chicken manure 2 clusters	Frozen raw breaded chicken, skinless chicken breast, chicken manure, and pork sausage 1 cluster	Skinless chicken breast, chicken manure, and irrigation water 1 cluster

Table 2.5: Total number and percent of *Salmonella* isolates collected through FoodNet Canada's retail, farm, and environmental components that were sequenced, and identified to be part of a WGS cluster in Canada, 2018 (with 2017 shown for reference).

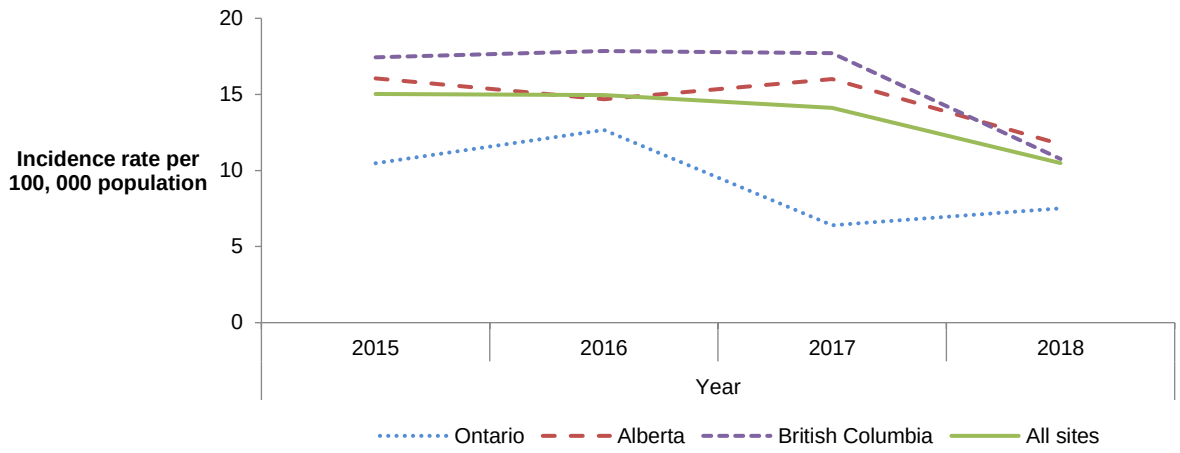
***Salmonella* serovar**	**Number of isolates sequenced and analyzed in 2018**	**Number of isolates found to be related to human isolates as part of a WGS cluster in 2018**	**% of isolates related to human isolates as part of a WGS cluster**		**Number of WGS clusters which isolates were found to be related to in 2018**
			2017	**2018**	
Skinless chicken breast					
Enteritidis	34	33	100%	97%	10
Other	42	9	39%	21%	9
Frozen raw breaded chicken					
Enteritidis	52	33	71%	63%	19
Other	48	10	27%	21%	8
Pork sausage					
Enteritidis	1	1	NT	100%	1
Other	20	1	NT	5%	0
Swine manure					
Enteritidis	0	0	0%	0%	0
Other	60	0	0%	0%	0
Broiler chicken manure					
Enteritidis	62	61	98%	98%	6
Other	105	33	33%	31%	10
Beef cattle manure					
Enteritidis	0	0	0%	0%	0
Other	2	0	0%	0%	0
Turkey manure					
Enteritidis	7	7	0%	100%	2
Other	182	99	31%	54%	12
Irrigation water					
Enteritidis	1	1	67%	100%	1
Other	5	0	0%	0%	0

NT – Not tested

INTEGRATED FINDINGS

The overall endemic *Salmonella* incidence rate decreased in 2018, as well as in the BC and AB sites specifically (Figure 2.7). For SE, which is the most common *Salmonella* serovar reported in humans in Canada, surveillance data collected in 2018 has also shown a decrease in human illness to the lowest overall incidence of SE observed since 2015 (Figure 2.6). This decrease seems to be driven by a significant decrease in the incidence of human illness in the BC site. However, regional differences in SE prevalence and incidence across all the surveillance components are still being observed with a slight increase observed in the ON site in human illness incidence and prevalence of SE on raw chicken breast, in frozen raw breaded chicken products and in broiler chicken manure. Although the incidence rate of SE decreased in 2018 among human endemic cases, high incidence rates of SE infections continued to be observed in the BC and AB sites, while the lowest incidence rate was reported in the ON site. However, decreases in SE have been observed in the BC and AB sites for incidence of human illness as well as prevalence of SE in raw chicken breast in the BC site, and in frozen raw breaded chicken products in the AB site.

Figure 2.7: Annual incidence rates (per 100,000 population) for endemic *Salmonella* spp. cases within FoodNet Canada sentinel sites, 2015-2018**.**



PUBLIC HEALTH IMPACT

Although not all of the *Salmonella* serovars have the same ability to cause human illness, it is important to conduct ongoing surveillance across the food chain to better understand trends over time and identify any emerging public health issues. *Salmonella* prevalence in turkey manure has increased between 2015 to 2018, however, less than 10% of serovars identified in turkey manure are among the top serovars causing illness in humans (Figure 2.3). Furthermore, *Salmonella* Kentucky continues to be among the top 3 serovars recovered from retail chicken and broiler chicken manure samples collected in 2018, much like 2017, while causing little to no human illness (Table 2.3).

Regional differences are present in the incidence of *Salmonella* across all surveillance components:

- The incidence of salmonellosis overall has significantly increased in ON in 2018, and significantly decreased in BC and AB, compared to 2017.
- *S.* Enteritidis incidence in humans and prevalence in chicken breast remains higher in BC and AB although significant decreases have been noted since 2017. A significant increase in the prevalence of SE in chicken breast in ON was also noted in 2018.

Whole genome sequencing data continue to highlight the burden of illness associated with poultry products across Canada.

- Over 85% of SE isolates recovered from chicken manure or chicken products were found to be genetically related to human cases of SE nationally, compared to <30% of other serovars.
- Routine monitoring of WGS data has contributed to the identification of emerging issues, such as *S*. Reading from turkey manure isolates, which were genetically related to human isolates in 2018.

Ongoing WGS for *Salmonella* isolates has further contributed to integrated and timely analysis of human, retail, farm, and water serovars, which has allowed for the detection of emerging issues and contributed to our understanding of pathogen transmission pathways. As in 2017, the majority of the farm and retail chicken isolates that were genetically related to human cases occured in *S*. Enteritidis clusters. In 2018, there was an increase in the number of farm turkey isolates genetically related to human cases, including farm turkey isolates that were related to a national outbreak of *Salmonella* Reading with 96 confirmed human cases[6].The remainder of clusters containing turkey isolates had 18 or fewer human cases. Continued analysis of WGS data in conjunction with other FoodNet Canada data sources, such as human case questionnaires and animal health data, will provide further evidence to inform action across regulators and industry groups.

SHIGATOXIGENIC *ESCHERICHIA COLI* (STEC)

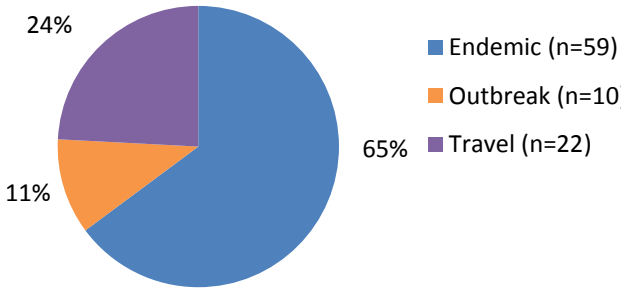
HUMAN SURVEILLANCE SUMMARY

Table 3.1: Annual incidence rates (per 100,000 population) of STEC by case classification and FoodNet Canada sentinel site, 2018 (with 2017 shown for reference).

	Ontario site		Alberta site[a]		British Columbia site		All sites	
	2017	2018	2017	2018	2017	2018	2017	2018
Endemic	0	0.61	2.59	4.66 ↑	2.47	1.20	1.94	2.85
Travel	0.21	0	0.38	1.58 ↑	0	1.00	0.25	1.06 ↑
Outbreak	0.21	0	1.25	0.93	0.41	0	0.79	0.48
Non-endemic	0	0	0	0	0	0	0	0
Lost to follow-up	0	0	0.19	0	0	0	0.10	0
Total	0.41	0.61	4.41	7.17 ↑	2.88	2.19	3.08	4.40 ↑

↑/↓Indicates a significant increase/decrease in prevalence compared with 2017
[a]Starting June 11, 2018, the AB site began testing all STEC samples for non-O157, in addition to continuing O157 testing

Figure 3.1: Relative proportion of STEC by case classification.



Isolates with subtype information: 86/91 (94.51%)

Top STEC subtypes:

- O157:H7 (34.48%)
- O26:H11 (11.49%)
- O111:NM (5.75%)
- O103:H25 (5.75%)
- O121:H19 (4.60%)
- O26:NM (4.60%)
- O103:H2 (3.45%)
- O145:NM (3.45%)
- O69:H11 (3.45%)
- O118:H16 (2.13%)

Significant changes in endemic, travel, and total incidence rates:

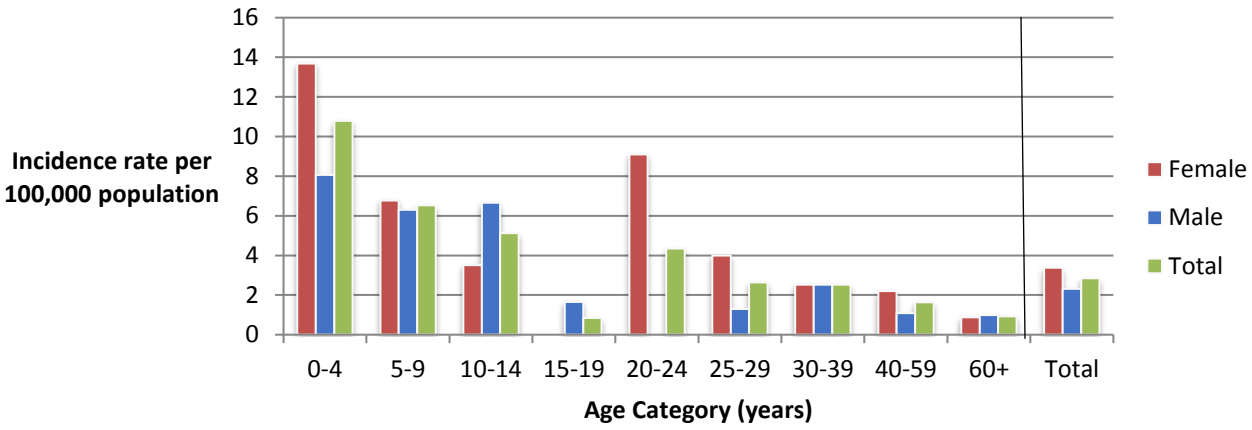
- The incidence rates of travel and total STEC in 2018 significantly increased since 2017 among all sites combined.
- The incidence rates of endemic, travel and total cases significantly increased in AB.

Clinical profile (endemic cases only):

- **Most commonly reported symptoms:**
  - Diarrhea: 92%
  - Abdominal pain: 85%
  - Fatigue and weakness: 68%
  - Anorexia: 64%
  - Bloody diarrhea: 58%

- **Indicators of severity:**
  - Emergency room visits: 68%
  - Hospitalizations: 12%
  - Antimicrobial prescriptions: 14

Figure 3.2: Age- and gender-specific annual incidence rates (per 100,000 population) for endemic STEC cases within FoodNet Canada sentinel sites, 2018.



FOOD, ANIMAL AND ENVIRONMENTAL SURVEILLANCE SUMMARY

Table 3.2: Prevalence of STEC spp. in 2018 by sample type* and FoodNet Canada sentinel site.

Sample type		Ontario site	Alberta site	British Columbia site	All sites
Ground beef		2.6% (3/114)	0.8% (1/119)	0.8% (1/129)	1.4% (5/362)
Pork		10.5% (12/114)	1.7% (2/116)	0.8% (1/129)	4.1% (15/359)
Feedlot beef manure	**Sample-level**	NT	↓ 7.4% (9/122)	NT	-
	Farm-level	NT	33.3% (7/21)	NT	-
Irrigation water		NT	53.1% (17/32)	↓ 4.4% (2/45)	24.7% (19/77)

NT: not tested
↑/↓Indicates a significant increase/decrease in the percent of samples positive for STEC compared with 2017
*Farmers' market sampling results are presented separately (see Farmers' Market Sampling textbox below)

Significant differences in prevalence since 2017:

- The prevalence of STEC in irrigation water in BC decreased significantly to 4% in 2018 from 26% in 2017.
- The prevalence of STEC in feedlot beef manure in AB decreased significantly to 7% in 2018 from 17% in 2017.

Regional differences:

- The prevalence of STEC in ON pork sausage was significantly higher than BC and AB in 2018.
- The prevalence of STEC in irrigation water in BC was significantly lower than AB in 2018.

Farmers' Market Sampling

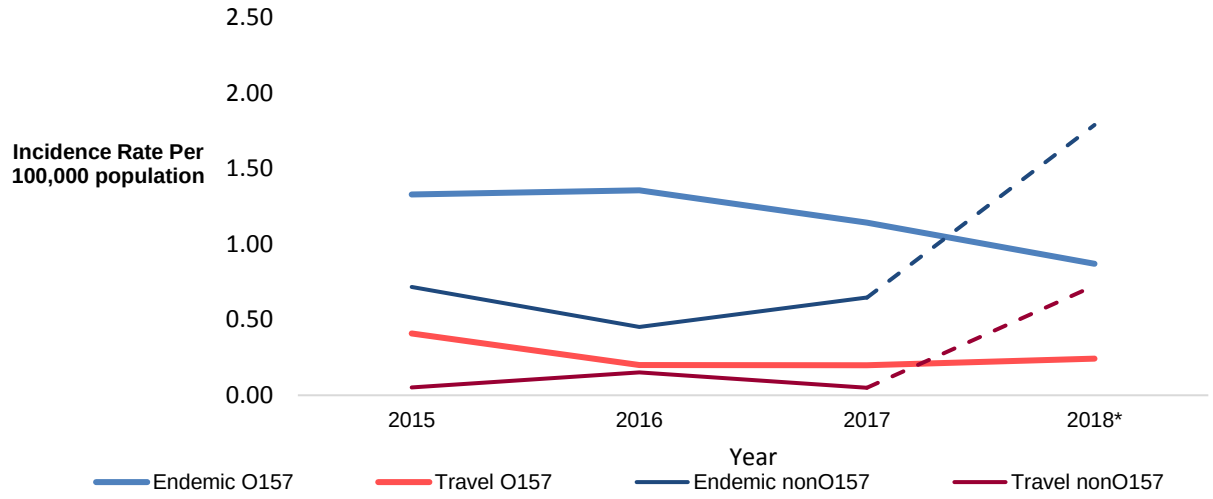
From May–August of 2018, FoodNet Canada conducted farmers' market sampling at the retail level in the ON and AB sites, testing ground beef and pork sausage products for STEC:

- 17% (4/23) of ground beef samples were positive for STEC.
- 11% (5/44) of pork sausage samples were positive for STEC.
- One ground beef sample collected from a farmers' market in the ON site was positive for STEC O157:H7, containing the *stx2* gene.

INTEGRATED FINDINGS

There was a significant increase in the incidence of travel-associated shigatoxigenic *Escherichia coli* (STEC) in 2018, with travel cases primarily reporting Mexico as their travel destination (64%; 14/22), of which 86% (12/14) reported travelling to the west coast of Mexico. Despite this, the majority of infections in 2018 continued to be domestically-acquired across all sites. The incidence rate of endemic STEC infections in 2018 also increased significantly since 2017. However, this increase was primarily driven by the AB sentinel site, which began testing all STEC samples for non-O157 starting June 11, 2018, in addition to continuing O157 testing.

Figure 3.3. Incidence of shigatoxigenic *E. coli* O157 and non-O157 among all FoodNet Canada sentinel sites combined, from 2015 to 2018.



*Starting June 11, 2018, the AB site began testing all STEC samples for non-O157, in addition to continuing O157 testing (trends are denoted in the graph as a dashed line after this time).

When assessing the trends among O157 endemic cases only, the incidence rate in FoodNet Canada sites has decreased significantly between 2016 and 2018 (Figure 3.3). Conversely, the national incidence of O157 reported by NESP increased from 0.95 per 100,000 in 2017 to 1.16 per 100,000 in 2018, which is similar to the national rate reported by NESP in 2016 (1.14 per 100,000)[7]. This difference in incidence between FoodNet Canada and NESP could be related to the higher incidence of O157 seen in regions outside of the sentinel sites, such as the Northwest Territories, Saskatchewan, and other regions within the sentinel site provinces[7].

While there was no significant change in outbreak related O157 human cases from FoodNet Canada in 2018, an outbreak of *E. coli* O157 linked to romaine lettuce from California occurred in Canada and the US, with illnesses in Canada reported in Ontario, Québec, New Brunswick, Newfoundland, Alberta, Saskatchewan, and British Columbia. This outbreak began in December 2017 with reoccurring cases through to November of 2018[8].

All of the six non-O157 serogroups that have been prioritized with regards to human health risk, which are O26, O45, O103, O111, O121 and O145[9], were reported to FoodNet Canada in 2018, with the exception of subtype O45. In NESP in 2018, approximately 53% of E. coli isolates were non-O157 and had further subtype information, of which E. coli O26:H11, O121:H19, and O111:H non-motile were the top three

serovars reported (NESP 2018 report). For FoodNet Canada, priority STEC subtypes O26:H11, O121:H19, and O26:H non-motile were isolated among both human cases and irrigation water. As for other non-O157 subtypes, O113:H21 was isolated in both human and irrigation water sources in the AB site, while O185:H7 was isolated from both ground beef and irrigation water, representing a potential source of retail and environmental contamination. There was also overlap with subtype O157 among human isolates and feedlot beef manure, including O157:H7 in addition to O157 with differing flagellar types. However, all O157 isolates from feedlot beef manure were identified as non-shigatoxin producing *E. coli*.

All retail products routinely sampled in 2018 were collected from either independent stores, such as butcher shops, or chain grocery stores. Although there was limited overlap in STEC subtypes between human cases and pork sausage samples in 2018, the prevalence of STEC was significantly higher among pork sausage samples (4%) compared with ground beef (1%), which was driven by the ON and AB sites.

FoodNet Canada also began whole genome sequencing of all STEC from food, animal, and environmental sources in April 2018. This resulted in a cluster of genetically related STEC isolates with subtype O26:H non-motile, including 4 human cases and one irrigation water sample in the AB site.

Top 7 STEC subtypes

Among the top 7 priority STEC subtypes, 3 were identified among both human cases and other FoodNet sample sources:

- O26 and O121 were identified among human cases and irrigation water samples.
- O157 was identified among human cases and a farmers' market ground beef sample.

PUBLIC HEALTH IMPACT

The change in laboratory methods and recent implementation of WGS in 2018 has resulted in greater integration across FoodNet Canada components. An increase in the number of non-O157 STEC has increased the ability to identify overlapping subtypes in addition to an improved understanding of travel related STEC. Irrigation water and pork and beef products at the retail level continue to present a risk to public health through food consumption and environmental exposure. In addition, elevated levels of STEC identified among retail meat samples collected from farmers' markets as compared with those collected from supermarkets or independent grocers represents a potential emerging source of foodborne illness.

LISTERIA MONOCYTOGENES

Table 4.1: Annual incidence rates (per 100,000 population)* of *Listeria monocytogenes* by case classification and FoodNet Canada sentinel site, 2018 (with 2017 shown for reference).

	Ontario site		Alberta site		British Columbia site		All sites	
	2017	2018	2017	2018	2017	2018	2017	2018
Endemic	0	0.20	0	0.37	0	0	0	0.24
Travel	0	0	0	0	0	0	0	0
Outbreak	0	0	0	0	0	0	0	0
Non-endemic	0	0	0	0	0	0	0	0
Lost to follow-up	0.21	0	0.10	0.09	0	0	0.10	0.05
Total	0.21	0.20	0.10	0.47	0	0	0.10	0.29

***Of 6 total cases reported in 2018, 5 cases were endemic (4 in AB site, 1 in ON site), and 1 case was lost to follow-up (in AB site)

Significant changes in endemic, travel, and total incidence rates:

- There were no significant changes from 2017 to 2018.

Table 4.2: Prevalence of *Listeria monocytogenes* in 2018 by sample type* and FoodNet Canada sentinel site.

Sample type	Ontario site	Alberta site	British Columbia site	All sites
Chicken breast	11% (13/114)	12% (14/118)	26% (34/132)	17% (61/364)
Frozen raw breaded chicken products	24% (27/114)	29% (35/120)	29% (38/131)	27% (100/365)
Ground beef	17% (19/114)	21% (25/122)	26% (34/132)	21% (78/368)
Pork sausage	20% (23/114)	13% (16/123)	17% (23/132)	17% (62/369)

*Farmers' market sampling results reported on separately (see Farmers' Market Sampling text box below)

Significant differences in prevalence since 2017:

- There were no significant changes in *L. monocytogenes* prevalence from 2017 to 2018

Regional differences:

- *L. monocytogenes* prevalence in chicken breast in the BC site was significantly higher than in both ON and AB sites.

WHOLE GENOME SEQUENCING (WGS)

Listeria isolates were sequenced and retrospectively analysed against human strains to determine their relatedness. In 2017 and 2018, there were a total of 287 and 340 *Listeria* isolates recovered from retail meats collected across all three FoodNet Canada sentinel sites, respectively. As with *Salmonella*, a "cluster" consists of two or more isolates, whether human or non-human isolates, found to be related by 0 to 10 allele differences. Isolates with larger allele ranges can be considered related depending on available epidemiologic information and at the discretion of the laboratory.

One cluster comprised of both human and retail meat isolates was identified in 2017. This cluster consisted of one human isolate from QC and a ground beef sample from the BC site. One new cluster comprised of human and retail meat isolates was also identified in 2018. This cluster consisted of one human isolate from BC, and 17 retail meat isolates; 13 chicken breast isolates from the BC site (12) and the AB site (1), and 1 chicken burger and 3 pork sausage isolates from the BC site.

Since the implementation of WGS for *Listeria*, this method has been found to provide a higher discriminatory power than PFGE for cluster identification (internal communication, PHAC, 2018), which may explain the small number of clusters identified with human isolates. In addition to the two clusters in which FoodNet retail isolates clustered with human isolates, there were instances where retail meat isolates of different types but from the same site, same type but from different sites, and of different types from different sites were also found to be related. These clusters could be explained by common establishments where meat samples were processed, through potential cross-contamination, or product distribution patterns.

INTEGRATED FINDINGS

Although the proportion of chicken breast samples testing positive for *L. monocytogenes* significantly increased between 2015 and 2016 across all sites (combined), this trend has not continued (Figure 4.1). In frozen raw breaded chicken products, despite the significant increase in *L. monocytogenes* observed between 2016 and 2017, the proportion in 2018 remained consistent with the previous year (Figure 4.2).

Figure 4.1: Percent of retail chicken breast samples positive for *Listeria monocytogenes* in each FoodNet Canada sentinel site and across all sites from 2015 to 2018.

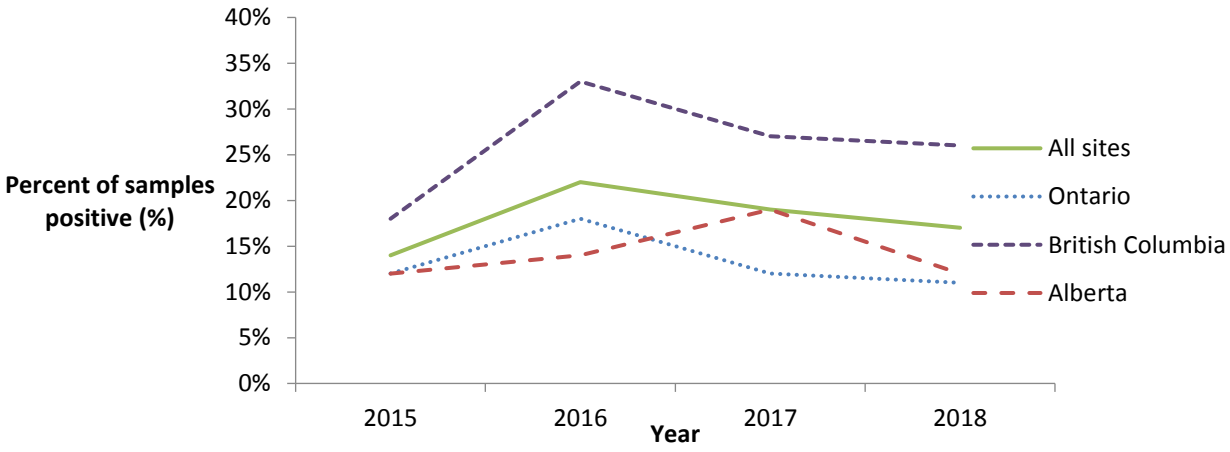
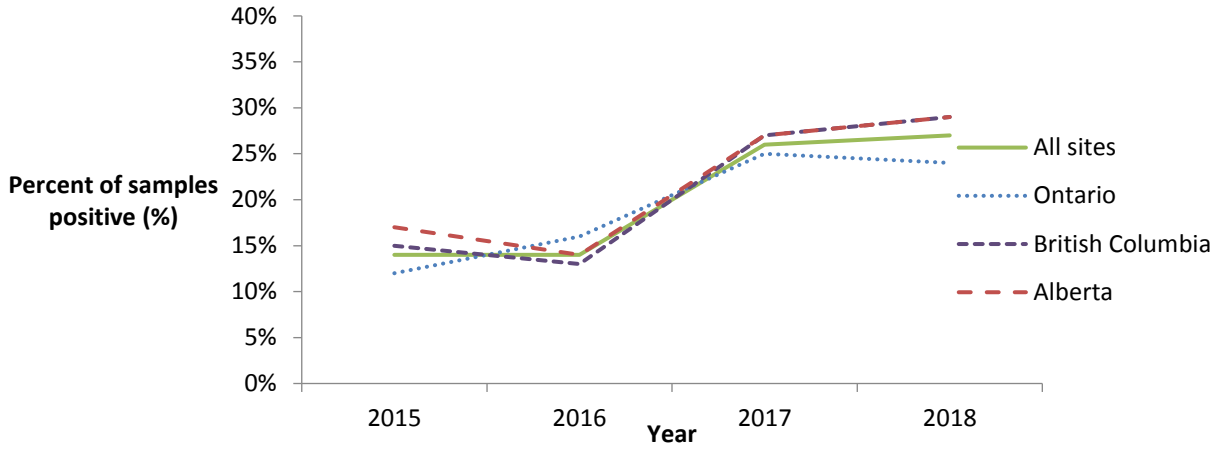
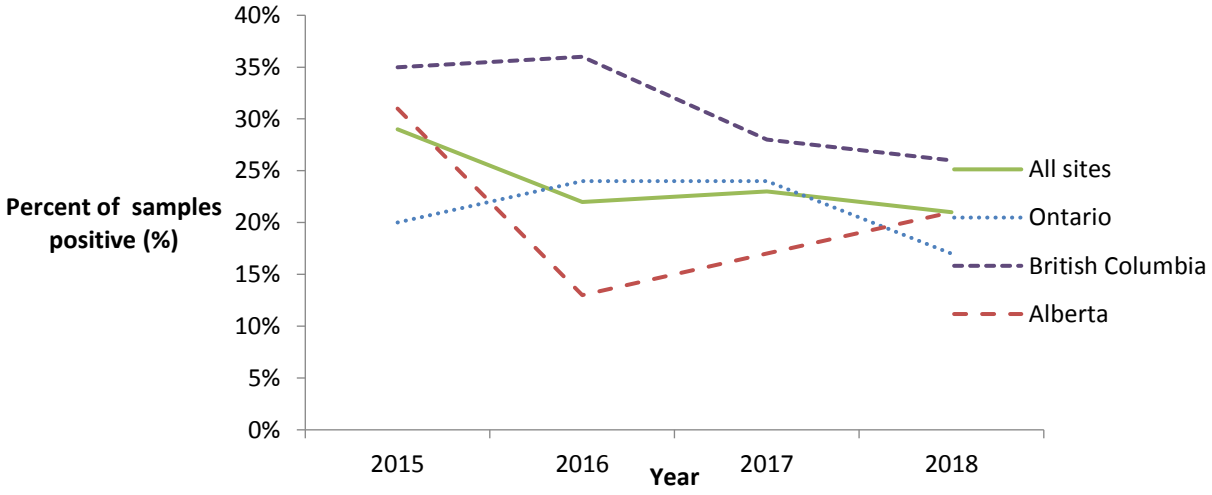


Figure 4.2: Percent of frozen raw breaded chicken product (FRBCP) samples positive for *Listeria monocytogenes* in each FoodNet Canada sentinel site and across all sites from 2015 to 2018.



The proportion of ground beef samples testing positive for *L. monocytogenes* continues to be high, with 21% of samples testing positive across all sites in 2018, compared to 23% of samples testing positive across all sites in 2017. Although the proportion detected in the ON and BC site's ground beef samples decreased slightly in 2018, in the AB site samples, the proportion testing positive continued to increase (Figure 4.3).

Figure 4.3: Percent of ground beef samples positive for *Listeria monocytogenes* in each FoodNet Canada sentinel site and across all sites from 2015 to 2018.



All retail products routinely sampled in 2018 were collected from either independent stores, such as butcher shops, or chain grocery stores. Farmers' market sampling results were not included in the overall analysis and are presented separately (see textbox below). Of the routinely sampled retail products (i.e. from independent or chain grocery stores), the proportion of both ground beef and pork sausage samples testing positive for *L. monocytogenes* was found to be significantly higher among samples collected from independent stores compared to chain grocery stores (for all sites combined) (Figure 4.4). The only significant difference found among chicken breast samples collected at independent stores compared with chain grocery stores in 2018 was in BC site samples, where the proportion testing positive was higher in independent stores. Among ground beef samples collected (for all sites combined), those that

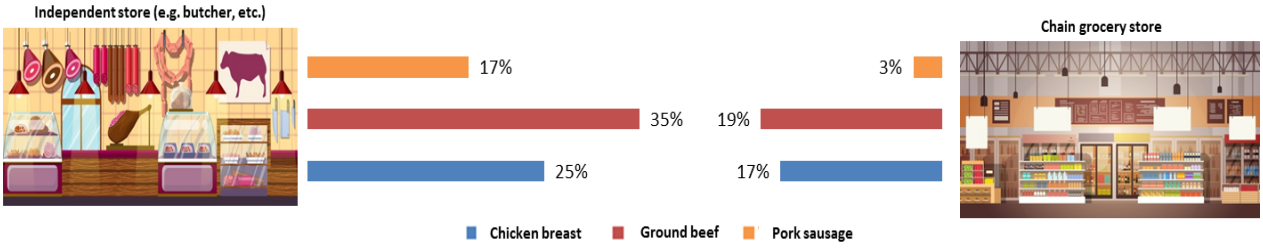
were from an establishment where the inspection jurisdiction was unknown (i.e. not specified) were significantly more likely to test positive for *L. monocytogenes* compared with samples from establishments known to be federally inspected.

Figure 4.4: Comparison of percent of samples testing positive for *Listeria monocytogenes* collected at independent stores or chain grocery stores in 2018.

Farmers' Market Sampling

From May–August of 2018, FoodNet Canada conducted farmers' market sampling of retail meats in the ON and AB sites, collecting and testing chicken breast, ground beef and pork sausage products for *Listeria monocytogenes*. The following tested positive for *L. monocytogenes*:

- 39% (9/23) of chicken breast samples.
- 35% (8/23) of ground beef samples.
- 43% (19/44) of pork sausage samples.



PUBLIC HEALTH IMPACT

Consumer awareness of foods as potential sources for *Listeria* continues to be important. For example, as members of the general public may not be aware that raw or undercooked ground beef is a potential source for *Listeria* infection, this presents an opportunity for targeted consumer education efforts, particularly towards high risk populations (i.e. pregnant women, the elderly, and those who are immunocompromised)[10]. According to Foodbook, 0.7% of Canadians eat ground beef raw or undercooked (e.g. steak tartar, undercooked hamburgers, etc.)[11].

The continued use of prospective whole genome sequencing will enable us to further explore relationships and better assess the transmission patterns for *Listeria.* In addition, the inclusion of retail products in human clusters will continue to inform the outbreak hypothesis generating processes, allowing investigations to be more focused on specific products, and assist in providing the information required for product recalls.

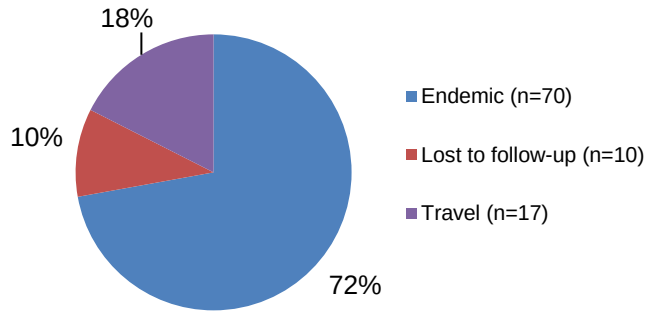
YERSINIA

Table 5.1 Annual incidence rates (per 100,000 population) of yersiniosis by case classification and FoodNet Canada sentinel site, 2018 (with 2017 shown for reference)**.**

	Ontario site		Alberta[a] site		British Columbia[b] site		All sites	
	2017	2018	2017	2018	2017	2018	2017	2018
Endemic	0.41	0	1.25	1.77	14.21	10.16	4.17	3.38
Travel	0.41	0.41	0.48	0.28	2.26	2.39	0.89	0.82
Outbreak	0	0	0	0	0	0	0	0
Non-endemic	0	0	0	0	0	0	0	0
Lost to follow-up	0.21	0.20	0.10	0.19	2.06	1.39	0.60	0.48
Total	1.03	0.61	1.82	2.23	18.53	13.95	5.66	4.69

[a]Starting in November 27, 2018 all *Yersinia* species became reportable to Alberta Health. The Alberta site does not follow-up with *Yersinia intermedia* cases.
[b] As of June 2016, private laboratories in the British Columbia site implemented the use of cold enrichment for the detection of *Yersinia*

Figure 5.1 Relative proportion of yersiniosis by case classification.



Significant changes in endemic, travel and total incidence rates:

- There were no significant changes from 2017 to 2018

Isolates with species information: 97/97 (100%)

Top Yersinia subtypes:

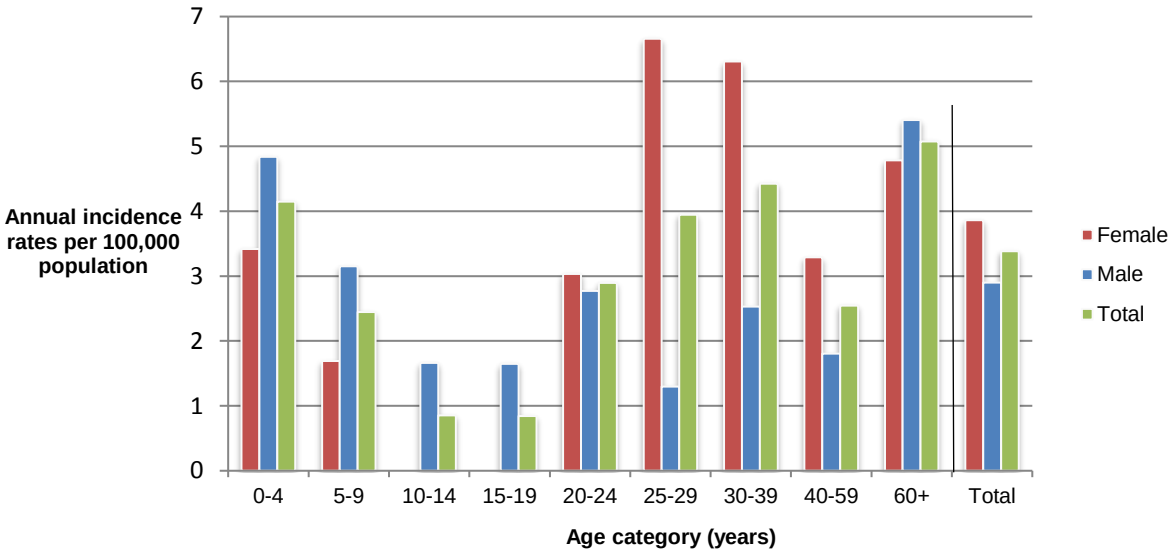
- *enterocolitica:* 96%
- *frederiksenii:* 2%
- *intermedia:* 1%
- *pseudotuberculosis*: 1%

Clinical profile (endemic cases only)

- Diarrhea: 83%
- Abdominal pain: 64%
- Fatigue and weakness: 46%
- Nausea: 34%
- Anorexia: 29%

- **Indicators of severity**
  - Bloody diarrhea: 19%
  - Emergency room visits: 14%
  - Hospitalizations: 6%
  - Antimicrobial prescriptions: 33%

Figure 5.2: Age- and gender-specific annual incidence rates (per 100,000 population) for endemic *Yersinia* cases within FoodNet Canada sentinel sites, 2018.



FOOD, ANIMAL, AND ENVIRONMENTAL SURVEILLANCE SUMMARY

Testing retail pork for *Yersinia* was discontinued in 2016 due to the low number of human pathogenic strains recovered from pork. Similarly in 2012 testing for *Yersinia* ceased across all commodities in the FoodNet Canada farm component due to a low number of detections.

PUBLIC HEALTH IMPACT

Since 2016, an increase in the incidence of yersiniosis has been noted in the BC site. The upsurge in case detections was a result of a change in testing protocol, specific to laboratories in BC. This included the use of cold enrichment techniques for the recovery of *Yersinia enterocolitica* from stools and a shift to routine testing of stools whereas previously testing was conducted only at the request of the attending physician. In 2018, of the cases for which a laboratory test was reported, 72% of detections were identified by cold enrichment and the remaining 28% by traditional culture methods. *Yersinia enterocolitica* strains of biotype 1A comprised 91% of cold enrichment detections, compared with 64% in the culture-based findings. Biotype 1A isolates are commonly regarded as avirulent. Some, however, may harbour enterotoxin-producing genes and have been implicated in foodborne outbreaks[12].

Upon review of the clinical and demographic characteristics of all cases across the sentinel sites, there were no differences in the age distribution of yersiniosis by testing method or the distribution of cases by case classification. However, symptomology suggests more severe disease among culture-based method cases and more chronic disease among those diagnosed by cold enrichment.

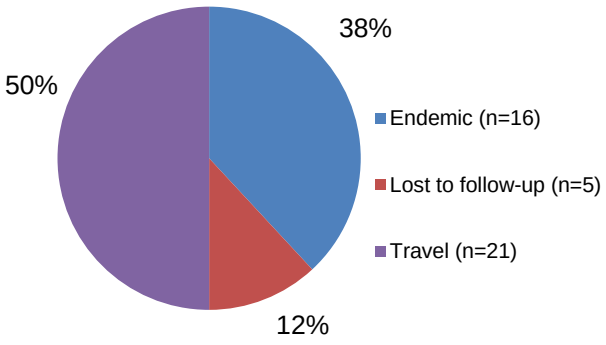
A study is currently underway to sequence and characterize historical *Yersinia* isolates collected in the BC sentinel site to better understand the potential differences in pathogenicity and contribution to disease of strains detected by primary culture versus cold enrichment.

SHIGELLA

Table 6.1: Annual incidence rates (per 100,000 population) of shigellosis by case classification and FoodNet Canada sentinel site, 2018 (with 2017 shown for reference).

	Ontario site		Alberta site		British Columbia site		All sites	
	2017	2018	2017	2018	2017	2018	2017	2018
Endemic	0.21	1.01	0.77	0.19	1.85	1.79	0.89	0.77
Travel	1.03	1.01	0.38	0.47	1.85	2.19	0.89	1.01
Outbreak	0	0	0	0	0	0	0	0
Non-endemic	0	0	0	0	0	0	0	0
Lost to follow-up	0	0.41	0.10	0.19	0	0.20	0.05	0.24
Total	1.24	2.43	1.25	0.84	3.71	4.18	1.84	2.03

Figure 6.1: Relative proportion of shigellosis by case classification.



Isolates with *Shigella* spp. information: 42/42 (100%)

- *flexneri:* 57%
- *sonnei:* 40%
- *dysenteriae:* 2%

Significant changes in endemic, travel, and total incidence rates:

- There were no significant changes from 2017 to 2018.

2018 travel cases: 21/42 (50%)

- **Cases by region travelled to:**
  - Asia: 48%
  - Americas (Central, South and Caribbean): 52%

PUBLIC HEALTH IMPACT

Travel continues to be an important factor for *Shigella* exposure in 2018, accounting for 50% of all reported human cases. Of these, travel region reported was almost evenly split between the Americas (Central, South, Caribbean) which accounted for 52% of cases, and Asia, which accounted for 48%. Due to low pathogen isolation among retail produce samples tested for *Shigella* in the past, routine testing for *Shigella* is no longer conducted in retail samples. However, the collection of risk factor information for endemic cases, including exposure to daycares and contaminated food and water, is important and allows for continued investigation of sources of human illness in Canada.

PARASITES

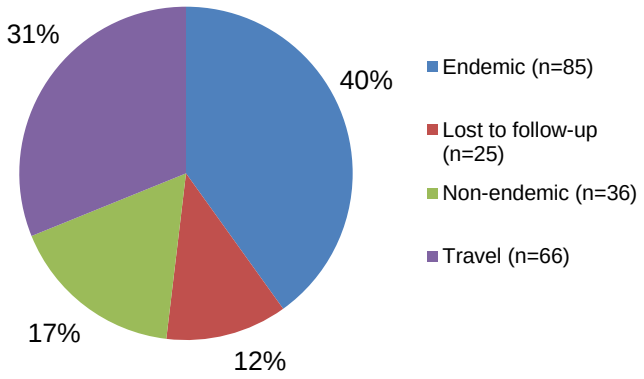
GIARDIA

Table 7.1: Annual incidence rates (per 100,000 population) of giardiasis by case classification and FoodNet Canada sentinel site, 2018 (with 2017 shown for reference).

	Ontario[a] site		Alberta site		British Columbia site		All sites	
	2017	2018	2017	2018	2017	2018	2017	2018
Endemic	2.06	3.24	4.03	4.84	3.91	3.39	3.53	4.11
Travel	1.86	1.62	3.64	3.91	3.91	3.19	3.28	3.19
Outbreak	0	0	0	0	0	0	0	0
Non-endemic	0.62	0	1.92	2.51	0.62	1.79	1.29	1.74
Lost to follow-up	2.06	2.43	0.86	0.56	0.82	1.39	1.14	1.21
Total	6.61	7.30	10.45	11.82	9.26	9.76	9.24	10.25

[a] As of May 1, 2018 Ontario site does not report on asymptomatic *Giardia* cases.

Figure 7.1: Relative proportion of giardiasis by case classification.



Clinical profile (endemic cases only):

- **Most commonly reported symptoms:**
  - Diarrhea: 86%
  - Abdominal pain: 69%
  - Fatigue and weakness: 62%
  - Nausea: 60%
  - Anorexia: 56%

Significant changes in endemic, travel and total incidence rates

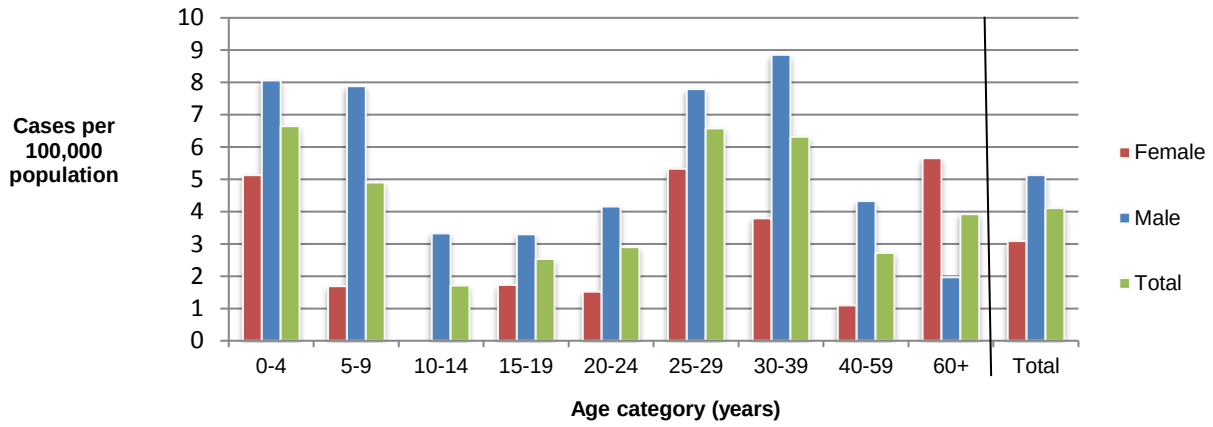
- There were no significant changes from 2017 to 2018.

- **Indicators of severity:**
  - Bloody diarrhea: 11%
  - Emergency room visits: 32%
  - Hospitalizations: 5%
  - Antimicrobial prescriptions: 71%

2018 travel cases: 66/212 (31%)

- **Cases by region travelled to:**
  - Asia 45%
  - Americas (Central, South, Caribbean) 36%
  - USA 9%
  - Multiple/Other 6%
  - Africa 2%
  - Europe 2%

Figure 7.2 Age- and gender-specific incidence rates (per 100,000 population) for endemic giardiasis cases within FoodNet Canada sentinel sites, 2018.



CRYPTOSPORIDIUM

Table 8.1 Annual incidence rates (per 100, 000 population) of cryptosporidiosis by case classification and FoodNet Canada sentinel site, 2018 (with 2017 shown for reference).

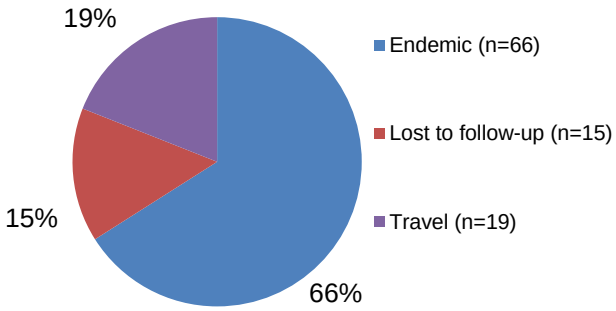
	Ontario site		Alberta site		British Columbia site		All sites	
	2017	2018	2017	2018	2017	2018	2017	2018
Endemic	1.65	2.23	2.11	4.56 ↑	1.44	1.20	1.84	3.19 ↑
Travel	0	0.20	1.25	1.30	0.21	0.80	0.70	0.92
Outbreak	0	0	0	0	0	0	0	0
Non-endemic	0	0	0	0	0	0	0	0
Lost to follow-up	0.41	1.42	0.19	0.74	0.21	0	0.25	0.72
Total	2.06	3.85	3.55	6.61 ↑	1.85	1.99	2.78	4.83 ↑

↑ Indicates a significant increase in prevalence in 2018.

Significant changes in endemic, travel, and total incidence rates:

- There was a significant increase in the all sites total and endemic incidence rates from 2017 to 2018. In 2018 some private laboratories implemented PCR multiplex testing. This change may have led to an increase in detections.
- There was a significant increase in the AB site total and endemic rates from 2017 to 2018.

Figure 8.1 Relative proportion of cryptosporidiosis by case classification.



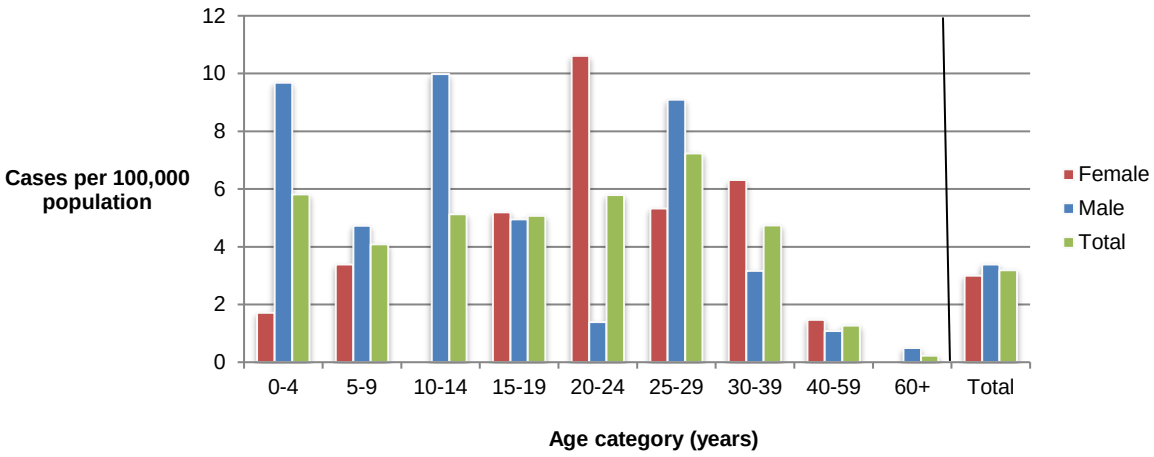
Clinical profile (endemic cases only):

- **Most commonly reported symptoms:**
  - Diarrhea: 100%
  - Abdominal pain: 80%
  - Fatigues and weakness: 76%
  - Anorexia: 74%
  - Nausea: 71%
- **Indicators of severity:**
  - Bloody diarrhea 5%
  - Emergency room visits: 53%
  - Hospitalization: 3%
  - Antibiotic prescriptions: 29%

2018 travel cases: 19/100(19%)

- **Cases by region travelled to:**
  - Americas (Central, South, Caribbean): 42%
  - Asia: 26%
  - Africa: 11%
  - Multiple/Other: 11%
  - U.S.A: 5%
  - Europe : 5%

Figure 8.2: Age- and gender-specific annual incidence rates (per 100,000 population) for endemic cryptosporidiosis cases in FoodNet Canada sentinel sites, 2018



CYCLOSPORA

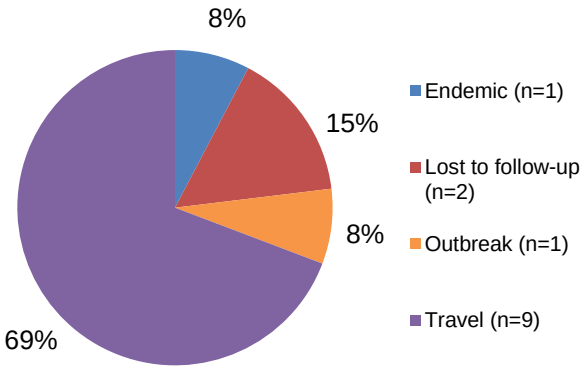
Table 9.1: Age- and gender-specific annual incidence rates (per 100,000 population) for endemic cryptosporidiosis cases in FoodNet sentinel sites, 2018.

	Ontario site		Alberta site		British Columbia site		All sites	
	2017	2018	2017	2018	2017	2018	2017	2018
Endemic	0.83	0	0	0.09	0	0	0.20	0.05
Travel	0	1.42	0.10	0.09	1.44	0.20	0.40	0.43
Outbreak	0	0	0	0	0	0.20	0	0.05
Non-endemic	0	0	0	0	0	0	0	0
Lost to follow-up	0	0.41	0	0	0.21	0	0.05	0.10
Total	0.83	1.82	0.10	0.19	1.65	0.40	0.65	0.63

Significant changes in endemic, travel, and total incidence rates

- There were no significant changes from 2017 to 2018.
-

Figure 9.1 Relative proportion of cyclosporiasis by case classification.



2018 travel cases: 9/13 (69%)

- **Cases by region of travel:**
  - Americas (Central, South, Caribbean): 67%
  - Asia: 11%
  - U.S.A.: 11%
  - Other: 11%
- **Cases by country of travel in the Americas:**
  - Mexico: 83%
  - Cuba: 17%

RETAIL SAMPLING SUMMARY

Please see summary of targeted studies of seafood.

PUBLIC HEALTH IMPACT

Similar to previous years, the majority (69%) of cyclosporiasis cases in 2018 were acquired during travel to regions where the parasite is endemic. Mexico was the most common destination for those reporting travel to the Americas (Central, South, Caribbean). Education of safe food practices continues to be the best strategy to reduce the risk of *Cyclospora* infections in Canadian travelers[13].

TARGETED STUDY: RAW BIVALVE MOLLUSCS AT RETAIL

A two year targeted study to describe the presence of pathogens in raw, bivalve molluscs commenced in January 2018. For the first year of reporting, the results have been combined for all sites.

RESULTS AT A GLANCE (2018)

During the course of the year, 188 samples of bivalve molluscs (125 raw mussels; 63 raw oysters) were submitted for testing. Due to viable sample volumes, the number of pathogens included in testing varied. The organisms isolated from the retail samples included *Vibrio* spp (62%; 112/182), generic *Escherichia coli* (27%; 48/180), *Giardia duodenalis* Assemblage B (4%; 7/177), *Cryptosporidium parvum* (4%; 7/177), *Listeria monocytogenes* (4%; 6/169), *Toxoplasma gondii* (2%; 4/182), and *Salmonella* (0.6%; 1/180) (Table 10.1). Laboratory results for norovirus and hepatitis A were pending at the time of report production and will be published in the 2019 FoodNet Canada Annual Report.

Table 10.1: Pathogens tested and detected in raw mussels and oysters across three FoodNet Canada sentinel sites, 2018.

Sample type	**Bacteria**				**Parasites**		
	Generic *E. coli*	*Listeria*	*Salmonella*	*Vibrio*	*Giardia*	*Toxoplasma*	*Cryptosporidium*
Mussels	24 % (29/119)	4 % (5/118)	0 % (0/119)	52 % (63/121)	3 % (4/119)	3 % (4/121)	4 % (5/119)
Oysters	31 % (19/61)	2 % (1/51)	2 % (1/61)	80 % (49/61)	5 % (3/58)	0 % (0/61)	3 % (2/58)

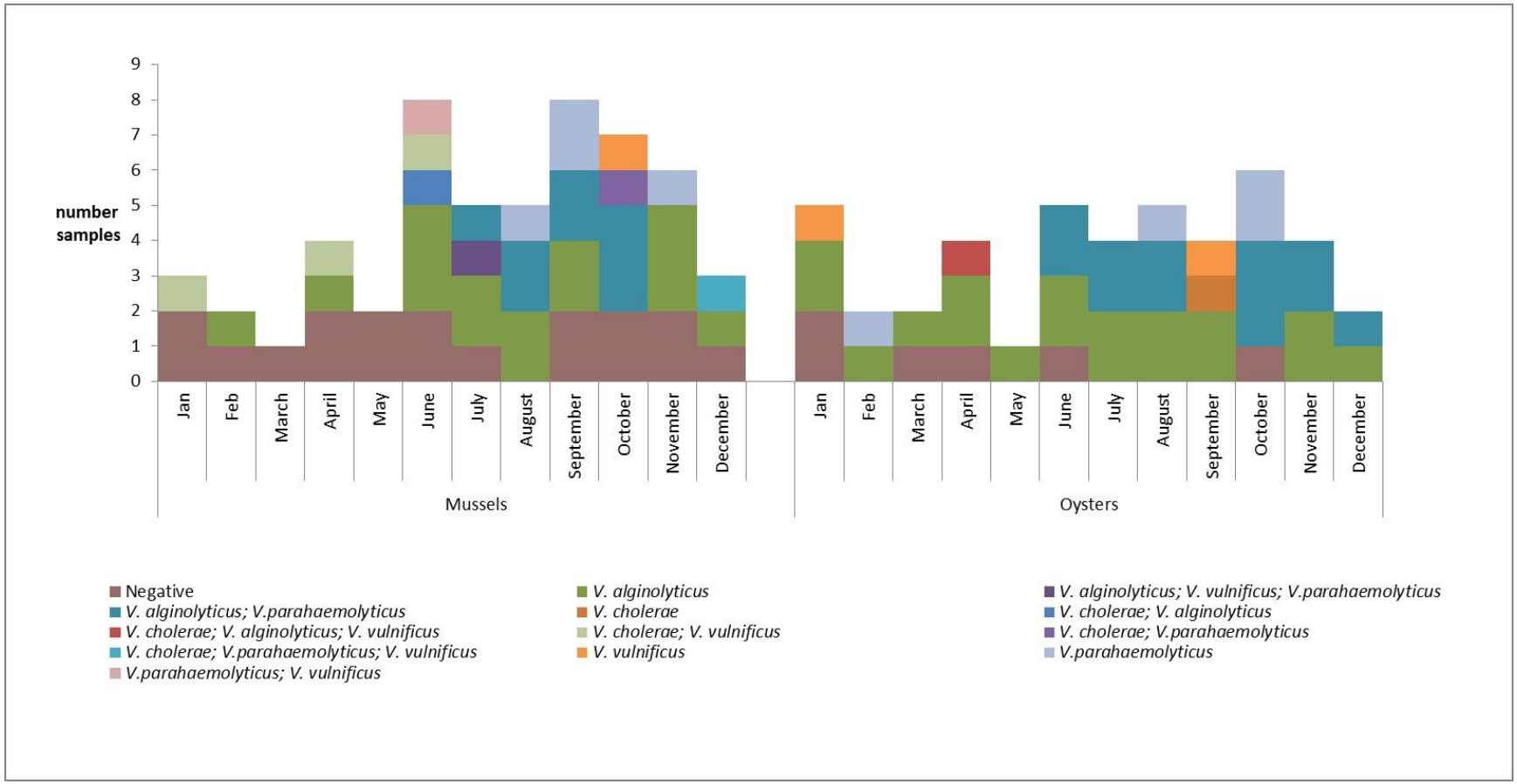
Vibrio species were found in 52% of mussels and 80% of oysters tested. Of these, potentially pathogenic strains belonging to the species *Vibrio alginolyticus*, *V. parahaemolyticus*, *V. vulnificus* and non-01/non-139 *V. cholerae* were detected individually or in combination with one or more strains. One or more virulence genes associated with foodborne illness (vibriosis) were found in 76% (85 /112) of *Vibrio* isolates from the combined sample types of mussels and oysters (Table 10.2). Of the oysters, 69% (42/61) of isolates carried between 1 and 5 virulence genes.

Table 10.2: Virulence genes by *Vibrio* species detected in raw mussels and oysters across three FoodNet Canada sentinel sites, 2018.

Sample type	***Vibrio* spp. (Number of isolates)**	**Number of isolates containing virulence genes**					
		clg+	**ctx+**	**tdh+**	**tlh+**	**trh+**	**Vvha+**
Mussels							
	alginolyticus (n=47)	31			11		
	cholera (n=6)		1				
	parahaemolyticus (n=20)				17	1	
	vulnificus (n=7)						7
Oysters							
	alginolyticus (n=42)	36					
	cholera (n=2)						
	parahaemolyticus (n=19)			2	11	4	
	vulnificus (n=3)						2

Vibrio species in mussels and oysters at retail were detected throughout the year. *V. alginolyticus* was the most commonly identified species in both mussels and oysters as a single species (56 %; 63/112) and in combination with *V. parahaemolyticus* (24%; 27/112) throughout the year (Figure 10.1). In mussels, the variety of *Vibrio* species was greater overall than in oysters.

Figure 10.1: Distribution of monthly *Vibrio* species detection in mussels and oysters across three FoodNet Canada sentinel sites, 2018.



PUBLIC HEALTH IMPACT

Of the samples tested, the proportion testing positive for most of the food borne pathogens tested remained low. The prevalence of *Vibrio* spp., however, was high. *Vibrio* is a bacterium that is naturally occuring in coastal marine environments. Although many *Vibrio* species only rarely cause illness or their potential to cause illness is unknown, strains carrying virulence genes (Table 10.2) are of concern.

Symptoms of *Vibro* infection range from mild to severe gastroenteritis with some species causing wound and blood-borne infections. Severe symptoms do result in hospitalizations and in rare cases, death[14]. In Canada, only infections caused by *Vibrio cholerae* are reportable nationally[15], while *V. parahaemolyticus* is reportable in the provinces of British Columbia[16] and Alberta[17]. The Canadian Food Inspection Agency conducts testing and enforces Health Canada's bacteriological guidelines for *Vibrio cholerae* contamination on cooked and ready to eat mussles, and *V. parahaemolyticus* contamination on raw oysters[18]. In 2015, the largest Canadian outbreak of *V. parahaemolyticus* infection caused by raw oysters occurred, with changing sea surface temperatures identified as a probable cause[19]. Based on the *Vibrio* reported to the Canadian National Enteric Surveillance Program[20], the incidence rate was 0.15 cases per 100,000 population in 2017[20]. Due to different province-specific practices of reporting non-cholera *Vibrio* spp. the true magnitude of vibriosis in the Canadian population is unknown.

A major risk factor for vibriosis is consuming raw or undercooked seafood[14,21]. The clinical significance of *Vibrio* species identified in this targeted study is still unknown as the quantity of bacteria in the sample is unknown and the potential of *Vibrio alginolyticus* and *Vibrio vulnificus* to cause vibriosis is still unknown. Since the main consumption trend of oysters is to eat freshly shucked raw oysters, this is an emerging potential source for foodborne illness.

Raw or undercooked bivalve molluscs continue to be a potential source for foodborne illness in Canada.

APPENDIX A — DATA COLLECTION AND REPORTING AND SURVEILLANCE STRATEGY

DATA COLLECTION AND REPORTING

Each FoodNet Canada sentinel site relies on a unique partnership with the local public health authority, private laboratories, water and agri-food sectors as well as the provincial and federal institutions responsible for public health, food safety, and water safety. The sites include Ontario (Middlesex-London Health Unit), British Columbia (Fraser Health Authority) and Alberta (Calgary and Central Zones of Alberta Health Services). The Ontario (ON) site data collection began in August of 2014; data from the ON pilot sentinel site (Region of Waterloo) (2005–Mar 2014) were not included in this report. The British Columbia (BC) site was officially established in April 2010 and includes the communities of Burnaby, Abbotsford, and Chilliwack. The province of Alberta (AB) contains the third site and data collection began in June of 2014. See appendix B for boundary maps.

Results are reported for all three sites unless otherwise stated. Readers should be cautious when extrapolating these results to areas beyond the sentinel communities. As additional sentinel sites are established, comprehensive information from laboratory and epidemiological analyses from all sites will provide more representative national trends in enteric disease incidence and exposure sources to inform accurate estimates for all of Canada.

In 2018, the farm and retail components were active across all sentinel sites in ON, AB, and BC whereas the water component was only active in AB and BC. The non-human surveillance data collected by FoodNet Canada represents possible exposure sources for human enteric illnesses within each sentinel site. The data are meant to be interpreted aggregately and cannot to be used to directly attribute a specific human case reported to FoodNet Canada to a positive isolate obtained from an exposure source. In this report, the non-human and human data are integrated using descriptive methods. The term “significant” is reserved in this report for describing trends that are statistically significant.

FoodNet Canada retail and farm sampling is integrated with CIPARS. This has included the streamlining and sharing of sampling and sampling sites, retrospective and prospective testing of antimicrobial resistance in selected bacteria isolated from FoodNet Canada samples, and improving data management mechanisms to maximize data linkages. CIPARS monitors trends and the relationship between antimicrobial use and antimicrobial resistance in selected bacterial organisms from human, animal, and food sources across Canada to inform evidence-based policy decision making to contain the emergence and spread of resistant bacteria. For further information about CIPARS, please refer to the program's website (http://www.phac-aspc.gc.ca/cipars-picra/index-eng.php).

SURVEILLANCE STRATEGY

HUMAN SURVEILLANCE

Public health professionals in each site use FoodNet Canada’s enhanced standardized questionnaire to interview reported enteric disease cases (or proxy respondents). Information on potential exposures collected from the questionnaires is used to determine case classification (e.g. international travel, endemic) and compare exposures between cases. In addition, advanced subtyping analyses on isolates from case specimens are conducted for further integration with non-human source information.

RETAIL SURVEILLANCE

The retail stage of food production represents the point closest to consumers through which they can be exposed to enteric pathogens. Retail meats, meat products are collected from a variety of large and small food retail outlets on a routine basis throughout the year within each site. FoodNet Canada collects samples of raw fresh (chilled) skinless chicken breasts and ground beef on a weekly basis. Each year, FoodNet Canada and its partners assess knowledge gaps and from this process, select targeted retail products to sample for a given year (see Appendix C for 2018 details). In past years, targeted meats have included but were not limited to pork chops, ground chicken and turkey, veal and uncooked frozen breaded chicken products, such as nuggets and strips. In 2018, FoodNet Canada opted to continue the targeted investigation of frozen breaded chicken products that began in 2011 as well as incorporating fresh pork sausage and fresh bivalve molluscs (oysters and mussels). In 2018, FoodNet Canada also began a targeted study collecting retail meat samples (chicken breast, ground beef and pork sausage) from farmers' markets in the AB and ON sentinel sites. Samples were collected once per month from May–August, replacing grocery store samples during those weeks. Preliminary results from the farmers' market sampling are presented throughout the report. Microbiological testing continued in 2018 as in previous years with *Campylobacter* and *Salmonella* being tested for among all chicken products and pork sausage, *Listeria spp.* tested for in all retail meat products, and shigatoxigenic *Escherichia coli* (STEC) tested for in ground beef and pork sausage samples. Raw bivalve molluscs were tested for the presence of *Vibrio*, *Salmonella*, *Giardia duodenalis, Listeria monocytogenes, Toxoplasma gondii,* Hepatitis A, and Norovirus.

Beginning in January 2018, a two-year targeted study was undertaken to describe the contamination of pathogens in raw, bivalve molluscs. In consultation with internal and external stakeholders, data from outbreak, surveillance, consumption, and research were used to define the study parameters. Raw shelled oysters and mussels were collected using the FoodNet Canada retail component sampling platform in all three sentinel sites (British Columbia, Alberta and Ontario). Sampling structure included large chain stores, small independent stores and fish mongers within the 2018 sampling schedule. Laboratory diagnostics for bacteria, viruses and parasites was conducted at FoodNet Canada-associated laboratories using culture-based methods for bacteria, PCR-based detection methods for viruses and PCR-based and microscopy methods for parasites. Enumeration of bacterial load was not conducted. *Vibrio* virulence genes associated with disease-causing properties were tested for using PCR methods in all *Vibrio* isolates. For the first year of reporting, the results have been combined for all sites.

ON-FARM SURVEILLANCE

The presence of enteric pathogens on farms is a potential source of environmental exposure of enteric pathogens, and also represents an important source in the farm-to-fork transmission chain. In 2018, the farm component was active across all three sentinel sites, although commodities varied by site (Appendix C). Manure samples were collected from beef cattle, swine, broiler chicken, and turkey farms in order to estimate the pathogen levels on farms. Approximately 30 farms of each type of participating farm commodities are targeted in each site, however, the number of farms and sampling location is based on the representativeness of each commodity in a particular region. A short management survey, and up to six manure samples (usually fresh pooled samples) were obtained at each farm visit. All samples were tested for *Campylobacter* and *Salmonella* with the beef samples additionally being tested for *E. coli* O157 and STEC. Throughout the report, farm results are reported at both the sample-level and farm-level to account for clustering within farms. Sample-level results include all manure samples collected on each farm, while farm-level results are based on a threshold of one positive manure sample per farm to report a farm as positive.

WATER SURVEILLANCE

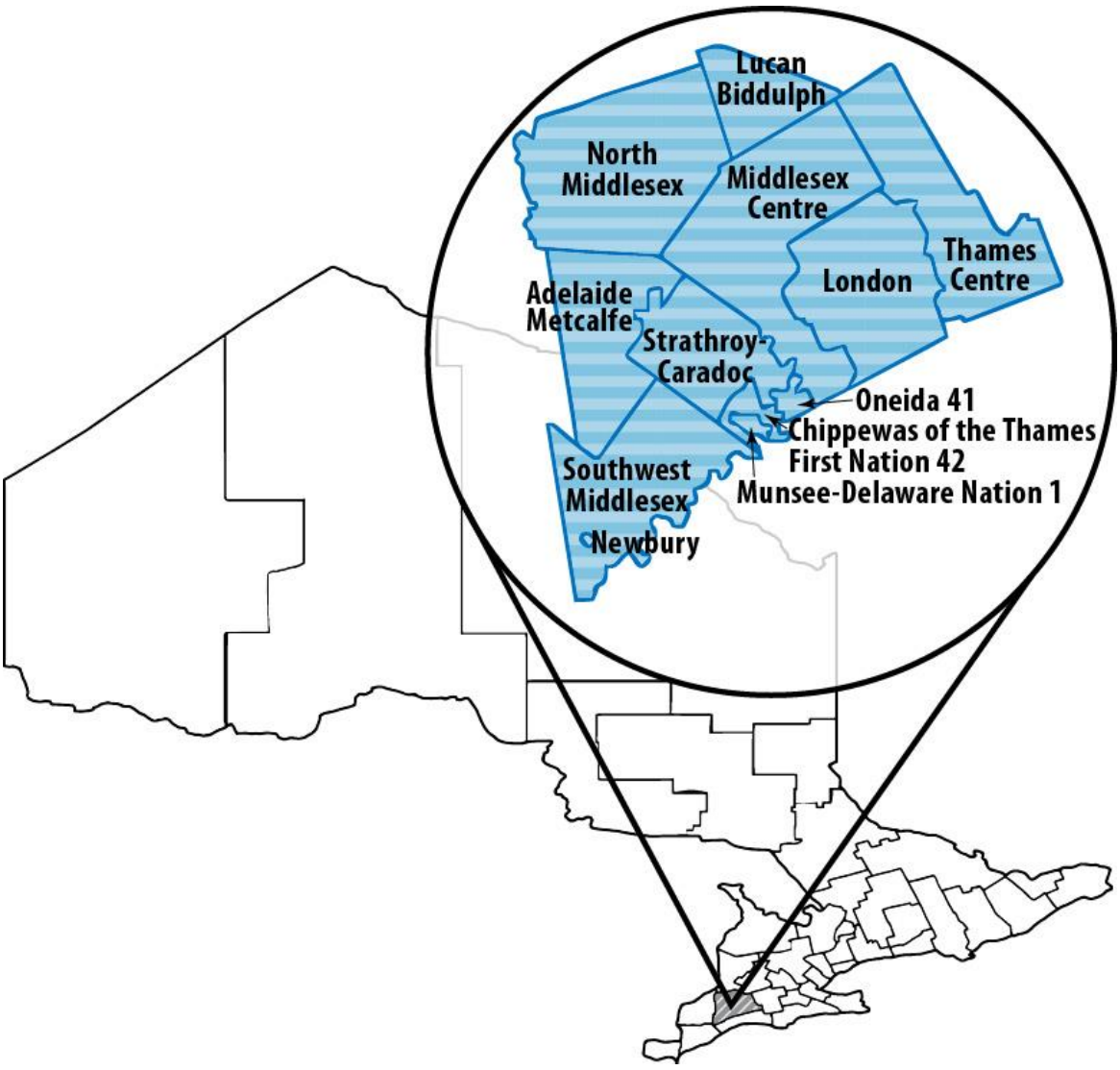
Water is another environmental source of enteric pathogens collected in the FoodNet Canada surveillance program. In 2018, irrigation water was sampled in both the BC and AB sentinel sites and was tested for Campylobacter, Salmonella, and STEC (Appendix C). Sampling in BC occurred bi-weekly from April to July, and monthly in AB from May to August.

WHOLE GENOME SEQUENCING (WGS) – *LISTERIA, SALMONELLA*, AND STEC

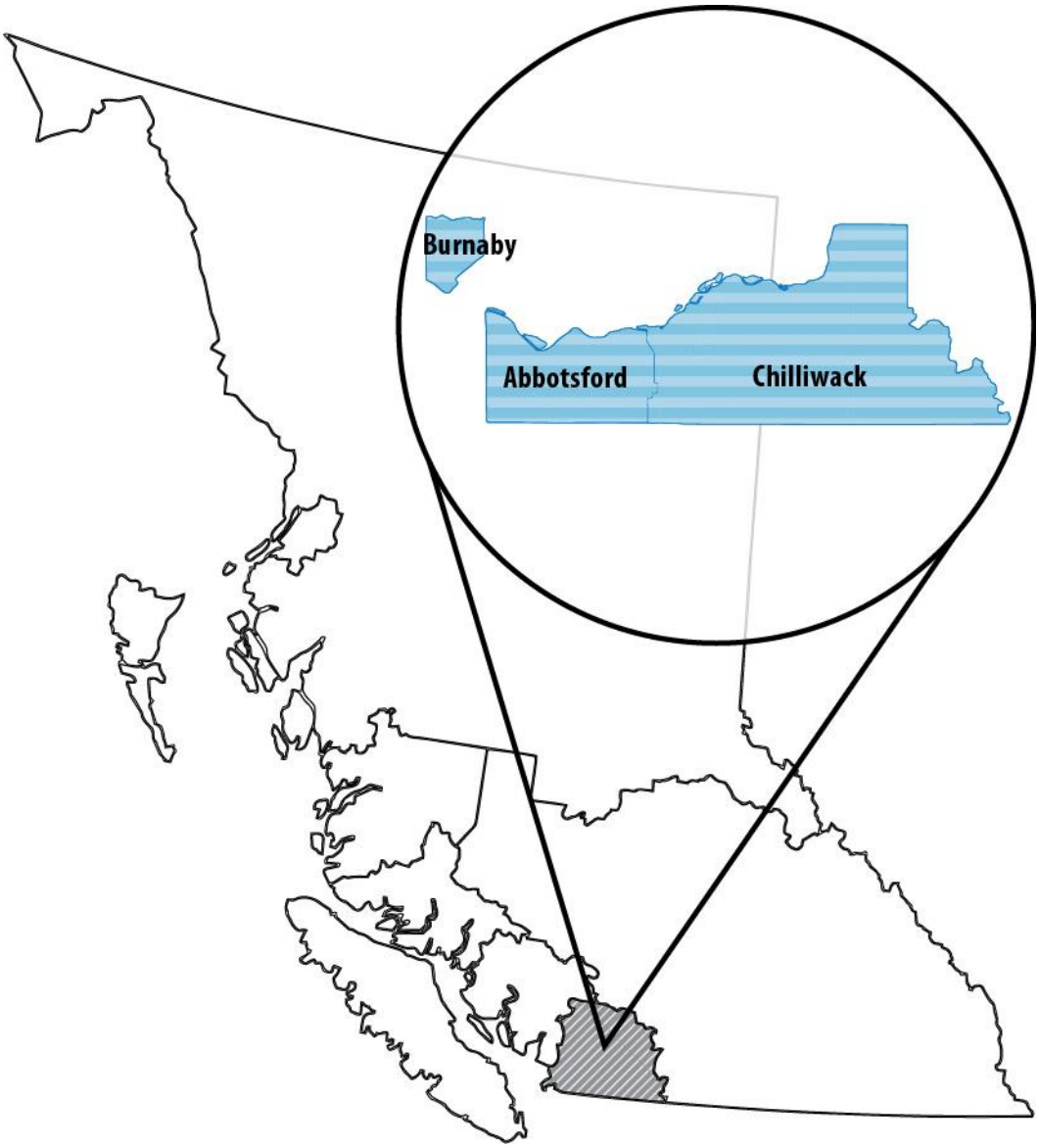
In January 2017, WGS was implemented across Canada as the primary tool to characterize *Listeria* isolates causing invasive human listeriosis, including cases captured within FoodNet Canada's sentinel sites. Shortly after WGS implementation for human isolates, FoodNet Canada also began to work with PHAC's National Microbiology Laboratory (NML) to sequence *Listeria* isolates from non-clinical retail meat samples collected by FoodNet Canada, which have been analyzed together with human isolates to assist in surveillance and outbreak detection activities. Since the implementation of WGS for *Salmonella* isolates in May 2017, FoodNet Canada has continued to work with PHAC's NML to assist in outbreak detection activities, in addition to integrating and analyzing WGS information from FoodNet Canada's human, retail, farm and water components. In April 2018, FoodNet Canada also began WGS for all STEC isolates from retail, farm, and water sources. This integration of data has presented new opportunities in understanding the transmission pathways of these organisms.

APPENDIX B — FOODNET CANADA SENTINEL SITE BOUNDARIES

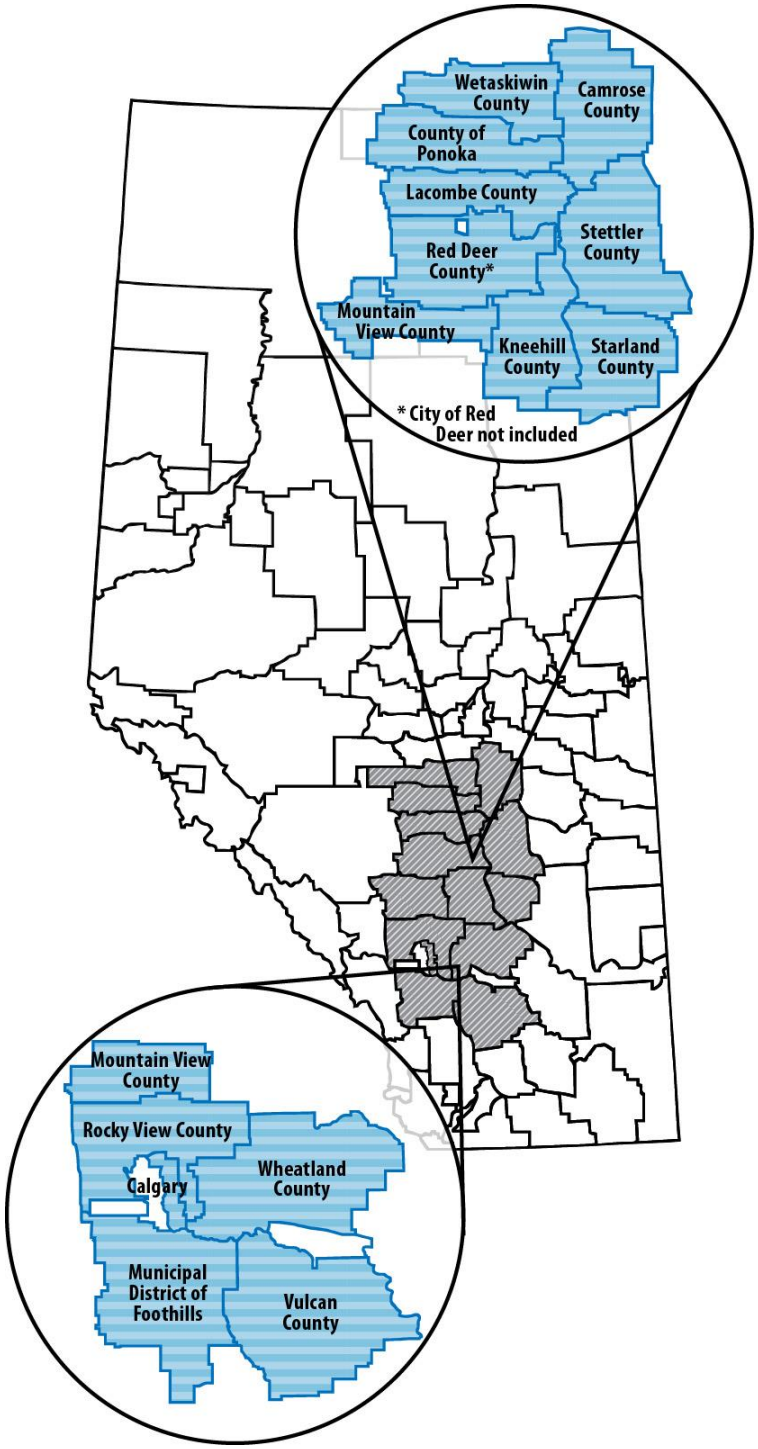
SENTINEL SITE 1: ONTARIO (MIDDLESEX-LONDON HEALTH UNIT)



SENTINEL SITE 2: BRITISH COLUMBIA (FRASER HEALTH REGION)



SENTINEL SITE 3: ALBERTA (ALBERTA HEALTH SERVICES: CALGARY AND CENTRAL ZONES)



APPENDIX C — NON-HUMAN SAMPLE TYPES TESTED IN 2018

Site	Retail	Farm	Water
British Columbia	Ground beef, skinless chicken breast, frozen raw breaded chicken products, pork sausage, molluscs	Broiler chickens & turkeys	Five sampling locations in the Sumas & Serpentine irrigation canals
Alberta	Ground beef, skinless chicken breast, frozen raw breaded chicken products, pork sausage, molluscs	Broiler chickens, swine, turkeys, & feedlot beef	Eight sampling locations in the Western Irrigation District
Ontario	Ground beef, skinless chicken breast, frozen raw breaded chicken products, pork sausage, molluscs	Broiler chickens, swine, & turkeys	

APPENDIX D – ABBREVIATIONS AND REFERENCES

ABBREVIATIONS

AB	Alberta
BC	British Columbia
CFIA	Canadian Food Inspection Agency
CIPARS	Canadian Integrated Program for Antimicrobial Resistance Surveillance
ER	Emergency Room
FRBCP	Frozen Raw Breaded Chicken Products
NESP	National Enteric Surveillance Program
NML	National Microbiology Laboratory
NT	Not Tested
OMD	Outbreak Management Division
ON	Ontario
PCR	Polymerase chain reaction
PHAC	Public Health Agency of Canada
SE	*Salmonella* Enteritidis
STEC	Shigatoxigenic *Escherichia coli*
WGS	Whole Genome Sequencing
USA	United States of America

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FARM TO FORK

The Public Health Agency of Canada FoodNet Canada Surveillance System

Public health and food safety partners working together across the farm-to-fork continuum to identify the primary sources of major enteric pathogens that are contributing to human illness.

2018 RESULTS

MOST COMMON PATHOGENS

FARM[Δ]

- *Campylobacter* in swine (73–81%)
- *Campylobacter* in turkey (35-79%)
- *Campylobacter* in feedlot beef (77%)*
- *Salmonella* in turkey (56–82*%)

Δ Manure samples
* Significant increase from 2017

WATER

- Shigatoxigenic *E. coli* (STEC) in irrigation water (4**–53%)
- Also identified: *Campylobacter* and *Salmonella* in irrigation water (up to 16%)

** Significant decrease from 2017

FOOD

- *Campylobacter* in skinless chicken breasts (26–54%)
- *Salmonella* in frozen raw breaded chicken products (21–37*%)
- *Listeria monocytogenes* in frozen raw breaded chicken products (24–29%) and ground beef (17–26%)

* Significant increase from 2017

HUMAN CASES

- *Campylobacter* (39%)
- *Salmonella* (26%)
- *Giardia* (14%)

Of reported cases[†] of these pathogens, 26% were travel-acquired and 59% were acquired in Canada

Percentages represent samples tested across sentinel sites

[†] Reported to FoodNet Canada

KEY HIGHLIGHTS

Poultry and poultry products are significant sources of both *Campylobacter* and *Salmonella* for humans. Other sources, such as irrigation water, may also cause human illness.

The first year of results from a two year targeted study found that 62% of bivalve molluscs sampled contained *Vibrio* spp. and 27% contained generic *E. coli*. As these products are typically consumed raw, this could pose a risk to consumers.

Although travel was an important factor (for 25% of reported illnesses), the majority of enteric illness was acquired in Canada.

Food safety risks for human illness vary across the country. Continued monitoring of emerging issues causing human illness, such as *Listeria* in pork sausages, chicken breast, and ground beef in independent vs. chain stores, is important.

ABOUT FOODNET CANADA

- Conducts surveillance to determine what foods and others sources are making Canadians ill;
- Determines significant risk factors for enteric illness;
- Accurately tracks disease rates and risks over time;
- Provides practical information to prioritize risks and assess the effectiveness of interventions;
- Examines regional differences to provide a better understanding of the human health risks, and their differences, across Canada.

phac.foodnet.canada.aspc@canada.ca

www.canada.ca/en/public-health/services/surveillance/foodnet-canada.html

SENTINEL SITES
- British Columbia (Fraser Health Authority)
- Alberta (Calgary and Central Zone)
- Ontario (Middlesex-London Health Unit)

FOODBORNE ILLNESSES CAN BE PREVENTED BY FOLLOWING SAFE FOOD HANDLING PRACTICES.

Learn more about food safety by visiting **www.canada.ca/foodsafety**

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Public Health Agency of Canada | Agence de la santé publique du Canada

Canada

Public Health Agency of Canada / Agence de la santé publique du Canada

C. MEMORANDUM OF AGREEMENT SUMMARY

C1. THE PUBLIC HEALTH AGENCY OF CANADA AUTHORITY

Steven Sternthal
Director General
Centre for Food-borne, Environmental & Zoonotic Infectious Diseases
Infectious Disease Prevention and Control
130 Colonnade, AL: 6502A
Ottawa, Ontario, K2E 1B6
Telephone: 613-948-6883
Fax: Fax #
E-mail: steven.sternthal@canada.ca

Memorandum of Agreement (MOA) - Services

between

Her Majesty the Queen in Right of Canada (referred to herein as "Canada"), as represented by the Minister of Health, acting through the Public Health Agency of Canada (referred to herein as the "Minister")

and

Middlesex - London Health Unit
50 King street, London Ontario, N6A5L7
1053704

(referred to herein as the "Provider of Services")

for
The Performance of the Work described in Annex A – Statement of Work

THIS MOA DOES NOT CONTAIN A SECURITY REQUIREMENT

C2. TITLE
Activities for the operation of PHAC FSASD's FoodNet Canada Sentinel Site in Ontario – Middlesex – London Heath Unit

C3. MOA PERIOD
Start date: April 1, 2020 End date: March 31, 2021

C4. MOA NUMBER	C5. FINANCIAL CODE	C6. MAMD REFERENCE
4500402998	250801-54819-TG04	Click here to enter text.

C7. MOA DOCUMENTS AND PRIORITY OF DOCUMENTS

1. This MOA Summary (Section C)
2. Security Requirements (Annex B), if applicable.
3. General Conditions (Section I)
4. Intellectual Property (Section II)
5. MOA Statement of Work (Annex A).

If there is a discrepancy or inconsistency between the wording of any documents that appear on the list, the wording of the document that first appears on the list above shall prevail.

C8. MOA VALUE
Subject to the terms and conditions of this MOA and in consideration for performance of the Work, Canada will pay the Provider of Services an all-inclusive amount (incl. GST/HST) not to exceed $138,842.00, all amounts in Canadian dollars, as follows:

Labour Category	Firm Price
Site Coordinator (See Annex B)	$103,289.00
Retail Sampler (See Annex B)	$17,056.00
Click here to enter text.	$0.00
Amount for GST / HST applicable to the above	$0.00
Cost Reimbursable Elements	**Limitation of Expenditure**
Miscellaneous expenses *reimbursed based at actual cost*	up to $11,000.00 including GST/HST
Travel and living expenses *reimbursed in accordance to GC10*	up to $7500.00 including GST/HST

C9. INVOICES
One (1) copy of each invoice is to be sent at the address below showing::

a. the Contract title, number and financial code;
b. the date;
c. a description of the Work performed;
d. timesheets (if payment is based on hourly/per diem rates);
e. evidence of actual cost (Cost Reimbursable Elements);
f. the amount of any tax (including GST/HST).

All invoices are to be sent to:
Choose an item.

C10. GOVERNING LAWS
This MOA shall be governed and construed by the laws in force in Ontario, Canada.

C11. ENQUIRIES
All enquiries and other communications related to this MOA are to be directed ONLY to the Choose an item. Authority.

C12. INTELLECTUAL PROPERTY
The Provider of Services Will Own Intellectual Property Rights as per Section II.

C13. SIGNATURES
This MOA has been executed on behalf of the Parties by their duly authorized representatives:

AUTHORIZED REPRESENTATIVE OF THE PROVIDER OF SERVICES

_____ _____
Signature **Date**
Name
Name of Position

PUBLIC HEALTH AGENCY OF CANADA AUTHORITY:

_____ _____
Signature **Date**
Steven Sternthal
Director General
Centre for Foodborne, Environmental & Zoonotic Infectious Diseases

Canada

SECTION I - GENERAL CONDITIONS

GC1. Definitions

1.1. In this Memorandum of Agreement, unless the context otherwise requires,

1.1.1. "Provider of Services" means the party agreeing to provide services by entering into this MOA with Public Health Agency of Canada (PHAC).

1.1.2. "Memorandum of Agreement" or "MOA" means this written agreement between PHAC and the Provider of Services, these general conditions, any supplemental general conditions specified in this written agreement and every other document specified or referred to in any of them as forming part of this Memorandum of Agreement, all of which may be amended by written agreement of the Parties, from time to time.

1.1.3. "Public Health Agency of Canada Authority" means the person designated as such in this MOA, or by notice to the Provider of Services to act as the representative of PHAC in the management of this MOA.

1.1.4. "Parties" means PHAC and the Provider of Services, both of which are signatories to this MOA.

GC2. Entire Agreement

2.1. This MOA constitutes the entire agreement between the Parties with respect to the provision of the services described in Annex A ("the Work") and supersedes all previous negotiations, communications and other agreements relating to it, unless they are incorporated by reference herein.

GC3. Time of the Essence

3.1. Time is of the essence in the provision of the services described in Annex A.

3.2. Any delay by the Provider of Services in performing the Provider of Services' obligations under this MOA which is caused by an event beyond the control of the Provider of Services, and which could not have been avoided by the Provider of Services without incurring unreasonable cost through the use of work-around plans including alternative sources or other means, constitutes an excusable delay.

3.3. The Provider of Services shall give notice to PHAC immediately after the occurrence of the event that causes the excusable delay. The notice shall state the cause and circumstances of the delay and indicate the portion of the Work affected by the delay. When requested to do so by the Public Health Agency of Canada Authority, the Provider of Services shall deliver a description, in a form satisfactory to PHAC, of work-around plans including alternative sources and any other means that the Provider of Services will utilize to overcome the delay and endeavour to prevent any further delay. Upon approval in writing by PHAC of the work-around plans, the Provider of Services shall implement the work-around plans and use all reasonable means to recover any time lost as a result of the excusable delay.

GC4. Indemnification

4.1. The Provider of Services shall indemnify and save harmless PHAC and PHAC's servants and agents from and against all claims, losses, damages, costs, expenses, actions and other proceedings, made, sustained, brought, prosecuted, threatened to be brought or prosecuted, in any manner based upon, occasioned by or attributable to any injury to or death of a person or damage to or loss of property arising from any wilful or negligent act, omission or delay on the part of the Provider of Service, or the Providers of Services' employees, agents, in performing the Work or as a result of the Work.

4.2. The Provider of Services shall indemnify PHAC and PHAC's servants and agents from all costs, charges and expenses whatsoever that PHAC sustains or incurs in all claims, actions, suits and proceedings for the use of the invention claimed in a patent, or infringement or alleged infringement of any patent or any registered industrial design or any copyright or other intellectual property right resulting from the performance of the Provider of Services' obligations under this MOA, and in respect of the use of or disposal by PHAC of anything furnished pursuant to this MOA.

4.3. The Provider of Services' liability to indemnify or reimburse PHAC under this MOA shall not affect or prejudice PHAC from exercising any other rights under law.

4.4. The Provider of Services agrees that PHAC shall not be liable for, and agrees to protect and indemnify PHAC with respect to, any injury or damage (including death) to the Provider of Services or to the person of any officer, servant or agent of the Provider of Services or for the loss of or damage to the property of the Provider of Services or its officers, servants or agents in any manner based upon, occasioned by, or in any way attributable to the performance of the said work unless the injury, loss or damage is caused by the negligence of an officer, servant or agent of PHAC while acting within the scope of his or her employment.

GC5. Termination or Suspension for Convenience

5.1. PHAC may, by giving notice to the Provider of Services, terminate or suspend the Work with respect to all or any part or parts of the Work not completed.

5.2. All work completed by the Provider of Services to the satisfaction of PHAC before the giving of notice shall be paid for by PHAC in accordance with the provisions of this MOA and, for all work not completed before the giving of notice, PHAC shall pay the Provider of Services' costs as determined under the provisions of this MOA and, in addition, an amount representing a fair and reasonable fee in respect of the Work not completed.

5.3. In addition to the amount which the Provider of Services shall be paid, the Provider of Services shall be reimbursed for their cost of, and incidental to, the cancellation of obligations incurred by the Provider of Services pursuant to the notice and obligations incurred by the Provider of Services or to which the Provider of Services is subject with respect to the Work.

5.4. Payment and reimbursement under these provisions shall be made only to the extent that it is established to the satisfaction of PHAC that the costs and expenses were actually incurred by the Provider of Services and that the same are fair and reasonable and are properly attributable to the termination or suspension of the Work or the part of the Work terminated.

5.5. The Provider of Services shall not be entitled to be reimbursed any amount which, taken together with any amounts paid or becoming due to the Provider of Services under this MOA, exceeds the MOA price applicable to the Work or the particular part of the Work.

GC6. Termination Due to Default

6.1. PHAC may, by notice to the Provider of Services, terminate the whole or any part of the Work if the Provider of Services fails to perform any of the Provider of Services obligations under this MOA, or, in PHAC's view, so fails to make

progress as to endanger performance of this MOA in accordance with its terms.

6.2. In the event that PHAC terminates the Work in whole or in part under this section, PHAC may arrange, upon such terms and conditions and in such manner as PHAC deems appropriate, for the Work to be completed that was so terminated, and the Provider of Services shall be liable to PHAC for any excess costs relating to the completion of the Work.

6.3. Upon termination of the Work under this section, PHAC may require the Provider of Services to deliver and transfer title to PHAC, in the manner and to the extent directed by PHAC, any finished work which has not been delivered and accepted prior to such termination and any materials or work-in-process which the Provider of Services has specifically acquired or produced for the fulfilment of this MOA. PHAC shall pay the Provider of Services for all finished work delivered pursuant to the direction and accepted by PHAC, the cost to the Provider of Services of the finished work plus the proportionate part of any fee fixed by this MOA and shall pay or reimburse the Provider of Services the fair and reasonable cost to the Provider of Services of all materials or work-in-process delivered pursuant to the direction. PHAC may withhold from the amounts due to the Provider of Services the sums that PHAC determines to be necessary to protect PHAC against excess costs for the completion of the Work.

6.4. The Provider of Services shall not be entitled to be reimbursed any amount which, taken together with any amounts paid or becoming due to the Provider of Services under this MOA, exceeds the MOA price applicable to the Work or the particular part of the Work.

6.5. If, after PHAC issues a notice of termination under this section, it is determined by PHAC that the default of the Provider of Services is due to causes beyond the control of the Provider of Services, the notice of termination shall be deemed to have been issued pursuant to Section GC5 and the rights and obligations of the parties shall be governed by Section GC5.

6.6. All work completed by the Provider of Services to the satisfaction of both Parties, before the giving of the notice, shall be paid for by PHAC in accordance with the provisions of this MOA and, for all work not completed before the giving of notice, PHAC shall withhold an amount reasonably estimated as being required to have the Work completed by another Provider of Services.

GC7. Amendments

7.1. The Parties agree that this MOA shall not be altered or amended without the written mutual consent of both the Public Health Agency of Canada Authority and the Provider of Services.

GC8. Security and Protection of Work

8.1. The Provider of Services shall keep confidential all information provided to the Provider of Services by or on behalf of PHAC in connection with the Work, acquired by the Provider of Services in the course of performing the Work or created by the Provider of Services as part of the Work. The Provider of Services shall not disclose the information to any person without the written permission of Public Health Agency of Canada Authority, except that the Provider of Services may disclose to a sub-Provider of Services, authorized in accordance with this MOA, information necessary to the performance of the subcontract. This section does not apply to any information that:

8.1.1. is publicly available from a source other than the Provider of Services ; or

8.1.2. is or becomes known to the Provider of Services from a source other than PHAC, except any source that is known to the Provider of Services to be under an obligation to PHAC not to disclose the information.

8.2. Upon request, the Provider of Services shall return to the Public Health Agency of Canada Authority all information provided to the Provider of Services by or on behalf of PHAC or acquired by the Provider of Services in connection with the Work and any copies of the information, in any form whatsoever.

GC9. Accounts and Audits

9.1. The Provider of Services shall keep proper accounts and records of the cost to the Provider of Services of the Work and all expenditures or commitments made by the Provider of Services.

GC10. Travel and Living Expenses

10.1. Travel and Living expenses incurred by the Provider of Services are entirely subject to the content of the current National Joint Council Travel Directive (http://www.njc-cnm.gc.ca/directive/travel-voyage/index-eng.php) and the Treasury Board Secretariat Special Travel Authorities, Section 7, "Persons on contract" (http://www.tbs-sct.gc.ca/pubs_pol/hrpubs/TBM_113/STA_e.asp).

10.2. Travel and Living expenses are considered to be part of the total cost of the MOA. Expenses which exceed the Directive will not be paid. Prior authorization for projected Travel and Living expenses is required.

SECTION II – INTELLECTUAL PROPERTY

IP1. Provider of Services to Own Intellectual Property Rights

1.0 Interpretation

In the MOA,

1.1 "Background Information" means all Intellectual Property that is not Foreground Information that is incorporated into the Work or necessary for the performance of the Work and that is proprietary to or the confidential information of the Provider of Services, its subcontractors or any other third party;

1.2 "Firmware" means any computer program stored in integrated circuits, read-only memory or other similar devices within the hardware or other equipment;

1.3 "Foreground Information" means all Intellectual Property first conceived, developed, produced or reduced to practice as part of the Work under the MOA;

1.4 "Intellectual Property" means any information or knowledge of an industrial, scientific, technical, commercial, literary, dramatic, artistic or otherwise creative nature relating to the Work, whether oral or recorded in any form or medium and whether or not subject to copyright; this includes but is not limited to any inventions, designs, methods, processes, techniques, know-how, show-how, models, prototypes, patterns, samples, schematics, experimental or test data, reports, drawings, plans, specifications, photographs, manuals and any other documents, Software and Firmware;

1.5 "Intellectual Property Right" means any intellectual property right recognized by law, including any intellectual property right protected by legislation such as patents, copyright, industrial design, integrated circuit topography, and plant breeders' rights, or subject to protection under the as trade secrets and confidential information;

1.6 "Software" means any computer program whether in source or object code (including Firmware), any computer program documentation recorded in any form or upon any medium, and any computer database, and includes modifications to any of the foregoing.

2.0 Records and Disclosure of Foreground Information

2.1 During and after the performance of the MOA, the Provider of Services must keep detailed records of the Foreground Information, including details of its creation, ownership and about any sale or transfer of any right in the Foreground Information. The Provider of Services must report and fully disclose to the Minister all Foreground Information as required by the MOA. If the MOA does not specifically state when and how the Provider of Services must do so, the Provider of Services must provide this information when requested by the Minister or a representative of the Minister, whether before or after completion of the MOA.

2.2 The Provider of Services must, in each disclosure under this section, indicate the names of all subcontractors at any tier, if any, who contributed to the development of the Intellectual Property Rights in the Foreground Information.

2.3 Before and after final payment to the Provider of Services, the Provider of Services must provide the Minister with access to all records and supporting data that the Minister considers pertinent to the identification of Foreground Information.

2.4 For any Intellectual Property that was developed or created in relation to the Work, the Minister will be entitled to assume that it was developed or created by Canada, if the Provider of Services' records do not list that Intellectual Property or do not indicate that it was created by the Provider of Services, or by someone on behalf of the Provider of Services, other than Canada.

3.0 Provider of Services to Own Intellectual Property Rights in Foreground Information

3.1 All Intellectual Property Rights in the Foreground Information belong to the Provider of Services as soon as they come into existence.

3.2 Despite the Provider of Services' ownership of all the Intellectual Property Rights in the Foreground Information, Canada has unrestricted ownership rights in any prototype, model, custom or customized system or equipment that is a deliverable under the MOA, including manuals and other operating and maintenance documents. This includes the right to make them available for public use, whether for a fee or otherwise, sell them or otherwise transfer ownership in them.

3.3 Any personal information, as defined in the *Privacy Act*, R.S. 1985, c. P-21, collected by the Provider of Services in the execution of the Work under the MOA becomes the property of Canada immediately upon collection and must be used only for the performance of the Work. The Provider of Services has no right in any such personal information.

3.4 If the Work under the MOA involves the preparation of a database or other compilation using information or data supplied by Canada or any personal information referred to above, the Intellectual Property Rights in the database or compilation containing such information will belong to Canada. The Provider of Services' Intellectual Property rights in the Foreground Information are restricted to those capable of being exploited without the use of the information or data supplied by Canada or the personal information. Unless the MOA otherwise expressly provides, the Provider of Services shall deliver to Canada all such information, data or personal information, together with every copy, draft, working paper and note thereof that contains such information, data, or personal information, upon the completion or termination of the MOA or at such earlier time as the Minister may require.

4.0 Licenses to Intellectual Property Rights in Foreground and Background Information

4.1 As Canada has contributed to the cost of developing the Foreground Information, the Provider of Services hereby grants to Canada a non-exclusive, perpetual, irrevocable, world-wide, fully-paid and royalty-free license to exercise the Intellectual Property Rights in the Foreground Information for Canada's activities. Subject to any exception described in the MOA, this license allows Canada to do anything that it would be able to do if it were the owner of the Foreground Information, other than exploit it commercially in competition with the Provider of Services and transfer or assign ownership of it. The Provider of Services also hereby grants to Canada a license to use the Background Information to the extent that it is reasonably necessary for Canada to exercise fully all its rights in the deliverables and in the Foreground Information. These licenses cannot be restricted in any way by the Provider of Services providing any form of notice to the contrary, including the wording on any shrink-wrap license or any other kind of packaging, attached to any deliverable.

4.2 For greater certainty, Canada's licenses include, but are not limited to:

a. the right to disclose the Foreground and Background Information to third parties bidding on or negotiating

contracts with Canada and to sublicense or otherwise authorize the use of that information by any contractor engaged by Canada solely for the purpose of carrying out such contracts. Canada will require these third parties and contractors not to use or disclose that information except as may be necessary to bid on, negotiate or carry out those contracts;

b. the right to disclose the Foreground and Background Information to other governments for information purposes;

c. the right to reproduce, modify, improve, develop or translate the Foreground and Background Information or have it done by a person hired by Canada. Canada, or a person designated by Canada, will own the Intellectual Property Rights associated with the reproduction, modification, improvement, development or translation;

d. without restricting the scope of any license or other right in the Background Information that Canada may otherwise hold, the right, in relation to any custom-designed or custom-manufactured part of the Work, to exercise such of the Intellectual Property Rights in the Background Information as may be required for the following purposes:

   i. for the use, operation, maintenance, repair or overhaul of the custom-designed or custom-manufactured parts of the Work;

   ii. in the manufacturing of spare parts for maintenance, repair or overhaul of any custom-designed or custom-manufactured part of the Work by Canada if those parts are not available on reasonable commercial terms to enable timely maintenance, repair or overhaul;

e. for Software that is custom designed for Canada, the right to use any source code the Provider of Services must deliver to Canada under the MOA and to reproduce, use, modify, improve or translate the Software.

4.3 The Provider of Services agrees to make the Background Information, including in the case of Software, the source code promptly available to Canada for any purpose mentioned above. The license does not apply to any Software that is subject to detailed license conditions that are set out elsewhere in the MOA. Furthermore, in the case of commercial off-the-shelf software, the Provider of Services' obligation to make the source code promptly available to Canada applies only to source code that is within the control of or can be obtained by the Provider of Services or any subcontractor.

4.4 Where the Intellectual Property Rights in any Foreground Information are or will be owned by a subcontractor at any tier, the Provider of Services shall either obtain a license from that subcontractor that permits compliance with subsections IP 4.1 and IP 4.2 or arrange for the subcontractor to convey directly to Canada the same rights by execution of the form provided for that purpose by the Minister, in which case the Provider of Services shall deliver that form to the Minister, duly completed and executed by the subcontractor, no later than the time of disclosure to Canada of that Foreground Information.

4.5 The Provider of Services represents and warrants that it has the right to grant to Canada the licenses and any other rights to use the Foreground and Background Information. If the Intellectual Property Rights in any Foreground or Background Information are or will be owned by a subcontractor or any other third party, the Provider of Services must have or obtain promptly a license from that subcontractor or third party to grant promptly any required license directly to Canada.

4.6 Any information supplied by Canada to the Provider of Services for the performance of the Work remains the property of Canada. The Provider of Services must use Canada's information only to perform the MOA. If the Provider of Services wants to use any information owned by Canada for the commercial exploitation or further development of any of the Foreground Information, the Provider of Services must obtain a license from the Minister. In its request for a license to the Minister, the Provider of Services must explain why the license is required and how the Provider of Services intends to use the information. If the Minister agrees to grant a license, its terms will be negotiated between the Provider of Services and the Minister and may include the payment of a compensation to Canada.

5.0 Transfer or License of Provider of Services' Rights

5.1 During the MOA, the Provider of Services must not sell, transfer, assign or license the Foreground Information without first obtaining the Health Canada Authority's written permission.

5.2 After the MOA, the Provider of Services is not required to obtain Canada's permission to transfer ownership in the Foreground Information but any transfer must be subject to all Canada's rights to use the Foreground Information. Furthermore, after the MOA, if the Provider of Services grants a license or any other right (other than a transfer of ownership) to a third party to use the Foreground Information, the Provider of Services is not required to notify Canada, but the license or right granted must not affect Canada's rights in any way. If the Provider of Services at any time transfers ownership or grants rights in the Foreground Information that interfere in any way with Canada's rights to use the Foreground Information, the Provider of Services must, if requested by Canada, immediately take all steps necessary to restore Canada's rights. If the Provider of Services is not successful in doing so, within the time reasonably required by Canada, the Provider of Services must immediately reimburse Canada for all costs Canada incurs to do so itself.

5.3 The Provider of Services shall promptly notify Canada of the name, address and other pertinent information in regard to any transferee (including the conditions of the transfer), assignee or licensee referred to in this subsection and shall ensure that such party is required to do the same with regard to any subsequent transferee, assignee or licensee.

5.4 If Canada terminates the MOA in whole or in part for default, or if the Provider of Services fails to disclose any Foreground Information in accordance with section IP 2.1, the Minister may, by giving notice to the Provider of Services, require the Provider of Services to convey to Canada all the Intellectual Property Rights in the Foreground Information or, in the case of a notice based on failure to disclose, all of the Intellectual Property Rights in the Foreground Information not disclosed, including the rights owned by subcontractors. In the case of Intellectual Property Rights in the Foreground Information that have been sold or assigned to a third party, the Provider of Services must pay to Canada on demand, at Canada's discretion, the fair market value of the Intellectual Property Rights in the Foreground Information or an amount equal to the payment received by the Provider of Services from the sale or assignment of the Intellectual Property Rights in the Foreground Information.

5.5 In the event of the issuance of a notice by the Minister, the Provider of Services must, at its own expense and without delay, execute such documents relating to ownership of the Intellectual Property Rights as the Minister may require. The Provider of Services must, at Canada's expense, provide all reasonable assistance in the preparation of applications and in the prosecution of any applications for any registration of

any Intellectual Property Rights in any jurisdiction, including the assistance of the inventor in the case of an invention.

5.6 If the Provider of Services uses the Foreground Information to develop any new product or any improvement in any existing product, the Provider of Services agrees that, if Canada wishes to purchase such new or improved product, the Provider of Services must sell them to Canada at a discount off the lowest price for which it has sold those products to other customers, to recognize Canada's financial contribution to the development of those products.

6.0 Waiver of Moral Rights

6.1 If requested by Canada, during and after the MOA, the Provider of Services must provide a written permanent waiver of moral rights, as defined in the Copyright Act, R.S. 1985, c. C-42, from every author that contributes to any Foreground Information subject to copyright protection that is a deliverable to Canada under the MOA. If the Provider of Services is an author of the Foreground Information, the Provider of Services permanently waives the Provider of Services' moral rights in that Foreground Information.

ANNEX A – MOA STATEMENT OF WORK

S1. INTRODUCTION

This Service Agreement ("Agreement") covers the operation of the Public Health Agency of Canada (PHAC), Food-borne Disease and Antimicrobial Resistance Surveillance Division (FDASD)'s enhanced integrated surveillance system for foodborne and waterborne infectious gastroenteritis, including provincial microbiological expertise, according to the FoodNet Canada business plan. FoodNet Canada provides a unique and flexible surveillance platform for the collection of epidemiological and laboratory data on cases of enteric illness in sentinel communities. Active sampling of potential exposures (food animals, food and water) is then linked with the disease information, to determine the actual level of risk from pathogens to the human population. This approach highlights food or water safety issues when they emerge, and provides a mechanism to measure the effectiveness of interventions/programs aimed at reducing risk, as well as providing information to policy makers to support activities to reduce the burden of enteric disease in Canada through sentinel site surveillance. The program involves systematic and integrated data collection, analysis, interpretation and communication of results; standardized microbiological and epidemiological methods; and timely and effective reporting and communication. In addition to FoodNet Canada, other programs within FDASD are the Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS), the National Enteric Surveillance Program (NESP), Enhanced National Listeriosis Surveillance, and Burden of Enteric Illness Studies. These FDASD surveillance programs are interconnected with integrated activities, and their combined information is used to inform enteric disease within Canada.

S2. TITLE

Activities for the operation of PHAC FDASD's FoodNet Canada Sentinel Site in Ontario - Middlesex-London Health Unit

S3. OBJECTIVES

This Service Agreement ("Agreement") is between PHAC's FDASD and the Middlesex-London Health Unit and covers the operation of PHAC FDASD's enhanced integrated surveillance system for foodborne and waterborne infectious gastroenteritis in the FoodNet Canada Ontario Sentinel Site, located in Middlesex-London, Ontario. This Agreement also includes the provision of data to PHAC's Outbreak Management Division (OMD) for the purpose of outbreak detection, assessment, and response.

The Agreement supports the three main objectives of the FoodNet Canada surveillance system:
1. To detect changes in trends in human enteric disease and in levels of pathogen exposure from food, animal and water sources in a defined population; and determine significant risk factors for enteric illness;
2. To conduct source attribution (determine the proportion of human cases due to exposure via food, animals and water); and
3. To provide practical preventive information to prioritize risks, compare interventions, measure effectiveness of food and water safety activities and inform policy.

The Agreement has the following main work objectives which are to:

- provide funding for an employee and outline their duties as they relate to the work and management of FoodNet Canada activities in the site; and
- provide funding for retail sampling and describe the associated activities.

S4. BACKGROUND

FoodNet Canada is a multi-partner sentinel site surveillance system facilitated by PHAC that identifies enteric pathogens in foods and environmental sources causing enteric illness in the Canadian population. The program brings together enhanced epidemiological and microbiological surveillance to identify risks and to help direct food and water safety action plans and programming as well as public health interventions.

Specifically, its core objectives are to: determine what food and other sources are making Canadians ill (source attribution); determine significant risk factors for enteric illness; accurately track disease rates and risks over time; and provide practical prevention information.

FoodNet Canada has two main databases: the human component (data on all human cases) and the non-human component, which includes data on retail foods (meats, produce or other), on-farm (farm animal manure) and water (untreated water). The objective of the human component is to: produce baseline data through enhanced passive surveillance, identify and analyse risk factors, and inform burden of enteric illness estimates and source attribution work. Each case of enteric disease in the sentinel site is followed up using a standardized FoodNet Canada case questionnaire and by conducting additional microbiological and molecular characterization of the pathogen implicated in the infection.

The non-human component consists of sampling and surveillance in three sub-components: retail food, farm and water. The objective of the retail food sampling is to identify pathogen levels on raw meat (e.g. chicken) and produce (e.g. bagged leafy greens) available to the consumer at the grocery store level for large and medium chain stores as well as independently owned butcher and market shops. The farm surveillance component objective is to determine the level of contamination on-farm through the active surveillance of fresh fecal material and stored manure sampled on participating producer farms within each site. Finally, the objective of the water surveillance component is to understand the dynamics of pathogen levels in the environment and the transmission of enteric pathogens from both specific and non-specific sources within local watersheds and water sources.

This MOA will cover the work related to the human component and the retail sampling in the Ontario sentinel site. For the human component the MOA will cover the cost of 1 FTE in the sentinel site to support continuous surveillance activities for FoodNet Canada. It will also cover the funding of work related to retail sampling which consists of the site providing staff to perform the sampling throughout the year for the sentinel site.

S5. SCOPE

RESPONSIBILITIES OF THE MIDDLESEX-LONDON HEALTH UNIT

1. The responsibilities of the site coordinator suggest an investment of salary and support for 1 FTE with extensive public health training and managerial (project/person) experience as appropriate. Any episodic surveillance activities, such as intervention, case-control studies or cohort follow-up studies will be additional to the roles described herein, and will be accompanied by extensive involvement by PHAC's FDASD.

2. Provide 1 (one) FTE employee with the following skill set to be the site coordinator and liaison between PHAC's FDASD and the Middlesex-London Health Unit during this agreement:

- knowledge of enteric diseases including current issues in foodborne and waterborne infectious diseases,
- experience with Infectious Diseases Program at the local and provincial level
- knowledge of planning and evaluation,
- detailed knowledge and experience managing a database,
- experience managing people and/or projects,
- excellent communication and interpersonal skills,
- ability to work collaboratively and with flexibility in an innovative, complex environment.

The roles and responsibilities of the site coordinator revolve around performing year-round surveillance activities to support FoodNet Canada's objectives. In particular, the responsibilities focus on relationship building within the Middlesex London Health Unit and the sentinel site community, coordination of the

various components of the surveillance system at the health unit level, and follow-up on the laboratory submission/tracking of information related to the submission of specimen samples and analytical results. Data management activities, compiling surveillance reports, as well as reporting on the progress of this work, will be critical to success.

The specific roles, responsibilities and tasks of the site coordinator include:

2.1 Communication

- Communicate with PHAC's FoodNet Canada team at monthly operation meetings, quarterly steering committee meetings, site coordinator meetings, annual site visits and as required (e.g., if other initiatives undertaken in collaboration with FoodNet Canada).
- Plan with and update the Middlesex-London Health Unit management and other public health staff as required.
- Communicate with Public Health Ontario, Public Health Ontario Laboratories Toronto regarding laboratory data as required to meet established timelines (i.e., every two months).

2.2 Enhanced Investigations of Reported Cases

- Ensure use and completion of standardized questionnaire by local public health staff.
- Ensure data quality by reviewing and cleaning case interview data prior to being sent to PHAC's FDASD according to the data management standard operating procedure (SOP) provided by PHAC's FDASD and calendar for data extract submission.
- Review data management SOP and calendar for data extract submission annually.
- Participate in annual and ongoing review and enhancement of the standardized questionnaire.

2.3 IT/Database Management

- Ensure data quality for processes involved with data collection, data entry, data storage, and data transfer. Many of these activities are outlined in the data management SOP. These activities include, but are not limited to: developing and maintaining data cleaning processes (identification of missing values, follow-up to finalize missing values, duplicate record identification and removal), and processes to ensure all relevant laboratory data are incorporated into the data extracts sent to PHAC's FDASD.
- Ensure bi-monthly transmission of data to PHAC's FDASD, and as required.
- Ensure database updates are made based on questionnaire revisions.

2.4 Relationship Building/Liaison

- Within the Middlesex-London Public Health.
- Within the community (physicians, institutions, infection control, etc.) as required.
- With provincial government as required.
- With FoodNet Canada's other sentinel sites across Canada and PHAC.

2.5 Enhancing Outbreak Investigations

- Ensure transfer of summary outbreak information to PHAC's FDASD on an annual basis.

2.6 Laboratory Coordination

- Work with the Provincial Laboratory for coordination/communication with private and hospital laboratories.
- Coordinate with the Provincial Laboratory to receive sub-typing information on a regular basis.
- Coordinate with the Provincial Laboratory to link laboratory and epidemiological information to meet established timelines for data submission to PHAC's FDASD (i.e., every two months).

2.7 Training

- As appropriate and availability permitting participate in training related to FoodNet Canada activities.

- Support PHAC's FDASD in providing training to other the Middlesex-London Health Unit personnel and other FoodNet Canada sites as required and agreed upon by the Middlesex-London Health Unit management.

2.8 Administration

- Participate in meetings to provide updates on activities and identify any issues/gaps.
- Assist in the provision of information to address information requests, briefing notes and other documentation regarding the FoodNet Canada sentinel site and related activities.
- Annually provide PHAC's FDASD population estimates, by age group and gender, for the sentinel site boundaries for the purpose of calculating disease incidence rates.
- Work with the Provincial laboratory to provide the Provincial Laboratory numbers to PHAC's FDASD according to established timelines for data submission (i.e., every two months) to allow for further laboratory analyses (e.g. Whole Genome Sequencing).
- Coordinate with PHAC's FDASD if activities or deadlines are being, or are anticipated to be, affected by unforeseen situations beyond the control of the site.
- Other tasks related to meeting FoodNet Canada's objectives, as required.

2.9 Communication Products

- Contribute to the review of FoodNet Canada communications, annual reports, email updates, feedback, information for website, presentations, etc., as required.

2.10 Analysis

- Assist with writing of reports and interpretation of data.
- Assist with journal articles.

2.11 Targeted Initiatives

- Work with PHAC's FDASD to address specific issues and knowledge gaps related to FoodNet Canada objectives.
- Liaise with students and others, as required.

2.12 Surge Capacity

- Work with the Middlesex-London Health Unit management to provide assistance with regular duties at the Health Unit as prioritized and appropriate; and in particular when short term surge capacity is required.

3. Allow for the use and enhancement of the following tools and the provision of training on these tools for the Middlesex-London Health Unit staff and managers:

- enhanced, standardized questionnaire for reported cases of infectious enteric disease,
- standardized operating procedures for the investigation of reported cases of infectious enteric disease,
- analytical methods and standardized operating procedures for the analysis of data from sporadic cases and other data from syndromic and alert surveillance systems to detect potential outbreaks,
- standardized operating procedures to follow up the information transfer related to the lab results coming back to the Middlesex-London Health Unit, and
- procedures to extract the required de-identified data and to securely transfer them to PHAC's FDASD.

4. Every two months provide to PHAC's FDASD de-identified[1] data on reported cases of infectious enteric disease.

5. Retail Sampling

- Provide PHAC's FDASD with a census of the retail grocery stores in the sentinel site.

- Provide staffing to perform retail sampling (1 day per week), throughout the year.
- The Site Coordinator will supervise activities of the retail sampler.

Retail sampler activities:

- Perform weekly retail sampling at retail stores as per the FoodNet Canada retail sampling manual and annual FoodNet Canada retail sampling schedule.
- Prepare all submission forms and paperwork associated with sample submissions as per the annual FoodNet Canada retail sampling manual.
- Prepare and ship retail food samples and temperature data loggers to the testing laboratories as per FoodNet Canada sampling manual.
- Provide PHAC's FDASD with the weekly sample information in the specified electronic format.
- Provide PHAC's FDASD with a digital electronic photograph of the front and back of each retail packages as per FoodNet Canada retail sampling manual.

6. Allow for PHAC FDASD's review of the Middlesex-London Health Unit procedures with regards to the agreed upon data cycle, from training and collection to data transfer.

7. For the purposes of this Agreement, the retail sampling area will include the following area: the Middlesex-London Health Unit.

8. The Middlesex-London Health Unit will ensure the provision of required office equipment (desk, chair, telephone) and computer equipment for the site coordinator and retail sampler. PHAC will not provide the Middlesex-London Health Unit any computers or any proprietary computer software, documents, or any symbols, designs, and images that, if used, may infringe on third party Intellectual Property rights.

9. If ever the Middlesex-London Health Unit is no longer a sentinel site under PHAC's FoodNet Canada surveillance system that data collected throughout the duration of this agreement will remain available to the FoodNet Canada Surveillance System for 10 years after the end of the agreement to enable reporting, such as ongoing trend analysis.

[1] De-identified data on cases of infectious disease include all lab results related to the case, age and gender of the patient, time of onset or related dates, and other data related to risk factors for foodborne and waterborne diseases (broadly: sources of food, outside house eating, source of drinking water, contact with recreational water, contact with animals, and travelling during the incubation period). De-identified data excludes the patient's name, home address, name and address of place of work or school, home and work phone numbers and fax, email address, and personal health record beyond the current enteric illness.

S6. MILESTONES

To ensure timely execution of the responsibilities of the Provider of Services, the following milestones are outlined:

Sentinel Site Coordinator Activities:

Monthly:

- Participate and communicate any issues with PHAC's FoodNet Canada team at monthly operation meetings.

Every Two Months:

- Coordinate with the Provincial Laboratory to provide relevant laboratory data and Provincial Laboratory numbers to PHAC's FDASD, as well as link laboratory and epidemiological information to meet established timelines for data submission to PHAC's FDASD (i.e., every two months).
- Ensure transmission of de-identified case data to PHAC's FDASD to meet established timelines for data submission (i.e., every two months).

Quarterly:

- Participate and communicate with PHAC's FoodNet Canada team at quarterly steering committee meetings.

Annually:

- Review data management SOP and calendar for data extract submission annually.
- Participate in annual and ongoing review and enhancement of the standardized questionnaire.
- Ensure transfer of summary outbreak information to PHAC's FDASD on an annual basis.

Other:

- Participate and communicate with PHAC's FoodNet Canada team at site coordinator meetings.

Retail Sampling:

Weekly:

- Perform weekly retail sampling including preparing and shipping samples to laboratories.
- Provide PHAC's FDASD with the weekly sample information in the specified electronic format, as well as a digital electronic photograph of the front and back of retail package.

Annually:

- Provide PHAC's FDASD with a census of the retail grocery stores in the sentinel site.

S7. RESPONSIBILITIES OF PUBLIC HEALTH AGENCY OF CANADA

1. Provide guidance and support for the effective governance and management of the activities related to the FoodNet Canada sentinel site in the Middlesex-London Health Unit in partnership with the site coordinator and the Middlesex-London Health Unit management.

2. Help coordinate communication between laboratories (public health, private, hospital) within the Middlesex-London Health Unit.

3. Provide tools (standardized operating procedures) and data management and FNC questionnaire training to the Middlesex-London Health Unit site coordinator and staff as required.

4. Provide assistance during outbreak investigation (at the request of the Middlesex-London Health Unit).

5. PHAC's FDASD will provide general program support (e.g. sampling questions, supplies, issues with samples) for the retail sampling program, as well as detailed training for the retail sampler.

6. Annually assess training needs for the Middlesex-London Health Unit personnel related to the functioning of the enhanced enteric disease surveillance system and provide training accordingly.

7. PHAC's FDASD will notify the Middlesex-London Health Unit at least one month in advance of publishing/presenting results (scientific journals, annual reports, conference or other external presentations) that include data from the Middlesex-London Health Unit.

8. PHAC's FDASD will notify the Middlesex-London Health Unit if sentinel site data are to be shared with PHAC's OMD for the purpose of outbreak detection, assessment, and/or response. Data provided to OMD will only be used for these operational activities.

9. PHAC's Centre for Food-borne, Environmental and Zoonotic Infectious Diseases will provide financial support for the site coordinator position, and expenses related to travel, and training; and salary for the retail sampler and costs associated with the retail sampling program. See detailed budget in Appendix B.

10. Working with the Middlesex-London Health Unit, PHAC's FDASD will plan quarterly steering committee meetings according to the FoodNet Canada Ontario Site Steering Committee Terms of Reference.

11. Any notice of termination of the Work outlined in the Memorandum of Agreement will be provided by PHAC to the Middlesex-London Health Unit at a minimum of three months prior to the date of termination.

S8. PROVIDER OF SERVICES RESPONSIBILITY

In addition to the Scope outlined in Section S-5, the Middlesex-London Health Unit shall:

- meet all tasks, deliverables and milestones as identified;
- keep all documents and proprietary information confidential;
- conduct and maintain all documentation in a secure area;
- provide to PHAC at any time during the course of the MOA Period a minimum three months' notice of intent to terminate the Work outlined in this agreement. The Middlesex-London Health Unit shall be reimbursed by PHAC for the work completed up to the termination date in accordance with Part GC5 of Section I "General Conditions". The Middlesex-London Health Unit shall not be liable for any costs incurred by PHAC to perform further Work by PHAC or an alternate Provider of Services after the termination date.

S9. PRIVACY REQUIREMENTS

4008 01 (2008-05-12) Interpretation

1. In the MOA, unless the context otherwise requires,

   "General Conditions"
   means the general conditions that form part of the MOA;
   "Personal Information"
   means information about an individual, including the types of information specifically described in the *Privacy Act*, R.S. 1985, c. P-21;
   "Record"
   means any hard copy document or any data in a machine-readable format containing Personal Information;

2. Words and expressions defined in the General Conditions and used in these supplemental general conditions have the meanings given to them in the General Conditions.

3. If there is any inconsistency between the General Conditions and these supplemental general conditions, the applicable provisions of these supplemental general conditions prevail.

4008 02 (2008-05-12) Ownership of Personal Information and Records

To perform the Work, the Provider of Services will be provided with and/or will be collecting Personal Information from third parties. The Provider of Services acknowledges that it has no rights in the Personal Information or the Records and that Canada owns the Records. On request, the Provider of Services must make all the Personal Information and Records available to Canada immediately in a format acceptable to Canada.

4008 03 (2008-05-12) Use of Personal Information

The Provider of Services agrees to create, collect, receive, manage, access, use, retain, and dispose of the Personal Information and the Records only to perform the Work in accordance with the Contract.

4008 04 (2008-05-12) Collection of Personal Information

1. If the Provider of Services must collect Personal Information from a third party to perform the Work, the Provider of Services must only collect Personal Information that is required to perform the Work. The Provider of Services must collect the Personal Information from the individual to whom it relates and the Provider of Services must inform that individual (at or before the time when it collects the Personal Information) of the following:

    a. that the Personal Information is being collected on behalf of, and will be provided to, Canada;

    b. the ways the Personal Information will be used;

    c. that the disclosure of the Personal Information is voluntary or, if there is a legal requirement to disclose the Personal Information, the basis of that legal requirement;

    d. the consequences, if any, of refusing to provide the information;

    e. that the individual has a right to access and correct his or her own Personal Information; and

    f. that the Personal Information will form part of a specific personal information bank (within the meaning of the *Privacy Act*), and also provide the individual with information about which government institution controls that personal information bank, if the Contracting Authority has provided this information to the Provider of Services.

2. The Provider of Services, its subcontractors, and their respective employees must identify themselves to the individuals from whom they are collecting Personal Information and must provide those individuals with a way to verify that they are authorized to collect the Personal Information under a Contract with Canada.

3. If requested by the Contracting Authority, the Provider of Services must develop a request for consent form to be used when collecting Personal Information, or a script for collecting the Personal Information by telephone. The Provider of Services must not begin using a form or script unless the Contracting Authority first approves it in writing. The Provider of Services must also obtain the Contracting Authority's approval before making any changes to a form or script.

4. At the time it requests Personal Information from any individual, if the Provider of Services doubts that the individual has the capacity to provide consent to the disclosure and use of his or her Personal Information, the Provider of Services must ask the Contracting Authority for instructions.

4008 05 (2008-05-12) Maintaining the Accuracy, Privacy and Integrity of Personal Information

The Provider of Services must ensure that the Personal Information is as accurate, complete, and up to date as possible. The Provider of Services must protect the privacy of the Personal Information. To do so, at a minimum, the Provider of Services must:

a. not use any personal identifiers (e.g., social insurance number) to link multiple databases containing Personal Information;

b. segregate all Records from the Provider of Services' own information and records;

c. restrict access to the Personal Information and the Records to people who require access to perform the Work (for example, by using passwords or biometric access controls);

d. provide training to anyone to whom the Provider of Services will provide access to the Personal Information regarding the obligation to keep it confidential and use it only to perform the Work. The Provider of Services must provide this training before giving an individual access to any Personal Information and the Provider of Services must keep a record of the training and make it available to the Contracting Authority if requested;

e. if requested by the Contracting Authority, before providing anyone with access to the Personal Information, require anyone to whom the Provider of Services provides access to the Personal Information to acknowledge in writing (in a form approved by the Contracting Authority) their responsibilities to maintain the privacy of the Personal Information;

f. keep a record of all requests made by an individual to review his or her Personal Information, and any requests to correct errors or omissions in the Personal Information (whether those requests are made directly by an individual or by Canada on behalf of an individual);

g. include a notation on any Record(s) that an individual has requested be corrected if the Provider of Services has decided not to make the correction for any reason. Whenever this occurs, the Provider of Services must immediately advise the Contracting Authority of the details of the requested correction and the reasons for the Provider of Services' decision not to make it. If directed by the Contracting Authority to make the correction, the Provider of Services must do so;

h. keep a record of the date and source of the last update to each Record;

i. maintain an audit log that electronically records all instances of and attempts to access Records stored electronically. The audit log must be in a format that can be reviewed by the Provider of Services and Canada at any time; and

j. secure and control access to any hard copy Records.

4008 06 (2008-05-12) Safeguarding Personal Information

The Provider of Services must safeguard the Personal Information at all times by taking all measures reasonably necessary to secure it and protect its integrity and confidentiality. To do so, at a minimum, the Provider of Services must:

a. store the Personal Information electronically so that a password (or a similar access control mechanism, such as biometric access) is required to access the system or database in which the Personal Information is stored;

b. ensure that passwords or other access controls are provided only to individuals who require access to the Personal Information to perform the Work;

c. not outsource the electronic storage of Personal Information to a third party (including an affiliate) unless the Contracting Authority has first consented in writing;

d. safeguard any database or computer system on which the Personal Information is stored from external access using methods that are generally used, from time to time, by prudent public and private sector organizations in Canada in order to protect highly secure or sensitive information;

e. maintain a secure back-up copy of all Records, updated at least weekly;

f. implement any reasonable security or protection measures requested by Canada from time to time; and

g. notify the Contracting Authority immediately of any security breaches; for example, any time an unauthorized individual accesses any Personal Information.

4008 11 (2008-05-12) Statutory Obligations

1. The Provider of Services acknowledges that Canada is required to handle the Personal Information and the Records in accordance with the provisions of Canada's *Privacy Act*, *Access to Information Act*, R.S. 1985, c. A-1, and *Library and Archives of Canada Act*, S.C. 2004, c. 11. The Provider of Services agrees to comply with any requirement established by the Contracting Authority that is reasonably required to ensure that Canada meets its obligations under these acts and any other legislation in effect from time to time.

2. The Provider of Services acknowledges that its obligations under the Contract are in addition to any obligations it has under the *Personal Information Protection and Electronic Documents Act*, S.C. 2000, c. 5, or similar legislation in effect from time to time in any province or territory of Canada. If the Provider of Services believes that any obligations in the Contract prevent it from meeting its obligations under any of these laws, the Provider of Services must immediately notify the Contracting Authority of the specific provision of the Contract and the specific obligation under the law with which the Provider of Services believes it conflicts.

4008 12 (2008-05-12) Disposing of Records and Returning Records to Canada

The Provider of Services must not dispose of any Record, except as instructed by the Contracting Authority. On request by the Contracting Authority, or once the Work involving the Personal Information is complete, the Contract is complete, or the Contract is terminated, whichever of these comes first, the Provider of Services must return all Records (including all copies) to the Contracting Authority.

S10. WORK SITE / LOCATION OF WORK
Within the Middlesex-London Health Unit

S11. LANGUAGE PROFIENCY.
English

S12. MEMORANDUM OF AGREEMENT CONTACT

The representative designated as the primary contact for the Public Health Agency of Canada:

Lisa Landry
Director,
Food-Borne Disease and Antimicrobial Resistance Surveillance DivisionCentre for Food-borne, Environmental and Zoonotic Infectious Diseases
IDPCB, PHAC
120-255 Woodlawn Road, West
Guelph, ON N1H 8J1
Telephone: 519-826-2995
E-mail: Lisa.landry@phac-aspc.gc.ca

S13. MEMORANDUM OF AGREEMENT CONTACT FOR THE PROVIDER OF SERVICES

The representative designated as primary contact for the Provider of Services:
Dr. Christopher Mackie
Medical Officer of Health
Middlesex-London Health Unit
50 King Street,
London, ON
N6A 5L7

ANNEX B – BASIS OF PAYMENT

The amount will be invoiced quarterly at the end of each quarter of the fiscal year (four invoices) for the duration of this agreement and by March 15th in the last quarter.

Middlesex-London Health Unit provides to the Administrative Assistant, Centre for Food-borne, Environmental and Zoonotic Infectious Diseases Public Health Agency of Canada an original and one (1) copy of the invoice.

1. MEMORANDUM OF AGREEMENT PERIOD:

April 01, 2020 – March 31, 2021;

1.2 Pricing Tables:

FoodNet Canada Site Coordinator (Middlesex-London Health Unit) includes: the salary and benefits for the FoodNet Canada site coordinator in the Middlesex-London Health Unit and expenses related to training. Training may include travel e.g. air fare and accommodation costs to attend professional development at an annual conference, enhanced epidemiological and laboratory capacity at the Public Health Agency of Canada; or other specified training according to the MOA Statement of Work.

FoodNet Canada Middlesex-London Health Unit retail sampling includes: wages and benefits for the retail sampler in Middlesex-London Health Unit, and weekly reimbursable costs related to retail food sample purchase and travel.

2. Site Coordinator:

No.	Description	Site Coordinator Rates for Year **Apr 1/20-Mar 31/21**
1	Salary and Benefits*	$100,786
2	Training	$2,500
	Total Yearly Cost:	$103,286

3. Retail Sampler:

No.	Description	Retail sampler Rates for Year **Apr 1/20-Mar 1/21**
1	Total Salary* (Hourly wage - $55.38)	$17,056
2	Retail Sample Purchase	$10,000
3	Travel (mileage)	$7,500
4	Supplies	$1,000
	Total Yearly Cost:	$35,556

*Based on 7 hrs/day for 44 weeks in a year = 308 hrs.

ANNEX C – SECURITY REQUIREMENTS

Unscreened contractors must be escorted by an employee or Commissionaire at all times when visiting GoC facilities.

Information which is to be used in the development of the contracted product, as reference material or otherwise made available to the Provider of Services must be treated in a manner consistent with Section S-9 Of the SOW.

MIDDLESEX-LONDON HEALTH UNIT

REPORT NO. 003-20

TO: Chair and Members of the Board of Health

FROM: Christopher Mackie, Medical Officer of Health / CEO

DATE: 2020 January 23

MEDICAL OFFICER OF HEALTH / CEO ACTIVITY REPORT FOR JANUARY

Recommendation

It is recommended that the Board of Health receive Report No. 003-20 re: "Medical Officer of Health Activity Report for January" for information.

The following report presents activities of the Medical Officer of Health (MOH)/CEO for the period December 2, 2019–January 10, 2020.

December 3	Phone call with Dr. Ram Singh, London Health Sciences Centre (LHSC), to discuss vaping reporting Met with Jackie Schleifer Taylor, LHSC, to discuss public health support for regional health integration of maternal amd pediatric services Attended at the request of the City of London's Community and Protective Services Committee to support the youth of the Human Environments Analysis Laboratory Youth Advisory Council (HEALYAC) and speak about the health issues associated with vaping
December 4	Inverviewed by Craig Needles, AM980, about youth vaping
December 5	Attended the Board of Health Finance & Facilities Committee meeting Attended the Board of Health Relocation Advisory Committee meeting
December 9	Met with Emily Carrothers, Daya Counselling, to discuss the Daya Campaign
December 10	Teleconference with Dr. David Williams, Chief Medical Officer of Health, and MOH's across the province to discuss provincial public health updates Met with Dr. Jason Gilliland, Western University, and Health Unit staff to discuss vaping and data sharing Met with Cynthia St. John, Southwestern Public Health, to discuss upcoming alPHa meetings
December 11	Attended meeting of the Chief Medical Officer of Health's Techincal Working Group in Toronto
December 12	Attended the Board of Health meeting and dinner
December 13	Participated in Council of Medical Officers of Health (COMOH) Executive Committee teleconference
December 16	Attended the Youth Opportunities Enterprises December social
December 17	Attended "Elimination of Violence Against Sex Workers" session, London Police Services

December 18	Teleconference with Middlesex Hospital Alliance staff to discuss vaping reporting Met with Scott Courtice, London Intercommunity Health Centre (LIHC), to discuss challenges and solutions to the overdose crisis, including safe supply
December 19	Teleconference with Ministry staff and Dr. Sharon Koivu, LHSC, to discuss opioid-related deaths
December 20	Interviews with several media outlets regarding vaping illness, updates, and policy Met with Andrew Lockie, YMCA of Western Ontario, to discuss public health modernization
January 6	Met with Michael Clarke, Board of Health, to discuss the Health Unit's review of public health services in Middlesex County
January 8	Attended the Board of Health and Senior Leadership Team Public Health Modernization Consultation Retreat
January 10	Participated in COMOH Executive Committee teleconference

This report was submitted by the Office of the Medical Officer of Health.

Christopher Mackie, MD, MHSc, CCFP, FRCPC
Medical Officer of Health / CEO

CORRESPONDENCE – January 2020

a) Date: 2019 November 27 [Received December 10]
Topic: Endorsement of Correspondence re: Measures to Address the Rise of Vaping in Ontario
From: Fred Eisenberger, Mayor, City of Hamilton
To: The Honourable Christine Elliott, Minister of Health

Background:

On November 27, 2019, the City of Hamilton Board of Health wrote to Minister Elliott endorsing correspondence from 1) Kingston, Frontenac and Lennox & Addington Public Health 2) Simcoe Muskoka District Healthy Unit and 3) Windsor-Essex County Health Unit in support of the measures to address the rise of vaping in Ontario. Refer to correspondence item d) in the November 21, 2019 Board of Health agenda.

Recommendation: Receive.

b) Date: 2019 November 27 [Received December 10]
Topic: Endorsement of Regional Municipality of Durham's Motion re: Opioid Overdose Emergency Resolution
From: Fred Eisenberger, Mayor, City of Hamilton
To: The Honourable Patty Hajdu, Minister of Health, Health Canada, The Honourable Christine Elliott, Minister of Health, Ministry of Health, Ontario

Background:

On November 27, 2019, the City of Hamilton Board of Health wrote to Minister Patty Hajdu and Minister Christine Elliott in support of the correspondence received from the Regional Municipality of Durham in support of their motion on an Opioid Overdose Emergency Resolution. Refer to correspondence item m) in the November 21, 2019 Board of Health agenda.

Recommendation: Receive.

c) Date: 2019 December 9
Topic: Schedule 16 of Proposed Bill 132 Respecting the *Aggregate Resources Act*
From: Wellington Dufferin Guelph Public Health
To: The Honourable John Yakabuski, Minister of Natural Resources and Forestry

Background:

On December 9, 2019, the Board of Health for Wellington-Dufferin-Guelph Public Health (WDGPH) wrote to Minister Yakabuski to express concerns over the amendments to the Aggregate Resources Act that could impact the protection of groundwater resources within the region. The proposed amendments limit the ability of municipalities to protect their local groundwater, and consequently, valuable drinking water resources. WDGPH encourages the provincial government to reconsider the removal of municipal authority to use zoning by-laws to regulate the depth of aggregate extraction activities.

Recommendation: Receive.

d) Date: 2019 December 3 [Received December 11]
Topic: E-Cigarette and Aerosolized Product Prevention and Cessation
From: Sudbury & Districts Public Health
To: The Honourable Christine Elliott, Minister of Health, Ministry of Health, Ontario

Background:

On December 3, 2019, The Board of Health for Public Health Sudbury & Districts wrote to Minister Elliott to convey their congratulations on the recent decision to ban the promotion of vapour products in corner stores and gas stations. In addition, the Board of Health for Public Health Sudbury & Districts further urges for the adoption of an expert-informed comprehensive tobacco and e-cigarette strategy to address flavoured e-juice, online sales to minors, treatment programs for youth cessation, and public education.

Recommendation: Receive.

e) Date: 2019 November 27 [Received December 10]
Topic: Endorsement of Comprehensive Measures to Address the Rise of Vaping in Canada
From: Fred Eisenberger, Mayor, City of Hamilton
To: The Honourable Patty Hajdu

Background:

On November 27, 2019, the City of Hamilton Board of Health wrote to Minister Hajdu in support of the correspondence from Kingston, Frontenac and Lennox & Addington Public Health regarding comprehensive measure to address the rise of vaping in Canada. Refer to correspondence item f) in the November 21, 2019 Board of Health agenda.

Recommendation: Receive.

f) Date: 2019 December 18
Topic: National Universal Pharmacare Program
From: Leeds, Grenville & Lanark District Health Unit
To: The Honourable Patty Hajdu

Background:

On December 18, 2019, the Board of Health for Leeds, Grenville and Lanark District Health Unit wrote to Minister Hajdu urging the Federal government to follow through on the promise to develop a national universal pharmacare program. A publicly funded health system that does not cover the cost of prescription medications is a barrier for many people receiving treatment they need for health problems.

Recommendation: Receive.

g) Date: 2019 December 18
Topic: Association of Local Public Health Agency (alPHa) Moving notice
From: alPHa
To: All Health Units

Background:

Effective December 19, 2019 the Association of Local Public Health Agencies (alPHa) moved to a new address: 480 University Avenue, Suite 300, Toronto, Ontario, M5G 1V2.

Recommendation: Receive.

h) Date: 2019 December 19
Topic: Stricter rules of vaping product promotion and finalizing labelling and packaging requirements for vaping products
From: James Van Look, Director General, Tobacco Control Directorate
To: All Health Units

Background:

On December 19, 2019, Mr. Van Look wrote to all health units to advise that Health Canada proposes stricter rules on vaping product promotion and on finalizing labelling and packaging requirements for vaping products. The proposed Vaping Products Promotion Regulation (VPPR) would prohibit all advertising that can be seen or heard by youth, with minor exceptions, and would prohibit the display of vaping products in retail locations, including online, that can be seen by youth. The regulations would also require that a health warning be conveyed in vaping product advertisements that are not prohibited. Consultation on the proposed regulations will run until January 20, 2020. Health Canada welcomes written submissions or input provided online.

Recommendation: Receive.

i) Date: 2019 December 20 [Received December 24]
Topic: Mr. Michael Clarke, Provincial Appointment Term
From: The Honourable Christine Elliott, Minister of Health
To: Dr. Michael Clarke, Middlesex-London Board of Health

Background:

On December 20, 2019, Minister Elliott wrote to Dr. Clarke to thank him for his time serving on the Board of Health for Middlesex-London Health Unit. Dr. Clarke's current appointment will come to an end on February 29, 2020.

Recommendation: Receive.

j) Date: 2019 January 2
Topic: Request for Weekly Data Reports on Vaping Cases
From: Peterborough Public Health
To: The Honourable Christine Elliott

Background:

On January 2, 2020, the Board of Health for Peterborough Public Health received correspondence from the City of Hamilton requesting that cases of vaping-related severe pulmonary disease in Hamilton hospitals be shared with Hamilton's Medical Officers of Health. Refer to correspondence item f) in the December 12, 2019 Board of Health agenda. The Board of Health for Peterborough Public Health is requesting the same information from Peterborough Regional Health Centre be shared with Peterborough's Medical Officer to Health.

Recommendation: Receive.

k) Date: 2019 January 9
Topic: Display and promotion of vaping products
From: Porcupine Health Unit
To: The Honourable Patty Hadju, Ministry of Health, Health Canada, The Honourable Christine Elliott, Minister of Health, Ontario

Background:

On January 9, 2020, Porcupine Health Unit Board of Health wrote to Minister Hadju and Minister Elliott in support of the correspondence received from Simcoe Muskoka District Health Unit regarding the promotion and display of vaping products. Refer to correspondence item a) in the October 17, 2019 Board of Health agenda. The Board of Health for Porcupine Health Unit also requests that the recommendations forwarded by the Physicians for a Smoke-Free Canada be considered in the development of new regulations with respect to vaping.

Recommendation: Receive.

l) Date: 2019 January 9 [Received January 10]
Topic: Mr. Robert Parker, Provincial Appointment Term
From: The Honourable Christine Elliott, Minister of Health
To: Middlesex-London Health Unit

Background:

On January 9, 2020, Mr. Robert Parker was appointed as a part time member of the Board of Health for the Middlesex-London Health Unit, effective until December 31, 2020.

Recommendation: Receive.

OFFICE OF THE MAYOR
CITY OF HAMILTON

November 27, 2019

VIA: Mail and Email

ATTN: Honourable Christine Elliott
Minister of Health
Ministry of Health, Ontario
777 Bay Street
Toronto, ON M7A 2J3
Christine.elliott@pc.ola.org

Re: Endorsement of Correspondence re: Measures to Address the Rise of Vaping in Ontario

Dear Minister Elliott,

At its meeting on November 16, 2019, the City of Hamilton Board of Health endorsed the following correspondence regarding comprehensive measures to address the rise of vaping in Ontario: September 27, 2019 - Kingston, Frontenac and Lennox & Addington Public Health, respecting a Resolution regarding the Immediate Removal of Regulation 268 of the *Smoke-Free Ontario Act, 2017;* October 30, 2019 – Simcoe Muskoka District Health Unit respecting Restrictions of Vaping Products and Flavoured E- cigarettes; and, October 24, 2019 – Windsor-Essex County Health Unit respecting the Harms of Vaping and the Next Steps for Regulation.

We wish to commend your decision to prohibit the promotion of vapour products in convenience stores and gas stations effective January 1, 2020. This regulatory amendment to the *Smoke Free Ontario Act, 2017* will have immediate and long-lasting benefits, protecting the health of the youth in our province.

However, the sharp increase in youth vaping rates is especially concerning given the availability and promotion of vapour products containing nicotine, the impact of nicotine on the developing brain, and the recent upward trending of cigarette smoking among this population. Our concerns are further compounded by the vaping-related pulmonary disease reports emerging in the United States and Canada. While vapour products are generally regarded as safer than combustible tobacco cigarettes, these products are not risk-free and are known to contain and emit potentially toxic substances. The emerging concerns surrounding vaping calls for a regulatory framework that provides equal protection for all Ontarians.

Hamilton Public Health Services' comprehensive tobacco control interventions across prevention, protection, cessation and enforcement include preventing experimentation

.../2

and escalation of tobacco use among children youth and young adults. However, in Hamilton, sales of vapour product or e-cigarettes to persons under the age of 19 have so far doubled in 2019 in comparison to all of 2018. There also is a marginal increase in tobacco sales to persons less than 19 years old in 2019 in comparison to 2018.

Immediate action is needed to curb the impacts of vaping given the increasing vaping rates among youth, widespread promotion of vaping products, and emerging concerns about vaping-related pulmonary illness. Targeted policy measures such as limiting vapour product display and advertising in convenience store strengthening penalties for retailers with a history of repeated sales to minors convictions (e.g. regulations and protections for tobacco such as the Automatic Prohibition); and restricting flavours would substantially impact youth vaping, while limiting impacts on vendors who respect restrictions against selling to young people.

As such, the City of Hamilton Board of Health endorses the following and urges:

a) That the Provincial Government immediately remove Regulation 268 of the *Smoke-Free Ontario Act, 2017*, so that retailers of vaping products will not be allowed to promote them, and so that the promotion and display of vape products are subject to the same prohibition as tobacco products;

b) That the Provincial Government make amendments to the *Smoke-Free Ontario Act, 2017* restricting the promotion and marketing of vaping product and the sale of flavoured vaping products, and applies all regulations and protections for tobacco, such as the Automatic Prohibition, to vaping retailers; and,

c) That the Provincial Government call for restrictions to ban flavoured e-cigarettes, as the evidence clearly supports that the thousands of flavours of e-liquid available, including candy and fruit-flavoured varieties, are a significant factor in youth uptake and use.

Sincerely,

Fred Eisenberger

Mayor

CC:
Hon. Bob Bratina, MP, Hamilton East – Stoney Creek
Hon. Scott Duvall, MP, Hamilton Mountain
Hon. Matthew Green, MP, Hamilton Centre
Hon. Filomena Tassi, MP, Hamilton West-Ancaster-Dundas
Council of Ontario Medical Officers of Health
Association of Local Public Health Agencies (alPHa)
Ontario Boards of Health

OFFICE OF THE MAYOR
CITY OF HAMILTON

November 27, 2019

VIA: Mail and Email

ATTN: Hon. Patty Hajdu
Minister of Health
Health Canada
Address Locator 0900C2
Ottawa, ON K1A 0K9
hcminister.ministresc@canada.ca

ATTN: Hon. Christine Elliott
Minister of Health
Ministry of Health, Ontario
777 Bay Street
Toronto, ON M7A 2J3
christine.elliott@pc.ola.org

RE: Endorsement of Regional Municipality of Durham's Motion re: Opioid Overdose Emergency Resolution

Honourable Ministers of Health,

At a meeting on November 18, 2019, the City of Hamilton Board of Health endorsed the October 24, 2019 correspondence from the Regional Municipality of Durham, regarding their motion on an Opioid Overdose Emergency Resolution.

Within the City of Hamilton, the impact of opioid related health issues continues to rise. This city continues to be disproportionately affected by the opioid crisis with rates for opioid related emergency hospital visits, hospitalizations and deaths that are higher than the Ontario provincial average. In 2017, Hamilton opioid related poisonings were 20.4 deaths per 100,000 vs. Vancouver rates of 20.2 deaths per 100,000. Opioid related death rates for 2018 continued to rise, and early reports for 2019 indicate this trend is continuing. Demands on emergency medical services including paramedicine services, emergency department visits and hospitalizations continue to escalate and represent a significant cost to the health care system. The cost of the opioid crisis on human life and the subsequent implications for persons who are using substances and their family and friends is beyond measure.

The harms related to opioid use not only include opioid poisonings, but also include opioid use disorders, adverse drug reactions, neonatal withdrawal, secondary infections

71 MAIN STREET WEST, 2ND FLOOR, HAMILTON, ONTARIO L8P 4Y5 PHONE 905.546.4200 FAX: 905.546.2340

such as HIV, Hepatitis, invasive group A streptococcal infections, endocarditis, pervasive individual trauma and community violence. These harms contribute to the need for the declaration of an Opioid Emergency across the province and the country.

The factors that lead to opioid use and substance use disorder are multiple and pervasive. Trauma, violence, and economic disparity are a few of the components of this issue. Many factors are related to social determinants of health and thus require long term, persistent and co-ordinated approaches in order to have an impact on the harms caused by opioid misuse.

At its November 18, 2019 meeting, the Hamilton Board of Health recommended that the City Council acknowledge and declare an Opioid Emergency in the City of Hamilton. This declaration recognizes and underscores the seriousness of this issue and allows for renewed attention and continued collective action. The City of Hamilton, like other regions and urban centres needs the support of the federal government and Minister of Health to combat this crisis. This support would best come in the way of public affirmation of the seriousness of this issue, a co-ordinated federal and provincial drug strategy and funding to support and expand evidence-based responses that support all pillars of drug strategy: prevention, harm reduction, treatment and social justice.

This multifaceted approach is addressed in the correspondence from the Regional Municipality of Durham, which outlines specific recommendations from the Federation of Canadian Municipalities, Mayor's Task Force and Association of Municipalities Ontario to combat this epidemic. In addition, at its meeting on November 27, 2019 Hamilton City Council endorsed urging the Minister of Health to seek authority from Health Canada to import diacetylmorphine (pharmaceutical heroin) for use as a managed opioid program medication.

The recommendations in the endorsed letter provide a roadmap for success through the declaration of a national epidemic, co-ordination of response across the country and funding to support public health units and Boards of Health to continue to provide evidence-based interventions to address the opioid crisis such as managed opioid programs and services.

Sincerely,

Fred Eisenberger

Mayor

CC:

Hon. Bob Bratina, MP, Hamilton East – Stoney Creek
Hon. Scott Duvall, MP, Hamilton Mountain
Hon. Matthew Green, MP, Hamilton Centre
Hon. Filomena Tassi, MP, Hamilton West-Ancaster-Dundas
Council of Ontario Medical Officers of Health
Association of Local Public Health Agencies (alPHa)
Ontario Boards of Health

PublicHealth
WELLINGTON-DUFFERIN-GUELPH
Stay Well.

December 9, 2019

DELIVERED VIA E-MAIL

The Honourable John Yakabuski
Minister of Natural Resources and Forestry
Whitney Block
Suite 6630, 6th Floor
99 Wellesley Street West
Toronto, ON M7A 1W3

Dear Minister:

Re: Schedule 16 of Proposed Bill 132 Respecting the *Aggregate Resources Act*

Wellington-Dufferin-Guelph Public Health (WDGPH) encourages you to consider the impact that proposed amendments to the *Aggregate Resources Act* could have on protecting groundwater resources in Wellington and Dufferin Counties and the City of Guelph.

Residents of Fergus, Orangeville and Guelph get their drinking water from ground water resources. The proposed amendments could negatively impact the groundwater that supplies these large municipal residential drinking water systems, as well as hundreds of other smaller drinking water systems, and over 30,000 private wells.

In the past, Wellington County, Dufferin County and the City of Guelph have passed zoning by-laws that trigger a zone change application when an operator applies to increase the depth of aggregate extraction. This process enables the municipality to require the submission of studies to assess potential groundwater impacts to prevent negative impacts and protect vital local groundwater resources.

The proposed amendments to Schedule 16 of Bill 132 limits the ability of municipalities to protect their local groundwater, and consequently, valuable drinking water resources. WDGPH believes that municipalities have an important role to play in protecting their local groundwater resources on behalf of their residents and that this oversight role should be maintained.

WDGPH understands that the government wants to protect groundwater resources and therefore encourages you to carefully reconsider amendments to the *Aggregate Resources Act* that remove municipal authority to use zoning by-laws to regulate the depth of aggregate extraction activities.

.../2

160 Chancellors Way, Guelph, ON N1G 0E1
1-800-265-7293 | wdgpublichealth.ca

Thank you for giving this matter your every consideration.

Sincerely,

George Bridge,
Chair, WDGPH Board of Health

c.c. Dr. David Williams, Chief Medical Officer of Health, Ministry of Health – via e-mail
c.c. Hon. Sylvia Jones, MPP (Dufferin-Caledon) - via e-mail
c.c. Hon. Ted Arnott, MPP (Wellington-Halton-Hills)- via e-mail
c.c. Randy Pettapiece, MPP (Perth-Wellington) – via e-mail
c.c. Mike Schreiner, MPP (Guelph) – via e-mail
c.c. Ontario Public Health Units – via e-mail
c.c. Dr. Nicola Mercer, Medical Officer of Health and CEO (WDGPH) – via e-mail

Public Health
Santé publique
SUDBURY & DISTRICTS

December 3, 2019

VIA EMAIL

The Honourable Christine Elliott
Minister of Health
Hepburn Block, 10th Floor
80 Grosvenor Street
Toronto, ON M7A 2C4

Dear Minister Elliott:

Re: E-Cigarette and Aerosolized Product Prevention and Cessation

On behalf of the Board of Health for Public Health Sudbury & Districts, I am very pleased to convey our congratulations on your recent decision to protect Ontarians by banning the promotion of vapour products in corner stores and gas stations. This is an important first step in reducing exposure and accessibility to vapour products and working toward improving the health of Ontarians.

By the enclosed resolution, the Board of Health further urges the adoption of an expert-informed comprehensive tobacco and e-cigarette strategy to address flavoured e-juice, online sales to minors, treatment programs for youth cessation, and public education.

Minister, we recognize that your Ministry is committed to establishing a patient centered system for health, and to ensuring system sustainability for Ontarians now and into the future. To this end, we strongly endorse that any vaping strategy is firmly grounded in the connect between vaping and tobacco use.

As you are aware, although vaping is not without risk, tobacco causes nearly 16 000 deaths per year[i] and costs Ontario nearly $7 billion ($2.7 billion direct health care, $4.2 billion indirect costs) annually.[ii] Cigarettes are known to be toxic and cause cancer, lung, and heart disease when used as intended[iii] and nearly one in five Ontarians continue to smoke[iv]. Reducing supply and exposure to products must be part of the system sustainability goal. This holds true for tobacco and anything that may

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Rainbow Centre
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t: 705.522.9200
f: 705.677.9611

Sudbury East / Sudbury-Est
1 rue King Street
Box / Boîte 58
St.-Charles ON P0M 2W0
t: 705.222.9201
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Espanola
800 rue Centre Street
Unit / Unité 100 C
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f: 705.869.5583

Île Manitoulin Island
6163 Highway / Route 542
Box / Boîte 87
Mindemoya ON P0P 1S0
t: 705.370.9200
f: 705.377.5580

Chapleau
101 rue Pine Street E
Box / Boîte 485
Chapleau ON P0M 1K0
t: 705.860.9200
f: 705.864.0820

Toll-free / Sans frais
1.866.522.9200

phsd.ca
@PublicHealthSD

promote or normalize its use, such as vaping. Below, we are sharing a compelling infographic developed by Public Health Sudbury & Districts to convey this important message to our publics.

Thank you again for your leadership in the protection of youth from the risks of vaping. We urge you to consider in your next steps the linkages between vaping and tobacco and develop a comprehensive tobacco and e-cigarette strategy. Please know that the Board of Health for Public Health Sudbury & Districts is a committed local partner in this important work.

Sincerely,

René Lapierre, Chair
Board of Health, Public Health Sudbury & Districts

Enclosures (2)

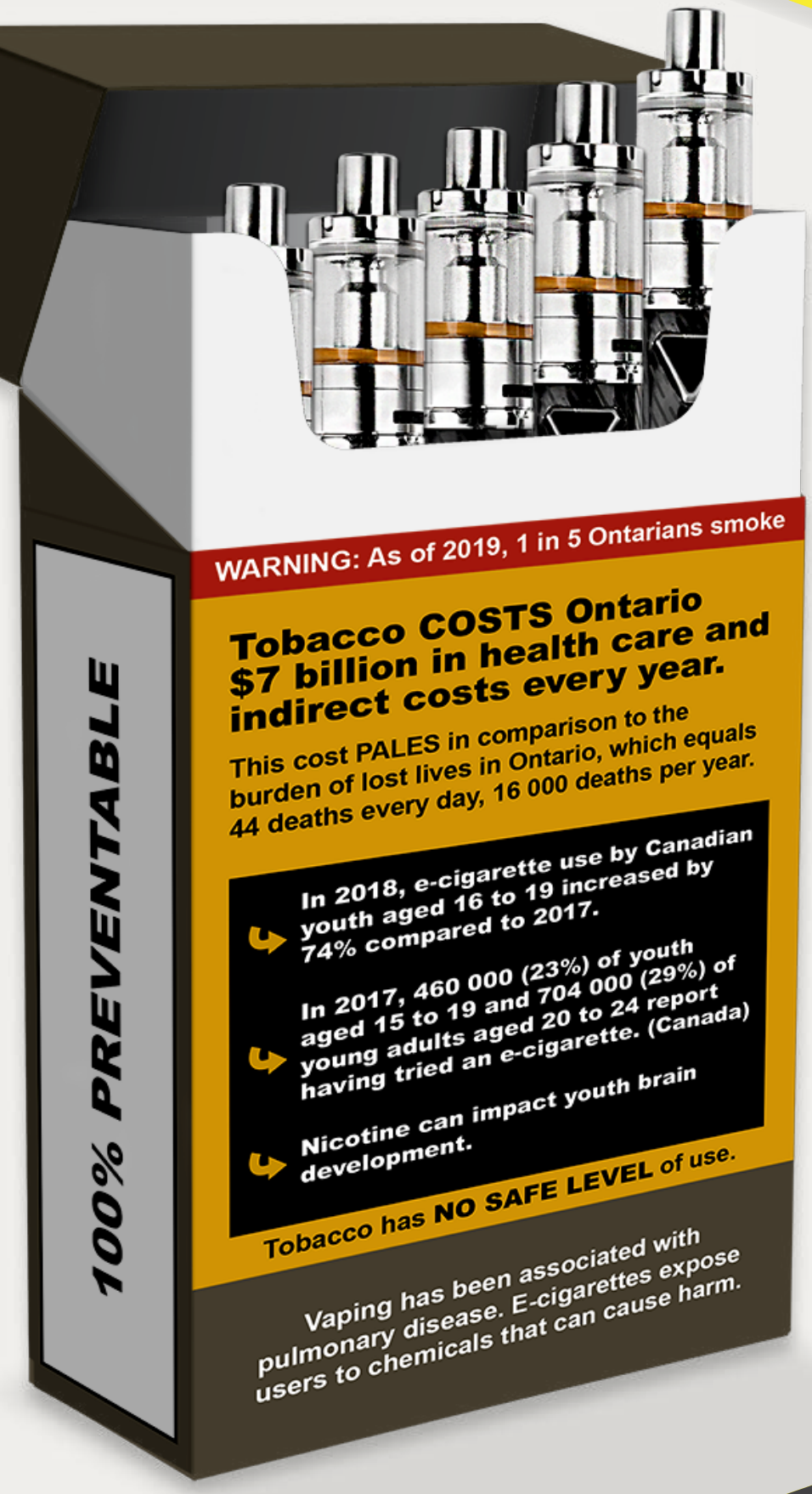
cc: The Honourable Doug Ford, Premier, Minister of Intergovernmental Affairs
All Ontario Boards of Health
Dr. David Williams, Chief Medical Officer of Health
The Honourable Jamie West, MPP, Sudbury
The Honourable France Gélinas, MPP, Nickel Belt
The Honourable Michael Mantha, MPP, Algoma-Manitoulin
Council of Ontario Medical Officers of Health
Loretta Ryan, Executive Director, Association of Local Public Health Agencies
Pegeen Walsh, Executive Director, Ontario Public Health Association
Constituent Municipalities within Public Health Sudbury & Districts
The Honourable Doug Downey, Attorney General of Ontario

[i] Ministry of Health and Long-Term Care. (2018, May 3) Minister of Health and Long-Term Care. Letter. Smoke-Free Ontario Strategy.

[ii] CCO and Ontario Agency for Health Protection and Promotion (Public Health Ontario). (2019). The burden of chronic diseases in Ontario: key estimates to support efforts in prevention. Toronto: Queen's Printer for Ontario.

[iii] Health Canada. (2019). Smoking, vaping and tobacco. Retrieved from https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping.html

[iv] Ministry of Health and Long-Term Care. (2018). Smoke-Free Ontario: The Next Chapter – 2018. Toronto: Queen's Printer for Ontario. Retrieved from http://www.health.gov.on.ca/en/common/ministry/publications/reports/SmokeFreeOntario/SFO_The_Next_Chapter.pdf



The need for a comprehensive tobacco and e-cigarette strategy

The **rapid** proliferation of e-cigarette use is fuelling mass recruitment of new consumers by an established industry, which profits from nicotine addiction.

Many e-cigarette users are **unaware** of the potential harms of regular or occasional use. There is evidence that e-cigarette use **increases youth uptake of tobacco**.

Tobacco continues to kill its users and cause cancer, lung and heart disease, and grips 1.8 million Ontarians daily.

Ingredients of a **comprehensive tobacco and e-cigarette strategy** include cessation, prevention (denormalization, education, taxation), and protection (enforcement, controls, regulations).

In time, e-cigarettes may be proven to help people quit smoking. What's the message to everyone else?

IF YOU DON'T SMOKE, DON'T VAPE.

Public Health
Santé publique
SUDBURY & DISTRICTS

December 2019

Moved by Hazlett - Thain
Approved by Board of Health for Public Health Sudbury & Districts, November 21, 2019

48-19 E-CIGARETTE AND AEROSOLIZED PRODUCT PREVENTION AND CESSATION

WHEREAS the Board of Health for Public Health Sudbury & Districts has a longstanding history of proactive and effective action to prevent tobacco and emerging product use and to promote tobacco use cessation; and

WHEREAS electronic cigarettes are increasingly popular in Canada, especially among youth and among smokers, including 15% of Canadian youths and 10% of local youths reporting having tried e-cigarettes; and

WHEREAS there is increasing concern about the health hazards of using e-cigarettes including nicotine addiction, transition to tobacco products especially among youth, and emerging risks of severe pulmonary illness; and

WHEREAS the Ontario government recently announced restrictions on the promotion of e-cigarettes and products that will come into effect January 2020;

THEREFORE BE IT RESOLVED THAT the Board of Health for Public Health Sudbury & Districts, while congratulating the Minister of Health on the restrictions on e-cigarette promotion, urge the adoption of an expert-informed comprehensive tobacco and e-cigarette strategy to address flavoured e-juice, online sales to minors, treatment programs for youth cessation, and public education; and

FURTHER that the Board urge the Minister to work with provincial, territorial and federal counterparts to adopt other evidence-informed strategies such as taxation, use prohibition, industry denormalization, and cross-Canada public education to address this emerging public health issue.

CARRIED WITH FRIENDLY AMENDMENTS

OFFICE OF THE MAYOR
CITY OF HAMILTON

November 27, 2019

VIA: Mail and Email

ATTN: Hon. Patty Hajdu
Minister of Health
Health Canada
Address Locator 0900C2
Ottawa, ON K1A 0K9
Hcminister.ministresc@canada.ca

RE: Endorsement of Comprehensive Measures to Address the Rise of Vaping in Canada

Dear Minister Hajdu,

At its meeting on November 16, 2019, the City of Hamilton Board of Health endorsed the October 16, 2019 correspondence from Kingston, Frontenac and Lennox & Addington Public Health, respecting comprehensive measures to address the rise of vaping in Canada.

The sharp increase in youth vaping rates is especially concerning given the availability and promotion of vapour products containing nicotine, the impact of nicotine on the developing brain, and the recent upward trending of cigarette smoking among this population. Our concerns are further compounded by the vaping-related pulmonary disease reports emerging in the United States and Canada. While vapour products are generally regarded as safer than combustible tobacco cigarettes, these products are not risk-free and are known to contain and emit potentially toxic substances. The emerging concerns surrounding vaping calls for a regulatory framework that provides equal protection for all Canadians.

71 MAIN STREET WEST, 2ND FLOOR, HAMILTON, ONTARIO L8P 4Y5 PHONE 905.546.4200 FAX: 905.546.2340

Endorsement of Measures to Address the Rise of Vaping in Canada

Hamilton Public Health Services' comprehensive tobacco control interventions across prevention, protection, cessation and enforcement include preventing experimentation and escalation of tobacco use among children youth and young adults. However, in Hamilton, sales of vapour product or e-cigarettes to persons under the age of 19 have so far doubled in 2019 in comparison to all of 2018.There also is a marginal increase in tobacco sales to persons less than 19 years old in 2019 in comparison to 2018.

A suite of robust measures is needed to address the rise in vapour product use and to protect our most vulnerable populations from the harms associated with these products. We applaud the Government of Canada's pursuit of an evidence-informed regulatory framework through the numerous public consultations conducted in 2019, through which the City of Hamilton Public Health Services has submitted regulatory recommendations.

The City of Hamilton Board of Health urges the Government of Canada to expedite a comprehensive set of controls for vapour products like those regulating tobacco products and to consider other evidence-informed strategies such as taxation, use prohibition, industry denormalization, and effective public education and behaviour change campaigns to address this emerging public health issue.
On behalf of the City of Hamilton's Board of Health, we endorse the following:

a) That the Federal Government prohibit all additives and non-tobacco flavours in vaping products and e-liquids;

b) That the Federal Government require the listing of all ingredients on product labels and packaging on vapour products;

c) That the Federal Government require health and toxicity warnings on vapour products;

d) That the Federal Government restrict nicotine concentration in all vaping products;

e) That the Federal Government require standardized and tamper proof packaging on all vapour products;

f) That the Federal Government require mandatory testing and reporting for vapour products;

g) That the Federal Government strengthen the advertising and promotion control regime so that it aligns with tobacco controls; and,

h) That the Federal Government develop a robust and sustainable monitoring and surveillance strategy to ensure compliance with advertising and promotion controls, and to identify emerging products.

Sincerely,

Fred Eisenberger
Mayor

CC:
Hon. Bob Bratina, MP, Hamilton East – Stoney Creek
Hon. Scott Duvall, MP, Hamilton Mountain
Hon. Matthew Green, MP, Hamilton Centre
Hon. Filomena Tassi, MP, Hamilton West-Ancaster-Dundas
Council of Ontario Medical Officers of Health
Association of Local Public Health Agencies (alPHa)
Ontario Boards of Health

alPHa
Association of Local PUBLIC HEALTH Agencies

2 Carlton Street, Suite 1306
Toronto, Ontario M5B 1J3
Tel: (416) 595-0006
E-mail: info@alphaweb.org

alPHa's members are the public health units in Ontario.

alPHa Sections:

- Boards of Health Section
- Council of Ontario Medical Officers of Health (COMOH)

Affiliate Organizations:

- Association of Ontario Public Health Business Administrators
- Association of Public Health Epidemiologists in Ontario
- Association of Supervisors of Public Health Inspectors of Ontario
- Health Promotion Ontario
- Ontario Association of Public Health Dentistry
- Ontario Association of Public Health Nursing Leaders
- Ontario Dietitians in Public Health

WE'RE MOVING!

Dear alPHa Member,

We are pleased to inform you that our office will be relocating to the following new address effective **Thursday, December 19, 2019**. Our phone number, extensions and email addresses will remain the same.

NEW ADDRESS:

Association of Local Public Health Agencies
480 University Avenue, Suite 300
Toronto ON M5G 1V2

Please update your records with our new address.

We apologize in advance for any inconvenience that you may encounter during our transition period in the week of December 16th. If you have any questions about our move, please feel free to contact us.

Sincerely,

alPHa Staff

Elizabeth Milne

From: Van Loon, James (HC/SC) <james.vanloon@canada.ca>
Sent: Thursday, December 19, 2019 2:45 PM
To: pregs (HC/SC)
Subject: Stricter rules on vaping product promotion and finalizes labelling and packaging requirements for vaping products / Règles plus strictes concernant la promotion des produits de vapotage et finalise les exigences en matière d'étiquetage et d'emballage

Health Canada proposes stricter rules on vaping product promotion and finalizes labelling and packaging requirements for vaping products

Evidence shows that youth vaping rates in Canada are increasing at a concerning pace. The Government of Canada has taken a number of steps in recent months to address the rise in youth vaping.
Please see Health Canada's announcement related to the Government of Canada's response to the rise in youth vaping at the following link: https://www.canada.ca/en/health-canada/news/2019/12/health-canada-proposes-to-ban-advertising-of-vaping-products-wherever-they-can-be-seen-or-heard-by-youth.html

Health Canada is publishing proposed restrictions on vaping product promotion in the *Canada Gazette*, Part I on Saturday, December 21, 2019 for a 30-day comment period.
The proposed *Vaping Products Promotion Regulations* (VPPR) would prohibit all advertising that can be seen or heard by youth, with minor exceptions, and would prohibit the display of vaping products at retail locations, including online, that can be seen by youth. The regulations would also require that a health warning be conveyed in vaping product advertisements that are not prohibited.

Canadians and interested parties are invited to share their views on the proposed regulations. Health Canada welcomes written submissions or input provided online. This consultation will run until January 20, 2020.
Final labelling and packaging requirements for vaping products are being published in the *Canada Gazette*, Part II on December 24, 2019. The *Vaping Products Labelling and Packaging Regulations* (VPLPR) require that vaping products that contain vaping substances display important health and safety information. Vaping products containing nicotine must display a standardized nicotine concentration statement and a health warning about the addictiveness of nicotine. In addition, vaping products containing nicotine must be packaged in child-resistant containers and display a toxicity warning and first aid treatment statement. A list of ingredients must be displayed on vaping substances, regardless of nicotine content. Refillable vaping devices and their parts must be child-resistant.

How to view the regulations and supporting documents:
The proposed VPPR and draft document to be incorporated by reference can be accessed through this link: https://www.dropbox.com/sh/19ymmoizwn3hnyj/AACzU205SDOaMK-X0d2caXhGa

The VPLPR and document incorporated by reference can be accessed through the same link.

****

Santé Canada propose des règles plus strictes concernant la promotion des produits de vapotage et finalise les exigences en matière d'étiquetage et d'emballage des produits de vapotage

Des données récentes montrent que les taux de vapotage chez les jeunes au Canada augmentent à un rythme inquiétant. Le gouvernement du Canada a donc pris un certain nombre de mesures au cours des derniers mois pour contrer l'augmentation du vapotage chez les jeunes.
Pour consulter l'annonce de Santé Canada concernant la réponse du gouvernement du Canada à l'égard de l'augmentation du vapotage chez les jeunes, cliquez sur le lien suivant : https://www.canada.ca/fr/sante-canada/nouvelles/2019/12/sante-canada-se-propose-dinterdire-la-publicite-sur-les-produits-de-vapotage-partout-ou-elle-pourrait-etre-vue-ou-entendue-par-des-jeunes.html

Santé Canada publiera les restrictions proposées en matière de promotion liée aux produits de vapotage dans la Partie I de la *Gazette du Canada*, le samedi 21 décembre 2019, pour une période de consultation de 30 jours.
Le projet de *Règlement sur la promotion des produits de vapotage* (RPPV) vise à interdire, sauf quelques exceptions mineures, toute publicité de produits de vapotage qui pourrait être vue ou entendue par les jeunes ainsi que l'affichage à la vue des jeunes des produits de vapotage dans les commerces de détail, incluant dans les commerces en ligne. Le règlement exigerait également que les publicités de produits de vapotage qui ne sont pas interdites comportent une mise en garde sur les dangers pour la santé.

Les Canadiens et les parties intéressées sont invités à communiquer leurs points de vue sur ce projet de règlement. Santé Canada recueille les soumissions écrites ou les commentaires fournis en ligne. La consultation se déroulera jusqu'au 20 janvier 2020.
La publication définitive des exigences relatives à l'étiquetage et à l'emballage des produits de vapotage sera effectuée dans la Partie II de la *Gazette du Canada* le 24 décembre 2019. Le *Règlement sur l'étiquetage et l'emballage des produits de vapotage* (REEPV) exige que des renseignements importants sur la santé et la sécurité soient inscrits sur les produits de vapotage contenant des substances de vapotage. Les produits de vapotage contenant de la nicotine doivent afficher un énoncé normalisé de la concentration de nicotine et une mise en garde relative à la santé à propos du caractère addictif de la nicotine. De plus, les produits de vapotage contenant de la nicotine doivent être emballés dans des contenants protège-enfants et porter un avertissement de toxicité et un énoncé de premiers soins. Une liste d'ingrédients doit être affichée sur les substances de vapotage, quelle que soit leur teneur en nicotine. Les produits de vapotage réutilisables, y compris les dispositifs et leurs pièces, doivent être équipés de mécanismes protège-enfants.

Comment accéder au règlement et aux documents connexes :
Le projet de RPPV et le document provisoire à incorporer par renvoi peuvent être consultés à l'adresse suivante : https://www.dropbox.com/sh/19ymmoizwn3hnyj/AACzU205SDOaMK-X0d2caXhGa

Il est également possible de consulter, à la même adresse, le REEPV et le document incorporé par renvoi.

James Van Loon
Director General/Directeur Général
Tobacco Control Directorate/Direction de la lutte au tabagisme
Health Canada/Santé Canada

Ministry of Health

Office of the Deputy Premier
and Minister of Health

777 Bay Street, 5th Floor
Toronto ON M7A 1N3
Telephone: 416 327-4300
Facsimile: 416 326-1571
www.ontario.ca/health

Ministère de la Santé

Bureau du vice-premier ministre
et du ministre de la Santé

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Toronto ON M7A 1N3
Téléphone: 416 327-4300
Télécopieur: 416 326-1571
www.ontario.ca/sante

Ontario

DEC 2 0 2019

Dr. Michael Clarke

Dear Dr. Clarke:

I would like to take this opportunity to thank you for the time and effort you have given while serving on the Board of Health for the Middlesex-London Health Unit.

Your current appointment will come to an end on February 29, 2020. Your commitment as a member of the board has been invaluable and the work you have done has left a lasting impact on all Ontarians. I truly appreciate your contribution and I hope you have found your tenure both challenging and rewarding.

Please accept my best wishes. I hope that you will continue to offer your time and talent in serving the people of Ontario.

Sincerely,

Christine Elliott

Christine Elliott
Deputy Premier and Minister of Health

c: Medical Officer of Health

Peterborough Public Health

Jackson Square, **185 King Street**, Peterborough, ON K9J 2R8
P: **705-743-1000** or 1-877-743-0101
F: 705-743-2897
peterboroughpublichealth.ca

January 2, 2020

The Honourable Christine Elliott
Minister of Health
10th Floor, Hepburn Block
80 Grosvenor Street
Toronto, ON M7A 2C4
Sent via e-mail: christine.elliott@pc.ola.org

Dear Minister Elliott,

Re: Request for Weekly Data Reports on Vaping Cases

At its meeting on December 11, 2019, the Board of Health for Peterborough Public Health received for information correspondence from the City of Hamilton (attached) requesting that cases of vaping-related severe pulmonary disease in Hamilton hospitals be shared with Hamilton's Medical Officers of Health.

The Board of Health for Peterborough Public Health also requests that local cases of vaping-related severe pulmonary disease reported by Peterborough Regional Health Centre to the Chief Medical Officer of Health under section 77.7.1 of the Health Protection and Promotion Act be shared with Peterborough's Medical Officer of Health.

Considering the importance of public health surveillance and the need to continue to raise awareness of health impacts related to vaping, information related to incidences of hospitalizations locally is critical in assessing the extent of the ill-effects of vaping on the health of residents of Curve Lake and Hiawatha First Nations, and the County and City of Peterborough.

Sincerely,

Original signed by

Councillor Kathryn Wilson
Chair, Board of Health

Encl.
/ag

cc: Dr. David Williams, Ontario Chief Medical Officer of Health
Dr. Peter McLaughlin, President and Chief Executive Officer, Peterborough Regional Health Centre
Local MPPs
Association of Local Public Health Agencies
Ontario Boards of Health

OFFICE OF THE MAYOR
CITY OF HAMILTON

October 30, 2019

VIA: Email

Hon. Christine Elliot
Minister of Health and Long-Term Care
Ministry of Health and Long-Term Care
777 Bay Street, 5th Floor
Toronto, Ontario M7A 2J3
christine.elliott@pc.ola.org

RE: Request for Weekly Data Reports on Vaping Cases

Dear Minister Elliott,

At its meeting on October 18, 2019 the City of Hamilton Board of Health discussed the potential health effects associated with the use of electronic cigarettes, in particular, the current outbreak of severe pulmonary disease, and your recent order for hospitals to report such cases to Ontario's Chief Medical Officer of Health.

In order to enable Hamilton's Board of Health to better assess the extent of the ill-effects of vaping on the health of those in Hamilton, I am writing on behalf of the Hamilton Board to request that any such reports to Ontario's Chief Medical Officer of Health by Hamilton hospitals be shared with Hamilton's Medical Officer of Health.

Sincerely,

Fred Eisenberger
Mayor

CC:
Hon. Donna Skelly, MPP, Flamborough – Glanbrook
Hon. Andrea Horwath, Leader of the Official Opposition, MPP, Hamilton Centre
Hon. Paul Miller, MPP, Hamilton East – Stoney Creek
Hon. Monique Taylor, MPP, Hamilton Mountain

.../2

Hon. Sandy Shaw, MPP, Hamilton West – Ancaster, Dundas
Council of Ontario Medical Officers of Health
Association of Local Public Health Agencies (alPHa)
Ontario Boards of Health

January 9, 2020

Honourable Patty Hajdu
Minister of Health, Canada
House of Commons
Ottawa, ON K1A 0A6
Sent via email: patty.hajdu@parl.gc.ca

Honourable Christine Elliott, Deputy Premier
Minister of Health, Ontario
Hepburn Block 10th Floor 80 Grosvenor Street
Toronto, ON M7A 1E9
Sent via email: christine.elliott@pc.ola.org

Dear Minister Hajdu and Minister Elliot,

The Board of Health for the Porcupine Health Unit would like to take this opportunity to support the correspondence forwarded by the Board of Health Chair of the Simcoe Muskoka District Health Unit dated September 18th, 2019. This requested stronger provincial legislation to restrict the display and promotion of vaping products and ban flavoured vaping products to address the youth vaping crisis. Accordingly, the concerns identified in the document reflect those of our Board of Health and community partners.

We would like to commend your leadership in making the decision to prohibit the promotion of vaping products in convenience stores and gas stations effective January 1, 2020. This measure is a critical first step towards preventing youth access and initiation. Nevertheless, the Board of Health for the Porcupine Health Unit (PHU) remains uncertain that banning the promotion of vaping products in retail settings will be enough to reduce youth uptake and related harms. With increasing numbers of youth seen vaping across PHU communities, and an already higher than provincial average tobacco use rate we remain extremely concerned. Evidence supports that e-cigarette companies are appealing to young people through the promotion of flavours. As such, banning flavoured e-cigarette products would be a great step towards curbing the current youth vaping epidemic.

The Board of Health for the Porcupine Health Unit supports Private Members Bill 151 which was brought forward in the Ontario Legislature by the Ontario NDP Health Critic France Gélinas on November 27, 2019. The Smoke-Free Ontario Amendment Act (*Vaping is not for Kids*) bill includes measures concerning e-cigarettes, such as banning flavours unless exempted by regulation; banning sales except in adult-only specialty vape stores; and requiring specialty vape stores to be approved by local Board of Health. The bill would prohibit the promotion of vaping products, regulate the availability of flavours, set a maximum amount of nicotine per milliliter of e-fluid, restrict sales to specialty shops, require Ontario Health to prepare an annual report on vaping usage and health effects as well as prioritize research by setting tax money aside. We urge the Ministry of Health to support this bill so that we not only protect our youth but can mutually reach our goal of achieving a smoking rate of less than 5% by 2035.

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Our concern that current measures will not be enough to adequately address the crisis of youth vaping continue to be supported. Decades of experience with youth smoking demonstrate the need for comprehensive protective measures. As such, the recommendations forwarded on December 19, 2019, by the *Physicians for a Smoke-Free Canada* should also be considered in the development of new regulations.

Thank you for your attention to this very important matter for the protection of the health of our youth.

Sincerely,

Sue Perras
Chair, Board of Health for the Porcupine Health Unit

cc: Ontario Boards of Health
Association of Local Public Health Agencies
Ontario Public Health Association
Porcupine Health Unit - Member Municipalities

Ontario

Executive Council of Ontario
Order in Council

On the recommendation of the undersigned, the Lieutenant Governor of Ontario, by and with the advice and concurrence of the Executive Council of Ontario, orders that:

Conseil exécutif de l'Ontario
Décret

Sur la recommandation de la personne soussignée, le lieutenant-gouverneur de l'Ontario, sur l'avis et avec le consentement du Conseil exécutif de l'Ontario, décrète ce qui suit :

PURSUANT TO subsections 49(3) and 51(1) of the *Health Protection and Promotion Act*, **Robert Parker** of London be appointed as a part-time member of the Board of Health for the Middlesex-London Health Unit to serve at the pleasure of the Lieutenant Governor in Council effective the date this Order in Council is made, to and including December 31, 2020.

EN VERTU DES paragraphes 49 (3) et 51 (1) de la *Loi sur la protection et la promotion de la santé*, **Robert Parker** de London est nommé au poste de membre à temps partiel du conseil de santé de la circonscription sanitaire de Middlesex-London pour exercer son mandat à titre amovible à la discrétion du lieutenant-gouverneur en conseil, à compter du jour de la prise du présent décret jusqu'au 31 décembre 2020 inclusivement.

Christine Elliott

Recommended: Minister of Health
Recommandé par : La ministre de la Santé

Concurred: Chair of Cabinet
Appuyé par : Le président | la présidente du Conseil des ministres

Approved and Ordered: JAN 0 9 2020
Approuvé et décrété le :

Lieutenant Governor
La lieutenante-gouverneure

O.C. | Décret : 19/2020