



Climate Change and Public Health in Ontario

March 2017

Prepared By: Helen Doyle, Sana Malim & Tapinder Flora Singh



**“Climate change is the defining issue for public health
in the 21st century.”**

-Dr. Margaret Chan, Director-General of the World Health Organization

Ontario Public Health Association

In collaboration with
Association of Supervisors of Public Health Inspectors of Ontario

Table of Contents

Introduction.....	4
Background.....	5
Health Impacts of Climate Change.....	5
Provincial Initiatives to Address Climate Change.....	7
Current Role of PHU's.....	8
Climate Change and Public Health Survey.....	9
Project Purpose.....	9
Project Methodology.....	9
Survey Results.....	10
Summary and Observations of Ontario's Health Unit Activities.....	13
Proposed Next Steps.....	17
Conclusion.....	18
References.....	20
Appendix A: Survey Questionnaire.....	21
OPHA & ASPHIO Climate Change and Public Health Survey.....	21
Appendix B: Survey Results.....	26
OPHA & ASPHIO Climate Change and Public Health Survey Results.....	26
Appendix C: Notable Initiatives by Public Health Units.....	42

Introduction

Until recently, climate change was portrayed solely as an environmental issue, with consequences so broad and obscure that attempts to address its impacts were often ignored. The interconnectedness of human health and well-being to global warming, extreme weather occurrences, warming water bodies, and air pollution, insect and animal migration patterns were frequently overlooked when in fact, they are two sides of the same coin^{1,2,3,4}. With increasing incidences of chronic health conditions, infectious diseases, mental health issues, injuries and deaths, it has become more apparent that we must act now to alleviate the distress caused by climate change on our communities and protect the health of future generations^{1,2,3,4}. Hence, climate change is an area of growing involvement for public health units [PHUs] with a wide variation in how public health professionals are approaching the issue.

In 2016, Ontario's Ministry of Health and Long-Term Care [MOHLTC] acknowledged the important link between climate change and public health, through the release of the Climate Change and Health Toolkit. This shift towards understanding climate change in the public health context, rather than the traditional environmental context, has led to a more compelling response by the public, media and government^{1,2}. Recent announcements by Ontario's Minister of the Environment and Climate Change, The Honorable Glen Murray, for example, committing \$325 million to the Green Investment Fund for climate change initiatives, further emphasizes the priority attached to tackling this critical issue.

In addition, the MOHLTC's consultation document on Standards for Public Health Programs and Services (2017) indicates that there will be greater emphasis on climate change and on a related public health concern – health equity. The goal of the Healthy Environments Program in the MOHLTC consultation document has been expanded to include, “to reduce *exposure to health hazards and promote the development of healthy natural and built environments that support health and mitigate existing and emerging risks, including the impacts of a changing climate.*” The goal of the Health Equity Program in the consultation document is “*...to decrease health inequities...*” Given that climate change will disproportionately impact our most vulnerable populations, it is important to consider both goals when public health units [PHUs] are assessing the health impacts of climate change at a local level.

The Ontario Public Health Association [OPHA] recognizes that climate change is an issue of significant priority on all levels and that public health provides an important platform for climate change initiatives through health promotion, policy development and advocacy, partnerships, surveillance and research. In order to effectively address the issue, individual and collective efforts towards the mitigation and adaptation of climate change impacts must be understood. Hence, the OPHA, in collaboration with the Association of Supervisors of Public Health Inspectors of Ontario [ASPHIO], conducted a survey in 2016 to capture the range of activities that Ontario PHUs are involved in related to climate change.

The purpose of this report is to highlight the importance of addressing climate change by drawing attention to health impacts, government efforts to tackle climate change, and the rationale behind why PHU's are well-placed to address the issue. Most importantly, this report aims to summarize the findings of OPHA and ASPHIO's 'Climate Change and Public Health Survey,' and provide recommendations for future dialogue.

Background

Health Impacts of Climate Change

The health implications of climate change can be complex and severe, threatening the well-being of entire communities. Those most vulnerable to these impacts include the homeless, low-income families, people with disabilities and/or chronic illnesses, children, elderly and indigenous populations². Thus, identifying health impacts is a priority in order for appropriate action to be taken.

According to Health Canada, there are seven categories of climate change related impacts that harm human health and well-being²:

1. Temperature-Related Morbidity & Mortality	<ul style="list-style-type: none">• Illnesses related to extreme heat and cold events.• Respiratory and cardiovascular illnesses• Increased occupational health risks
2. Weather-Related Natural Hazards	<ul style="list-style-type: none">• Damaged public health infrastructure• Injuries and illnesses• Social and mental stress• Increased occupational health hazards• Population displacement
3. Air Quality	<ul style="list-style-type: none">• Increased exposure to outdoor and indoor air pollutants and allergens• Respiratory diseases• Heart attacks, strokes and other cardiovascular diseases• Cancer
4. Water & Food-borne Contamination	<ul style="list-style-type: none">• Intestinal disorders and illnesses caused by chemical and biological contaminants
5. Exposure to UV Radiation	<ul style="list-style-type: none">• Skin damage and skin cancer• Cataracts

	<ul style="list-style-type: none"> • Disturbed immune function
<p>6. Vector & Zoonotic-borne Diseases</p>	<ul style="list-style-type: none"> • Changed patterns of diseases caused by bacteria, viruses and other pathogens carried by mosquitoes, ticks, and animals
<p>7. Socioeconomic Impacts on Community Health and Well-being</p>	<ul style="list-style-type: none"> • Increased demands on health care services resulting from weather-related natural hazards. • Disruption of communication networks as a result of extreme weather-related events. • Increased stress levels if livelihoods and productivity are threatened due to extreme or prolonged weather events. • Damage to, or unavailability of, housing and shelter due to extreme weather, leading to trauma and displacement. • Damage to critical infrastructures including those related to food production, water management, energy production, storm sewer, drainage and sanitation systems and housing and health infrastructures. Health risks can arise when any one of these systems fails or becomes compromised - as they may in a changing climate.

Health Canada. (2009, October 13). Understanding the health impacts of climate change. Retrieved February 17, 2017, from <http://www.hc-sc.gc.ca/ewh-semt/climat/impact/index-eng.php>

Provincial Initiatives to Address Climate Change

In the last decade, the Ontario government has undertaken several initiatives to address climate change impacts.

Some of Ontario's climate change efforts over the last decade include:

- 2007:** Expert Panel on Climate Change Adaptation provides the government with advice on how to protect our health, environment, infrastructure, and economy from climate change impacts.
- 2008:** Climate change is identified as key government priority.
- 2009:** Expert Panel releases Adapting to Climate Change in Ontario report.
- 2011:** Ministry of Environment and Climate Change [MOECC] releases 'Climate Ready.' This is the first climate change adaptation strategy and action plan for 2011 to 2014.
- 2012:** Building Code is updated; New, energy-efficiency standards are added to Ontario's Building Code to lower greenhouse gases, protect air, water and soil quality, and save energy.
- 2014:** Ontario passes the Ending Coal for Cleaner Air Act, permanently banning coal-fired electricity generation in the province.
- 2015:** Ontario announces a Cap and Trade Program to help the province meet its short and long-term greenhouse gas pollution reduction targets.
- 2016:** MOHLTC releases Climate Change & Health Toolkit.
MOHLTC releases a Harmonized Heat Warning and Information System for Ontario: Standard Operating Practice, which was developed through collaborative work of PHUs, MOHLTC, Public Health Ontario, Health Canada, Environment and Climate Change Canada, and the Clean Air Partnership.
Climate Change Mitigation and Low-carbon Economy Act is passed.
Ontario announces the commitment of \$325 million from Green Investment Fund for climate change projects.



Current Role of PHU's

Aligned with government initiatives, under the 2008 Ontario Public Health Standards [OPHS], Ontario's 36 PHUs have a provincial mandate to identify, investigate, manage and prevent health hazards in the environment by:

- Increasing public awareness of health hazards, including climate change and emerging health issues associated with extreme weather;
- Developing policies related to reducing health hazards;
- Implementing control measures to prevent or reduce exposure to health hazards; and;
- Responding to and managing health hazards in the environment.

Given this mandate and public health's expertise, health units are well placed to:

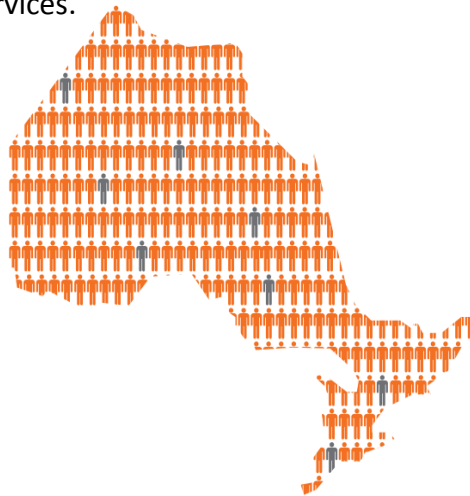
- Increase awareness and promote programs and policies to reduce greenhouse gases and air pollutants;
- Reduce the public's vulnerability to climate change and the incidence of adverse health outcomes;
- Save and protect lives during emergencies;
- Track and control infectious diseases from a local to global scale;
- Facilitate comprehensive cross-sector strategies that reduce exposure to climate change impacts and improve the ecological and social determinants of health; and
- Identify those most vulnerable and promote equitable access to needed services.



Climate Change and Public Health Survey

Project Purpose

Understanding the breadth of climate change activities that health units are currently engaged in is an important first step towards tackling such an expansive issue. By surveying health units across Ontario, OPHA and ASPHIO sought to showcase the work being done on this front, and garner more support for climate change initiatives. It was also seen as a useful tool to identify barriers and determine provincial or other supports needed for PHUs and their municipalities to initiate and/or continue work on climate change issues, share promising practices, and better portray achievements, as well as areas for possible collaborations with the MOHLTC, the MOECC and other agencies. In addition, the results of this survey will also provide valuable background information to support implementation of the updated MOHLTC Standards for Public Health Programs and Services.



Project Methodology

To grasp a clear sense of the range of climate change activities in Ontario's 36 health units, OPHA undertook a scan using the following methods:

- **Online Survey Questionnaire**
 - A survey launched to all health Units across Ontario with questions involving local climate change mitigation and adaptation strategies, vulnerability assessments for marginalized populations, as well as enablers and barriers for their work. (See survey questionnaire in [Appendix A](#), and results in [Appendix B](#))
- **Web based search of activities undertaken by individual PHUs in Ontario**
 - PHU websites, health unit's annual reports, websites of their respective municipalities, and other internet search tools. (See activities in [Appendix C](#))

Survey Results

Of the 36 health units who were asked to complete the survey, 26 health units participated, generating a response rate of 72%.

- When asked how health units developed/contributed to local climate change strategies in the areas of:

Health Promotion:

- 61% indicated that they are raising awareness of climate change health impacts and/or promoting reductions in greenhouse gas emissions.
- 50% indicated that they are raising awareness of the linkages between climate change and the built and natural environment.
- Some health units indicated that they are promoting clean air initiatives.

Policy Development and Advocacy:

- 73% indicated that they are contributing to built environment policies.
- 50% indicated that they are contributing to external (municipal, regional etc.) climate change policies/strategies.
- Some health units are contributing to air quality/clean air initiatives.

Partnerships:

- 54% indicated that they are working with municipalities on climate change strategies.
- 50% indicated that they are working with other partners (Conservation Authorities, Forestry etc.) on climate change strategies.

Surveillance:

- 42% indicated that they are monitoring climate change trends such as extreme weather.
- Only 19% indicated that they are monitoring climate change health impact trends.
 - Vector-borne and infectious diseases were the most prominent area of surveillance.

Research:

- 50% indicated that they are involved in climate change research. The most common topics they reported were research to inform their vulnerability assessments, urban heat island health impacts and extreme heat.

- When asked how health units are measuring the effectiveness of their climate change strategies, most health units indicated that they are not currently measuring effectiveness. Those who were assessing effectiveness used various tactics, including assessing syndromic surveillance data, incorporating Balanced Score Cards into the strategic plan, and reporting to Councils/Boards of Health etc.
- Most health units revealed that they have not developed processes or outcome indicators to evaluate their climate change strategies. Some health units indicated that they are using Balanced Score Cards as indicators, and have included climate change in their strategic plan.
- The top 3 health risks that health units are addressing in terms of local climate change strategies include:
 - Extreme heat (85%)
 - Extreme cold (69%)
 - Air pollution (65%)
- Only 38% of health units indicated that they have conducted a climate change health vulnerability assessment. The most common tools/resources that were used for the assessment included guidelines published by the Ministry of Health and Long-Term Care, the World Health Organization and Health Canada.
- When asked what actions have been prioritized by health units to address health vulnerabilities, most health units revealed that completing vulnerability assessments was a priority. Other priorities included: developing heat alert response strategies, communication strategies for vulnerable/marginalized groups, emergency response protocols for extreme weather, and working with community agencies to coordinate and disseminate messages.
- When asked what actions have been implemented to address health vulnerabilities, several health units indicated they were working with municipalities. Some examples included:
 - Property standards by-law for maximum temperatures in multi-residential buildings
 - Assistance with policy development in municipal daycares
 - Reaching out to event coordinators for heat and cold planning at events
 - Heat cold alerts
- Less than half (42%) of health units indicated that their organization had used a health equity lens to identify, prioritize, and address climate change health risks. Recognizing that vulnerable populations are disproportionately impacted by climate change, health units are targeting assessment and response activities to: those living in poverty or homeless, people living with mental health issues or addictions, and isolated seniors.

- The top three health risks assessed from a health equity perspective include:
 - Extreme heat
 - Extreme cold
 - Air quality

- The top three enablers public health units identified for addressing climate change health impacts include:
 - Ontario Public Health Standards (50%)
 - Leadership (e.g. Board of Health, MOH support) (42%)
 - Health unit strategic plan (38%)

- The top three supports that public health units identified for addressing climate change health impacts include:
 - Clearer mandates under the Ontario Public Health Standards (85%)
 - Local data/projections on climate change impacts (77%)
 - Vulnerability assessment tools (69%)

- When asked if there were any future climate change programs or initiatives being proposed by the health unit, 58% responded affirmatively. Various initiatives were described, including: undertaking vulnerability assessments, implementing climate change adaptation/action plans, applying a health equity lens to climate change impacts, working with municipalities, forming new partnerships and community engagement.

- When asked what topics health units would be interested in learning about through a collaborative OPHA/ASPHIO workshop, the top 3 topics that health units identified were:
 - Current PHU climate change projects (88%)
 - Conducting vulnerability assessments (81%)
 - Communicating about climate change (73%)



Summary and Observations of Ontario’s Health Unit Activities

Upon examination of the results of the on-line survey and web-based search of PHU activities, it is evident that health units have been engaged in various and mutually-supportive activities to address climate change health impacts. Their efforts are focused on:

1. Policy Development:

1 (A) Developing Climate Change Plans with Municipal Partners:

- Participating and/or leading the development of ‘Climate Change and Air Quality’ strategies (both mitigation and adaptation);
- Developing protocols and response plans for extreme weather events, especially extreme heat events;
- Participating in the Federation of Canadian Municipalities’ Partners for Climate Protection Program;
- Participating in the development of Emergency Response Plans to address health impacts of climate change;

1 (B) Advocating for Policy Action on the Built Environment:

- Participating on health/land-use and transportation planning committees to create healthy sustainable communities (e.g. reducing transportation emissions);
- Promoting green space and ecosystem health, green energy, energy conservation, active transportation, green fleets, and green building design.
- Contributing to built environment policies (e.g. reducing transportation emissions);
- Supporting the creation of anti-idling policies at schools;
- Shaping the development and implementation of provincial legislation and policies (e.g. Provincial Policy Statement, Air Quality Health Index [AQHI], and Provincial Climate Change Plan);

2. Health Promotion and Awareness:

- Developing resources to inform the public of the health risks of extreme heat, extreme cold, air quality, vector borne disease and food insecurity
- Raising awareness of the linkages between climate change, health and the built environment;
- Launching health promotion campaigns such as Earth Week, anti-idling, school travel planning;
- Promoting air quality and greenhouse gas emission reductions through:
 - 2020 The Way to Clean Air Eco-Schools Program;
 - Active and Safe Routes to School;
 - The AQHI;

- Disseminating messages on health protection and adaptation measures;
- Highlighting key emerging issues through website and social media such as extreme heat events, vector borne disease incidences, blue-green algae blooms, and other environmental health hazards.

3. Research:

3 (A) Vulnerability Assessments:

- Beginning or completing a climate change and health vulnerability assessment.
- Mapping climate risk factors (e.g. urban heat island, disease vector habitat, flood zones) and vulnerable populations
- Using a health equity lens (e.g. considering social determinants of health) to identify, prioritize and address climate change health risks of marginalized populations:
- Conducting climate modeling on health impacts;
- Partnering with local climate change researcher to exchange information and knowledge;
- Conducting Rapid Risk Factor Surveillance System surveys and environmental health surveys in local communities.

3 (B) Topic Specific Research:

- Participating in a Pan-American research study on improving syndromic surveillance of heat related illnesses;
- Advisory committee with local university related to seniors and extreme heat;
- Partnering with academia, Public Health Ontario [PHO] and Health Canada to research emerging tick borne diseases;
- Researching vulnerability of the homeless during extreme temperatures;
- Drinking water risk assessments (e.g. Blue-green algae)

4. Monitoring and Surveillance:

- Monitoring climate change trends such as:
 - Spread of mosquito and Lyme disease vectors;
 - Extreme heat, air quality, drinking water, beach water, extreme weather events;
- Monitoring climate change health impact trends through surveillance of vector-borne diseases and heat health impacts;
- Monitoring climate and weather events provided by other agencies (e.g. Environment Canada for extreme heat, extreme weather events, Conservation Authorities for flood events, etc.)
- Sample testing and routine surveillance of public drinking water and recreational beaches

5. Partnerships:

- Working with municipalities on climate change strategies as well as with various other partners (e.g. Conservation Authorities, Forestry, etc.)
- Exploring partnership opportunities with private consultants, academia and stakeholder groups

6. Community Engagement:

- Involving community groups in vulnerability assessments of the health impacts of climate change
- Inviting and promoting community engagement and participation through activities such as:
 - Earth Hour and Earth Day participation in schools;
 - First Commuter Challenge (local residents participated in walking, cycling, public transit, car-pooling and telecommuting).

7. Extreme Weather Response:

- Developing protocols and response plans for extreme weather events;
- Disseminating health protection messages through website, social media and other communication media;
- Participating in pilot projects with Health Canada to develop heat response plans;
- Working with all levels of government to create a harmonized 'Heat Warning and Information System' for Ontario.

More examples of significant developments on climate change by PHUs can be found in [Appendix C](#).

Upon examination of health unit responses with respect to enablers that have helped in their climate change work, and supports that could help in the future, there were several commonalities identified:

Enablers:

PHUs identified the following to be current enablers for their work in addressing climate change health impacts:

- The Ontario Public Health Standards [OPHS];
- Leadership (e.g. Board of health, Medical Officer of Health support);
- Health unit's/organization's strategic plan;
- Education/training;
- External requests from municipalities/community partners to participate on the development of climate change strategies;
- Social media to encourage communities;
- Motivated staff.

Supports:

PHUs mentioned the following supports would help their work in addressing climate change health impacts:

- Training, skills development;
- Dedicated resources (staffing);
- Clearer mandates under the OPHS (e.g. climate change); protocols/guidance documents;
- Vulnerability assessment tools;
- Communication materials;
- Partnership building.

Provincial Supports:

Survey respondents identified the following as supports that would be helpful in their work to address climate change:

- Policy directions to municipalities strengthened in Provincial Policy Statement;
- Legislation and clearer linkage with MOECC legislation;
- Specialized funding, such as the funding allocated for tobacco programs; or enhanced funding like that provided for recreational water and food safety program delivery;
- Coordinate workshops and knowledge exchange sessions for PHUs;
- Indicator development – to measure PHU success, research (academia, PHO);
- Local data/projections on climate change impacts.

Health units also identified future climate change activities that have been proposed for their jurisdictions.

Future Programs or Initiatives:

Some PHUs have proposed future climate change programs or initiatives, including:

- Further applying the health equity lens to climate change, developing new partnerships with community groups, new staffing etc.;
- Creating a Climate Change Adaptation Planning Committee;
- Focusing on climate change in their next strategic plan;
- Holding a round table with municipalities to discuss impacts of climate change;
- Forming a MOECC & Clean Air Partnership-led 'Extreme Weather Response and Alert System';
- Developing a discussion paper exploring the relationship between built environment policies and safe drinking water;
- Conducting a climate change vulnerability assessment; analyzing survey of long-term care [LTC] homes.

Proposed Next Steps

Partnerships and collaborations on all levels are imperative in the fight against climate change. In light of the lessons learned through this survey, OPHA is interested in hosting a joint OPHA/ASPHIO workshop for PHU's to share information on health unit activities related to climate change and opportunities for collaboration. PHUs indicated the following as possible topics for such a workshop:

- Update on current PHU climate change projects;
- Capacity building to address climate change health impacts;
- Climate change surveillance;
- Analyzing and interpreting climate and health data;
- Conducting vulnerability assessments;
- Developing climate change adaptation strategies;
- Stakeholder engagement;
- Communicating about climate change;
- Organizing climate change activities (e.g. cross-divisional groups, accessing funding, building skills and expertise within PHUs).



Conclusion

Climate change is an area of growing concern and attention for public health, as the costs to human life and suffering are indisputable. Dr. Margaret Chan, the World Health Organization's [WHO] Director-General, has noted that, "climate change is the defining issue for public health in the 21st century," as global warming, extreme weather occurrences, warming water bodies, air pollution, and changing insect and animal migration patterns are drastically increasing at alarming rates, along with a myriad of health issues associated with such changes^{2,7}. There is evidence that climate change has led to higher incidences of mental illnesses, cancers, respiratory, cardiovascular, and infectious diseases, while greatly threatening food and water quality⁶. Given the media, public and governments' emphasis on the priority attached to tackling climate change, public health plays an important role in mitigation and adaptation efforts, and is well-placed to address these issues on municipal, provincial and federal levels.

Through the 'Climate Change and Public Health Survey,' the OPHA, alongside ASPHIO, found that PHUs in the province have undertaken various initiatives in response to the threat that climate change poses to the health of Ontarians. Several units have collaborated with their respective municipalities and developed climate change mitigation and adaptation plans, while others anticipate focusing on climate change in their upcoming strategic plans. However, certain inconsistencies in priorities and a lack of strong initiatives in a number of health units were identified. Such disparities raised questions regarding the availability of dedicated resources (e.g. staffing, funding etc.) for climate change projects, effective communication and partnerships with municipalities, as well as collaborations with other important sectors and stakeholders.

The survey results reveal that there are a number of enablers that allow for more effective execution of current strategies and for the developments of new strategies.

These enablers include:

- More detailed protocol under the OPHS on climate change (e.g. Protocol/guidance documents);
- Regular communication exchange with MOHLTC to better align strategy development and execution by PHUs across the province;
- Effective collaboration between PHUs and MOECC to allow closer work with colleagues at the local level;
- Closer connection between public health professionals in environmental health, chronic disease prevention and infectious disease control to highlight the negative health effects of climate change and prevention strategies;
- Effective communication strategies, through enhancing PHU social media outreach programs to build awareness on the key issues of climate change, as they pertain to the health of Ontarians;

- More coordinated framework with effective collaborations and partnerships between city planners, builders, public health, environmental health specialists, transportation, community agencies, and the private and industrial sector to tackle climate change issues.

Taking these valuable insights into consideration, OPHA is optimistic that such knowledge can be used to shape municipal, provincial, and federal agenda's on how to effectively address climate change on a wider scale. Hence, OPHA will continue working collaboratively with its constituent societies, the Environmental Health Work Group, the Canadian Partnership for Children's Health and Environment, members from Eco-Health Ontario, as well as many others, to broaden alliances with government and non-government agencies and to further garner support for this critical issue. It is hoped that such joint-efforts will further advance the vision to protect the health and well-being of Ontarians, into the future.



References

- ¹ Environmental Health Perspectives & National Institute of Environmental Health Sciences (2010). A human health perspective on climate change. Retrieved February 15, 2017, from https://www.niehs.nih.gov/health/materials/a_human_health_perspective_on_climate_change_full_report_508.pdf
- ² Health Canada. (2009, October 13). Understanding the health impacts of climate change. Retrieved February 17, 2017, from <http://www.hc-sc.gc.ca/ewh-semt/climat/impact/index-eng.php>
- ³ Myers, T. A., Nisbet, M. C., Maibach, E. W., & Leiserowitz, A. A. (2012). A public health frame arouses hopeful emotions about climate change. *Climatic Change*, 113(3-4), 1105-1112. doi:10.1007/s10584-012-0513-6
- ⁴ Public Health Agency of Canada. (2015, August 11). Climate change and public health factsheet. *Health Promotion*. Retrieved February 15, 2017, from <http://www.phac-aspc.gc.ca/hp-ps/eph-esp/fs-fia-eng.php>
- ⁶ Austin, S., Ford, J., Berrang-Ford, L., Araos, M., Parker, S., & Fleury, M. (2015). Public health adaptation to climate change in Canadian jurisdictions. *International Journal of Environmental Research and Public Health IJERPH*, 12(1), 623-651. doi:10.3390/ijerph120100623
- ⁷ Chan, M. (2016, March 3). WHO Director-General addresses human rights council on climate change. *World Health Organization*. Retrieved March 16, 2017, from <http://www.who.int/dg/speeches/2016/human-rights-council/en/>

Appendix A: Survey Questionnaire

OPHA & ASPHIO Climate Change and Public Health Survey 2016

ASPHIO and OPHA are undertaking this survey to capture the range of activities that Ontario public health units are involved in related to climate change. Given the breadth of climate change activities that health units are engaged in, and that climate change has been gaining increased media, public and government attention, it is timely to collect this information so that we have a more accurate picture of how health units are responding.

Your feedback will help us identify topics of interest for a workshop, provincial or other supports needed for PHUs to continue/initiate work on climate change, share promising practices, and better portray to our MOHLTC and MOECC colleagues achievements and areas for possible collaboration. In addition, it could provide useful background for the upcoming OPHS review.

As the World Health Organization's (WHO) Director-General, Margaret Chan, has noted "climate change is the defining issue for public health in the 21st century". OPHA and ASPHIO are looking forward to collaborating with Health Units on showcasing the work we have underway and garnering more support for this issue so critical to Ontarians health and wellbeing.

Thank you

1. Please identify your public health unit.

2. A) How, if at all, has your health unit developed/contributed to local climate change strategies in the area of HEALTH PROMOTION? (check all that apply):

- Raising awareness of climate change health impacts
- Promoting reductions in greenhouse gas emissions (e.g. active transportation, anti-Idling, reducing transportation emissions etc.)
- Promoting energy reduction efforts/campaigns (e.g. earth hour, reduced home energy usage)
- Raising awareness of the linkages between climate change and the built & natural environment
- Other – Please describe: _____

B) How, if at all, has your health unit develop/contributed to local climate change strategies in the area of POLICY DEVELOPMENT AND ADVOCACY? (check all that apply):

- Contributing to built environment policies (e.g. land use planning, official plans)

- Developing internal (e.g. health-unit specific) climate change policies/strategies
- Contributing to external (e.g. municipal, regional etc.) climate change policies/strategies
- Commenting on legislation (e.g. EBR , Canada Gazette)
- Other – Please describe: _____

C) How, if at all, has your health unit developed/contributed to local climate change strategies in the area of PARTNERSHIPS? (check all that apply):

- Working with municipalities on climate change strategies
- Working with other partners on climate change strategies (Conservation Authorities, Forestry, etc.)
- Other – Please describe: _____

D) How, if at all, has your health unit developed/contributed to local climate change strategies in the area of SURVEILLANCE? (check all that apply):

- Monitoring climate change trends (please provide detail on indicators and data sources)
- Monitoring climate change health impact trends (please provide detail on indicators and data sources)
- Other – Please describe: _____

E) How, if at all, has your health unit developed/contributed to local climate change strategies in the area of RESEARCH? (check all that apply):

- Please Describe: _____
- Don't Know
- None of the Above

3. Please provide any additional details on the strategies identified above.

4. For the above climate change strategies:

A) How is your public health unit measuring their effectiveness?

B) Have you developed processes or outcome indicators to evaluate the strategies? (you may share a link to your strategic plan or logic model, if any)

5. Has your PHU developed/contributed to local climate change strategies to address the following climate change health risks (check all that apply):

- Extreme heat

- Extreme cold
- Extreme weather (storms)
- Air pollution
- Food safety
- Water-borne diseases
- Vector-borne diseases
- Food insecurity
- Other – Please describe
- Don't know
- None of the above

6. Has your public health unit conducted a climate change health vulnerability assessment?

- Yes
- No
- Don't Know

7. If you answered "yes" for the question above,

A) Which, if any, assessment tools or resources were used?

B) Please describe, if any, actions that have been prioritized by your public health unit to address health vulnerabilities?

C) Which, if any, of the actions have been implemented?

8. Has your PHU used a health equity lens to identify, prioritize and address climate change health risks (e.g. different strategies for vulnerable and/or marginalized populations)?

- Yes – Please describe: _____
- No
- Don't Know

9. What, if any, are current enablers for your PHU in addressing climate change health impacts? (check all that apply):

- Leadership (e.g. Board of Health, MOH support)
- Ontario Public Health Standards (OPHS)
- My health unit's/organization's strategic plan
- Education/Training
- External requests from municipalities/community partners to participate on the development of climate change strategies
- Other - Please describe: _____
- Don't know

10. What supports would help your PHU in addressing climate change health impacts? (check all that apply):

- Training, skills development
- Dedicated Resources (staffing)
- Clearer mandates under the Ontario Public Health Standards – e.g. Climate Change Protocols/Guidance Documents
- Provincial supports - Please describe
- Vulnerability assessment tools
- Communication materials
- Partnership building
- Local data/projections on climate change impacts
- Other - Please describe: _____
- Don't know

11. Are there any future climate change programs or initiatives being proposed by your health unit? If yes, please describe:

- Yes – Please describe: _____
- No
- Don't know

12. We are considering a joint OPHA/ASPHIO fall workshop for PHUs to share information on health unit activities and opportunities for collaboration to address climate change. Please identify topics that you would be interested in hearing about at this workshop:

- Current PHU Climate Change projects
- Capacity Building to Address Climate Change Health Impacts
- Climate Change Surveillance
- Analyzing and Interpreting Climate and Health Data
- Conducting Vulnerability Assessments

- Developing Climate Change Adaptation Strategies
- Stakeholder Engagement
- Communicating about Climate Change
- Other – Please describe: _____

Thank you for participating in our survey. We value your feedback.

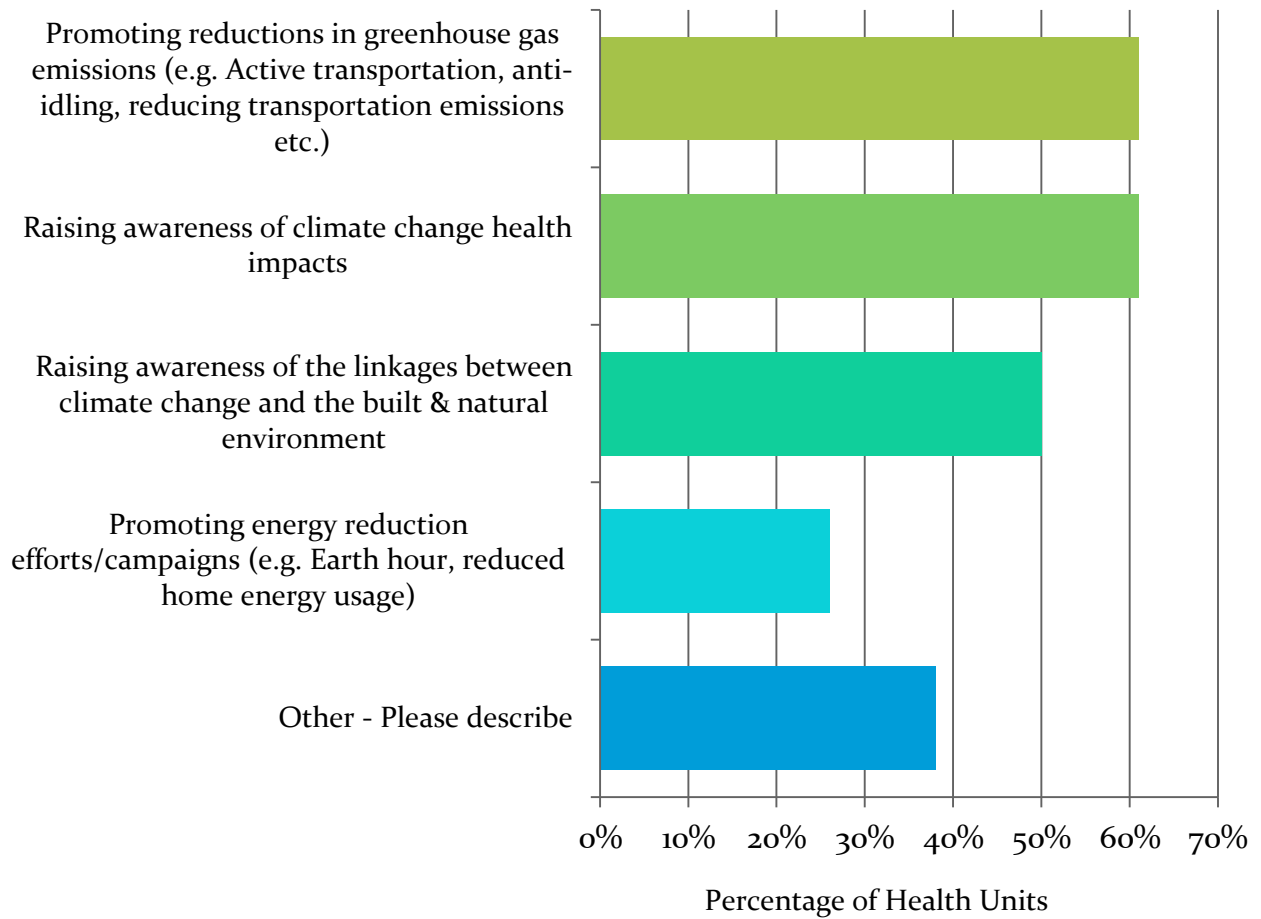
Appendix B: Survey Results

OPHA & ASPHIO Climate Change and Public Health Survey Results

1) Identify your Public Health Unit

- A total of 26 health units responded to the survey, representing a 72% response rate. These included:
 - City of Hamilton Public Health Services
 - Durham Region Health Department
 - Eastern Ontario Health Unit
 - Elgin-St. Thomas Public Health
 - Grey Bruce Health Unit
 - Halton Region Health Department
 - Hastings Prince Edward Public Health
 - Huron County Health Unit
 - Kingston, Frontenac, Lennox & Addington Public Health
 - Lambton Public Health
 - Leeds, Grenville and Lanark District Health Unit
 - Middlesex-London Health Unit
 - Niagara Region Public Health
 - North Bay Parry Sound District Health Unit
 - Ottawa Public Health
 - Oxford County Public Health
 - Peel Public Health
 - Perth District Health Unit
 - Porcupine Health Unit
 - Region of Waterloo, Public Health
 - Renfrew County & District Health Unit
 - Simcoe Muskoka District Health Unit
 - Sudbury & District Health Unit
 - Toronto Public Health
 - Wellington-Dufferin-Guelph Public Health
 - York Region Public Health

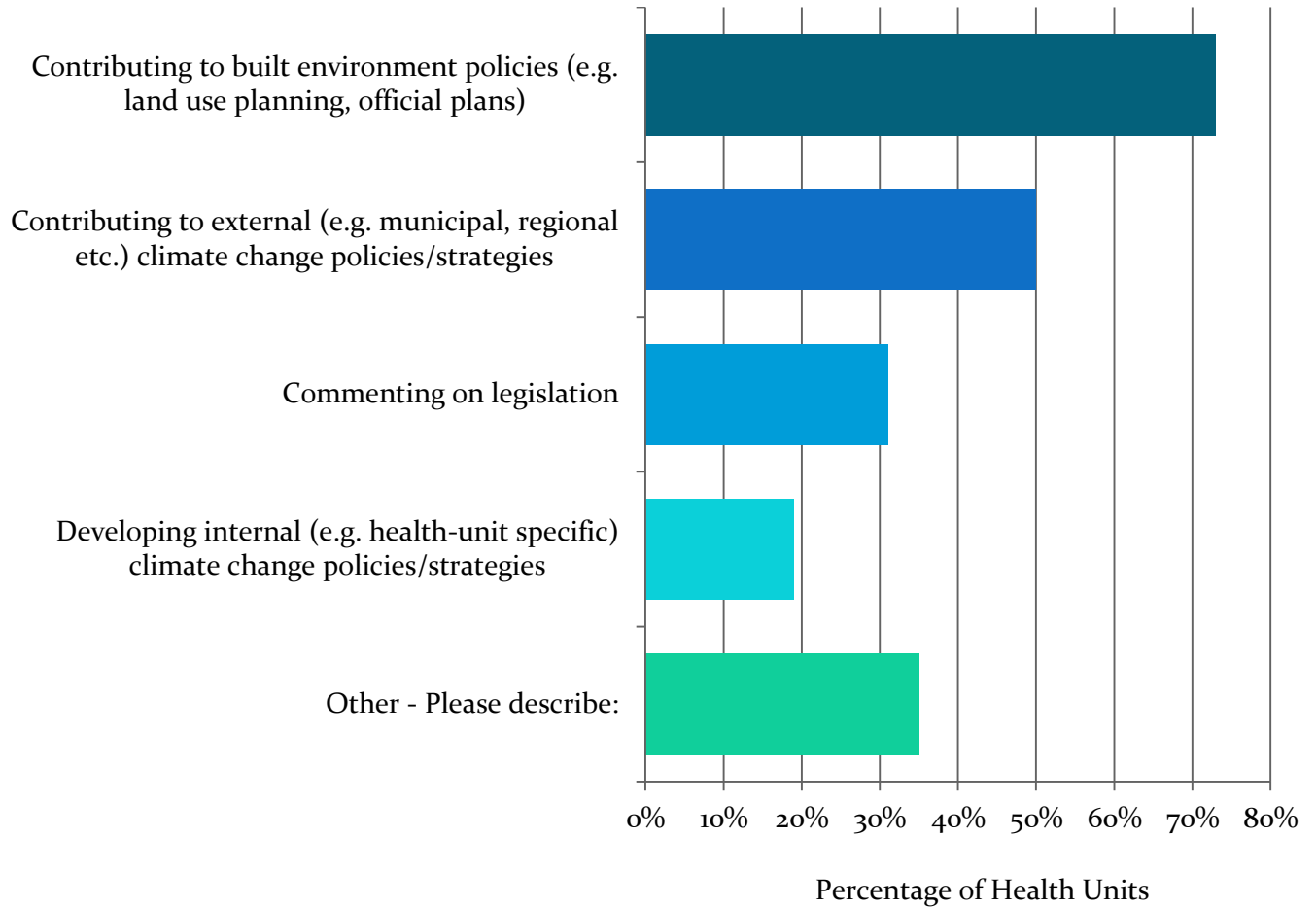
2A) How, if at all, has your health unit developed/contributed to local climate change strategies in the area of HEALTH PROMOTION? (check all that apply):



“Other” included:

- Outlining ‘Healthy Environments’ as a priority, with a focus on the Built Environment in the strategic plan of the PHU.
- Focusing on the effects of climate change, without putting it into context (e.g. vector-borne diseases, extreme weather etc.).
- Through 20/20 Way to Clean Air, AQHI.
- Promoting linkages between heat, air quality and climate change.
- Completing vulnerability assessments of potential impacts of climate change, and identifying plans of action.
- Educating staff.
- Through inter-sector collaborations with municipalities for a Climate Change Adaptation Plan.
- Identifying climate change as a priority public health issue and creating an action plan.

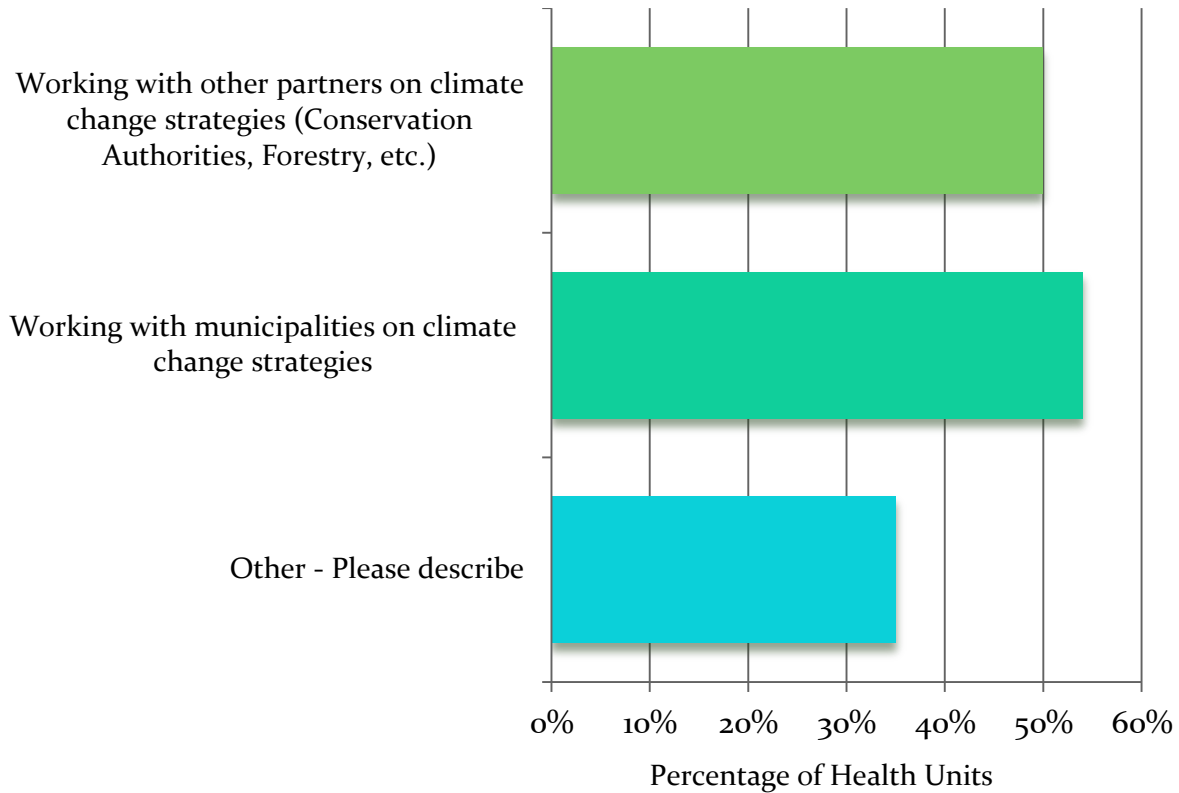
2B) How, if at all, has your health unit developed/contributed to local climate change strategies in the area of POLICY DEVELOPMENT & ADVOCACY? (check all that apply):



‘Other’ included:

- Through the Ottawa Air Quality and Climate Change Management Plan.
- Outline ‘Healthy Environments’ as a priority with a focus on the Built Environment, in the strategic plan of the PHU.
- Through work with Locally Driven Collaborative Project Healthy Rural Built Environment.
- Through Built Environment policies.
- No involvement or just beginning to address the issue.
- Through partnership in the Clean Air Partnership.
- Working on vulnerability assessments with municipalities.
- Completing emissions inventory, and developing action plans.
- Through the Heat Warning and Information System.

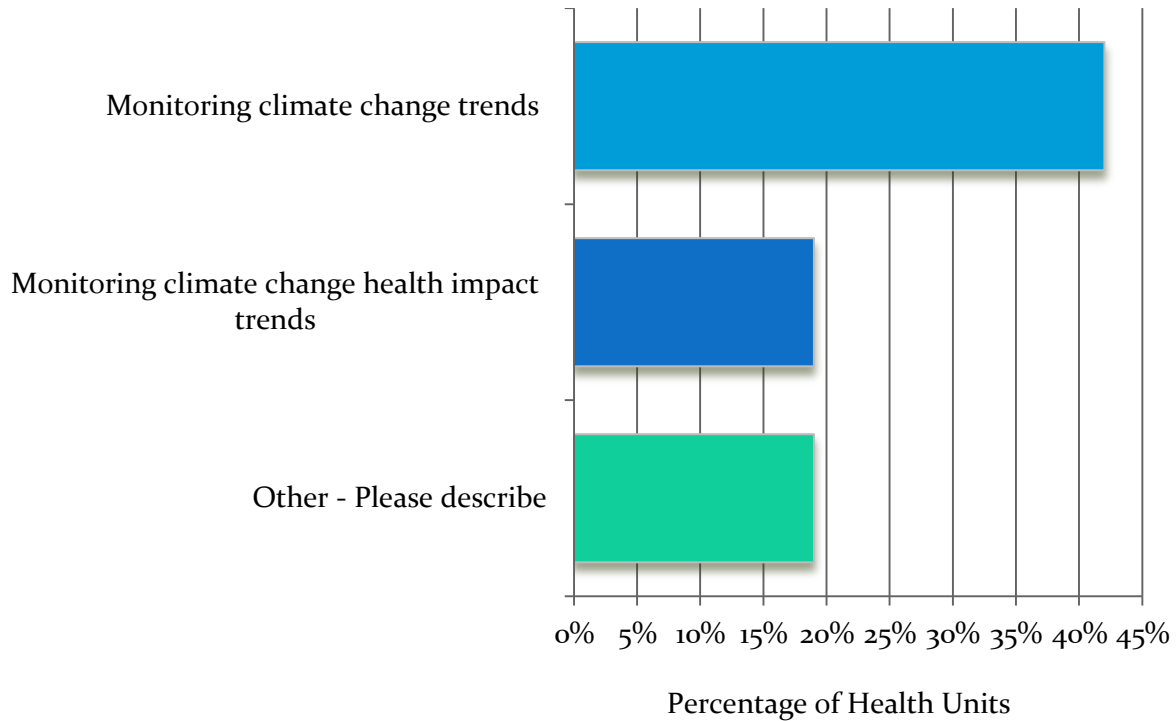
2C) How, if at all, has your health unit developed/contributed to local climate change strategies in the area of PARTNERSHIPS? (check all that apply):



‘Other’ included:

- Partnership opportunities explored with private consultants.
- Working mostly on extreme temperatures.
- Working on stakeholder engagement through strategic planning initiatives on the Built Environment.
- Through involvement in GTA Clean Air Council, Regional/Municipal Climate Change Workgroup, OPHA Environmental Health Workgroup, ASPHIO Workgroup & Eco-Health.
- Consulting with municipalities and other partners in the assessment described in 2a).
- Through involvement in Clear Air Partnership, OPHA Environmental Health Workgroup, Emergency Management partnerships, and local groups supporting climate change strategies.
- Minimal work done so far, although climate change is an area of interest.
- Through membership on the Ontario Climate Consortium.

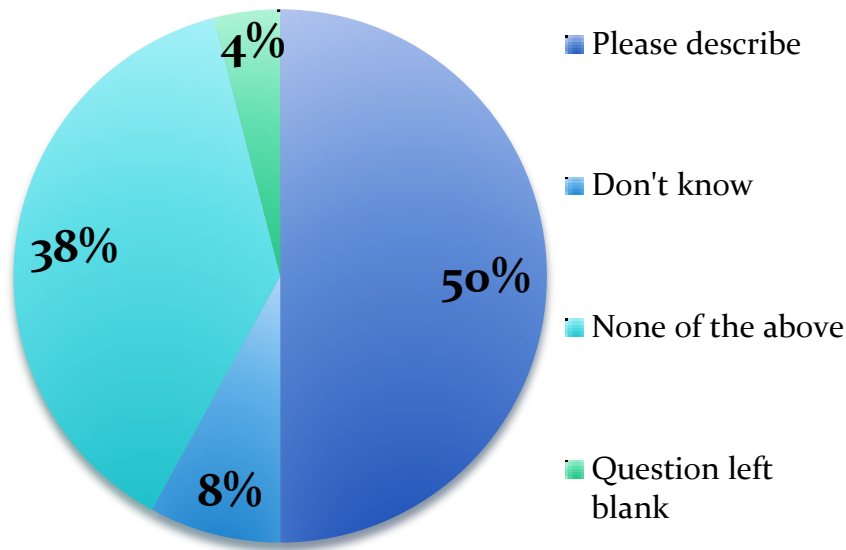
D) How, if at all, has your health unit developed/contributed to local climate change strategies in the area of SURVEILLANCE? (check all that apply):



'Other' included:

- Through mosquito, Tick, Eastern Equine Encephalitis (EEE) surveillance.
- Advised by Environment Canada when extreme weather is expected.
- Through Infectious disease and vector-borne disease surveillance, monitoring of water, sewage and power outages.
- No current efforts.

E) How, if at all, has your health unit developed/contributed to local climate change strategies in the area of RESEARCH? (check all that apply):



'Please describe' included:

- Reviewed and responded to modelling study report from a consultant hired by Durham Regional Roundtable on Climate Change.
- Drinking Water Risk Assessment – blue-green Algae.
- Partnering with PhD students researching ticks and Lyme disease, Public Health Ontario, Health Canada, and a local climate change researcher.
- Supporting urban heat island research, conducting vulnerability assessments of climate change health impacts, and participating in a conference to engage stakeholders and the public.
- Preparing regional assessments of impacts, current initiatives, and potential interventions in collaboration with Brock University, and other advocates.
- Improving syndromic surveillance during extreme heat events.
- Participating in a Pan-American research study on improving syndromic surveillance of heat related illnesses.
- Mapping urban heat islands with overlay of at risk populations to heat.
- Collecting environmental meteorological measurements.
- Through involvement in Advisory Committee with Wilfrid Laurier University related to seniors and extreme heat.
- Participation in Eco-health Ontario.
- Partner in Ontario Heat Health Team.
- Completing a Cold Weather Assessment.
- Working on key informant interviews to identify regional mitigation and adaptation strategies in place, to inform vulnerability assessment.
- Partnering with Laurentian University for vulnerability assessment and adaptation plans.
- Research on low carbon and health, severe weather, vulnerability of the homeless during extreme temperatures.

3) Please provide any additional details on the strategies identified above.

Responses included:

- “Just beginning to undertake the health vulnerability assessment identified in the community climate change plan.”
- “SENES consultant put together a report outlining climate change local impacts and potential risk projections arising from 2040 to 2049. This study was commissioned by the Region of Durham and Durham Region Health Department, as part of the stakeholder engagement process in the Human Health sector task force. Such task forces also included members from conservation authorities, local electrical utilities, citizens groups, and post-secondary institutions as well as the municipal representative. As part of the task force, we had to identify vulnerabilities, conduct a risk assessment and compare with other stakeholders for gaps, overlaps and interdependencies in regards to various impacts and consequences to develop a Community Adaptation Plan. The Task Forces produced a total of 28 sectoral program proposals.”
- “In 2009, the Bay of Quinte experienced a significant Blue-green algae bloom. This bloom posed a potential health threat to residents. Depending on the source of a resident's water supply (municipal or private) some residents did not have safe drinking water. Ensuring safe drinking water is one of the goals within the Ontario Public Health Standards. This scenario began to raise some serious questions about safe drinking water for residents and lead to the creation of this project. The project consisted of three key steps: (1) a risk assessment, (2) an awareness campaign, and (3) an evaluation of the awareness campaign. Climate change relates to this research in that Blue-green algae blooms tend to occur during warmer weather conditions. Thus, any increases in overall temperatures may mean an increase in these types of algal blooms.”
- “We are participating in a Pan-American Research Project on improving the assessment and streaming of real time heat health surveillance data from existing and potential new sources as a project with the Commission for Environmental Cooperation.”
- “Assisting community partners develop policies for adapting to climate change (i.e. extreme heat and cold events), presentation on health equity and climate change issues to local association of air and waste water professionals.”
- “Other vulnerability assessments (e.g. flooding, natural form).”
- “Our climate change action plan is a three-phased approach (phase 1 - analysis of the current environment; phase 2 - health promotion and engagement; phase 3 - integration of climate change into health unit programming). We are currently in phase 1 of the plan, completing our vulnerability assessment. Once we have identified health impacts and potential strategies for climate change mitigation/adaptation within the vulnerability assessment, we will create a community engagement and health promotion plan surrounding climate change. We will work with community partners and municipalities to support them in their work to mitigate and adapt to climate change within our region.”
- “Reports can be shared as needed. The Environmental Health Survey asked questions about knowledge, attitudes and behaviours related to climate change.”

4) For the above climate change strategies:

A) How is your public health unit measuring their effectiveness?

Responses included:

- “We will be consulted and will monitor the program approval and funding related to the 28 sectoral program proposals, as we move forward to funding and implementation. These will be considered as a component of the Action Report described in 2a).”
- “Currently, internal capacity has not allowed us to further the work initiated in the above project.”
- “Not measuring at this time.”
- “No way of doing that currently.”
- “Targets have been set and success/failure reported to Council annually.”
- “Syndromic surveillance data from hospital emergency rooms, reportable disease reports, tracking the number of polices we have input into.”
- “We are not.”
- “Pending.”
- “No requirement to measure what is not there.”
- “Internal sustainability indicators (e.g. reduced mileage, purchasing policies etc.), through Balanced Scorecard, the development evaluation process and plan for strategy.”
- “We are currently completing our vulnerability assessment, and will be identifying strategies to implement throughout this process. Once in phase 2 of the plan (health promotion and engagement), we will look to employ developmental evaluation to aid in the measuring of success of the climate change initiative. In addition, we currently have climate change integrated into the Balanced Score Card of our strategic plan, to measure the implementation of our action plan across the agency.”
- “No current evaluation.”
- “Reporting yearly to the Board of Health with a combination of quantitative and qualitative data.”
- “Limited.”

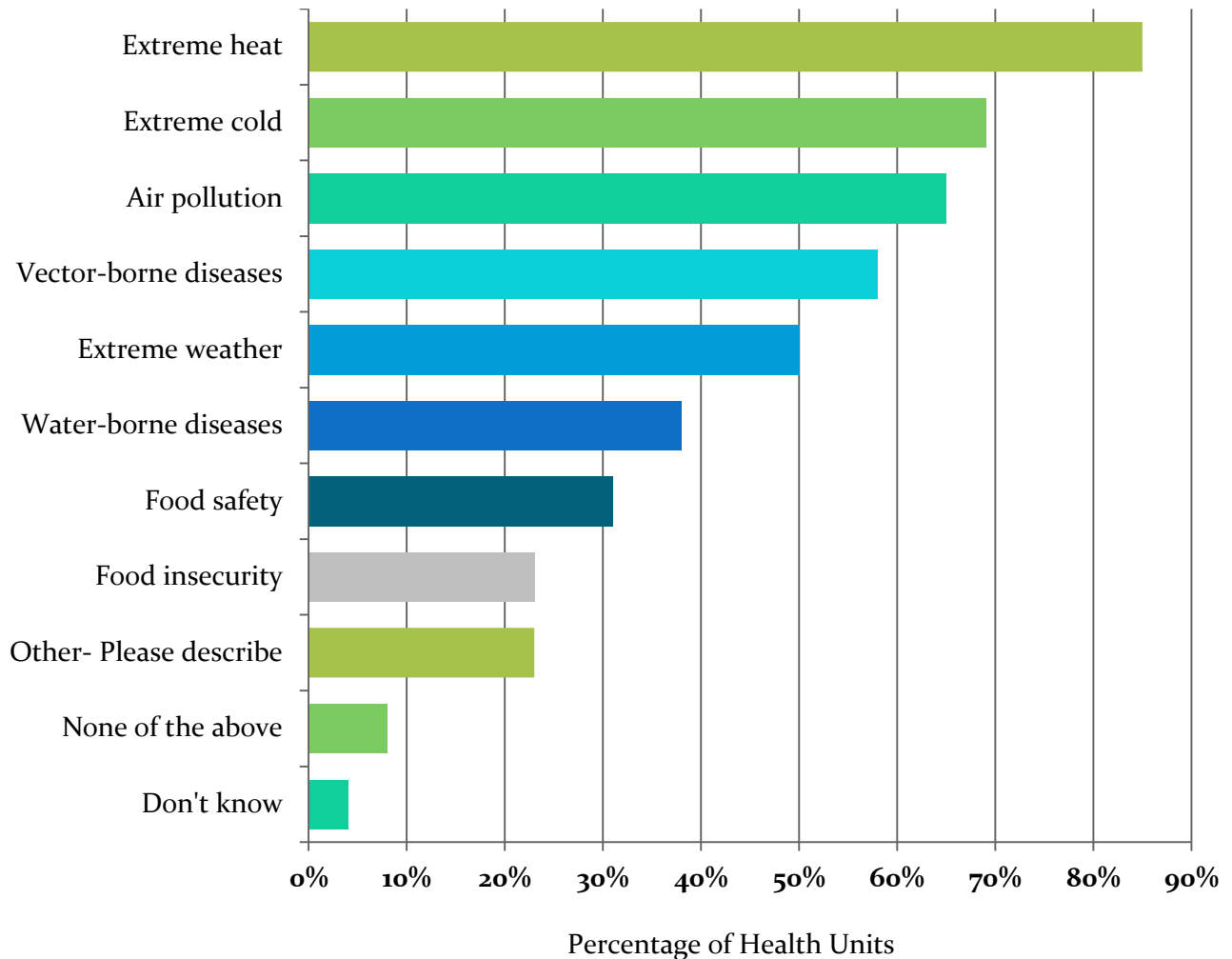
B) Have you developed processes or outcome indicators to evaluate the strategies? (You may share a link to your strategic plan or logic model, if any)

Responses included:

- “We will review and update the plan every 5 - 10 years.”
- “These will be considered as a component of the Action Report described in 2a.”
- “Not yet.”
- “Not there yet.”
- “Not to any great degree.”
- “Setting targets and monitoring the number of policies, partnerships, building internal capacity consultations we provide input.”
- “We do not have one.”
- “In process for term of Council.”
- “The time used to develop these strategies is being used to address current and ongoing issues.”
- “Yes. Climate change is a component of the strategic plan.”
- “Balanced scorecard indicators have been developed for this.”

- “Indicators for our Balanced Score Card have been created; they aim to identify the % of deliverables identified within the climate change action plan's work plan (phase 1) which are completed by the end of 2016.”
- “Under development.”
- “Limited indicators for some programs e.g. social media uptake on heat warnings.”

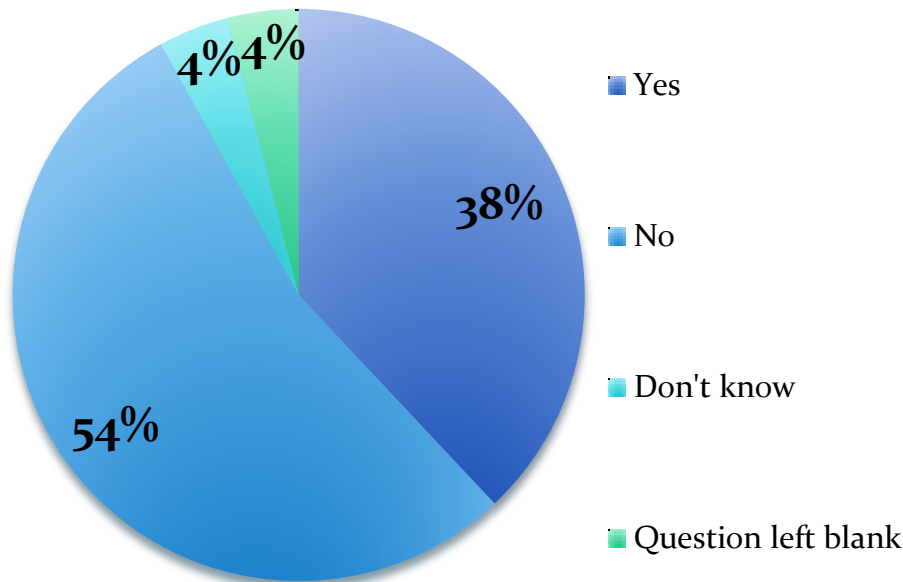
5) Has your public health unit developed/contributed to local climate change strategies to address the following climate change health risks (check all that apply):



‘Other’ included:

- Blue-green algae blooms response
- Current climate change strategies are not in the context of health.
- Surveillance and response of weather events and illnesses.
- Recreational water.
- Vector-borne disease surveillance.
- Currently working towards creating/implementing a strategy to support community partners during times of extreme cold.
- Indicated in Toronto Public Health’s Climate Change and Health Strategy.

6) Has your public health unit conducted a climate change health vulnerability assessment?



7) If you answered 'yes' for the question above:

A) Which, if any, assessment tools or resources were used?

Responses included:

- "MOHLTC, and WHO."
- "Health Canada guidelines and the SENES report to illuminate vulnerabilities."
- "Survey tool was adapted for the risk assessment and for the evaluation."
- "Master student focusing climate change and public health."
- "1) Health Canada - Guidelines for Assessing Health Vulnerability- Adapting to Extreme Heat Events and 2) Documents provided by Health Canada of tools used in other vulnerability assessments in Ontario municipalities."
- "WHO and Pan-American Health Organization."
- "Health Canada and MOHLTC."
- "Currently in the process of completing a vulnerability assessment based on the WHO and Pan-American vulnerability assessments, as well as the guidelines laid out by the MOHLTC. We also have used information and resources from Health Canada."
- "Natural Recourses and a Grant."
- "Collected data from a variety of sources."

B) Please describe, if any, actions that have been prioritized by your public health unit to address health vulnerabilities?

Responses included:

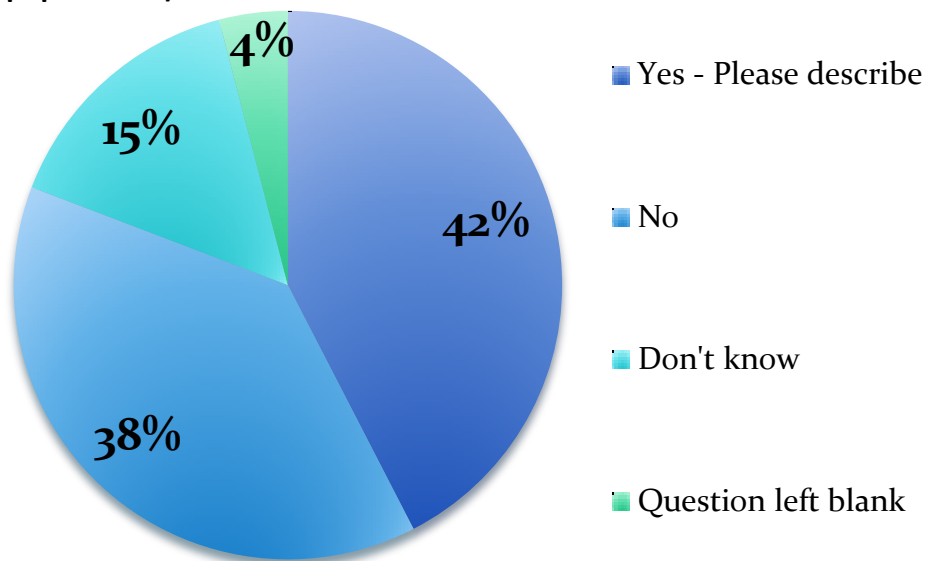
- “Heat Alert response strategies - help to coordinate information and awareness of programs for access to food and potable water during an extended power failure, coordinate response activities pursued by agencies that serve the vulnerable population during heat alerts, and pursuing a Vulnerable Persons Registry, ongoing emergency preparedness training for extreme weather events.”
- “As part of the Action Report described in 2a) we will be developing these priority actions. We anticipate that these actions will involve communication strategies targeted toward marginalized groups in our community as well as modifications to emergency response protocols to better take into account extreme weather events.”
- “Developing resources to inform public of the health risks for extreme heat, cold, air quality, vector borne disease, food insecurity.”
- “Assisting service providers with developing policies and 2) more attention to messaging and reaching out to festival and sports event coordinators to ensure hot and cold weather precautions and services are available.”
- “Linkages with other organizations (e.g. Community Care Access Centre, Human Services etc.)”
- “Still in the assessment stage - Data collection, analysis etc. We will be examining climate change health impacts associated with extreme temperatures, extreme weather/natural hazards, vector-borne disease, contamination of food and water, as well as air quality.”
- “Completing the vulnerability assessment has been the main priority for our health unit so that we can adequately understand what the impacts for climate change will be in the future for our region. Impacts include: Extreme Temperatures, Extreme Weather, Food and Waterborne Illnesses, Air Quality, and Vector Borne diseases.”
- “Higher awareness of vulnerable groups.”

C) Which, if any, of the actions have been implemented?

Responses included:

- “Property standards by-law for maximum temp in multi-residential buildings.”
- “All of the above.”
- “Some assistance with policy development in municipal daycares and reaching out to event coordinators for heat and cold planning at events.”
- “Held a workshop last spring. Further follow-up required.”
- “Not yet at the stage of implementation.”
- “Heat cold alerts - ongoing partnerships with municipalities.”
- “All are underway.”

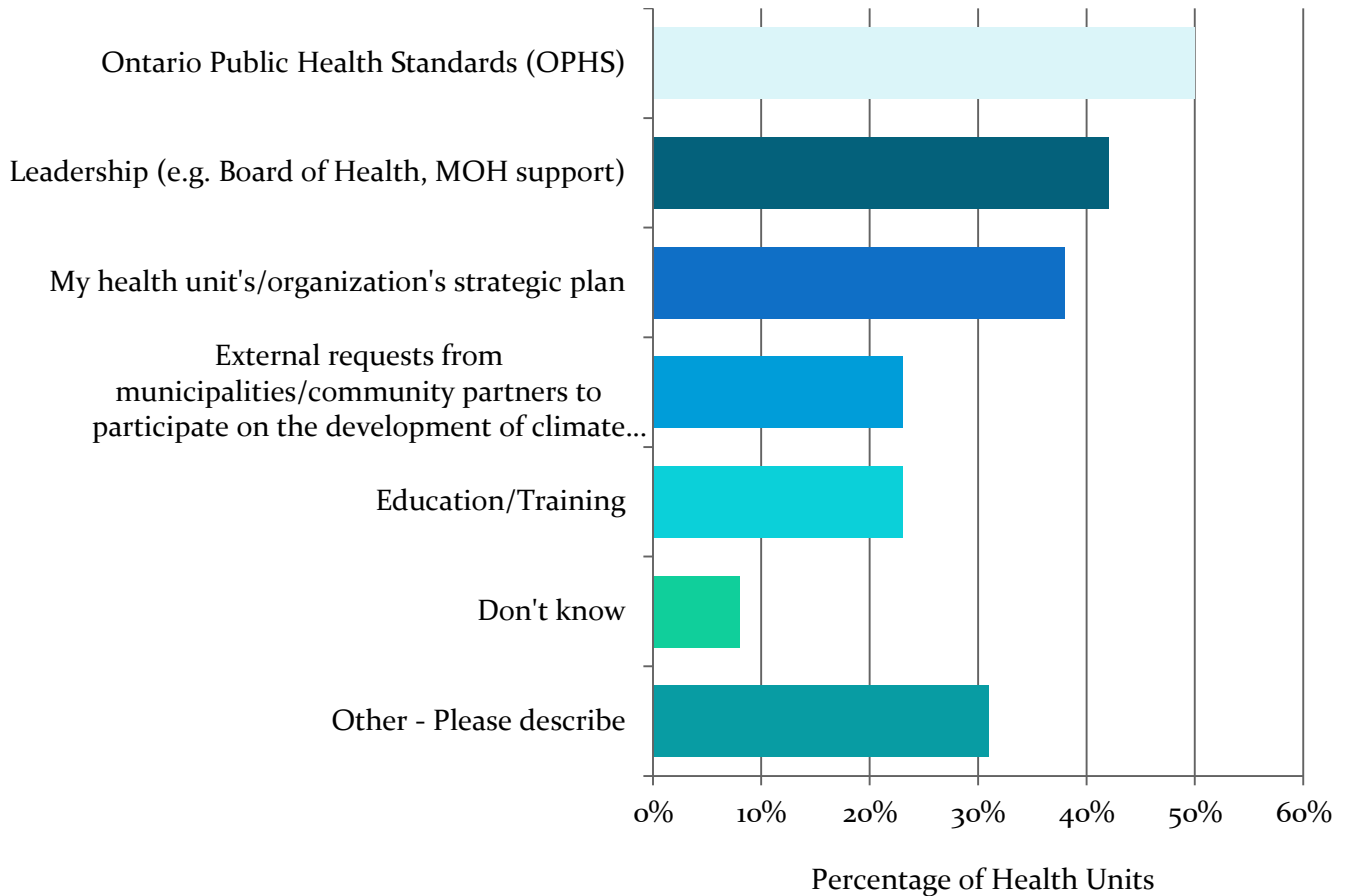
8) Has your public health unit used a health equity lens to identify, prioritize and address climate change health risks (e.g. different strategies for vulnerable and/or marginalized populations)?



Descriptions from those who answered 'yes,' included:

- "Heat/cold alerts and AQHI."
- "Our assessment report of 2015 focused particularly on people living in poverty and/or with mental health/addictions, recognizing that they may be more vulnerable to and least capable of coping with adverse climate change impacts."
- "Yes, we target populations vulnerable to heat/cold and air quality."
- "Food insecurity."
- "Encouraging different strategies for different access depending on health equity (e.g. encouraging shade trees and access to greenspace for homeless)."
- "Extreme heat and cold focus on vulnerable groups including isolated seniors and homeless."
- "Yes, this is a component of the vulnerability assessment. Assessing the sensitivity and adaptive capacity."
- "We have been working with our SDOH nurses to identify priority populations, as well as completing key informant interviews to help identify potentially vulnerable populations within our community from the perspectives of our municipal and community partners."
- "Higher awareness of vulnerable groups"
- "Health equity vulnerability assessment."
- "Intend to when we get to it."
- "Limited – urban heat island study looked at groups vulnerable to heat, targeted message for AQHI."

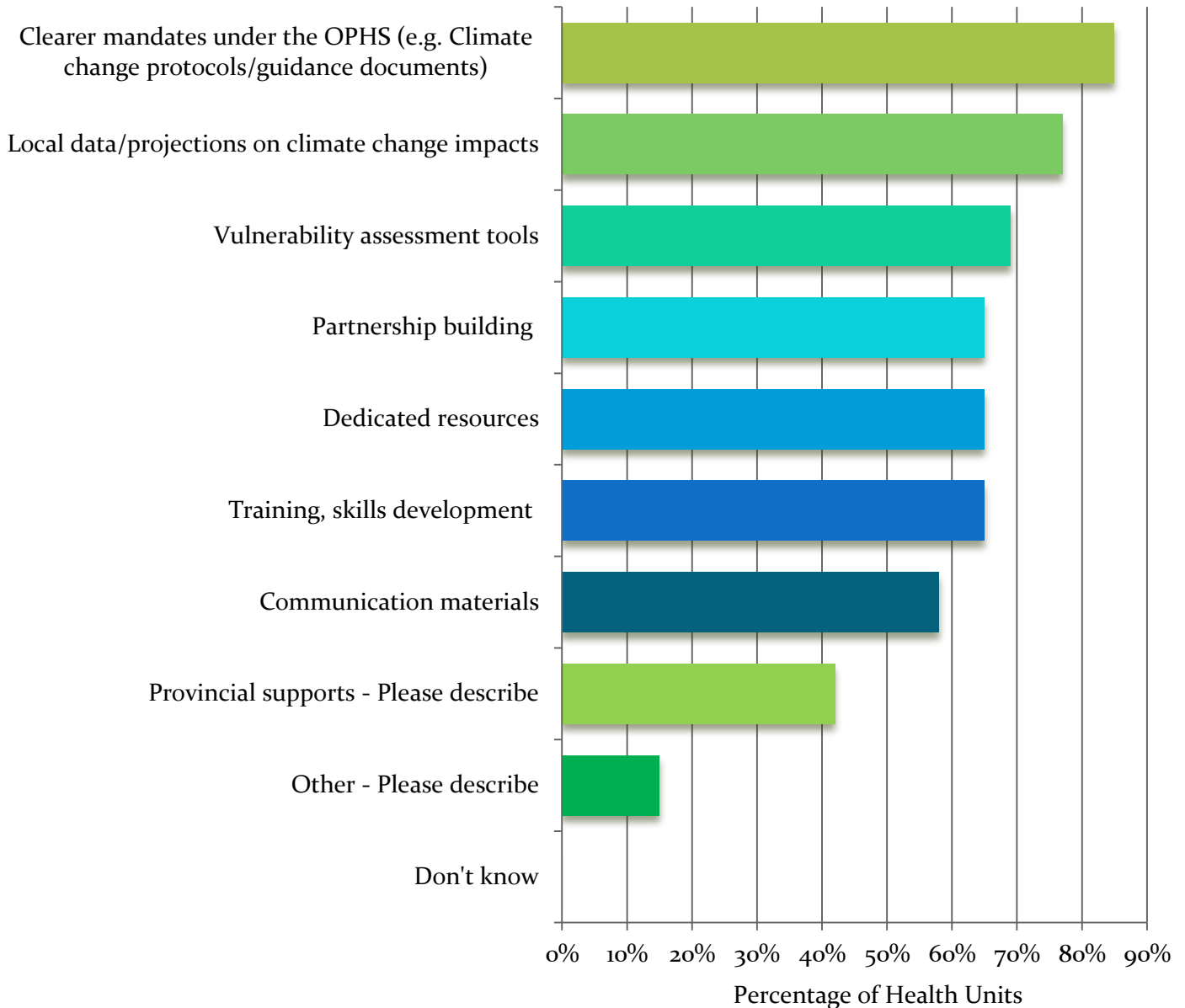
9) What, if any, are current enablers for your public health unit in addressing climate change health impacts (check all that apply):



'Other' included:

- "Social media community tweeting and encouraging everyone, as well as provincial government strategic direction."
- "Reference of climate change in the corporate strategic plan."
- "Motivated middle managers and front line staff."
- "Future Oxford - Sustainability Plan."
- "Regional Strategy Plan and Term of Council priorities."
- "Leadership from the Durham Region Roundtable on Climate Change."
- "We reached out to municipalities and now are following up to support them in their policy development wherever possible."

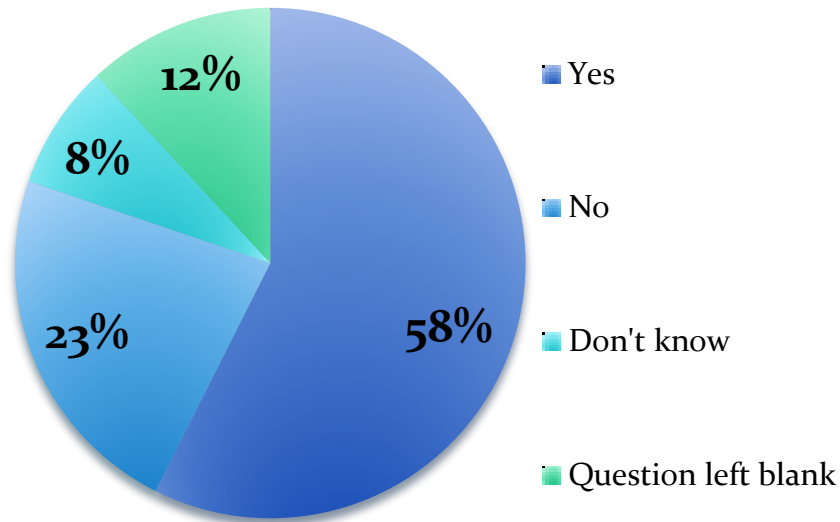
10) What supports would help your public health unit in addressing climate change health impacts (check all that apply):



‘Other’ included:

- “Direction that supports the work of other involved agencies working on climate change without duplicating efforts. Clear direction for public health role, coinciding with training.”
- “Indicator development - how to measure PHU success; research (academia, Public Health Ontario).”
- “Federal funding of pilot projects to map urban heat islands, air quality awareness, vulnerability assessments, improved syndromic surveillance etc.”
- “Report on Health and climate change impacts in Ontario.”

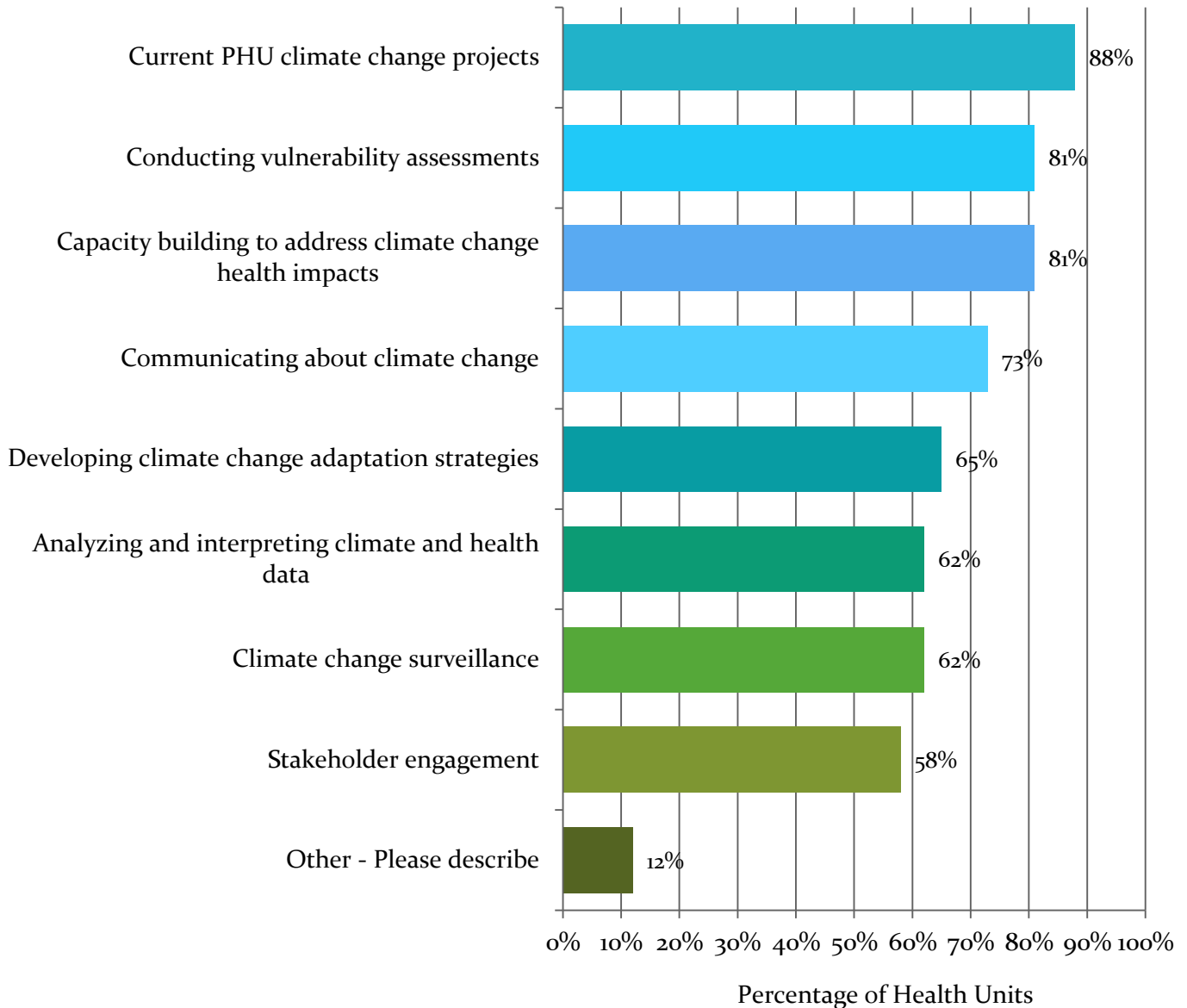
11) Are there any future climate change programs or initiatives being proposed by your health unit?



Descriptions from those who answered 'yes' included:

- “Undertaking the vulnerability assessment.”
- “The Durham Community Climate Adaptation Plan is moving forward for program approval and funding.”
- “MOECC & Clean Air Partnership - extreme weather response & alert system, developing a discussion paper exploring the relationship between built environment policies and safe drinking water etc.”
- “The Health Unit is planning to undertake climate change related initiative(s) after review of the newly released Ministry Guidance document and conducting vulnerability/risk assessment.”
- “We may focus on climate change in our next strategic plan (~2019).”
- “Round table with our municipalities to discuss impacts of climate change.”
- “Outreach programming to develop/support community partners.”
- “Applying the Health Equity lens to Climate change, new partnerships with community groups, new staffing.”
- “Planning a workshop to raise awareness of mitigation strategies to climate change in the built environment and the links between planning and public health and 2) contributing to the City of Ottawa urban forest management.”
- “Future Oxford Sustainability Plan.”
- “Not sure, waiting to see what direction the new OPHS provides.”
- “Climate Adaptation Planning Committee.”
- “Following the completion of the vulnerability assessment - the next phase in the strategy is public and community engagement.”
- “Continuation of the implementation of our Climate Change Action Plan.”
- “Presently reviewing toolkit.”
- “Climate change vulnerability assessment (2017); analyzing survey of LTC homes.”

12) We are considering a joint OPHA/ASPHIO fall workshop for public health units to share information on health unit activities and opportunities for collaboration to address climate change. Please identify topics that you would be interested in hearing about at this workshop:



‘Other’ included:

- How to achieve a sustainable plan
- How PHUs organize climate change activities e.g. cross-divisional groups, accessing funding; Building skills and expertise within PHUs
- “I think this would be a great idea!!”

Appendix C: Notable PHU Initiatives

OPHA acknowledges that climate change is a broad issue, affecting multiple aspects of our lives and that public health has attempted to tackle climate change in numerous ways. Below is a list of notable initiatives undertaken by some PHUs and their municipalities across Ontario, in the areas of public awareness, reports, collaborations and engagement, strategic planning, and future directions. Such information may provide further insight on how the public health sector can individually and collectively address the complex nature of climate change health impacts, and work towards a resilient Ontario.

Public Awareness

Website:

Toronto Public Health:

- Displays a wide range of topics on their website, providing well-rounded information to the public on protection from, and prevention of various health hazards related to climate change.

Link:

<http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=d0685ce6dfb31410VqnVC M10000071d60f89RCRD>

Middlesex-London Health Unit:

- Easily accessible web-page dedicated to climate change, making note of associated health impacts and vulnerabilities.

Link:

<https://www.healthunit.com/climate-change>

Peel Region:

- Provides a very organized listing of climate change issues, and the work their municipalities have been undertaking.

- Raises awareness on the impacts of climate change through “**Did You Know Facts,**” and other related tools.

Link:

<https://www.peelregion.ca/planning/climatechange/>

Social Media:

City of Hamilton Public Health Services:

- Active on social media (Twitter: [@ClimateHamON](#)) to create awareness on climate change related issues.

- Created a **Climate Change Charter** video, emphasizing the significance of the issue in Hamilton, and their commitment in addressing it.

Link:

<https://www.hamilton.ca/public-health/health-topics/climate-change>

Events:

Sudbury Health Unit:

- Hold educational activities at the **Sudbury Children’s Water Festival**

- Raises awareness regarding climate change through the **Greater Sudbury Climate Change Consortium**.

Link:

<https://www.sdhu.com/health-topics-programs/environment/climate-change>

Media Coverage:

Grey Bruce Health Unit:

- Received media coverage for considering climate change health impacts as an area of focus.

Link:

<http://www.shorelinebeacon.com/2016/03/07/grey-bruce-public-health-to-consider-climate-change>

Reports

Toronto Public Health released:

- **“A Climate of Concern: Climate Change and Health Strategy for Toronto” (2015)**, identifying actions set out to understand and respond to climate change related health impacts.

- **“Health benefits of a Low-Carbon Future” (2016)**, which supports long-term greenhouse gas reduction strategies to combat climate change, and improve the built environment.

Link:

<http://www.toronto.ca/legdocs/mmis/2015/hl/bgrd/backgroundfile-81509.pdf>

<http://www1.toronto.ca/City%20Of%20Toronto/Toronto%20Public%20Health/Healthy%20Public%20Policy/Climate%20Change/Files/Low-C%20Report%20TPH%202016-06-23%206%204%20AODA.pdf>

Middlesex-London Health Unit released:

- **“Assessment of Vulnerability to the Health Impacts of Climate Change in Middlesex-London” (2014)**. The report looked at various exposures, sensitivities, and adaptation methods of various climate change issues.

Link:

<https://www.healthunit.com/climate-change>

York Region Public Health:

- With support from Health Canada, York Region Planning and GIS colleagues, completed an **Urban Heat Island [UHI] Study**, identifying where UHIs may be occurring in York Region and recommended mitigation and adaptation strategies to reduce UHIs and their impacts on public health.

-The report of the study can be requested at: health.inspectors@york.ca

Collaborations and Engagement

Sudbury Health Unit:

- Partner in **The Greater Sudbury Climate Change Consortium** which brings together various stakeholders to ensure adaptability to climate change impacts in the area.

Link:

<http://www.sudburyclimateaction.ca/en/>

Durham Region Health Department:

-Participated in the **Durham Region Roundtable on Climate Change (DRRCC)**, along with the regions 8 municipalities to draft the **Community Climate Adaptation Plan (2016)**.

Link:

https://www.durham.ca/default.asp?nr=/community/climate_change/adaptation.htm&setFooter=/includes/climateFooter.inc

Niagara Region Health Department:

- In collaboration with Planning and Public Works, the health unit has developed an **emissions inventory** for the Niagara region, which sets target greenhouse gas emissions.
- On-going collaborations with Brock University, conservative authorities, and citizen advocates on various initiatives, preparing Niagara region for current and project climate change impacts.

Link:

<https://www.niaqararegion.ca/government/planning/climate-change.aspx>

Strategic Planning

Toronto Public Health:

- Broader city plan, **“A Healthy City for All (2015-2019)** champions actions to increase resilience to climate change impacts on health.
- Toronto has created the **Climate Change Risk Assessment Tool**, a software developed to identify and mitigate climate change-related risks and take action to reduce the impact of severe weather on infrastructure and key services.

Link:

<http://www1.toronto.ca/City%20of%20Toronto/City%20Managers%20Office/Agencies%20and%20Corporations/Files/pdf/TPH%20Strategic%20Plan%202015-2019.pdf>
<http://www1.toronto.ca/wps/portal/contentonly?vqnextoid=78cfa84c9f6e1410VqnVC M10000071d60f89RCRD>

The City of Hamilton:

- Released **“Taking Action on Climate Change in Hamilton – A Community Plan” (2015)**; a commendable report and action plan emphasizing the importance of addressing climate change, and discussing mitigation, resiliency and adaptation efforts for the coming years.

Link:

<http://greenventure.ca/climatechange/HamiltonCCAPFINAL2015.pdf>

The Simcoe-Muskoka District Health Unit:

- Identified climate change as an area of priority for their current and future action plan, while incorporating the issue into the **“Balanced Score Card.”**

Durham Region:

- The Minister of Environment and Climate Change and the University of Waterloo, recognized the region for its leadership in climate change adaptation planning initiatives in 2016.
- Helped create **The Durham Community Climate Adaptation Plan** outlines adaptation programs across various sectors.

Link:

https://www.durham.ca/default.asp?nr=/community/climate_change/adaptation.htm&setFooter=/includes/climateFooter.inc

Peel Region:

- Brought together the regional government, municipalities and conservation authorities to create Peel's new **Climate Change Strategy**, discussing action plans for various environmental issues.

Link:

<https://www.peelregion.ca/planning/climatechange/events/>

The Oxford County Public Health:

- Working with their municipality to reduce greenhouse gas emissions, and commit to a 100% renewable energy target by 2050, outlined in the **“Future Oxford Sustainability Plan.”**

Link:

<http://www.oxfordcounty.ca/Home/Newsroom/News-Details/ArticleId/4395/Oxford-County-commits-to-100-renewable-energy-by-2050>

York Region Public Health:

- Official Plan includes many policies to address climate change health impacts including **Air Quality and Climate Change policies**, to improve air quality and mitigate/adapt to the impacts of climate change.

Link:

https://www.york.ca/wps/wcm/connect/yorkpublic/0dc3cfc2-2e0f-49d2-b523-dc7c14b08273/15001_yropConsolidation2016AccessibleMay42016.pdf?MOD=AJPERES

Future Directions

A climate change related vulnerability assessment is currently underway at Hamilton Public Health Services, Simcoe-Muskoka District Health Unit, York Region Public Health, Lambton Public Health and other PHU's across Ontario.





“For the sake of our health, our children and grandchildren, and even our economic well-being, we must make protecting the planet our top priority.”

-David Suzuki