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Adverse Childhood Experiences (ACEs)

Public Health Programs to Address ACEs in Ontario

June 2022

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ACEs Collaborative Working Group

Authors

Sarah Carsley, PhD (co-Chair)
Applied Public Health Science Specialist –
Healthy Growth and Development
Public Health Ontario

Brooke Cousins, BSc MPH
Health Promoter
Hastings Prince Edward Public Health

Dawn Cole, RN MPH (co-Chair)
Foundational Standards Specialist
Family Health Division
KFL&A Public Health

Katherine Dunford, RN BScN
Public Health Nurse
Peterborough Public Health

Kara Koteles, RN BScN
Public Health Nurse
Peterborough Public Health

Anna Vanderlaan, MPH
Supervisor – Healthy Growth and Development
Wellington Dufferin Guelph Public Health

Contributors

Tiffany Oei, MSc
Senior Research Coordinator
Health Promotion, Chronic Disease and Injury Prevention
Public Health Ontario

Justin Thielman, MSc
Epidemiologist Lead
Health Promotion, Chronic Disease and Injury Prevention
Public Health Ontario

Susan Jack, PhD RN
Professor,
School of Nursing McMaster University

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Note to the Reader

This environmental scan was due to be completed in spring 2020. The initial idea for this project was developed and led by a dedicated group of local public health units who formed the Adverse Childhood Experiences (ACEs) Collaborative Working Group in partnership with Public Health Ontario (PHO). This group designed and administered the electronic survey and performed all the key informant interviews over six months in 2019. Unfortunately, the COVID-19 pandemic started right as the final analysis and drafts of this project were being completed. All public health unit staff were redeployed, and the responsibility for completing this report was transferred to PHO.

While the data were collected pre-pandemic, the information in this report may be beneficial to health units who are planning recovery efforts and rebuilding programs that have been dormant for two years. The programs and activities documented here provide a solid foundation of what was happening in Ontario public health units pre-pandemic, as well as what could be in scope for public health going forward to address ACEs and promote resiliency. All Ontarians likely experienced some adversity in the COVID-19 pandemic, and ACEs/resilience programs can act as a unifying priority for public health units in their recovery planning and in future phases of the pandemic.

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Executive Summary

Adverse Childhood Experiences (ACEs) are defined as potentially traumatic experiences that occur in a child's first 18 years of life. ACEs are prevalent and associated with poor health outcomes such as chronic disease, mental health disorders, health risk behaviours, and decreased life potential. Since the landmark ACEs study by Felitti et al., there has been a considerable amount of research that builds on both the definition of ACEs and the association between child adversity and health outcomes. Given the importance of this association, public health has a vested interest in the prevention and mitigation of ACEs. In an effort to leverage strengths, reduce duplication, and enhance collaboration across the province, the ACEs Collaborative Working Group was formed to understand and describe how public health units in Ontario are addressing ACEs. This report provides an overview of programs, activities, and initiatives public health units in Ontario were engaged in as of 2019 and describes health unit perceptions on their strengths, challenges, and opportunities for support.

An environmental scan of 35 public health units in Ontario was conducted between August 2019 and October 2019 (the scan was conducted before the formal merger of Huron County and Perth District Health Units). This study used a mixed-methods approach to data collection starting with an electronic survey and followed by key informant interviews. The survey was designed to identify activities that were conducted by public health units to address ACEs across the lifespan. Public health units completed one survey each and were encouraged to connect with all program areas to identify ACE-related activities. The survey was sent through the Healthy Growth and Development Evidence Network listserv and completed by an identified person most knowledgeable about ACEs in the health unit, often they were managers of the Healthy Growth and Development division. The aim of the key informant interviews was to clarify content from the electronic survey if needed, and to identify their perceived strengths, gaps, barriers, and additional supports needed to address ACEs locally.

A total of 31 public health units participated in the electronic survey and 29 of those participated in the key informant interviews. Public health units reported 213 activities to address ACEs, ranging from one to 21 per health unit. Approximately 40% of activities were reported that directly impacted ACEs, particularly physical, emotional, and sexual abuse, and emotional and physical neglect. Almost half (48.4%) of activities were reported to also indirectly impact mental health in the household. The majority of activities (65.2%) were delivered by the public health units and 11.7% were delivered in partnership with external organizations, such as EarlyON centres, schools, and community agencies. The main participants of these programs and activities were parents of young children (0-6 years) and the main beneficiaries were young and school-aged children. A quarter of activities involved public health unit staff as the participants and these usually involved staff training, reflective supervision and internal committee work. Overall, 45% of public health units reported they had modified the Healthy Babies Healthy Children (HBHC) program to address ACEs. These modifications were to improve triaging HBHC clients based on the ACE-like factors collected during the universal postpartum screen, to develop partnerships with community agencies using common ACEs language, and to ensure training on ACEs for HBHC staff included both public health nurses and home visitors.

The main findings from the key informant interviews with the public health unit staff most knowledgeable were the importance of multi-sectoral community partnerships, providing training on ACEs, trauma-and violence-informed care, and intimate partner violence to all staff, to have ACEs content woven throughout all healthy growth and development programming, and the use of epidemiologic and surveillance data to inform planning and decision making. The key challenges included lack of a strategic direction to address ACEs, and lack of a formal network to initiate early planning and implementation. Other challenges included lack of ACEs awareness in the community and of the resulting long-term health effects, particularly on mental health. Finally, a key challenge was the lack of evidence-based interventions to respond to ACEs, particularly using a social determinants of health approach to prevention.

With the growing acknowledgement of the importance of ACEs and resilience, especially in the wake of the COVID-19 pandemic, there is evidence that Ontario public health units were engaged in various ACE-related programming pre-pandemic. Many of the topics that public health units are mandated to work on are related to ACEs, and the flexibility of the 2018 Ontario Public Health Standards (OPHS) further supports use of new evidence of local needs to inform programming. There is a broad range of activities that were implemented in Ontario to support preventing or mitigating ACEs and many public health units were at varying stages of implementation prior to the COVID-19 pandemic. To further increase the impact of programs, it may be important to adapt existing programs or implement new programs to address more than one ACE, as there is an inter-relationship between ACEs.

Based on responses from participants across Ontario, the ACEs Collaborative Working Group developed some suggested directions on next steps in how public health units in Ontario can address ACEs and the support they would like to receive, including:

- Provincial guidance
- Improved access to data at a local public health unit level
- Identifying evidence on best practices for topics such as promoting sensitive parenting and building resilience
- Training public health unit staff on ACEs, resilience, and trauma-and violence-informed care
- Continued collaboration and knowledge exchange between public health units
- Community education, public awareness, and advocacy on ACEs and promoting resiliency

As Ontario enters the third year of the pandemic in 2022, public health professionals are untangling the various effects on multiple populations, while building back their programming in multiple standards such as chronic disease and injury prevention, substance use, and healthy growth and development. There is an opportunity to examine how public health practice could move forward using an ACEs, resilience, and trauma-and violence-informed care lens with the knowledge that adversity in childhood unifies multiple public health programs.

About This Document

Introduction

Adverse Childhood Experiences (ACEs) are defined as potentially traumatic experiences that occur during a child's first 18 years of life.[1] The two categories of experiences described in the initial ACEs studies included child maltreatment (physical, emotional, and sexual abuse and emotional and physical neglect) and family household dysfunction [intimate partner violence (IPV), mental illness, substance use, parental separation or divorce, incarcerated household member].[2-4] The landmark ACEs study was conducted by Felitti and colleagues in the United States (U.S.) from 1995-1997.[2] This study documented a dose-response relationship in the number of ACEs a child has experienced and their risk factors for disease and health risk behaviours.[2] Childhood adversity that happens in the absence of protective adult relationships can result in toxic stress.[5] This type of stress can be prolonged, frequent or intense and can weaken the development of the brain architecture and other organ systems.[5] Emerging research has identified ACEs as having an impact on short- and long-term health including chronic disease, mental health, and substance use.[4] According to the Centers for Disease Control (CDC) 2019 Vital Signs Report there is the potential that preventing ACEs can lower the risk for conditions like depression by 44.1% and asthma by 24.0%, reduce risky behaviours such as smoking by 32.9% and heavy drinking by 23.9%, and improve education by 4.6% and job potential by 14.9%.[6] Additionally, the impact of ACEs can be transmitted between generations, as adults who have experienced ACEs are more likely to expose their children to ACEs.[7] A goal of public health is to improve and protect population health; thus, addressing ACEs provides an opportunity to influence health before the development of illnesses and unhealthy behaviours.

List of ACEs as described in the CDC-Kaiser ACE Study[2,3]:

- Physical abuse
- Sexual abuse
- Emotional abuse
- Physical neglect
- Emotional neglect
- Exposure to domestic violence
- Household substance abuse
- Household mental illness
- Incarcerated household member

ACEs studies have been replicated in places such as England, Wales and throughout the United States (U.S.) demonstrating ACEs are highly prevalent in many populations.[8-11] For example, the proportion of

adults reporting at least one ACE in Wales and England was 47% and the proportion reporting four or more was 14%.[10] In a study of adults from 23 U.S. states, with over 200,000 participants, 61.6% reported at least one ACE and 15.8% reported four or more.[11] There is limited Canadian data specific to ACEs, however a 2013 study in Alberta reported the proportion of participants that had at least one ACE was 55.8%.[12,13] In Ontario, a local survey of adults in Wellington, Dufferin and Guelph found 81% reported at least one ACE, and 31% had four or more.[14]

There is a link between social determinants of health and ACEs. Previous evidence shows that children living in lower socioeconomic conditions experience a higher number of ACEs.[15] If families have their basic needs met, they may be less stressed and more able to create safe, stable, nurturing relationships and environments for their children.[4] Although the 10 ACEs identified by Felliti et al. are well-established, there are other exposures in childhood that may also cause traumatic experiences, including structural and contextual forms of trauma.[16] Sometimes referred to as 'adverse community experiences,' situational circumstances such as structural violence, living in poverty and experiencing homelessness are also forms of adversity in childhood.[17,18]

Internationally, government agencies such as the CDC in the U.S., the State of California, the Scottish Government and Public Health Wales are supportive of addressing ACEs and are taking action.[19-21] The evidence to prevent and mitigate ACEs is compelling, complex and is gaining acknowledgement as a public health issue with negative outcomes for individuals, families, communities and society.[16,22] Given the momentum to address ACEs internationally, investigators of this environmental scan wanted to assess what interventions Ontario public health units (PHUs) were participating in to address ACEs. This report aims to provide an overview of the public health landscape in Ontario specific to ACE-related activities being implemented up to 2019.

Objectives

This environmental scan seeks to understand and describe the work PHUs in Ontario are doing to address ACEs. This research also aims to describe the strengths and barriers that PHUs experience related to the prevention and mitigation of ACEs. The ACEs Collaborative Working Group was not aware of any existing document describing the range of activities and programs related to ACEs undertaken by local PHUs. The overall purpose of this report is to support future work on this topic by sharing the collaborative learnings provincially with all PHUs, and with other relevant stakeholders. This report is accompanied by the joint release of a literature review conducted by Public Health Ontario (PHO) in consultation with the ACEs Collaborative Working Group.[23] The goal is for both the evidence synthesis and the environmental scan to support PHUs in Ontario with evidence-based resources on the prevention and mitigation of ACEs.

Project Partners

The lead agencies for this project were PHO and four Ontario PHUs: Kingston, Frontenac, Lennox & Addington Public Health (KFL&A PH), Hastings Prince Edward Public Health (HPEPH), Wellington-Dufferin-Guelph Public Health (WDGPH), and Peterborough Public Health (PPH). An ACEs Collaborative Working Group was formed between PHO and the four Ontario PHUs. Two projects were developed by

the working group: a literature review, led by PHO and an environmental scan, led by the PHUs.[23] The working group guided the project objectives and development of this report. All support for this report was provided in-kind by the PHUs and PHO. No additional resources or funds were used in the creation of this report.

Background and Context

Emerging evidence indicating the importance of early childhood development and the impact of ACEs on lifelong physical and mental health has led to investigation and action on this issue in some PHUs across Ontario. Through the Ontario Public Health Evaluators Network, a request was made for sharing of evidence reviews related to ACEs in April 2019. Several PHUs indicated that they were in various stages of investigating ACEs through a public health lens, and there was interest from PHO to support an evidence review. In May 2019, these PHUs approached PHO for assistance with a project to better understand how PHUs could support programming that prevents or mitigates ACE-related harms in their communities. In an effort to leverage strengths, reduce duplication, and enhance collaboration across the province, the ACEs Collaborative Working Group was formed in June 2019 to meet shared goals. The benefit of this approach is that it leverages the strengths of both PHO who has expertise in evidence review, knowledge synthesis and translation; and PHU staff, who have expertise in local public health context, community needs, and priority populations. It is the intention that the information gained from this study will support the prevention and mitigation of ACEs in Ontario.

The COVID-19 Pandemic

Since the data for this study were collected, the COVID-19 pandemic has upended the lives of Ontarians and of public health practitioners. For example, families were particularly impacted by the closure of schools and childcare centres implemented to mitigate the spread of the SARS-CoV2 virus.[24] Since March 2020, there has been extensive research on the unintended consequences of these public health measures on children and families. Overall, there is evidence of detrimental effects on the physical and mental health of both children and their parents.[25-27] The pandemic has also been suggested to be a potentially traumatic experience for all those who were affected globally and may have exacerbated some ACEs.[28,29] Across the world, as well as across Ontario, individuals did not experience the burden of the pandemic uniformly. It is well-established that those living in lower income, marginalized/vulnerable or racialized communities experienced higher rates of COVID-19, more severe outcomes and higher mortality due to COVID-19.[30,31] People living in these communities were often unable to work from home, lived in multi-generational dwellings, and were unable to stay home from work even when sick.[30] These priority populations are the same as those with a higher prevalence of ACEs. To what extent the pandemic may have exacerbated various ACEs such as IPV, abuse and neglect, and parent mental health conditions is the subject of ongoing research. The additional stress on families who may have experienced food insecurity, job loss and financial stress would also contribute to conditions that increase ACEs risk factors.[32] Simultaneously, protective factors such as access to safe, stable relationships outside the home through grandparents, school, and extra-curricular activities were limited, and traditional public health services were impacted. The public health programs and services typically available to support families with young children, especially those with complex needs, saw a redeployment of staff to lead public health responses to the pandemic (vaccination, contact and case management) which in many communities resulted in a reduction of services (e.g., identification of families with needs and provision of home visiting). As Ontario enters the third year of the pandemic in

2022, public health professionals are untangling the various effects on multiple populations, while building back their programming in chronic disease and injury prevention, substance use, and child and family health. There is an opportunity to examine how public health could move forward using an ACEs or trauma-and violence-informed lens with the knowledge that addressing adversity in childhood with the potential for preventing chronic diseases and reducing morbidity and mortality unifies multiple public health programs.

OPHS and Guidance Documents

In Ontario, the OPHS identify the minimum expectations for public health programs and services, and defines the work of PHUs (OPHS 2018).[33] The standards were revised in 2018 to allow for more flexibility and an increased focus to meet local needs. The OPHS and their guidelines both directly and indirectly mention ACEs. Within the standards and guidelines, there is recognition of the importance of early life experiences for physical and mental health outcomes.[34,35] Healthy child development is a key determinant of health, and interventions to support a healthy beginning can have an impact throughout the life course.[34] The inclusion of the Healthy Babies, Healthy Children (HBHC) program as a requirement of the OPHS also reflects the importance of investing in the early years. ACEs are specifically mentioned in the Mental Health Promotion Guideline as they are "clearly linked to risk for mental illness and addiction later in life".[35 (p. 16)] In the Substance Use and Injury Prevention standard, violence is included as a topic of consideration, and in the Substance Use Prevention and Harm Reduction guideline, early stress and trauma are recognized as risk factors for substance use.[36] Although there is no explicit mention of early childhood experiences in the Chronic Disease and Wellbeing standard, research has demonstrated ACEs increase the risk for developing numerous chronic conditions. Thus, the directive to assess risk and protective factors should include discussion of the impact of ACEs on chronic diseases. In addition to the components of each standard, the emphasis on promoting health equity and creating safe and supportive environments found throughout the standards are in line with interventions to prevent and mitigate ACEs.[4,15] Overall, evidence supporting early intervention and the impact of ACEs on health is supported in the OPHS. Further assessment of how PHUs view ACEs fitting into the standards will be described in this report.

National and Provincial Context

Currently, there is no federal or provincial ACEs strategy, however some of the ACEs-related evidence is embedded in existing documents, or evidence that focuses on the identification and response to a specific ACE. As part of Canada's commitment in 2018 to the Global Partnership to End Violence Against Children, the *Road Map to End Violence Against Children* was created.[37] Although it focused on violence, this report describes physical, sexual and emotional abuse; neglect; and childhood exposure to IPV, which make up six of the 10 'traditional' ACEs.[2] The *Road Map to End Violence Against Children* provides a summary of the current nature and prevalence of violence against children in Canada, and highlights current efforts. This includes recognition of the impact of social determinants of health, healthy parent-child relationships, poverty, housing and homelessness as risk factors. Five opportunities for action are laid out with concrete commitments outlined. In addition to this, the *2016 Chief Public Health Officer's*

Report on the State of Public Health in Canada focused on family violence and demonstrates the importance of child maltreatment as a public health issue.[38]

Current research into child maltreatment is ongoing. In 2018, Statistics Canada conducted a Survey of Safety in Private and Public Spaces (SSPPS) as part of *It's Time: Canada's Strategy to Prevent and Address Gender-Based Violence***.**[39] The survey asked questions about childhood (before age 15) physical, sexual, and emotional abuse, emotional and physical neglect, and IPV between caregivers. Selected results about harsh parenting reported that "Among those living in the provinces, 64% of Canadians stated that they had experienced some form of harsh parenting (65% of women and 62% of men)".[39] The most common type of harsh parenting was spanking or slapping (experienced by 55% of Canadians overall), followed by hurt feelings (38%), feeling unwanted or unloved (19%) and unmet basic needs (4%).[39] This pattern was the same for both women and men.[39] Other existing government priorities with strategies related to ACEs include addressing poverty and infant and child mental health.[40,41]

Methods

This environmental scan was conducted between June and December 2019 and had two phases: 1) an electronic survey and 2) key informant interviews with Ontario PHUs. The survey was distributed through a listserv for the Healthy Growth and Development Evidence Network, a group of program managers in child and family health divisions. Voluntary and informed consent were sought from managers responsible for overseeing the Healthy Growth and Development Standard of the OPHS (Healthy Growth and Development managers) at each PHU by email. Participants of the survey were employees from Ontario PHUs with experience working in or overseeing activities or initiatives related to addressing ACEs. These staff members were identified by the Healthy Growth and Development manager at each PHU. In the survey, PHUs were asked to identify one or two people who could participate in a key informant interview. The key informants identified were often the same person who completed the survey. This study adopted a similar mixed-methods approach also used in the completion of the *Connecting the Dots* research project, which assessed how Ontario PHUs were addressing child and youth mental health.[42]

Electronic Survey

The survey (Appendix A) was designed to identify activities that were conducted by PHUs to address ACEs across the lifespan. The survey was pilot tested with four independent reviewers from PHUs and modifications were made to incorporate feedback. The survey was fielded between August and October 2019. Since ACEs cross over several standards, participants were asked to complete one survey per health unit and were encouraged to consult colleagues working in other programs at their health unit to ensure that all activities relating to ACEs were captured. A frequently asked questions (FAQ) document accompanied the survey to assist participants with completing the online survey. The survey included four parts. The first part included introductory questions about the participant and their perception of how ACEs fit into the OPHS. The second part was specific to the HBHC program and asked participants to identify if any ACEs-related modifications or additions were made to their health unit's HBHC program. In part three, participants were asked to identify programs or activities their health unit was doing to address ACEs. Inclusion of activities in this part required meeting criteria that included preventing or mitigating the health effects of at least one ACE. The survey allowed users to include information for a maximum of 10 activities, however some PHUs submitted additional activities. Information gathered on the activities included their direct or indirect impact on ACEs, the main participants and main beneficiaries of the program/activities, a description of the program/activity, the settings where the program/activities are offered, and the level of stakeholder engagement. Stakeholder engagement was measured using the Spectrum of Public Participation created and owned by the International Association for Public Participation (IAP2).[43] In part four there was an opportunity for users to report on any other relevant activities (e.g., childhood poverty strategies) and identify the key informant for the interview component.

The survey was conducted using Check Market survey software. Data were exported to Microsoft Excel and analyzed using R version 3.6.1. Descriptive statistics for each question were performed to assess frequencies.

Key Informant Interviews

Key informant interviews were designed to clarify any responses received on the electronic survey, and open-ended questions were used to identify perceived strengths, gaps, barriers, and additional supports needed to address ACEs locally. Five members of the project team (BC, DC, KD, KK, AV) were responsible for conducting interviews; each team member was responsible for conducting six or seven interviews. Key informants identified through the electronic survey were contacted up to three times by the project team to make arrangements for a 30–45-minute interview. Interviews were conducted over the phone and were not audio-recorded. A standard interview guide (Appendix B) was created to provide direction for the semi-structured interviews. Interview questions were categorized into two parts. First, questions that were unique to each PHU related to clarifying survey responses to ensure a good understanding of activities reported. Second, standard questions that were asked to all participants regarding perceived strengths, gaps, barriers, and additional supports needed to address ACEs in their communities. Each interviewer took notes of participant responses. In the first phase of analysis, responses were collated, categorized and summarized by three members of the study team (AV, DC, BC). During the qualitative analysis phase, COVID-19 was declared a global pandemic, and all study team members were redeployed to Ontario's emergency response. As such, the qualitative analysis was left partially completed. From May 2021 to May 2022, the qualitative analysis resumed with additional support from a qualitative research expert (SJ) and lead for the report from PHO (SC). Interview notes were re-read, and analytic memos created to synthesize responses to questions three and four on the interview guide.

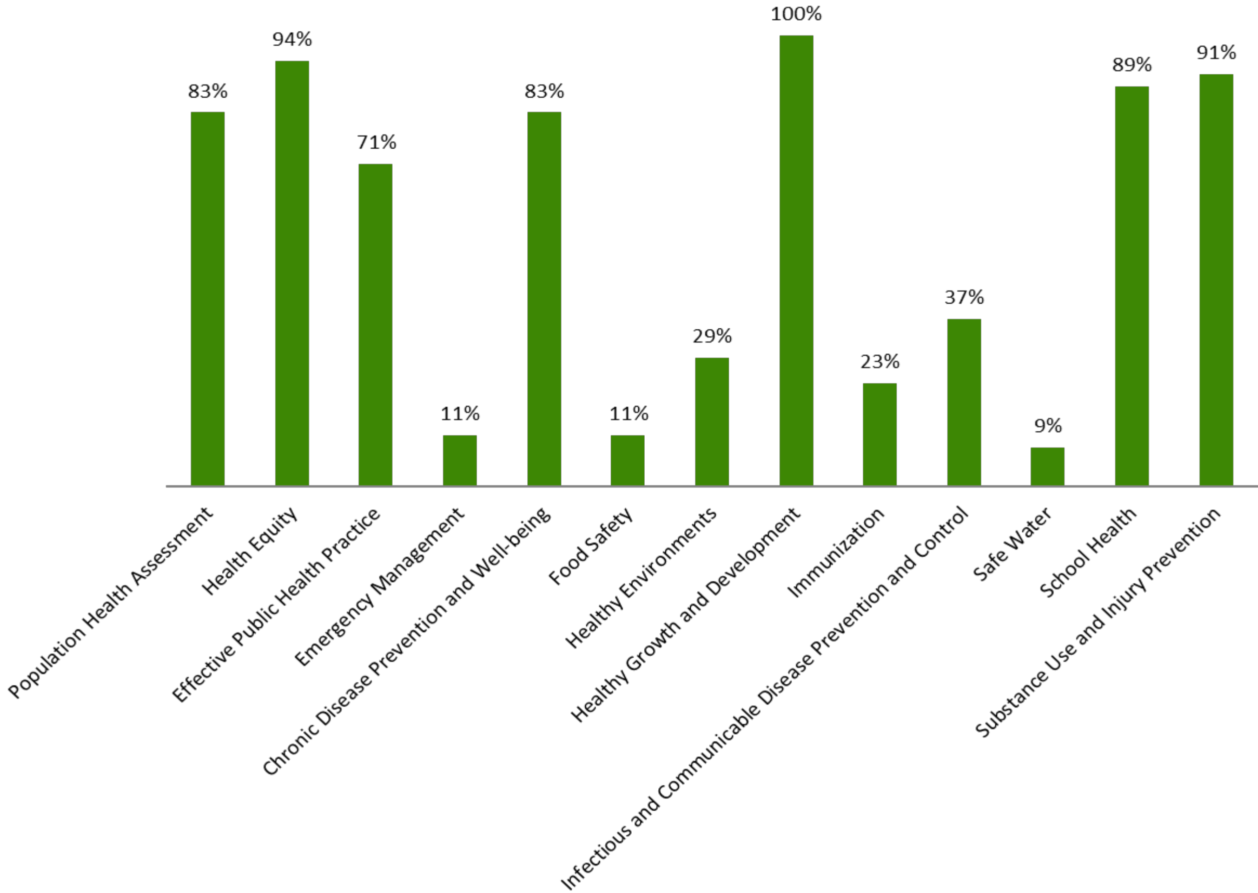
Results and Analysis

Electronic Survey

Part 1: Respondent characteristics and ACEs programming in the OPHS

Surveys were received from 31 of 35 (89%) Ontario PHUs (the surveys were conducted before the formal merger of Huron County and Perth District Health Units). Respondents included 22 managers, three supervisors, three public health nurses, and three advisors/program coordinators. Figure 1 presents how PHUs described ACEs fitting into the OPHS. All respondents specified Healthy Growth and Development, 94% reported Health Equity, 91% reported Substance Use and Injury Prevention, and 89% reported it could fit in School Health. There was no program standard that was not identified as ACEs-related by at least one public health unit.

Figure 1. In which Standards do you see ACEs work fitting into the OPHS? (Check all that apply)



Part 2: Modifications to the Healthy Babies Healthy Children program

In Part two of the survey, respondents were asked to specifically report on if and how their PHU was modifying their HBHC program to incorporate up-to-date knowledge of ACEs. The HBHC program in Ontario is a home visiting program for vulnerable families, mandated by the Ontario Ministry of Health through the OPHS Protocol, and funded by the Ministry of Children, Community and Social Services.[44] The overall goal of the home visiting program is to prevent negative outcomes for the child and family, including ACEs. Forty-five percent of PHUs reported they had modified their HBHC program to address ACEs. The main types of modifications were: a) to triage HBHC clients using ACE-like questions on the universal screen in order to prioritize who receives the in-depth assessment, b) to develop partnerships with community agencies (Children's Aid Societies, Addiction and Mental Health agencies, child care facilities), and c) building workforce capacity through staff training on ACEs (for both public health nurses and home visitors).

Part 3: Reported activities, initiatives, and programs to address ACEs

A total of 213 activities were reported, an average of seven per PHU, ranging from one to 21. In order to get the scope of activities that public health units were conducting in their current work, the main question on the survey was quite broad. As such, there were discrepancies between PHUs' interpretations of what type of activities they considered were "addressing ACEs." For example, some health units included only those activities that were designed and intended to focus on ACEs (e.g., ACEs survey in the community) or one of the 10 ACEs individually (e.g., maternal mental health or substance use). Conversely, some health units reported all their on-going programming in maternal and child health (e.g., prenatal classes, home visiting, breastfeeding etc.). Overall, health units reported that 25.9% of activities were initially designed or modified with the intention of addressing ACEs. When the study team added themes to the topic areas of all activities, a separate category of intended ACEs activities emerged which accounted for 11.3% and included specific ACEs work such as training staff using the Brain Story Certification, developing ACEs Working Groups, and trauma-informed care practices.[45] These categories were developed by one member of the study team (DC) and validated by the ACEs Collaborative Working Group. A full list of reported activities is available at the end of this document.

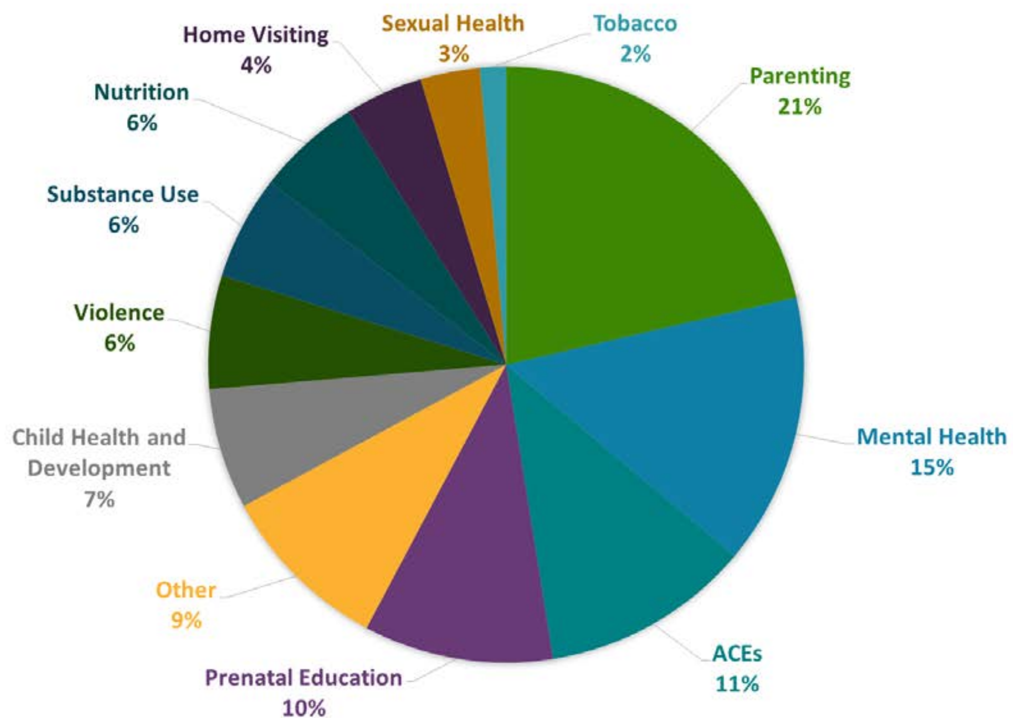
ACTIVITIES BY TOPIC AREA (E.G., MENTAL HEALTH, PARENTING, VIOLENCE)

In Figure 2, the distribution of activities and programs by topic area are presented. There were 12 categories defined including parenting, mental health, prenatal education including the Canadian Prenatal Nutrition Program, general child health and development, violence, substance use and alcohol, nutrition/breastfeeding, home visiting, sexual health, tobacco, other, and ACEs specific or intended. The most common category of activity reported by health units was parenting (21.6%), followed by mental health promotion including perinatal mental health (14.6%), and ACEs specific programming (11.3%). The category labeled 'other' (9%) included poverty reduction strategies and programs (e.g., Bridges out of Poverty and CIRCLEs), clinical services for oral health, immunization and primary care, and a sleep program. The category of child health and development described some general public health services such as Family Health phone lines, School Health programs, as well as some special needs early

intervention services such as Preschool Speech and Language and Infant and Toddler Development Program.

There were 24 (11%) activities and initiatives reported that were specifically conducted by the public health units to address ACEs. The largest category of activity was knowledge translation and staff training on ACEs. Two health units also described organizational and service provider training in trauma-informed care. Three health units reported engaging in surveillance and data collection in their local community, and three described ACEs working groups internal to their public health unit or in a more formal Coalition with their community partners. Only three ACE-specific programs for service delivery were reported (i.e., Building Resilience Cognitive Behavioural Therapy Project, Children in Between, and the Nurse-Family Partnership home visiting program). Two health units reported their collaborations with Children's Aid Societies as specifically addressing ACEs.

Figure 2. Reported activities by topic area



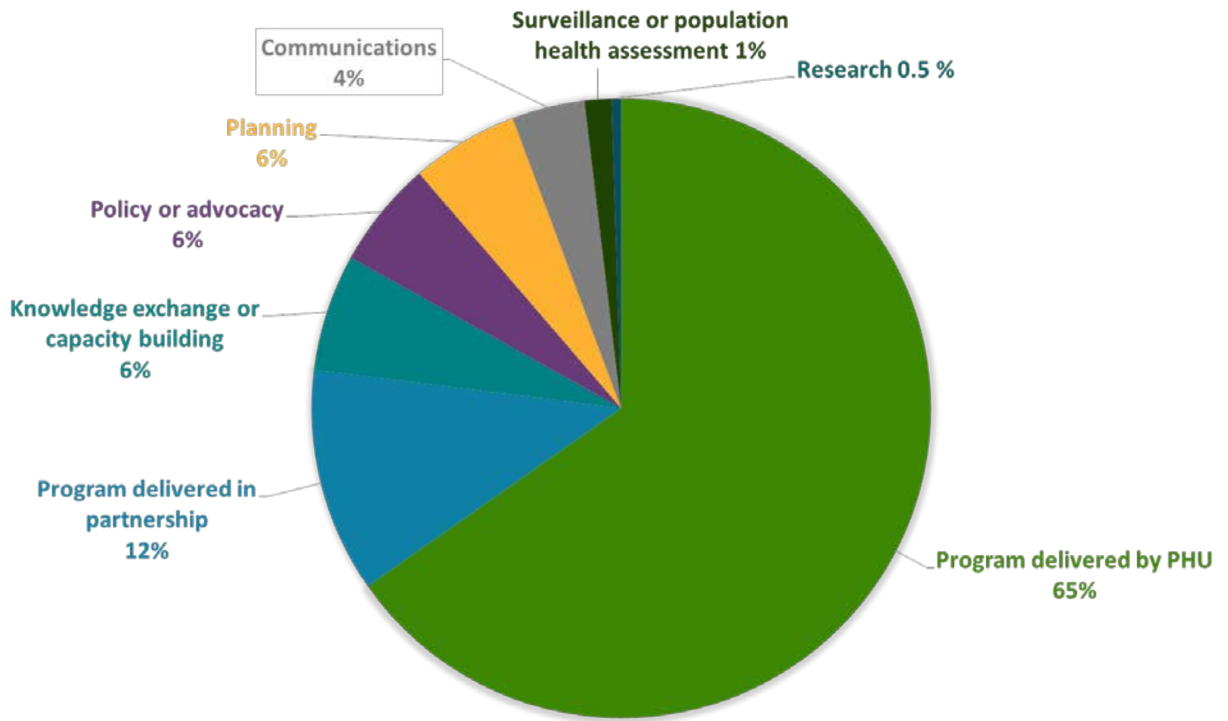
ACTIVITIES BY TYPE (E.G., PROGRAM DELIVERY, KNOWLEDGE EXCHANGE)

There were eight sub-categories defined to describe the type of public health activity including program delivered by PHU, external collaboration with partners, knowledge exchange or capacity building, policy or advocacy-related, planning, communications, surveillance or population health assessment and research (Figure 3). The majority of activities were programs delivered by the PHU (65%). Only one academic research pilot study was reported, and three activities involved data collection for surveillance or population health assessment, which were all specific to ACEs data.

Knowledge exchange or capacity building included staff training as well as external facing presentations to the community. Communications activities were more focused on public health awareness and

educational campaigns. Policy or advocacy activities that were reported included the Child Friendly Policy Project at Toronto Public Health or policies around Poverty and Health (Peterborough Public Health) and policy work to address the social determinants of health (North Bay Parry Sound District Health Unit). The planning activities included, but were not limited to, developing mental health frameworks, and positive parenting conceptual models and/or frameworks.

Figure 3. Programs and activities reported categorized by type



ACES IMPACTED BY ACTIVITIES

Table 1 presents data on the direct or indirect impact of reported activities on each individual ACE. Only 7.5% reported the activity directly impacted incarcerated family members and 14.6% directly impacted parental separation or divorce. The remaining ACEs were impacted directly between 33% and 42% of by activities reported by PHUs.

Table 1. Proportion of Activities impacting individual ACEs (N=213)

Individual ACEs	Directly Impacts N (%)	Indirectly Impacts N (%)	No Impact N (%)
Emotional Abuse	88 (41.3)	92 (43.2)	22 (10.3)
Physical Abuse	86 (40.4)	89 (41.8)	27 (12.7)
Sexual Abuse	80 (37.6)	76 (35.7)	46 (21.6)
Emotional Neglect	91 (42.7)	88 (41.3)	23 (10.8)
Physical Neglect	89 (41.8)	87 (40.8)	26 (12.2)
Intimate Partner Violence	71 (33.3)	90 (42.3)	41 (19.2)
Substance Abuse in the Household	75 (35.2)	90 (42.3)	37 (17.4)
Mental Illness in the Household	80 (37.6)	103 (48.4)	19 (8.9)
Parental Separation or Divorce	31 (14.6)	82 (38.5)	89 (41.8)
Incarcerated Family Member	16 (7.5)	68 (31.9)	118 (55.4)

BENEFICIARIES, PARTICIPANTS, AND PRIORITY POPULATIONS

Table 2 presents the main participants and beneficiaries of the activities or programs. Parents, caregivers, or guardians were the main participants (62.0%), followed by public health staff (25.4%), children 0-6 years (20.7%), and elementary (14.6%) and secondary school children (15.5%). Daycare providers and early childhood educators were less often the main participants (7.0% and 7.5%, respectively). Overall, 24.9% of activities reported by public health units targeted priority populations. A list of priority populations mentioned is available in a list below. Children 0-6 years were identified as the main beneficiaries of the programs, followed by parents/caregivers, school-aged children and the general public. About 25% of programs described a targeted priority population that were participants and 22% were beneficiaries.

Table 2. Main participants and beneficiaries of the activities/programs (N=213)

	Participants N (%)	Beneficiaries N (%)
Children 0-6 years of age	44 (20.7)	144 (67.6)
Elementary school children	31 (14.6)	84 (39.4)
Secondary school children	33 (15.5)	73 (34.3)
Parents, caregivers, or guardians	132 (62.0)	118 (55.4)
Public Health staff	54 (25.4)	17 (8.0)
Healthcare providers (e.g., nurses, physicians, etc.)	25 (11.7)	20 (9.4)
Educators	26 (12.2)	21 (9.9)
Early Childhood Educators	16 (7.5)	9 (4.2)
Daycare providers	15 (7.0)	7 (3.3)
General public	30 (14.1)	29 (13.6)
Adult community leaders (e.g., youth group leaders, coaches, etc.)	15 (7.0)	6 (2.8)
Policy makers	18 (8.5)	12 (5.6)
None of the above	1 (0.5)	0 (0.0)
Priority Populations (see List below)	53 (24.9)	47 (22.1)

Many of the priority populations listed as the main beneficiaries of the programs/activities were similar to participants. There was a difference when programs/activities were targeted to 'train the trainer'

programs where the participants were service providers and the beneficiaries were various at risk groups in communities. Other responses included other health and social service workers who work with individuals with substance use disorders (e.g., police, probation etc.), and those impacted by the social determinants of health.

List of priority populations targeted by activities to address ACEs reported by health units

- Breastfeeding Families
- Newcomers to Canada
- Children identified with risk for poor development and parent-child attachment
- Persons with lived experience
- Families involved with Children Aid Society (parents separated from children due to apprehension)
- Pregnant individuals in challenging circumstances (e.g., experiencing homelessness, family violence, poverty, young mothers, substance use, financial need)
- Families with children from birth to age 6 experiencing poverty
- Prison/Street involved
- Fathers on Ontario Works & Ontario Disability Support Program, with children up to the age of 18 years
- Reach Out Centre for Kids (ROCK) Therapists
- Indigenous, (African, Caribbean & Black), Local Indigenous Community, low-income Indigenous populations
- Service Providers (internal and external)
- Individuals living in poverty, individuals working with people living in poverty, those with low income
- Social and geographical isolation
- Individuals using substances and opioids
- Women and children fleeing violence / In shelters
- Individuals with mental illness
- Women and their young infants
- Individuals without a health care provider or individuals who are not comfortable with their health care provider
- Women's Shelter and outreach service
- Injection drug users, people at risk or living with HIV/Hepatitis C, sex workers
- Young, (up to 22 years of age) pregnant first-time mothers and their families
- LGBQT2S+, secondary school youth
- Youth aged 15-29 years
- Parents less than the age of 25 years and their children aged 0-18 months
- Youth who have not completed school and have children or are expecting their first child and are enrolled in the Ontario Works Learning, Earning, and Parenting (LEAP) program

ACTIVITIES BY SETTING

Each public health unit was asked to describe the setting of each activity, which may have been more than one location (Table 3). The main settings were at the public health (50.2%), at an EarlyON Centre (33.3%), located in a school (26.3%), online (21.6%) and during home visiting (21.6%). Other locations described were community agencies and library or community centres (43.2%). Very few activities were conducted in primary care or in a daycare setting which corresponds with few activity participants involving early childhood educators or daycare providers.

Table 3. Location of activity/program within the community (check all that apply)

Setting of activities	N	%
Public Health Unit	107	50.2
School	56	26.3
Daycare	17	8.0
Primary Care	11	5.2
Community Health Centre	27	12.7
Online	46	21.6
EarlyON Centre	71	33.3
Home Visiting	46	21.6

EVALUATION OF ACTIVITIES OR INITIATIVES

When asked about whether programs had been evaluated, PHUs reported 45.5% of programs had not been officially evaluated, but service utilization data (general operational reporting) was tracked and reported (i.e., number of participants, number of partnerships, number of communications, etc.). Evaluations were completed for 15.0% of activities, and 11.7% were in progress. No evaluation or plans to evaluate were reported for 8.5% of activities/programs, and 6.6% were not applicable for evaluation.

Table 4. Description of program/activity evaluation status (n=213)

Status of Program Evaluation	N	%
Evaluation complete	32	15.0
Evaluation in progress	25	11.7
General reporting/operational planning	105	49.3

Status of Program Evaluation	N	%
No evaluation	18	8.5
N/A	14	6.6
Don't know	4	1.9
Missing	14	6.6

COLLABORATION

Health units reported that 50.2% of the activities were offered in collaboration with other teams or divisions within their own health unit. The majority of internal collaboration was described between teams within Healthy Growth and Development (37%) (e.g., HBHC, Child Health, and Healthy Families). The main divisions working in collaboration outside of Healthy Growth and Development were School Health (8.3%), Substance Use and Injury Prevention (7.4%) and Sexual Health and Harm Reduction (4.6%). Ten percent of activities included referrals of clients between various teams. Seven activities were described as being implemented across all teams in the PHU, including health equity and mental health promotion activities, which is reflective of the current OPHS Guidelines.[33] The other public health divisions reported as internal collaborators included (but not limited to) Epidemiology and Surveillance, Foundational Standards, Communications, Chronic Disease Prevention and Oral Health.

PHUs described the level of engagement with external stakeholders using the planning, implementation, and/or evaluation framework (inform, consult, involve, collaborate, empower), see Table 5.[43] Local community agencies were engaged mainly as collaborators for 30.0% of activities reported, whereas hospitals/community health centres/primary care providers were informed on 27.7% of reported activities. EarlyON Centres were identified as collaborators on 22.1% of activities and programs. Parents and caregivers were informed, consulted, involved, and empowered for approximately 12% of the activities. Levels of engagement were generally low for government and other municipal department stakeholders.

Table 5. Level of engagement with external stakeholders

Stakeholder	Inform N (%)	Consult N (%)	Involve N(%)	Collaborate N (%)	Empower N(%)	N/A N(%)
Another Public Health Unit	20 (9.4)	22 (10.3)	3 (1.4)	8 (3.8)	1 (0.5)	148 (69.5)
Another Municipal Department	15 (7)	7 (3.3)	18 (8.5)	20 (9.4)	11 (5.2)	131 (61.5)
Government	29 (13.6)	8 (3.8)	6 (2.8)	8 (3.8)	2 (0.9)	149 (70)

Stakeholder	Inform N (%)	Consult N (%)	Involve N(%)	Collaborate N (%)	Empower N(%)	N/A N(%)
School or School Board	24 (11.3)	12 (5.6)	23 (10.8)	21 (9.9)	8 (3.8)	114 (53.5)
Hospital/Community Health Centre/Primary Care Providers	59 (27.7)	11 (5.2)	15 (7)	38 (17.8)	8 (3.8)	71 (33.3)
Local Community Agency	33 (15.5)	13 (6.1)	30 (14.1)	64 (30.0)	14 (6.6)	48 (22.5)
EarlyON Centre or daycare	32 (15)	15 (7)	21 (9.9)	47 (22.1)	9 (4.2)	78 (36.6)
Business	3 (1.4)	2 (0.9)	4 (1.9)	4 (1.9)	0 (0.0)	189 (88.7)
College or University	9 (4.2)	6 (2.8)	7 (3.3)	11 (5.2)	1 (0.5)	168 (78.9)
Parents/caregivers/ guardians	22 (10.3)	29 (13.6)	25 (11.7)	11 (5.2)	25 (11.7)	90 (42.3)
Children/youth	6 (2.8)	6 (2.8)	18 (8.5)	9 (4.2)	7 (3.3)	156 (73.2)

Key Informant Interviews

Overall, 29 of 31 health units who responded to the electronic survey participated in an interview with a member of the ACEs Collaborative Working Group. Across PHUs, there was variation with respect to the degree and level of engagement in ACEs programming. At the lower level of engagement, some health units articulated an "awareness" of the importance of addressing ACEs yet confirmed that specific initiatives or strategic plans were not yet locally implemented. More commonly, many health units identified internal programming to prevent ACEs (e.g., prevention of family violence through promotion of sensitive parenting, focus on attachment) or corresponding health effects (e.g., programs to address substance use, mental health). It is important to note that the majority of these initiatives were grounded in prenatal/reproductive health, Healthy Growth and Development or HBHC programming, or through sexual health services. Many participants considered their general maternal and child health public health work to be addressing ACEs, however acknowledged the language had changed. Multiple programs reported existed before ACEs terminology became more mainstream. Three health units identified that the use of the HBHC universal postpartum screen created an opportunity to identify children at-risk for ACEs. Less commonly, public health units described threading ACEs content through multiple public health programs. Finally, 11 participants explicitly discussed their involvement in multi-sectoral initiatives to prevent or respond to ACEs and citing these community partnerships as the key strength.

Community Partnerships

Community partnerships were the most commonly reported area of strength for PHUs doing work related to ACEs. Partnerships with other agencies in the community such as family and children services, resource centres, child and adolescent mental health agencies, were critical to the success of many programs addressing childhood adversity. Respondents described public health as having a role in training community partners in various parenting curriculums as well as their own staff internally. Some PHUs described a strong level of co-facilitation and partnership with community stakeholders for example sitting on community tables, engaging in communities of practice and coalitions. Among participating health units, two agencies identified that the prevention, identification, and response to ACEs had been identified as a community level priority and where support for these initiatives was received from their senior public health leadership.

Approximately half of the PHUs spoke to the importance of multi-sectoral partnerships collaborating to develop and implement community-level approaches to the prevention and response to ACEs. This was the most common "strength" identified across all responses. Given the breadth of work required to prevent, identify, or respond to ACEs with individuals across the lifespan, collaborations between public health and other community organizations providing services and supports to children, adults, or families were identified as necessary. Within contexts of scarce resources and a recognition that many organizations serve similar populations who have experienced ACEs (or have children at-risk for ACEs), it was identified by several participants that a community-level plan or response to ACEs is critical. When speaking to the strengths of community partnerships, comments shared included statements like, "[this health unit] can do cool things because of these partnerships" or "we know that this is not something we can do alone" or "we are all talking the same language." Examples of multi-sectoral initiatives that were implemented across organizations or at the community levels included: consistent use of screening tools, joint training on ACEs, co-facilitation of parenting programs (e.g., Circle of Security, Nobody's Perfect) or healthy relationship programs for students/young adults (e.g., Healthy Relationships +). A full list of the programs, where respondents identified that ACEs-related content had been integrated, is provided in Table 9. Working in multi-sectoral partnerships was also identified as a strategy that provides opportunities for increasing community level awareness about ACEs, planning across sectors, joint training, developing, and implementing common frameworks/approaches to care/services in all agencies, sharing resources to implement and deliver programming. At many of these planning tables, it was noted that public health brings expertise in epidemiology and evaluation.

> ***Exemplar Public Health Unit:*** "Our health unit has very strong connections with community partners. These partners have accepted ACEs as a priority in our community and begun to work towards community action in this area. Through the local coalition we've been able to create more interest in this area in our community. For example, the United Way has made ACEs one of their priority areas. We also have strengths related to measurement and surveillance. Our community felt it was important to collect local data to support decision-making, Public Health took the lead to develop and pilot a local data collection tool. We also have local content expertise. With support from our Director, we provided time for staff to develop a high level of expertise in this area. We are now looked to as the local content experts in this topic area."

It was interesting to note that as part of the conversation on addressing ACEs, several PHUs reported initiatives to ensure that services or programs were trauma-informed. One health unit described an innovative long-term community approach to providing trauma-informed care: "[In our community, there is a] "no wrong door policy." Whatever agency a client comes to first, the client will receive the support they need and not have to re-tell their story." Other respondents spoke to the importance of providing "trauma-informed" training for all staff, for example by encouraging public health staff to complete the "Brain Story" certification.[45]

Table 6. Integration of ACEs content into Existing Programs

Program Name	# of Health Units that referenced program
Triple P	2
HBHC (including references to NCAST, Promoting Maternal Mental Health)	4
Early Years	5
Substance use programming	2
Canadian Prenatal Nutrition Program	1
Nobody's Perfect	1
Circle of Security	2
Parenting Programs (no specific program mentioned)	1
Services through Social Determinants of Health Public Health Nurse/Family Health	1
School Health Team	1
Healthy Relationships programs	1
Youth mental health	1
Health unit wide integration into all programming	1

Facilitators to Addressing ACES

At the organizational or PHU level, there were a number of factors that were identified as contributing to the implementation of a range of strategies to increase staff awareness about ACEs as well as the development of programming to support individuals or populations who had experienced ACEs. A common trend across this dataset is the identification of a number of discrete "factors" influencing

responses to ACEs across the health units, but no identifiable trends in factors that serve as common "facilitators" to ACEs programming across a large number of health units. There was also little evidence that PHUs have comprehensive plans informed by the adoption of multiple strategies to promote programming to address ACEs. Within this context, the most common "facilitator" of promoting ACEs programming within PHUs was the provision of ACEs training to staff, including public health nurses (and especially those working in HBHC), a factor identified though by just four of the responding health units. A list of the factors that served as facilitators, as well as the number of PHUs that identified this factor, is summarized in Table 7.

In addition, respondents reported strengths specific to their agency such as senior management support for this topic, internal collaboration across teams and departments and in some cases integrating ACEs concepts into strategic planning and other guiding documents. Other strengths were population health assessment capacity, community engagement efforts and reduced barriers for clients to access public health programs.

Table 7. Public Health Unit Factors/Strategies Identified as Facilitators to Addressing ACEs

Factor	Endorsed by # of Health Units
Flexibility to adapt programming to meet needs of local populations	1
ACEs content woven throughout Healthy Growth & Development programming	1
ACEs integrated into all (prenatal/parenting) programming for all populations (universal approach)	1
Targeted program to specifically address ACEs	1
Providing ACEs training to staff/nurses	4
Identification of ACEs champion	1
Use of epidemiology unit/surveillance data to inform planning	3
Identification/development of programs/services focused specifically on an ACE or health effect associated with ACEs	1
Staff Training on IPV	1
Staff Training on trauma-and violence-informed care	1

Barriers to Addressing ACEs

Of the participating PHUs, 21 identified issues (1-5 issues/health unit) related to addressing ACEs that they perceived were not being well addressed in their local community. There was tremendous variation in the areas where they expressed their efforts could be strengthened. Strengthening responses to identify and respond to ACEs were the most common issues that arose, including identifying consistent community-level approaches for early identification and response. Several PHUs specified that they could improve their foci or responses to the prevention of specific ACEs, measuring or addressing the health effects associated with ACEs, or raising awareness about the connection between ACEs and short and long-term health, social, and education outcomes.

Table 8. Issues perceived as not being well addressed within communities

Issue	# Health Units
Awareness of ACEs & connection to health, social, education outcomes	
• Internal to health unit	2
• Community level	3
Prevention of ACEs (individual types of trauma)	
• Trauma	2
• Intergenerational trauma	1
• Parental separation	1
• Violence prevention (general)	1
• Prevention of emotional abuse, physical abuse, neglect (or child maltreatment)	2
• Prevention of sexual abuse	1
• Prevention of intimate partner violence (including child exposure to IPV)	3
• Prevention of structural violence	1
Health Effects Associated with ACEs	
• Adolescent pregnancy	1
• Mental health	6
• Substance use	3
• Strategies/tools to measure outcomes	1

Issue	# Health Units
Environments Contributing to Toxic Stress	
• Poverty	2
• High ACEs environments	1
Identification and Responses to ACEs	
• Identification and screening	1
• Strategies to promote responsive parenting	1
• Interventions to respond to ACEs	6
• How to apply social determinants of health/population health approach to prevention of ACEs	6
• Use of consistent approaches at community level	5

Respondents were also able to identify key challenges at the community and health unit levels that served as barriers to addressing ACEs. In several health units, the lack of a strategic direction to address ACEs or a lack of a formal network to facilitate this work hampered efforts to initiate early planning and implementation. Respondents also spoke about some of the challenges inherent to doing this work. Several of the conversations focused on the most appropriate strategies for identifying populations to develop programming for and the benefits of targeted versus universal approaches to identification and response.

Other common barriers to addressing ACEs included a lack of available resources, specifically human resources or capacity within the health unit to develop ACEs-specific programming. Generally, it was identified too that no additional time was allocated to ACEs programming and there was often a lack of time within existing program structures to develop ACEs planning. This was particularly evident within smaller health units, yet interestingly, it was also some smaller health units that spoke about leveraging and engaging in multi-sectoral responses to the issue.

Important Issues Related to Addressing ACEs

When asked about issues related to addressing ACEs locally, PHUs most commonly reported that the lack of evidence-based interventions was their biggest barrier (n=17). Respondents reported the need for more guidance to address ACEs related to mental health, substance use, violence, abuse, neglect, and parental separation. Respondents also stated the need for interventions that address less commonly considered potential ACEs, such as racism, poverty, food insecurity and housing. Two respondents also expressed the need for more action to address intergenerational ACEs.

Some key informants expressed concern about the lack of awareness about ACEs from partners and the public and a lack of common language used to describe ACEs principles. Some also spoke to the need for

a more coordinated response across teams and divisions within their public health unit. Lastly, one participant also discussed how existing stigma related to ACEs in their communities may be preventing clear and open discussions on this topic.

ACEs in Strategic Planning or Accountability Documents

Priority directions focused on the primary or secondary prevention of ACEs were not explicitly incorporated into any one PHU's strategic plan or accountability documents. However, several identified that strategic objectives related to promoting child and youth well-being, supporting families and communities to provide safe and secure environments for children, integrating health equity into policies, planning, or services, addressing the social determinants of health, or promoting mental health (including the prevention of substance use) were perceived to be indirectly related to addressing ACEs within their communities. It was noted that when strategic or service plans identify health equity or mental health as strategic priorities, then this provides a foundation for moving work on ACEs forward within the health unit and community. An intent to address ACEs in future program plans (e.g., for Healthy Growth and Development teams), was identified by at least four PHUs.

Focusing on the promotion of children's healthy growth and development, preventing conditions that contribute to toxic stress, and addressing health outcomes associated with experiences of trauma and violence, particularly among individuals, communities or populations determined to be most vulnerable, appeared to be "ingrained in the values" of the work of all PHUs. While specific overarching frameworks to prevent or explicitly identify and respond to individuals with ACES were not identified, it was evident that the majority of PHUs were able to identify initiatives or program interventions, most often nested within HBHC, School Health, or Sexual Health programming, geared to address ACEs, or as one respondent indicated, "we know that indirectly our programming does support ACEs."

Discussion

In 2019, PHUs in Ontario were at various stages of actively addressing ACEs by leading or contributing to a wide range of activities such as training staff internally, collaborating with community partners, and collecting surveillance data on ACEs and ACE-related health outcomes. Over 200 activities, programs, and initiatives were reported by PHUs. The breadth of the activities reported was diverse and encompassed activities that were intended to directly impact ACEs, as well as those that indirectly impacted ACEs being run by various PHU programs (e.g., School Health, Sexual Health, and Chronic Disease Prevention). In this report, activities were categorized by the topic of consideration or program standard in the OPHS. While many PHUs were in early stages of planning strategies to address ACEs, there was an overall understanding of the importance of public health's role in preventing and mitigating ACEs.

There was ranging interpretation of what was meant by a "program to address ACEs" which resulted in variation in the programs and activities reported. Some public health units took a broad view of impacting ACEs and some focused on only activities addressing priority populations, or that addressed multiple ACEs (e.g., implementation of the Nurse-Family Partnership home visitation program). For example, a few PHUs were focused on violence prevention as their main ACEs interventions. Multiple health units reported some core public health program standards such as healthy sexuality and smoking cessation programs to impact ACEs indirectly. There was also variation in understanding the context of ACEs across the province, and how ACE-related programming would work in a public health setting. The language surrounding ACEs has changed over time (e.g., toxic stress, infant mental health etc.), changed in the literature, and changed in stakeholder understanding. Many public health professionals have been doing this work throughout their long careers, however there is acknowledgment that the language has changed. Programs may have existed before ACEs terminology became more mainstream, and therefore may not be interpreted as designed specifically to address ACEs. However, research suggests that programs with the intention to impact the same risk factors as ACEs can still be effective at preventing or mitigating ACEs. Furthermore, although our survey only asked about the 10 original ACEs which were measured in the Felitti study (1998), the definition of ACEs is continually evolving and includes multiple forms of adversity such as poverty, racism, and community violence.[2,18]

There were 24 activities reported that were created with the intention to address ACEs. Two health units reported staff training using the Brain Story Certification 30-hour course from Alberta Family Wellness.[45] This course is extremely comprehensive, however very long and time-intensive. Providing public health staff with opportunities to further understand the importance of building resilience through quality relationships and reducing adversity may be a key first step to creating an ACEs-aware organization. An example of an exemplary PHU on ACEs work was WDGPH, who is a main partner of the Wellington-Dufferin Community Resilience Coalition (formerly the ACEs Coalition), a community partnership between multiple sectors including public health, children services, and the justice system.[14] Part of the role of public health in the Coalition was to collect data in the region to understand the burden of ACEs and ACE-related harms in the region. This is the first PHU that has completed and

analyzed data from an ACE survey; one other health unit had also started the process to begin local data collection pre-pandemic. To complement work happening in the community, public health has a role in surveillance and to develop indicators not only to measure the burden of ACEs in their local community but also to understand the effectiveness of programs and interventions implemented by the community. There are opportunities to collaborate across Ontario to share programming successes, lessons learned, and innovations from PHUs that have more developed strategic plans, frameworks, and programs with those at the planning stage.

One of the key findings from this environmental scan was the importance of not only discussing ACEs but also discussing resilience. By including resilience in the discussion, it changes the framing from a deficit approach to a strengths-based approach. Parenting programs and interventions were the most reported activity that may not have been directly intended as addressing ACEs, as they are thought of today, but that are highly relevant to preventing them. Previous studies have shown building resilience in children is more effective than reducing the continuously heightened level of cortisol in children exposed to ACEs.[21] Meaning, it may be more important to build relationships and resilience in children than removing the adversity. Therefore, the discussion on ACEs and how to address them should never be without a discussion of resilience. Public health programming around positive parenting and secure attachment provides a good theoretical framework for resilience building.

Finally, very few programs were reported that focused or engaged with Indigenous partners, however Indigenous populations were identified by multiple public health units as a priority population for targeting public health interventions. Indigenous youth have a higher rate of ACEs, which may be due to intergenerational trauma and colonization.[46] Collaborating with Indigenous communities to determine their priorities and culturally appropriate interventions is recommended, and has been done in some communities across Canada.[23,47]

Future Considerations

Based on responses from the participants of this study across Ontario, the ACEs Collaborative Working Group developed some key considerations for the directions of how public health units can address ACEs in Ontario and the support they would like to receive, including:

- **Provincial guidance**: Mentioning ACEs in the OPHS as its own topic of consideration under the Healthy Growth and Development and Chronic Disease Prevention guidelines would allow public health units to allocate resources to this topic area including having a specific staff member with ACEs in their portfolio. It also indicates and promotes the importance of collaboration on this topic with community partners and stakeholders.

- **Improved access to data at a local public health unit level:** One of the main functions of public health is to collect and analyze epidemiologic data to aid communities to understand the burden of illness in their region. Therefore, a key consideration is for public health units to develop a plan of collecting ACEs-related data. Using a standardized ACEs survey, PHUs can gather data

similar to what was done in Wellington-Dufferin-Guelph to ensure consistency across the province and provide data for future planning and decision-making.

- **Identifying evidence on best practices for topics such as promoting sensitive parenting and building resilience**: There is a need for research and practice-based evidence in complex programming such as parenting and building resilience. Partnering with academic researchers to help align objectives and evaluate on-going programming, particularly of programs based on protective factors such as healthy relationships and resilience.

- **Training public health unit staff on ACEs, resilience, and trauma-and violence-informed care:** Ensure all existing and new staff in PHUs are aware of ACEs and those providing direct to client services complete training on trauma-and violence-informed care.

- **Continued collaboration and knowledge exchange between public health units:** PHUs should develop a community of practice or collaborative working groups to continue sharing and collaborating on public health work related to ACEs. This will also reduce duplication of efforts and improve equity among public health units with fewer resources.

- **Community education, public awareness and advocacy on ACEs and promoting resiliency**: Knowledge translation activities with community agencies and external stakeholders to get the multi-sectoral buy-in for successful implementation of initiatives.

Public health units can consider making changes to programming and using a comprehensive approach that involves programming and prioritizing activities in each of these categories. Although public health plays an important role in addressing ACEs, the reach and impact of programming will be amplified by creating an ACEs-aware community. Public health could take an active role in educating and supporting training for community partners in trauma-and violence-informed care practices, brain science and the importance of preventing and mitigating ACEs. Communities need to be on the same page in their understanding and interpretation of ACEs in public health practice. An important next step will be to determine the most appropriate training for public health and community partners on trauma-informed practice, and effective ACE-related interventions.

Strengths and Limitations

This environmental scan had many strengths. Ninety percent of PHUs responded to the electronic survey and 95% of those health units participated in a key informant interview. Using a mixed methods approach provided rich data on the breadth of work being conducted in Ontario, but also on how PHUs have experienced doing this work in terms of challenges, barriers, and opportunities that may be addressed in the future. The discussion of next steps was based on a PHO literature review on intervention to impact ACEs, this environmental scan, and consensus among the members of the ACEs Collaborative Working Group based on the best available evidence.[23] However, the ACEs Collaborative Working Group understands that evidence in the area of ACEs is evolving quickly as many jurisdictions have prioritized this area of public health research.

There were several limitations to this study. The research question for our environmental scan was purposefully broad to elicit a large scope of how Ontario PHUs were addressing ACEs. However, some health units had difficulty completing the survey, unsure what constituted "addressing ACEs" and as such this report may be missing other programs being implemented that may be indirectly addressing ACEs, but not reported by the health units. When asked to indicate how their activity impacts ACEs (direct, indirect or no impact), respondents' answers were based on the participants' perspective, which may not have been the primary outcome of the activity. However, it was emphasized in the survey instructions to discuss responses with multiple public health practitioners, especially those in program areas outside Healthy Growth and Development or Family Health. The IAP2 Spectrum was also interpreted in multiple ways, often when including parents as partners. For example, parents were often chosen as 'empowered' even though the definition is "decision making given to the stakeholders".[43] A few additional questions in the key informant interviews were too broad to get accurately synthesized data therefore the responses from those questions were incorporated, where possible, in other themes that had identified and not analyzed separately.

Conclusion

In 2019, PHUs across Ontario were engaged in a wide variety of activities to address ACEs, and were at varying stages of incorporating ACEs and resilience building into their programming. The range of activities included internal activities within the health unit such as incorporating ACEs into strategic frameworks or the development of working groups within individual PHUs, to external partnerships with community-led coalitions where public health plays an important role. Public health units are responsive to local needs and in multiple cases were collaborating with a variety of partners. Multiple PHUs reported innovative modifications to pre-existing programs to incorporate ACEs. This approach was often described as the result of having no provincial strategy on ACEs nor allocated funds to develop new programming. Overall, this report describes the potential role for public health, and also informs the barriers and facilitators that exist for public health practice to address ACEs.

References

1. Ports KA, Ford DC, Merrick MT, Guinn AS. Chapter 2 - ACEs: definitions, measurement, and prevalence. In: Asmundson GJG, Afifi TO, editors. Adverse childhood experiences. London: Academic Press; 2020. p. 17-34. Available from: https://www.sciencedirect.com/science/article/pii/B9780128160657000021
2. Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, Edwards V, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. Am J Prev Med. 1998;14(4):245-58. Available from: https://doi.org/10.1016/s0749-3797(98)00017-8
3. Dube SR, Anda RF, Felitti VJ, Croft JB, Edwards VJ, Giles WH. Growing up with parental alcohol abuse: exposure to childhood abuse, neglect, and household dysfunction. Child Abuse Negl. 2001;25(12):1627-40. Available from: https://doi.org/10.1016/s0145-2134(01)00293-9
4. Centers for Disease Control and Prevention. Preventing Adverse Childhood Experiences (ACEs): leveraging the best available evidence [Internet]. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2019 [cited 2022 May 26]. Available from: https://www.cdc.gov/violenceprevention/pdf/preventingACES.pdf
5. National Scientific Council on the Developing Child. Excessive stress disrupts the architecture of the developing brain [Internet]. Camridge, MA: President and Fellows of Harvard College; 2014 [cited 2019 Dec 17]. Available from: https://developingchild.harvard.edu/resources/wp3/
6. Merrick MT, Ford DC, Ports KA, Guinn AS, Chen J, Klevens J, et al. Vital signs: estimated proportion of adult health problems attributable to adverse childhood experiences and implications for prevention - 25 states, 2015-2017. MMWR Morb Mortal Wkly Rep. 2019;68(44):999-1005. Available from: https://doi.org/10.15585/mmwr.mm6844e1
7. Lomanowska AM, Boivin M, Hertzman C, Fleming AS. Parenting begets parenting: a neurobiological perspective on early adversity and the transmission of parenting styles across generations. Neuroscience. 2017;342:120-39. Available from: https://doi.org/10.1016/j.neuroscience.2015.09.029
8. Bellis MA, Hughes K, Ford K, Hardcastle KA, Sharp CA, Wood S, et al. Adverse childhood experiences and sources of childhood resilience: a retrospective study of their combined relationships with child health and educational attendance. BMC Public Health. 2018;18(1):792. Available from: https://doi.org/10.1186/s12889-018-5699-8
9. Bellis MA, Hughes K, Leckenby N, Perkins C, Lowey H. National household survey of adverse childhood experiences and their relationship with resilience to health-harming behaviors in England. BMC Med. 2014;12:72. Available from: https://doi.org/10.1186/1741-7015-12-72
10. Bellis MA AK, Hughes K, Ford K, Bishop J, Paranjothy S. Welsh Adverse Childhood Experiences (ACE) study: adverse childhood experiences and their impact on health-harming behaviours in the Welsh adult population [Internet]. Liverpool, UK: Centre for Public Health, 2015 [cited 2022 Jun 29]. Available from: https://www.suicideinfo.ca/resource/welsh-adverse-childhood-experiences-ace-study-adverse-childhood-experiences-and-their-impact-on-health-harming-behaviours-in-the-welsh-adult-population/
11. Merrick MT, Ford DC, Ports KA, Guinn AS. Prevalence of adverse childhood experiences from the 2011-2014 behavioral risk factor surveillance system in 23 states. JAMA Pediatr. 2018;172(11):1038-44. Available from: https://doi.org/10.1001/jamapediatrics.2018.2537
12. Tonmyr L, Lacroix J, Herbert M. Chapter 10 - The public health issue of ACEs in Canada. In: Asmundson GJG, Afifi TO, editors. Adverse childhood experiences. London: Academic Press;

2020. p. 185-207. Available from: https://www.sciencedirect.com/science/article/pii/B9780128160657000100
13. McDonald S, Tough S. The Alberta adverse childhood experiences survey [Internet]. Edmonton, AB: Alberta Centre for Child, Family and Community Research; 2014 [cited 2022 Jun 29]. Available from: https://policywise.com/wp-content/uploads/resources/2016/07/345_ALBERTA_ADVERSE_CHILDHOOD_EXPERIENCES_SURVEY_FINAL_JULY_2014.pdf
14. Community Resilience Coalition of Guelph & Wellington [Internet]. Guelph, ON: Community Resilience Coalition of Guelph & Wellington; 2022 [cited 2022 Jun 9]. Available from: https://communityresilience.ca/
15. Walsh D, McCartney G, Smith M, Armour G. Relationship between childhood socioeconomic position and adverse childhood experiences (ACEs): a systematic review. J Epidemiol Commun Health. 2019;73(12):1087-93. Available from: https://doi.org/10.1136/jech-2019-212738
16. Afifi TO. Chapter 3: considerations for expanding the definition of ACEs. In: Asmundson GJG, Afifi TO, editors. Adverse childhood experiences. London: Academic Press; 2020. p. 35-44. Available from: https://www.sciencedirect.com/science/article/pii/B9780128160657000033
17. Ellis WR, Dietz WH. A new framework for addressing adverse childhood and community experiences: the building community resilience model. Acad Pediatr. 2017;17(7S):S86-S93. Available from: https://doi.org/10.1016/j.acap.2016.12.011
18. Pinderhughes H, Davis R, Williams M. Adverse community experiences and resilience: a framework for addressing and preventing community trauma [Internet]. Oakland CA: Prevention Institute; 2015 [cited 2022 Jun 29]. Available from: https://www.preventioninstitute.org/publications/adverse-community-experiences-and-resilience-framework-addressing-and-preventing
19. California Health and Human Services Agency. California surgeon general Dr. Nadine Burke Harris launches statewide listening tour [Internet]. Sacramento, CA: State of California; 2019 [cited 2019 Dec 13]. Available from: https://www.chhs.ca.gov/blog/2019/04/02/california-surgeon-general-dr-nadine-burke-harris-launches-statewide-listening-tour/
20. Couper S, Mackie P. “Polishing the diamonds”: addressing adverse childhood experiences in Scotland [Internet]. Glasgow: Scottish Public Health Network; 2016 [cited 2022 Jun 29]. Available from: https://www.scotphn.net/wp-content/uploads/2016/06/2016_05_26-ACE-Report-Final-AF.pdf
21. Di Lemma LCG, Davies AR, Ford K, Hughes K, Homolova L, Gray B, et al. Responding to adverse childhood experiences: an evidence review of interventions to prevent and address adversity across the life course [Internet]. Cardiff: Public Health Wales; Bangor University; 2019 [cited 2022 Jun 29]. Available from: https://research.bangor.ac.uk/portal/files/23440237/RespondingToACEs_PHW2019_english.pdf
22. Asmundson G, Afifi TO. Adverse childhood experiences : using evidence to advance research, practice, policy, and prevention. San Diego, CA: Academic Press; 2020.
23. Ontario Agency for Health Protection and Promotion (Public Health Ontario), Carsley S, Oei T. Interventions to prevent and mitigate the impact of adverse childhood experiences (ACEs) in Canada: a literature review [Internet]. Toronto, ON: Queen’s Printer for Ontario; 2020 [cited 2022 Jun 29]. Available from: https://www.publichealthontario.ca/-/media/documents/a/2020/adverse-childhood-experiences-report.pdf
24. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Negative impacts of community-based public health measures on children, adolescents and families during the COVID-19 pandemic: update [Internet]. Toronto, ON: Queen’s Printer for Ontario; 2021 [cited 2022 May 30]. Available from: https://www.publichealthontario.ca/-

/media/documents/ncov/he/2021/01/rapid-review-neg-impacts-children-youth-families.pdf?la=en.

25. Korczak DJ, Madigan S, Vaillancourt T. Data divide—disentangling the role of the COVID-19 pandemic on child mental health and well-being. JAMA Pediatr. 2022 Apr 25 [Epub ahead of print]. Available from: https://doi.org/10.1001/jamapediatrics.2022.0791
26. Lange SJ, Kompaniyets L, Freedman DS, Kraus E, Porter R, Blanck H, et al. Longitudinal trends in body mass index before and during the COVID-19 pandemic among persons aged 2–19 years — United States, 2018–2020. MMWR Morb Mortal Wkly Rep. 2021;70:1278-83. Available from: http://dx.doi.org/10.15585/mmwr.mm7037a3
27. Gadermann AC, Thomson KC, Richardson CG, Gagné M, McAuliffe C, Hirani S, et al. Examining the impacts of the COVID-19 pandemic on family mental health in Canada: findings from a national cross-sectional study. BMJ Open. 2021;11:e042871. Available from: https://doi.org/10.1136/bmjopen-2020-042871
28. Sanders LM. Is COVID-19 an adverse childhood experience (ACE): implications for screening for primary care. J Pediatr. 2020;222:4-6. Available from: https://doi.org/10.1016/j.jpeds.2020.05.064
29. Bryant DJ, Oo M, Damian AJ. The rise of adverse childhood experiences during the COVID-19 pandemic. Psychol Trauma. 2020;12(S1):S193-S194. Available from: https://doi.org/10.1037/tra0000711
30. Ontario Agency for Health Protection and Promotion (Public Health Ontario). COVID-19 in Ontario – a focus on neighbourhood diversity, February 26, 2020 to December 13, 2021 [Internet] Toronto: ON; Queen's Printer for Ontario; 2022 [cited 2022 May 16] Available from: https://www.publichealthontario.ca/-/media/documents/ncov/epi/2020/06/covid-19-epi-diversity.htm
31. Vasquez Reyes M. The disproportional impact of COVID-19 on African Americans. Health Hum Rights. 2020;22(2):299-307. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7762908/pdf/hhr-22-02-299.pdf
32. Centers for Disease Control and Prevention. Violence prevention: risk and protective factors [Internet] Atlanta, GA: Centers for Disease Control and Prevention; 2021 [cited 2022 May 16] Available from: https://www.cdc.gov/violenceprevention/aces/riskprotectivefactors.html
33. Ontario. Ministry of Health and Long Term Care. Protecting and promoting the health of Ontarians: Ontario public health standards: requirements for programs, services, and accountability [Internet]. Toronto, ON: Queen's Printer for Ontario; 2018 [cited 2022 Jun 29]. Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Ontario_Public_Health_Standards_2018_en.pdf
34. Ontario. Ministry of Health and Long-Term Care. Healthy growth and development guideline, 2018 [Internet]. Toronto, ON: Queen's Printer for Ontario; 2018 [cited 2020 Jan 27]. Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Healthy_Growth_and_Development_Guideline_2018.pdf
35. Ontario. Ministry of Health and Long-Term Care. Mental health promotion guideline, 2018 [Internet]. Toronto, ON: Queen's Printer for Ontario; 2018 [cited 2020 Jan 27]. Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Mental_Health_Promotion_Guideline_2018.pdf
36. Ontario. Ministry of Health and Long-Term Care. Injury prevention guideline, 2018 [Internet]. Toronto, ON: Queen's Printer for Ontario; 2018 [cited 2020 Jan 27]. Available from:

http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Injury_Prevention_Guideline_2018_en.pdf

37. Public Health Agency of Canada. Canada: a pathfinding country - Canada's road map to end violence against children [Internet]. Ottawa, ON: Government of Canada; 2019 [modified 2019 Jul 15; cited 2019 Dec 12]. Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/road-map-end-violence-against-children.html
38. Taylor G. The Chief Public Health Officer's report on the state of public health in Canada 2016: a focus on family violence in Canada [Internet]. Ottawa, ON: Her Majesty the Queen in Right of Canada; 2016 [cited 2022 Jun 29]. Available from: https://www.canada.ca/content/dam/canada/public-health/migration/publications/department-ministere/state-public-health-family-violence-2016-etat-sante-publique-violence-familiale/alt/pdf-eng.pdf
39. Conroy S BM, Savage L. Family violence in Canada: a statistical profile, 2018 [Internet]. Ottawa, ON: Statistics Canada; 2019 [cited 2020 Jan 27]. Available from: https://www150.statcan.gc.ca/n1/en/pub/85-002-x/2019001/article/00018-eng.pdf?st=RKocqqmF
40. Government of Canada. Opportunity for all – Canada's first poverty reduction strategy [Internet]. Ottawa, ON: Government of Canada; 2018 [cited 2020 Jan 27]. Available from: https://www.canada.ca/en/employment-social-development/programs/poverty-reduction/reports/strategy
41. Clinton J K-BA, Carter C. Supporting Ontario's youngest minds: investing in the mental health of children under 6 [Internet]. Ottawa, ON: Knowledge Institute on Child and Youth Mental Health and Addictions; 2014 [cited 2019 Dec 13]; Available from: https://www.cymh.ca/Modules/ResourceHub/?id=AF13E20F-F63B-40B8-A2E4-84C98FF479DF
42. Centre for Addiction and Mental Health; Ontario Agency for Health Protection and Promotion (Public Health Ontario); Toronto Public Health. Connecting the dots: how Ontario public health units are addressing child and youth mental health [Internet]. Toronto, ON: Queen's Printer for Ontario; 2013 [cited 2020 Jan 27]. Available from: https://www.publichealthontario.ca/-/media/documents/connecting-dots.pdf?la=en
43. International Association for Public Participation 2 (IAP2). IAP2 spectrum of public participation [Internet]. [Ottawa, ON]: IAP2; 2018 [cited 2019 Jul 17]. Available from: https://cdn.ymaws.com/www.iap2.org/resource/resmgr/pillars/Spectrum_8.5x11_Print.pdf
44. Ontario. Ministry of Health and Long Term Care. Healthy babies healthy children protocol (effective January 1, 2018) [Intenet]. Toronto, ON: Queen's Printer for Ontario; 2018 [cited 2022 Jun 29]. Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/HBHC_Protocol_2018_en.pdf
45. Alberta Family Wellness Initiative. Brain story certification [Internet]. Calgary, AB: Palix Foundation; 2022 [cited 2022 May 10]. Available from: https://www.albertafamilywellness.org/training/
46. Radford A, Toombs E, Zugic K, Boles K, Lund J, Mushquash CJ. Examining Adverse Childhood Experiences (ACEs) within Indigenous populations: a systematic review. J Child Adolesc Trauma. 2021;15(2):401-21. Available from: https://doi.org/10.1007/s40653-021-00393-7
47. Baydala L, Fletcher F, Worrell S, Kajner T, Letendre S, Letendre L, et al. Partnership, knowledge translation, and substance abuse prevention with a First Nations community. Prog Community Health Partnersh. 2014;8(2):145-55. Available from: https://doi.org/10.1353/cpr.2014.0030

Appendix A: Activity Lists

ACEs Specific/Intended

ACEs Surveillance

Activity Name - full name given by HU	Health Unit	Evaluation
ACEs Survey (in Development)	North Bay Parry Sound District Health Unit	N/A
Childhood Experiences Survey (ACEs/ Resilience Survey)	Wellington-Dufferin-Guelph Public Health	N/A
Use of HBHC Screen ACE-Like Data	Niagara Region Public Health	*Missing*

Children’s Aid Society (CAS) Collaborations

Activity Name - full name given by HU	**Health Unit**	**Evaluation**
CAS Collaboration	Peel Public Health	Evaluation in progress
Halton Children's Aid Society & Halton Region Joint Protocol	Halton Region Health Department	General reporting
Joint Protocol between Halton Health Families, Halton Children's Services and Reach Out Centre for Kids (ROCK)	Halton Region Health Department	General reporting

Coalitions and Committees

Activity Name - full name given by HU	**Health Unit**	**Evaluation**
ACEs Coalition of Guelph and Wellington	Wellington-Dufferin-Guelph Public Health	Evaluation in progress
ACEs Intended Impact Statement Working Group	Peterborough Public Health	General reporting
ACEs Working Group	Niagara Region Public Health	*Missing*
ACEs Survey (in Development)	North Bay Parry Sound District Health Unit	N/A
Childhood Experiences Survey (ACEs/ Resilience Survey)	Wellington-Dufferin-Guelph Public Health	N/A
Use of HBHC Screen ACE-Like Data	Niagara Region Public Health	*Missing*

Knowledge Translation and Staff Training

Activity Name - full name given by HU	Health Unit	Evaluation
Article in Physician Newsletter	Niagara Region Public Health	*Missing*
Brain Story Certification	Ottawa Public Health	General reporting
Brain Story Certification	Simcoe Muskoka District Health Unit	General reporting
Brain Story Certification	York Region Public Health	*Missing*
Knowledge Translation of ACEs to Community	North Bay Parry Sound District Health Unit	Evaluation complete
Staff training on ACEs	Niagara Region Public Health	*Missing*
Staff training on ACEs	North Bay Parry Sound District Health Unit	Evaluation complete
Trauma Informed Care- Organizational Practices	Northwestern Health Unit	Evaluation in progress
Trauma Informed Care- Service Provider Practices	Leeds, Grenville and Lanark District Health Unit	*Missing*

Programs (Service Provision)

Activity Name - full name given by HU	Health Unit	Evaluation
Building Resilience CBT Project with Strive Niagara	Niagara Region Public Health	*Missing*
Children in Between	North Bay Parry Sound District Health Unit	*Missing*
Nurse Family Partnership	Niagara Region Public Health	General reporting
Nurse Family Partnership	Toronto Public Health	Evaluation in progress
Nurse Family Partnership	York Region Public Health	Evaluation in progress

Research

Activity Name - full name given by HU	Health Unit	Evaluation
Supporting young mothers for improved maternal outcomes	Thunder Bay District Health Unit	Evaluation in progress

General Child Health and Development

Coalitions and Committees

Activity Name - full name given by HU	Health Unit	Evaluation
Child Health & Development Fathering Committee	Toronto Public Health	General reporting

Programs (Service Provision)

Activity Name - full name given by HU	Health Unit	Evaluation
Developmental and Nutrition Screening Clinics	Toronto Public Health	Evaluation complete
Infant and Toddler Development Program	Peterborough Public Health	General reporting
Phone Lines	Hastings Prince Edward Public Health	General reporting
Phone Lines	Peterborough Public Health	General reporting
Phone Lines	Wellington-Dufferin-Guelph Public Health	General reporting
Phone Lines - Phone counselling	Haliburton, Kawartha, Pine Ridge District Health Unit	Evaluation in progress
Preschool Speech and Language Program in KFL&A and the Infant Hearing Program in Southeast Region	KFL&A Public Health	Evaluation in progress
Student Health Drop-in Service?	Huron County Health Unit	General reporting
School Health Programming	Thunder Bay District Health Unit	Evaluation complete
Strengthening Families for the Future	Northwestern Health Unit	General reporting
Strengthening Families for Parents and Youth	Renfrew County & District Health Unit	Evaluation complete
The Healthy Together Program	KFL&A Public Health	Evaluation complete
Watch Me Grow Clinic	Eastern Ontario Health Unit	General reporting

HBHC/Home visiting

Programs (Service Provision)

Activity Name - full name given by HU	Health Unit	Evaluation
Homeless At-Risk Prenatal (HARP)	Toronto Public Health	Evaluation complete
Healthy Babies, Healthy Children (HBHC)	Haliburton, Kawartha, Pine Ridge District Health Unit	General reporting
Healthy Babies, Healthy Children (HBHC)	Niagara Region Public Health	General reporting
Healthy Babies, Healthy Children (HBHC)	Peel Public Health	General reporting
Healthy Babies, Healthy Children (HBHC)	Region of Waterloo, Public Health	General reporting
Healthy Babies, Healthy Children (HBHC)	Southwestern Public Health Windsor-Essex County Health Unit	General reporting
Healthy Babies, Healthy Children (HBHC)	York Region Public Health	General reporting
NCAST - PCI Scales	Leeds, Grenville and Lanark District Health Unit	General reporting

Nutrition/Breastfeeding

Community Coalitions

Activity Name - full name given by HU	Health Unit	Evaluation
Halton BFI	Halton Region Health Department	General reporting

Philosophy

Activity Name - full name given by HU	Health Unit	Evaluation
Health & Well-Being Philosophy (formerly Every BODY Matters, Weight Bias Reduction Strategy)	Huron County Health Unit	Evaluation in progress

Programs (Service Provision)

Activity Name - full name given by HU	Health Unit	Evaluation
Baby Feeding Drop-In/Ask A Nurse	Hastings Prince Edward Public Health	General reporting
Breastfeeding Classes	Halton Region Health Department	General reporting
Breastfeeding Clinics/Support	York Region Public Health	*Missing*
Breastfeeding Clinics/Support	Hastings Prince Edward Public Health	General reporting
Breastfeeding Clinics/Support	Northwestern Health Unit	General reporting
Breast Friends	York Region Public Health	*Missing*
Community Kitchens	Algoma Public Health	No evaluation
Families in the Kitchen	North Bay Parry Sound District Health Unit	General reporting
Halton Breastfeeding Connection	Halton Region Health Department	General reporting
Healthy eating and nutrition and education sessions	Haliburton, Kawartha, Pine Ridge District Health Unit	General reporting

Training

Activity Name - full name given by HU	Health Unit	Evaluation
BFI 20 hour course	Hastings Prince Edward Public Health	General reporting

Other (e.g. poverty reduction, etc.)

Miscellaneous

Activity Name - full name given by HU	Health Unit	Evaluation
Chronic Disease Injury Prevention (CDIP) redesign	Lambton Public Health	No evaluation
EarlyON Liaison	Toronto Public Health	General reporting
Health Equity Project	Region of Waterloo, Public Health	No evaluation

Policy Advocacy and Development

Activity Name - full name given by HU	Health Unit	Evaluation
Child Friendly Policy Project	Toronto Public Health	General reporting
Poverty and Health	Peterborough Public Health	Evaluation complete
Policy work to address the SDOH	North Bay Parry Sound District Health Unit	General reporting

Programs (Service Provision)

Activity Name - full name given by HU	Health Unit	Evaluation
Bridges out of Poverty and CIRCLEs	Wellington-Dufferin-Guelph Public Health	Evaluation complete
CIRCLEs	Public Health Sudbury & Districts	General reporting
Destination Prosperity	Huron County Health Unit	N/A
Immunization for priority populations	Ottawa Public Health	General reporting
Investing in Families team	Toronto Public Health	Evaluation in progress
Neighbourhood Groups	Halton Region Health Department	General reporting
No family Doctor clinic	Haliburton, Kawartha, Pine Ridge District Health Unit	General reporting
Oral Health clinics	Haliburton, Kawartha, Pine Ridge District Health Unit	General reporting
Oral Health Screening and Case Management	York Region Public Health	General reporting
Referrals to community services and supports	Northwestern Health Unit	N/A
Sleep Program: Sleep and Baby Cues Session	Region of Waterloo, Public Health	Evaluation in progress

Training and Knowledge Translation

Activity Name - full name given by HU	Health Unit	Evaluation
Education to Community Partners, HCP, Service Providers, Teachers, School Boards, etc.	Northwestern Health Unit	General reporting
Health Equity Work	Northwestern Health Unit	*Missing*
Reflective Practice	Northwestern Health Unit	Evaluation complete

Parenting

Online Parenting Support (Service Provision)

Activity Name - full name given by HU	Health Unit	Evaluation
HaltonParents	Halton Region Health Department	General reporting
Parenting in Ottawa (PiO) resources	Ottawa Public Health	General reporting
Online prenatal education and preparation for parenting	Wellington-Dufferin-Guelph Public Health	General reporting
Welcome to Parenting	Toronto Public Health	Evaluation complete

Parenting Campaigns

Activity Name - full name given by HU	Health Unit	Evaluation
Dufferin Basics	Wellington-Dufferin-Guelph Public Health	Evaluation in progress
Parenting in KFL&A	KFL&A Public Health	Evaluation in progress

Parenting Frameworks

Activity Name - full name given by HU	Health Unit	Evaluation
Positive Parenting Conceptual Model	KFL&A Public Health	Evaluation complete
Positive Parenting Framework Development	North Bay Parry Sound District Health Unit	N/A
Positive Parenting Framework Development	Wellington-Dufferin-Guelph Public Health	N/A

Programs (Service Provision)

Activity Name - full name given by HU	Health Unit	Evaluation
Baby's Own	Haliburton, Kawartha, Pine Ridge District Health Unit	Evaluation in progress
Beyond the Basics	Southwestern Public Health	General reporting
Bounce Back & Thrive! Sustainability	York Region Public Health	Evaluation complete
Children See - Children Learn	Northwestern Health Unit	General reporting
Circle of Security	Huron County Health Unit	*Missing*
Circle of Security	Thunder Bay District Health Unit	General reporting
Come Understand Parenting	Wellington-Dufferin-Guelph Public Health	General reporting
First Five Years Parenting Program	Chatham-Kent Public Health	No evaluation
Living and Learning with Baby	Toronto Public Health	No evaluation
Make the Connection	Porcupine Health Unit	No evaluation
Make the Connection	Northwestern Health Unit	General reporting
Make the Connection	Toronto Public Health	Evaluation complete
Me My Baby Our World	Porcupine Health Unit	Evaluation complete
Newcomers Group	Wellington-Dufferin-Guelph Public Health	Evaluation in progress
Nobody's Perfect	Halton Region Health Department	General reporting
Nobody's Perfect	Southwestern Public Health	General reporting
Nobody's Perfect	Renfrew County & District Health Unit	No evaluation
Nobody's Perfect	Timiskaming Health Unit	No evaluation
Nobody’s Perfect	Toronto Public Health	Evaluation complete
Nobody’s Perfect – Fathers	Toronto Public Health	Evaluation complete
Nobody’s Perfect – Fathers	Southwestern Public Health	General reporting
Nurturing Neighborhoods	Wellington-Dufferin-Guelph Public Health	Evaluation in progress
Parenting With Love	Halton Region Health Department	Evaluation in progress
Peer Parenting Support Program	Ottawa Public Health	TBD
Positive Parenting Workshops	Toronto Public Health	No evaluation
Triple P	Eastern Ontario Health Unit	General reporting
Triple P	Halton Region Health Department	General reporting
Triple P	Leeds, Grenville and Lanark District Health Unit	General reporting
Triple P	Niagara Region Public Health	General reporting
Triple P	North Bay Parry Sound District Health Unit	General reporting
Triple P	Simcoe Muskoka District Health Unit	General reporting

Activity Name - full name given by HU	Health Unit	Evaluation
Triple P	Southwestern Public Health	General reporting
Triple P Transitions	Public Health Sudbury & Districts	General reporting
You & Your Baby	Algoma Public Health	No evaluation
Young Parents Connection	Algoma Public Health	No evaluation

Postpartum Mood Disorder/Mental Health/ Stress Reduction

Coalitions and Committees

Activity Name - full name given by HU	Health Unit	Evaluation
Be Well – Workplace Wellness Committee	Huron County Health Unit	Staff survey
Community Safety and Well-Being Initiative	Halton Region Health Department	N/A
Early Years Mental Health Committee	Halton Region Health Department	Evaluation in progress
Halton Perinatal Mental Health Coalition	Halton Region Health Department	*Missing*
Infant Mental Health Advisory Community Collective Impact Project	Niagara Region Public Health	*Missing*
Perinatal Adjustment Coalition	KFL&A Public Health	No evaluation
School Board Mental Health Strategy Advisory and Steering Committees	Halton Region Health Department	Evaluation complete

Mental Health Frameworks

Activity Name - full name given by HU	Health Unit	Evaluation
Mental Health Promotion Framework	KFL&A Public Health	Evaluation in progress
Mental Health Promotion strategy	Niagara Region Public Health	*Missing*
Social Ecological Approach (SEA) Michael Ungar	Huron County Health Unit	Don't know

Programs (Service Provision)

Activity Name - full name given by HU	Health Unit	Evaluation
Adjustment to Parenthood (A2P)	Halton Region Health Department	General reporting
Amish and Mennonite Mental Health Support Groups	Huron County Health Unit	No evaluation
Can You Feel It?	Simcoe Muskoka District Health Unit	Evaluation complete
Care by Text	KFL&A Public Health	Evaluation in progress

Activity Name - full name given by HU	Health Unit	Evaluation
Collaborative PMD group	Durham Region Health Department	Evaluation in progress
Feelings After Birth & Postpartum Mood Disorder Support Group	Wellington-Dufferin-Guelph Public Health	Evaluation complete
Healthy Transitions	Halton Region Health Department	Evaluation complete
Healthy Transitions	Ottawa Public Health	Evaluation complete
Healthy Transitions	Huron County Health Unit	General reporting
Stress Lessons	Huron County Health Unit	General reporting
Stress Lessons	Wellington-Dufferin-Guelph Public Health	Evaluation in progress
Kids Have Stress Too!	Renfrew County & District Health Unit	No evaluation
Kids Have Stress Too/Stress Lessons	Simcoe Muskoka District Health Unit	Evaluation in progress
Mental Health Awareness Workshops (MHAW) for Elementary Student Leaders	York Region Public Health	General reporting
MHAW for Secondary Student Leaders	York Region Public Health	General reporting
Mental Health Treatment Services	Niagara Region Public Health	*Missing*
Parent/Teacher/Staff Mental Health Awareness Presentation Stigma Reduction Display in Secondary Schools	York Region Public Health	General reporting
Perinatal Adjustment Program	Toronto Public Health	General reporting
Perinatal Mood Disorder Screening	Porcupine Health Unit	Evaluation complete
Peel Postpartum Mood Disorders Program	Peel Public Health	Evaluation complete
Postpartum Mood Disorder Support Groups	Peel Public Health	General reporting
Postpartum Mood Disorder Support Groups	Southwestern Public Health	General reporting
Transition to Parenting	York Region Public Health	Evaluation complete

Prenatal Education and Canada Prenatal Nutrition Program

Programs (Service Provision)

Activity Name - full name given by HU	Health Unit	Evaluation
All Babies Count (ABC)	York Region Public Health	Evaluation complete
Canada Prenatal Nutrition Program (various names)	Algoma Public Health	General reporting
Canada Prenatal Nutrition Program (various names)	Brant County Health Unit	General reporting
Canada Prenatal Nutrition Program (various names)	Chatham-Kent Public Health	General reporting
Canada Prenatal Nutrition Program (various names)	Eastern Ontario Health Unit	General reporting
Canada Prenatal Nutrition Program (various names)	Halton Region Health Department	General reporting

Activity Name - full name given by HU	Health Unit	Evaluation
Canada Prenatal Nutrition Program (various names)	Hastings Prince Edward Public Health	General reporting
Canada Prenatal Nutrition Program (various names)	North Bay Parry Sound District Health Unit	General reporting
Canada Prenatal Nutrition Program (various names)	Peterborough Public Health	General reporting
Canada Prenatal Nutrition Program (various names)	Simcoe Muskoka District Health Unit	General reporting
Canada Prenatal Nutrition Program (various names)	Wellington-Dufferin-Guelph Public Health	General reporting
Canada Prenatal Nutrition Program	Porcupine Health Unit	Evaluation in progress
Halton Online Prenatal Program	Halton Region Health Department	General reporting
Online Prenatal Program	York Region Public Health	Evaluation complete
Preconception Health	Northwestern Health Unit	General reporting
Prenatal Education (various names)	Eastern Ontario Health Unit	General reporting
Prenatal Education (various names)	Haliburton, Kawartha, Pine Ridge District Health Unit	General reporting
Prenatal Education (various names)	North Bay Parry Sound District Health Unit	General reporting
Prenatal Education (various names)	Northwestern Health Unit	General reporting
Prenatal Education (various names)	Peterborough Public Health	General reporting
Prenatal Education (various names)	Simcoe Muskoka District Health Unit	General reporting
Prenatal Education (various names)	Wellington-Dufferin-Guelph Public Health	General reporting

Sexual Health

Coalitions and Committees

Activity Name - full name given by HU	Health Unit	Evaluation
Sexual Health Youth Strategy	Region of Waterloo, Public Health	Not available at time of report

Programs (Service Provision)

Activity Name - full name given by HU	Health Unit	Evaluation
Sexual Health Clinic Services	Haliburton, Kawartha, Pine Ridge District Health Unit	General reporting
Sexual Health Clinic Services	Hastings Prince Edward Public Health	General reporting
Sexual Health Clinic Services	Huron County Health Unit	General reporting
Sexual Health Clinic Services	Ottawa Public Health	General reporting

Activity Name - full name given by HU	Health Unit	Evaluation
Sexual Health Clinic Services	Region of Waterloo, Public Health	Not available at time of report
Sexual Health Community Clinic - PILOT	Hastings Prince Edward Public Health	Evaluation in progress

Substance Use

Campaigns and Communications

Activity Name - full name given by HU	Health Unit	Evaluation
Alcohol Prevention program	Haldimand-Norfolk Health Unit	No evaluation
Ottawa Prom Safety Campaign #OTTDoesProm	Ottawa Public Health	No evaluation
Prevention of Substance Use in Pregnancy	Durham Region Health Department	Evaluation in progress

Coalitions and Committees

Activity Name - full name given by HU	Health Unit	Evaluation
Champlain Maternal Newborn Regional Program (CMNRP) Substance Use Workgroups	Ottawa Public Health	General reporting
Halton FASD Collaborative Pregnancy and Preconception Action Group	Halton Region Health Department	N/A
Harm Reduction Action Team	Haldimand-Norfolk Health Unit	Don't know
Peterborough Drug Strategy	Peterborough Public Health	General reporting

Programs (Service Provision)

Activity Name - full name given by HU		
Challenges, Beliefs, and Changes Program	Peterborough Public Health	Evaluation complete
Clinical Information at the NBPSDHU	North Bay Parry Sound District Health Unit	General reporting
Harm Reduction	Ottawa Public Health	General reporting
Naloxone Distribution and harm reduction programming	Haliburton, Kawartha, Pine Ridge District Health Unit	General reporting
Substance Use Prevention	Halton Region Health Department	TBD

Tobacco

Policy Development

Activity Name - full name given by HU	Health Unit	Evaluation
Hastings County Smoke Free Policy for Multi-Unit Dwellings	Hastings Prince Edward Public Health	Evaluation complete

Programs (Service Provision)

Activity Name - full name given by HU	Health Unit	Evaluation
Choose to be Smoke Free	Peterborough Public Health	General reporting
We Can Quit Clinics	Hastings Prince Edward Public Health	General reporting

Violence (IPV, dating violence, bullying)

Programs (Service Provision)

Activity Name - full name given by HU	Health Unit	Evaluation
Healthy Relationships	Huron County Health Unit	General reporting
Intimate Partner Violence (IPV) Policy and Procedure	Halton Region Health Department	N/A
Playground Activity Leaders in Schools (P.A.L.S.)	Halton Region Health Department	Evaluation complete
Routine Universal Comprehensive Screening (RUCS)	Peel Public Health	N/A
The Fourth R	Huron County Health Unit, Northwestern Health Unit	General reporting
The Fourth R	Thunder Bay District Health Unit	Evaluation in progress
Woman Abuse Screening	Porcupine Health Unit	No evaluation

Training and Knowledge Translation

Activity Name - full name given by HU	Health Unit	Evaluation
Creating a Culture of Non-Violence	Ottawa Public Health	General reporting

Coalitions and Committees

Activity Name - full name given by HU	Health Unit	Evaluation
Domestic Assault Review Team (DART) of Waterloo Region and DART Health Engagement Task Force	Region of Waterloo, Public Health	General reporting
Cochrane North Family Violence Network	Porcupine Health Unit	General reporting
K/RR Violence Against Women Coordinating Committee	Northwestern Health Unit	General reporting
Timmins Family Violence Interagency Action Committee	Porcupine Health Unit	General reporting

Appendix B: Supplementary Tables

Supplementary Table 1b: In which Standards do you see ACEs work fitting into the OPHS? (Check all that apply)

OPHS Program Standards	Percent
Population Health Assessment	83%
Health Equity	94%
Effective Public Health Practice	71%
Emergency Management	11%
Chronic Disease Prevention and Well-being	83%
Food Safety	11%
Healthy Environments	29%
Healthy Growth and Development	100%
Immunization	23%
Infectious and Communicable Disease Prevention and Control	37%
Safe Water	9%
School Health	89%
Substance Use and Injury Prevention	91%

Supplementary Table 2b: Reported activities by topic area (n=213)

Topic of Consideration	Count	Percent
Parenting	46	21.2
Mental Health/PMD/Stress Reduction	31	14.6
ACEs specific/intended	24	11.3
Prenatal Education including CPNP	22	10.2

Topic of Consideration	Count	Percent
Other, e.g. poverty reduction	20	9.3
General child health and development	14	6.5
Violence (IPV, dating violence, bullying)	13	6.1
Substance use and alcohol	12	5.6
Nutrition/Breastfeeding	12	5.6
HBHC/Home visiting	9	4.2
Sexual health	7	3.2
Tobacco	3	1.4

Supplementary Table 3b: Programs and activities reported by type (N=213)

Category	Count	Percent
Program delivered by the PHU	139	65.2
External collaboration/program delivered in partnership with another organization	25	11.7
Knowledge exchange or capacity building	13	6.1
Policy or advocacy-related	12	5.6
Planning	12	5.6
Communications (campaigns, online social media)	8	3.8
Surveillance or population health assessment	3	1.4
Research	1	0.5

Public Health Ontario
480 University Avenue, Suite 300
Toronto, Ontario
M5G 1V2
647.260.7100
communications@oahpp.ca
publichealthontario.ca

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