

Public Health: Chronic Disease Prevention

1.0 Summary

Public health works to prevent and protect individuals from becoming sick by promoting healthy lifestyle behaviours and preventing the spread of diseases. One of public health's functions is to prevent chronic diseases. Chronic diseases are those that persist for a long time and generally cannot be prevented by vaccines or cured by medication. Major chronic diseases include cardiovascular and respiratory diseases, cancer and diabetes.

In Ontario, the number of people living with these chronic diseases has been on the rise. For example, the prevalence, that is, the number of cases of a disease in a population at a given time, increased from 2003 to 2013 in the following four health conditions:

- diabetes increased by 65%;
- cancer by 44%;
- high blood pressure by 42%; and
- chronic obstructive pulmonary disease (a type of respiratory disease) by 17%.

People living with chronic diseases may have a poorer quality of life than the general population.

Research from the Institute for Clinical Evaluative Sciences, a not-for-profit research institute that conducts research on Ontario's health-related data, shows that chronic diseases place a significant cost burden on the health system. According to its 2016

report, four modifiable risk factors that contribute to chronic diseases—physical inactivity, smoking, unhealthy eating and excessive alcohol consumption—cost Ontario almost \$90 billion in health-care costs between 2004 and 2013.

Fortunately, most chronic diseases are preventable or their onset can be delayed by limiting these modifiable risk factors. Ontario has focused on and has had some success in reducing smoking—between 2003 and 2014, the smoking rate decreased by just under five percentage points from 22.3% to 17.4%. And, according to Cancer Care Ontario, the decrease and stabilization of the incidence rate—the number of new cases of a disease that develop in a given period of time—of small cell lung cancer, a condition almost entirely caused by tobacco use, may be the result of the historical decline in tobacco use in Ontario.

However, Ontario has not placed a similar focus on addressing the other modifiable risk factors to assist in reducing the burden of chronic diseases—even though research has noted that physical inactivity contributed more to health-care costs than smoking.

There are opportunities for the Ministry of Health and Long-Term Care (Ministry), Public Health Ontario (a provincial agency tasked with providing scientific and technical advice to government on public health issues) and the 36 public health units (organizations accountable to the

Province and mostly funded by the Ministry that have a mandate to plan and deliver programs and services to reduce the burden of chronic diseases) to work better together to address the key modifiable risk factors of chronic diseases.

Similarly, the Ministry can work better with other provincial ministries—such as education, environment and transportation—to develop public policies that would take into account their effect on the health of the population, which would further promote a better quality of health for Ontarians.

We found that significant inefficiencies exist across the public health units because there are limited formal systems in place to co-ordinate their activities and share best practices, with many public health units separately conducting research and obtaining needed data.

As well, the Ministry does not fully measure public health units' performance in chronic disease prevention. Specifically, the Ministry does not measure the public health units' performance and activities in the areas of physical activity, healthy diet and healthy weight, and has not set any measurable goals to improve overall population health. Consequently, it cannot ensure that public health units and all the other recipients of provincial funding on chronic disease prevention are making progress in helping Ontarians live longer and healthier lives.

In addition, following a number of previous Ministry-commissioned studies that identified the need to improve the public health service delivery model, the Minister of Health and Long-Term Care appointed an Expert Panel on Public Health to provide advice on the optimal structural, organizational, and governance changes needed for public health as part of transforming the health-care system. The Ministry released the Expert Panel's report—*Public Health Within an Integrated Health System*—in July 2017 that included a number of recommendations, including one on reducing the 36 public health units to 14 regional public health entities to better deliver public health services. The Ministry was undertaking consultation on the

Expert Panel's recommendations when we completed our audit.

Our other significant concerns are as follows:

- **Ontario has no overarching chronic disease prevention strategy.** The Province has no overarching policy framework on chronic disease prevention to guide overall program planning and development. Such a framework would outline the goals and objectives of chronic disease prevention programming, provincial targets that focus on health outcomes, and the roles and responsibilities of the various parties involved in planning, delivering and evaluating public health programs designed for preventing chronic diseases. In contrast, British Columbia has established long-term goals and targets to drive system-wide action and improve health outcomes. As well, it has a policy framework for using evidence to design interventions that address the major risk factors for chronic diseases. As will be noted, British Columbians already generally live longer than Ontarians.
- **Some public health units faced challenges in accessing schools to provide health promotion programs.** Because changing health behaviours early, as opposed to later in life, is more effective and has a more long-lasting impact, public health practitioners often target children as a priority population to deliver healthy living programs. While the public health units have a mandate to work with schools, the lack of co-ordination at the provincial level to help deliver public-health programs and services at the local level in schools has limited the public health units' ability to influence healthy living behaviours in young children. As a result, public health units spend resources to build relationships and persuade schools to participate in effective public health programs instead of on actual service delivery.
- **No consistent provincial leadership to co-ordinate public health units' updating of evidence, sharing of best practices, and**

development of monitoring systems on health promotion programs. Because no provincial body actively updates evidence, shares best practices, and develops surveillance systems on health promotion programs on a regular basis to help the public health units design programs to meet their local needs, public health units have undertaken research and developed local solutions independently. We noted significant duplication of effort and instances of variation in the depth of the research and type of information gathered. For example, two-thirds of public health units reported having independently reviewed evidence and best practice on school-based programs that promote healthy weights, healthy eating or physical activity. As well, public health units tend to work individually to develop systems to collect data, and the type of data collected differed among these public health units, resulting in data not being comparable.

- **Not all public health units have access to necessary epidemiological data.** Having complete and accurate data is important because the public health units are required to assess and monitor population health and evaluate the effectiveness of their programs under the Ontario Public Health Standards. We found that public health units have not all been able to access complete and current epidemiological data to study the patterns, causes and effects of health and disease within populations. For example, Ontario does not have enough data on children and Indigenous populations to meet local needs for population health assessment and surveillance, program planning and evaluation. In addition, no central body is responsible for collecting and disseminating this data to public health units, resulting in some public health units not having access to such information. As well, some units may not be using current data to plan programs because

Statistics Canada's Canadian Community Health Survey does not provide adequate sample sizes for local analysis within these public health units' areas. In his 2015 report, the Chief Medical Officer of Health also highlighted the importance of local data and recommended that the Province undertake a provincial population health survey that collects data at the local levels.

- **Public health units individually indicated that they have limited capacity to perform epidemiological analysis to help guide and monitor their programs.** Even in instances where the data is available, some public health units indicated that they do not have the required time and/or staff expertise to review and analyze epidemiological data. The Ministry did not establish specific standards on how much epidemiological work the public health units have to undertake for chronic disease prevention, or assess whether certain epidemiological analyses should be conducted centrally. As a result, there is no assurance that public health units that lack sufficient epidemiologist resources have conducted the proper analysis of population data to help guide and monitor their programming.
- **At some public health units, program evaluations were not conducted to determine whether their programs had a positive impact.** We noted cases where some public health units did not evaluate new programs, or measure the programs' effectiveness, as required by the Ministry. For example, three of the four health units we visited have been delivering school-based programs without having conducted any evaluation of these programs. We also found that public health units have a different understanding of what constitutes an evaluation, and apply different levels of rigour on their own evaluations, because the Ministry has not specified a particular evaluation method. Furthermore, one study conducted in 2015 by public health units

themselves has indicated that most health units do not have the necessary capacity to evaluate programs. Without these evaluations, public health units cannot demonstrate that their programs have been effective in improving the health outcome of their population. As well, public health units did not always define and measure whether they have achieved the objectives of their chronic disease prevention programs. For example, in one of the four public health units we visited, we noted that it had an objective of reducing the consumption of sugar-sweetened beverages in its geographic area but had not measured the change in consumption of these beverages.

- **Current provincial performance indicators do not fully measure public health units' performance in preventing chronic diseases and promoting health.** There are no indicators to measure public health units' achievement toward reducing key risk factors, such as physical inactivity, unhealthy eating and unhealthy weights. As well, public health staff noted that results in a number of performance indicators, such as the rate of youth that have not smoked a whole cigarette and the rate of adults that consume alcohol above the Low-Risk Drinking Guidelines, cannot be solely attributed to the effort of the public health units. These indicators involve both the work of public health units and others, such as schools and community-based organizations. As a result, using these performance indicators, the Ministry could not sufficiently measure whether public health units were effective in providing chronic disease prevention programs and services in their local community.
- **Ministry has started to address funding equity but full implementation of the needs-based funding model may take up to 10 years.** The Ministry developed a new funding model to identify an appropriate share for each public health unit following a recommendation in 2013 by the Funding Review

Working Group. In 2015, the Ministry started applying this new model, but has not set a target date for when the public health units will reach their modelled share of funding. The Ministry estimated it could take 10 years to ensure public health funding is more equitably allocated to all health units, assuming a 2% growth rate and that future incremental funds are targeted to units that do not yet receive modelled share of funding. As a result, some public health units may continue to experience funding inequities.

This report contains 11 recommendations, consisting of 22 actions, to address our audit findings.

Overall Conclusion

The Ministry of Health and Long-Term Care (Ministry) does not have the needed processes and systems in place to ensure that public health units plan and deliver chronic disease prevention programs and services in a cost-effective manner. As well, the Ministry has not sufficiently supported co-ordination among the provincial ministries or public health units. Such co-ordination would help public health units plan and deliver programs more efficiently.

The Ministry also has not ensured whether Public Health Ontario provides the necessary and sufficient support to the public health units with scientific and technical advice in the areas of population health assessment, epidemiology and program planning and evaluation.

Further, the Ministry does not guide public health units on a methodology to evaluate their programs. The public health units need a methodology to evaluate, measure and report on whether their chronic disease prevention and health promotion programs have been effective in reducing the cost burden on the health-care system and improving population health outcomes.

OVERALL MINISTRY RESPONSE

The Ministry of Health and Long-Term Care (Ministry) welcomes the recommendations contained in the Auditor General's report and the report's emphasis on the prevention of chronic diseases. Chronic diseases carry a significant burden of illness in Ontario and around the world, and can often be prevented or reduced by addressing modifiable risk factors such as unhealthy eating, physical inactivity, tobacco use and harmful use of alcohol.

Ontario has made progress in the area of chronic disease prevention. For instance:

- The Province's Smoke-Free Ontario Strategy, which aims to achieve the lowest smoking rates in Canada, has greatly reduced tobacco use and lowered health risks to non-smokers in Ontario over the past 11 years. As a result of concerted efforts, the Province has decreased the smoking rate from 20.9% in 2005 to 17.4% in 2014.
- The Healthy Kids Strategy, a cross-government initiative launched in 2013, focuses on key interventions to support healthy weights among children and youth through increased physical activity and healthy eating. This strategy includes new provincial legislation requiring the posting of calories on menu boards at regulated food premises, and implementation of the Healthy Kids Community Challenge in 45 communities across Ontario.
- The Ministry and public health units are actively involved in promoting the Low-Risk Alcohol Drinking Guidelines to support a culture of moderation and provide consistent messaging about informed alcohol choices and responsible use. Over 65 stakeholders have been consulted to inform the development of a provincial Alcohol Strategy.
- The Ministry has embarked on a process to modernize the current Ontario Public Health Standards with an enhanced focus

on outcomes, accountability, evaluation, transparency and collaboration. Within the modernized standards, which are expected to come into effect January 1, 2018, chronic disease prevention programming will be responsive to local needs, informed by evidence, and supported by an integrated health system.

Building on these achievements, the Ministry is currently developing an integrated provincial strategy to further increase adoption of healthy living behaviours and reduce risk factors for chronic diseases across the lifespan, including unhealthy eating, physical inactivity, harmful use of alcohol, and tobacco use, while recognizing the impact of social determinants of health. These audit recommendations will contribute significantly to the development of the provincial strategy, which aims to promote health, prevent disease and help all Ontarians live long, healthy lives.

2.0 Background

2.1 Overview of Public Health

Public health focuses on the health and well-being of the whole population through the promotion and protection of health and the prevention of illness. Public health involves a wide variety of activities such as:

- inspecting food premises and tobacco retailers;
- providing immunizations to children and adults;
- investigating cases and outbreaks of infectious diseases to prevent further spread;
- providing support to new parents for healthy babies;
- collecting and analyzing epidemiological data to assess the health of the population; and
- promoting healthy living programs to prevent chronic diseases, such as cardiovascular disease and cancer.

In Ontario, the *Health Protection and Promotion Act* (Act) is the primary legislation that governs the delivery of public health programs and services in the province. The purpose of the Act is to provide for the organization and delivery of public health programs and services, the prevention of the spread of disease, and the promotion and protection of the health of the people of Ontario. Other legislation that plays a role in public health includes the *Immunization of School Pupils Act* and *Smoke-Free Ontario Act*.

2.1.1 The Public Health System in Ontario

The public health system in Ontario is an extensive network of government, non-government, and community organizations operating at the local, provincial and federal levels. Non-government organizations include not-for-profit groups that advocate for awareness, prevention and treatment of various chronic diseases. Community organizations include groups like community centres that deliver nutrition programs to improve food skills and knowledge.

At the provincial level, the key players involved in public health are the Ministry of Health and Long-Term Care (Ministry) and Public Health Ontario. The Ministry co-funds 36 public health units across the province with municipalities to directly provide public health services to Ontarians. While the Ministry is the main funder of the public health units, public health units also receive funds from other sources, including the Ministry of Children and Youth Services, Health Canada and community organizations.

Ministry of Health and Long-Term Care

The Population and Public Health Division (Division) of the Ministry is responsible for developing provincial public health initiatives and strategies, and funding and monitoring public health programs delivered by public health units. It also works to ensure that appropriate actions are taken to respond to urgent and emergency situations.

The Province's Chief Medical Officer of Health reports directly to the Deputy Minister of Health and Long-Term Care, not through the Division. The Chief Medical Officer's responsibilities include the following:

- provides clinical and public-health practice leadership and advice to the public-health sector;
- identifies and assesses risk and opportunities for improvement in public health in Ontario;
- communicates directly with the public with respect to public health, such as on the risk of the Zika virus to Ontarians; and
- reports annually to the Legislature on the provincial state of public health.

Public Health Ontario

The Ontario Agency for Health Protection and Promotion (also known as Public Health Ontario) began operation in 2008 as a scientific and technical organization mostly funded by the Ministry. The organization was established through the *Ontario Agency for Health Protection and Promotion Act, 2007* as a result of recommendations after the 2003 Ontario outbreak of Severe Acute Respiratory Syndrome (SARS).

Public Health Ontario provides scientific and technical advice and support activities, such as population health assessment, public health research, surveillance, epidemiology, and program planning and evaluation to protect and improve the health of Ontarians. It generates the public health science and research expertise in communicable diseases, environmental health, and chronic diseases and injuries, and conducts surveillance and outbreak investigations. It also operates the province's 11 public health laboratories, which offer such services as clinical and environmental testing, bioterrorism testing, and evaluation of new laboratory technologies and methodologies. Some of these functions rested with the Ministry prior to the establishment of Public Health Ontario.

Public Health Units

Ontario's 36 public health units provide their communities with a variety of services and resources, which differ to meet local needs. Services and resources may include keeping a file on children's school immunization records, providing safe food handling certification, beach water warnings for high bacteria levels, online physical and mental health information—including preventing chronic diseases—and issuing extreme heat and cold alerts.

Each public health unit serves a population of various sizes and profile, ranging from, for example, about 34,000 people in Timiskaming to almost three million people in Toronto. **Appendix 1** shows the boundaries of the 36 public health units in Ontario and the estimated population within each unit.

Each of the 36 public health units is governed by a local Board of Health. The Boards of Health are accountable for meeting provincial standards under the *Health Protection and Promotion Act* (Act), and each is administered and led by a Medical Officer of Health. In each region, each Medical Officer of Health reports public health and other matters to the local Board of Health.

Governance models vary considerably across the 36 public health units. The Act does not prescribe a standard governance model that would apply to all Boards of Health; municipalities in Ontario follow different organizational structures, and the Boards of Health across the province were established at different times throughout history. But all Boards of Health are municipally controlled to varying degrees—some are autonomous boards with members appointed by municipalities and others are part of the structure of the municipal or regional government. Depending on the governance model, board members could be provincially appointed, municipally appointed, elected municipal or regional councillors, or the general public.

Each public health unit has a Public Health Funding and Accountability Agreement with the Ministry, which sets out the terms and conditions governing its funding. The agreement has no

expiry date and is amended annually to include new requirements and performance targets. The Ontario Public Health Standards (explained in **Section 2.1.2**) set the minimum requirements for the delivery of public health programs and services and the Act provides the authority to implement the standards, including outlining the roles and responsibilities between the public health units and the Ministry.

2.1.2 Ontario Public Health Standards

The Ministry develops guidelines for delivering public health programs and services as required by the Act. Every Board of Health is required to comply with these guidelines, called the Ontario Public Health Standards. These 14 standards, which were originally developed in 2008 and last revised in March 2017, are included in a 70-page document. The standards set out the minimum requirements that the public health units must adhere to in delivering programs and services.

Altogether, the 14 standards include one foundational standard that covers population health assessment, surveillance, research and sharing of information, and program evaluations. The other 13 standards fall within the following five broad categories:

- chronic diseases and injuries (such as chronic disease prevention and prevention of injuries and substance misuse);
- family health (such as reproductive health and child health);
- emergency preparedness;
- environmental health (such as food safety and safe water); and
- infectious diseases (such as infectious disease prevention and prevention of tuberculosis, rabies and vaccine-preventable diseases).

Appendix 2 shows a summary of the 14 standards, their goals and some examples of the requirements on the public health units for each standard.

2.1.3 Funding Structure of Public Health Programs and Services

Under the Act, provincial funding toward public health is not mandatory and is instead provided as per Ministry policy. However, the Act requires obligated municipalities (any upper-tier municipality or single-tier municipality that is situated, in whole or in part, in the area that comprises the public health unit) to pay the expenses incurred by or on behalf of the public health units to deliver the health programs and services set out in the Act, the regulations and the guidelines.

Even so, the Ministry funds public health units' programs either partially or fully, depending on the program. It funds:

- up to 75% of mandatory programs. The municipalities fund the remaining 25% or more if the actual expense is beyond the approved amount; and
- 100% of priority provincial programs, such as the Smoke-Free Ontario Strategy, the Infectious Disease Control Initiative, the Diabetes Prevention Program, Medical Officer of Health/Associate Medical Officer of Health Compensation Initiative, the Northern Fruit and Vegetable Program, Healthy Smiles Ontario Program, and Harm Reduction Programs.

Some public health units offer only provincially mandated programs, but others can provide additional public health services that are funded by their municipalities. For example, the City of Toronto funds a dental program for low-income seniors and adults, as well as for children and youth who are not eligible for other dental programs.

On an annual basis, the Ministry updates the schedules in the Public Health Funding and Accountability Agreement with each Board of Health that governs the public health unit to reflect updated funding allocations, new policies and guidelines, new reporting requirements, and updated performance indicators, baselines and targets.

On average, over the last 10 years, the Ministry has spent about \$1 billion annually on public health-related programs and services, or about 2% of the overall provincial health expenditures. This spending is allocated to many parties, including public health units, not-for-profit organizations and Public Health Ontario.

2.2 Importance of Promoting Healthy Living and Preventing Chronic Diseases

2.2.1 Chronic Diseases and Their Impact on People and Health-Care Costs

Chronic diseases are those that persist for a long time. They generally cannot be prevented by vaccines or cured by medication. Major chronic diseases include cardiovascular and respiratory diseases, cancer and diabetes. According to Public Health Ontario, chronic diseases accounted for about three-quarters of all deaths in Ontario in 2012, or 68,944 of 90,525 deaths.

People living with chronic diseases may have a poorer quality of life than the general population. For example, people living with diabetes have a higher risk of toes, feet and lower leg amputation, and kidney and eye complications; and many people with cancer have to undergo multiple types of procedures, such as surgery, radiation, and drug therapy, to treat or control the condition.

Chronic diseases have a significant impact on health-care spending. Using data from 2008, the Ministry estimated that major chronic diseases and injuries accounted for about 31% of direct, attributable health-care costs in Ontario. This is a significant cost to focus on given that Ontario's health-care expenditures have been increasing—by about 47% in the last 10 years between 2007/08 and 2016/17 from \$38.1 billion to \$56.0 billion.

Preventing chronic diseases helps reduce the burden on the health-care system and promotes a better quality of life. The Institute for Clinical Evaluative Sciences, which is a not-for-profit

research institute that conducts research on Ontario's health-related data, released in April 2016 an Ontario-based study that looked at the impact of the modifiable risk factors of smoking, alcohol consumption, poor diet, and physical inactivity on health-care expenditure in Ontario. To say that a risk factor is 'modifiable' means that measures can be taken to change them and their effect on a person's health can be prevented and modified through a person's behaviour, such as not smoking, being physically active and eating healthy foods.

The Institute's study indicated that 22% of the Province's spending on health care was attributable to those four modifiable risk factors associated with chronic diseases. The study also found that those risk factors cost Ontario almost \$90 billion in health-care costs, including hospital care, drugs and community care, between 2004 and 2013.

A report on disease prevention released in 2009 by Trust for America's Health, a U.S. non-profit organization that advocates in support of effective policies and resources for public health programs, concluded that money invested today on proven community-based disease prevention programs—specifically those that result in increased levels of physical activity, improved nutrition, and a reduc-

tion in smoking—could save significant funds in future spending. The report found that for every \$1 invested, the return on investment is 6.2 within 10 to 20 years. This return on investment does not include the significant gains that could be achieved in worker productivity, reduced absenteeism at work and school, and enhanced quality of life.

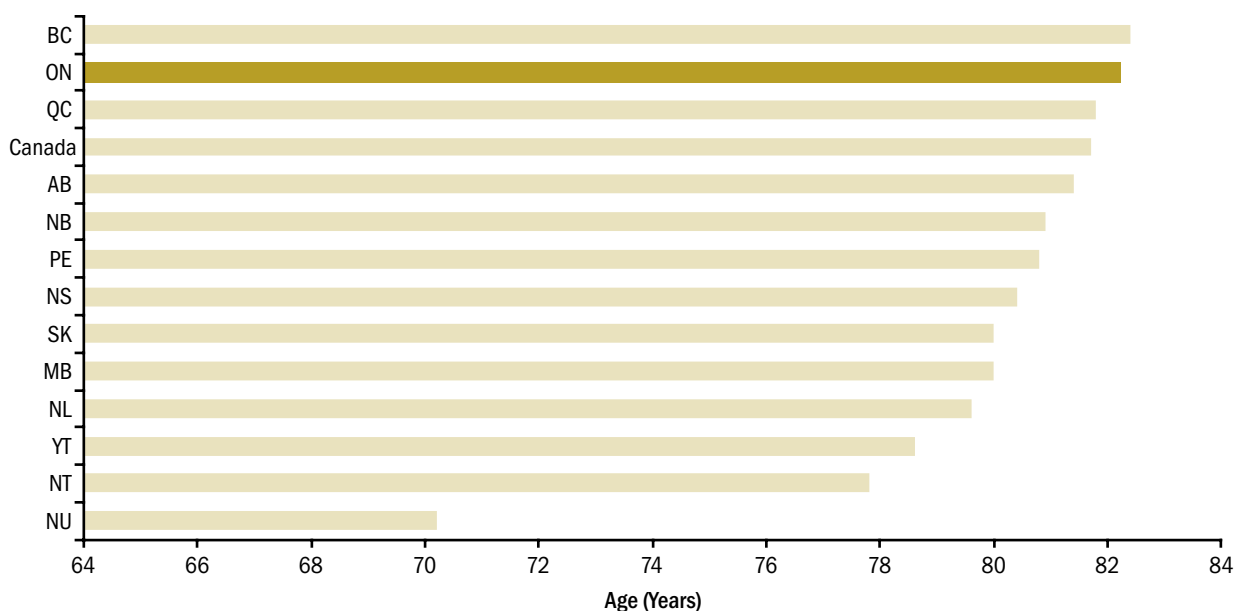
2.2.2 Life Expectancy of Ontarians

The health status of a population is usually measured by life expectancy, health behaviours, self-assessed health, and the prevalence (the number of cases at a given time) and incidence (the number of new cases over a given period of time) of illnesses and diseases.

According to Statistics Canada, the life expectancy calculated for the 2011-2013 three-year period (the most recent data available), for the average Canadian is 81.7 years, with those in British Columbia living the longest, at 82.4 years, and those in the three territories living the shortest, ranging from 70.2 years in Nunavut to 78.6 years in Yukon. Ontarians live the second-longest compared with other provinces and territories, at 82.2 years, as shown in **Figure 1**.

Figure 1: Life Expectancy, Canada, Provinces and Territories, 2011–2013

Source of data: Statistics Canada



2.2.3 Trends of Chronic Diseases and Key Risk Factors in Ontario

The prevalence of diagnosed chronic diseases in Ontario has increased between 2003 and 2013:

- diabetes increased by 65%;
- chronic obstructive pulmonary disease (a type of respiratory disease) increased by 17%;
- high blood pressure (a cause of cardiovascular disease) increased by 42%; and
- cancer increased by 44%.

The number of new cancer cases diagnosed per year in Ontario, which is the incidence rate, has increased since at least 1981 from 29,649 to 85,648 in 2016; and the number of new diabetes cases fluctuated from 66,180 in 2000, peaking in 2006 at 93,950 and subsequently decreased to 72,510 in 2012, which is the most recent data available at the time of our audit.

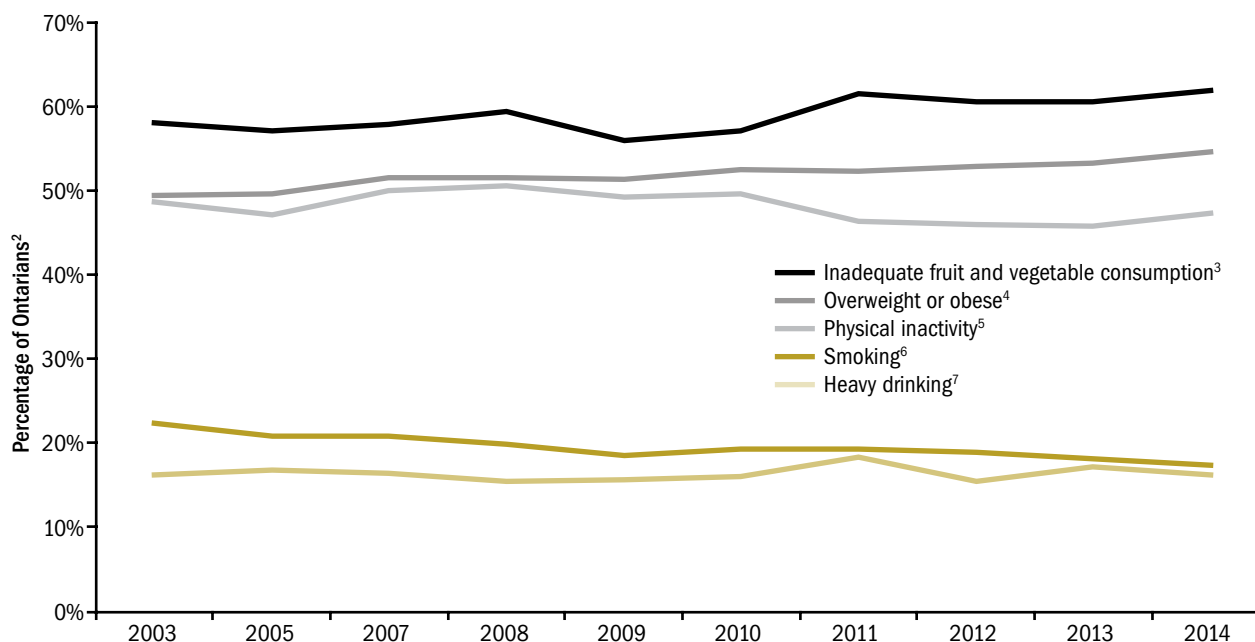
A predominant reason for the spike in prevalence and incidence of chronic diseases is the aging Ontarian population. From 2006 to 2016, the general population in Ontario increased by about 11%. During the same period, the number of Ontarians aged 65 and older increased from 1.65 million to 2.25 million, a 36% increase in the last 10 years. In addition, according to the Ontario Population Projections Update released in spring 2017, the number of seniors aged 65 and over is expected to almost double between 2016 and 2041, with the growth in the share and number of seniors accelerating over the 2016 to 2031 period as the last of the baby boomers turn 65.

Treatment advances have also contributed to more people living longer with—rather than dying early from—chronic diseases.

Figure 2 shows the trends between 2003 and 2014 for the five factors that are contributing to the

Figure 2: Key Health Risk Factor Trends in Ontario, 2003–2014¹

Source of data: Canadian Community Health Survey, Statistics Canada



1. No data available for 2004 and 2006.

2. Ontarians aged 12 and older, except Overweight or Obese aged 18 and older.

3. Consuming fruits and vegetables less than five times per day.

4. Ratio of body weight (in kilograms) to height (in metres) squared is 25 and above.

5. Daily physical activity in leisure time < 1.5 kcal/kg/day.

6. Daily or occasional cigarette smoking.

7. Prior to 2013, heavy drinking was defined as having five or more drinks on one occasion, at least once a month. In 2013, the definition changed to five or more drinks for males and four or more drinks for females.

Figure 3: The Spectrum of Prevention Categories

Prepared by the Office of the Auditor General of Ontario

Level of Prevention	Description	Examples	Primary Responsible Party in Ontario
Primary*	Prevents the onset of disease; involves interventions that are applied before there is any evidence of disease or injury	Smoking cessation, physical fitness, and immunization	36 public health units
Secondary	Detects a disease in its earliest stages, before symptoms appear, and intervenes to slow or stop its progression	Cancer screening and oral glucose tolerance test	Primary-care providers, Cancer Care Ontario
Tertiary	Interventions designed to arrest the progress of an established disease, such as diabetes, cancer, and stroke, and to control its negative consequences	Drug treatment, bariatric surgery (surgery to aid weight loss), and diet	Primary-care providers, hospitals

* Focus of this audit is on primary intervention by public health.

incidence of chronic diseases: inadequate fruit and vegetable consumption; obesity; physical inactivity; heavy drinking; and smoking.

In 2014, a smaller proportion of Ontarians reported smoking and heavy drinking compared with 2003, indicating positive trends. Yet a larger proportion of people reported inadequate fruit and vegetable consumption, and more people were overweight or obese, indicating negative trends. The change in physical activity was negligible during this period.

In 2012, the Institute for Clinical Evaluative Sciences and Public Health Ontario released a report that noted that smoking, unhealthy alcohol consumption, poor diet, physical inactivity and high stress can influence life expectancy and quality of life. Collectively, these five risks reduced life expectancy in Ontario by 7.5 years: 7.9 years for men and 7.1 years for women. By reducing these risks, Ontarians would not only live longer but also increase the number of years they spend in good health—a concept known as ‘increased quality-adjusted life years,’ which considers the quality of life when counting life years, and that the burden of chronic disease risk factors will potentially have a negative impact on quality of life.

2.3 Programs and Services to Promote Healthy Living and Prevent Chronic Diseases

2.3.1 Three Levels of Prevention

Public health programs in Ontario focus on health promotion and primary prevention to reduce disease incidence before symptoms occur. Other partners in the health sector, including primary-care providers or hospitals, would be involved in secondary and tertiary preventive strategies, as shown in **Figure 3**.

2.3.2 Public Health Programs and Services to Promote Healthy Living and Prevent Chronic Diseases

The Ontario Public Health Standards specify that public health units must work with local stakeholders, such as schools and municipal governments, and increase the ability of workplaces and community partners, to provide healthy living and chronic disease prevention programs that address the following six areas:

- healthy eating;
- healthy weights;
- comprehensive tobacco control;
- alcohol use;
- physical activity; and

- exposure to ultraviolet radiation (for example, from tanning beds and over-exposure to sunlight).

Public health units are also required to influence the development of public policies that incorporate health effects, living and working conditions that increase healthy activities and environments, and development of personal skills to support healthy lifestyles. They also are required to conduct analysis of surveillance data, including monitoring of trends over time, emerging trends and priority populations in the above six areas.

Major activities by the public health units on chronic disease prevention include:

- conducting research into effective interventions, approaches, and policies to address chronic disease risk factors, such as investigating the linkage between sugar (including sugar-sweetened beverages) and health for children, youth and adults;
- developing and implementing communication campaigns, such as creating brochures, posters, and online resources (including uploading materials to websites), to raise awareness of various chronic disease risk factors, such as consumption of sugar-sweetened beverages, reducing sedentary time and increasing physical activity, and tobacco-free living;
- working with external stakeholders, such as recreation facilities, municipalities, school boards, and not-for-profit organizations, to deliver workshops and skill-training sessions on smoking cessation, promotion of nutrition, and knowledge and skills on physical activity; and
- promoting comprehensive school health (explained in **Section 4.4.3**) through developing curriculum support materials, working with parents, staff and students to promote a supportive environment for healthy eating, healthy weights, tobacco-free living, alcohol-use prevention, sun safety, and physical activity.

Figure 4 shows examples of healthy living and chronic disease prevention programs and services offered by the 36 public health units in Ontario.

Figure 4: Examples of Programs and Services Delivered by Public Health Units to Prevent Risk Factors Contributing to Chronic Diseases

Prepared by the Office of the Auditor General of Ontario

Key Risk Factors	Examples of Programs or Services Delivered by Public Health Units
Unhealthy eating	<ul style="list-style-type: none"> • Workshops that provide nutrition information (for example, educate students on Canada's Food Guide) or teach food skills • Co-ordination of a student breakfast program
Unhealthy weights	<ul style="list-style-type: none"> • Providing materials to a workplace that is organizing a health fair • A combination of healthy eating and physical activity programs and services
Tobacco use	<ul style="list-style-type: none"> • Cessation clinics that provide counselling and nicotine replacement therapy to smokers • Youth leadership programs to train youth to advocate for tobacco control • Tobacco enforcement inspections to check that retailers have appropriate signage
Alcohol use	<ul style="list-style-type: none"> • Communication campaign to increase awareness of Canada's Low-Risk Alcohol Drinking Guidelines • Workshops in secondary schools to educate students about safe drinking
Physical inactivity	<ul style="list-style-type: none"> • Pedometer lending program • Active transportation planning; for example, assessing road safety for walking to schools • Sedentary behaviours communication campaign; for example, "interrupt your sit"
Ultraviolet radiation (UV) exposure	<ul style="list-style-type: none"> • Work with community partners to develop sun safety policies, help day camps to get accredited in sun safety • Implement shade policy—ensure schools have sufficient shade for students during recess and when they go outside

2.3.3 Funding of Healthy Living and Chronic Disease Prevention Programs

In Ontario, the Ministry spent \$1.2 billion on public health and health promotion programs in 2016/17. **Figure 5** provides a breakdown of funding allocation to the key parties, with public health units receiving about 58% of the funding to deliver Ministry-mandated programs and services.

As noted in **Section 2.2.1**, chronic diseases have been identified as a major contributor to the cost of the health-care system. Public health units are the key delivery agent of Ontario's chronic disease prevention programs and receive Ministry funding for doing so. Public health units independently determine the proportion of their funding they would spend on the various activities under the Ontario Public Health Standards. Overall, Ontario's 36 public health units reported having devoted on average 12% of their full-time equivalent employees to chronic disease prevention in 2016.

Similarly, Public Health Ontario determines the proportion of funding it will spend on various activ-

ities, such as to support public health laboratories, scientific and technical support for chronic diseases and infectious diseases, and other operational areas.

Overall, in 2016/17, Ontario spent about \$192 million, representing 16% of the total public health spending, on preventing chronic diseases. The percentage of public health funding allocated to chronic disease prevention has been consistently at this level in the last 10 years, despite rates of chronic diseases rising as the population ages. **Figure 6** shows the breakdown of this spending.

2.4 Expert Panel on Public Health

The Minister of Health and Long-Term Care appointed an Expert Panel on Public Health in January 2017 to provide advice on the optimal structural, organizational, and governance changes needed for public health as part of transforming the health-care system, including the long-standing issue of realigning the boundaries of the public health units to better deliver public health services. The Ministry released the Expert Panel's report—*Public Health Within an Integrated Health System*—in July 2017.

The recommendations from the panel include:

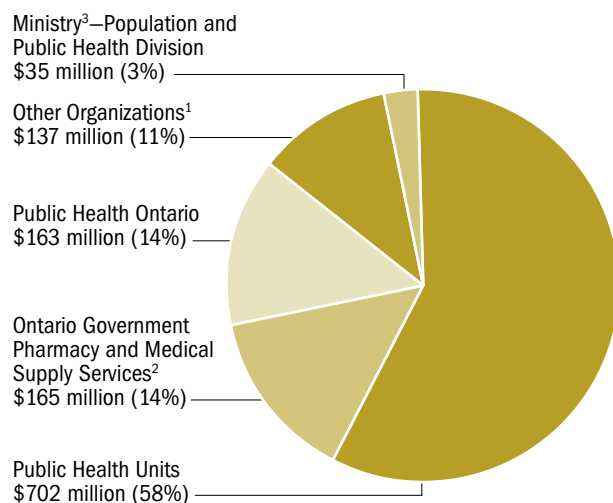
- the establishment of 14 regional public health entities, each with local service delivery areas, with boundaries consistent with Local Health Integration Network boundaries, which would be a reduction from the 36 individual public health units;
- a suggested structure of leadership and departments within each public health unit; and
- a consistent governance approach for all Boards of Health and suggested composition and size of the board and skills of board members.

The Ministry has announced that consultations on the recommendations are taking place in summer/fall 2017. There was no timeframe or any commitment yet to making changes to the public health delivery system at the time we completed our audit.

Over the last decade, a number of Ministry-commissioned studies have identified the need to

Figure 5: Allocation of Provincial Public Health Funding to Major Recipients, 2016/17

Source of data: Ministry of Health and Long-Term Care



1. Including organizations such as AccertaClaim Servcorp Inc., (the program administrator for Ontario's dental program), University of Ottawa Heart Institute, and Canadian Cancer Society.
2. The majority of this funding is for vaccines intended to prevent the spread of infectious diseases.
3. For policy development, oversight and administration.

Figure 6: Allocation of Provincial Funding on Chronic Disease Prevention to Major Recipients, 2016/17

Source of data: Ministry of Health and Long-Term Care

Recipient	Description	Amount (\$ million)
Public health units	Provincial share of the provincial/municipal cost-shared mandatory programs	105
	Smoke-Free Ontario program	23
Various parties*	Smoke-Free Ontario program	27
	Nutrition and healthy-eating programs	22
Health Promotion Resource Centres	Funds provided to 12 health promotion resource centres (See Figure 7 for the list of centres and their hosting organizations)	11
Public Health Ontario	Funds allocated to support health promotion and chronic disease and injury prevention out of its total budget of \$165 million	4
Total		192

* Includes municipalities, universities, and not-for-profit organizations, such as Canadian Cancer Society and Dietitians of Canada

review the number and size of the public health units to determine the most cost-effective delivery structure. These recommendations noted that the public health service delivery model could benefit from a reduced number of public health units and from ensuring that sufficient resources and staff expertise are in place at public health units, especially smaller ones. For instance, a 2006 report noted that “small health units sometimes find it difficult to recruit and retain skilled staff and generally lack sufficient team size and bench strength to manage smoothly during vacancies or emergencies.” The report also noted that “it is harder for smaller health units to afford or justify the specialized staff needed to deal with expanding and increasingly complex public health programs and issues.”

The number of health units remained at 36 at the time of our audit. The Ministry explained that it had not adjusted the number of public health units in the last 10 years because the recommendations were specific to the public-health sector only, and they needed to be considered in respect of the whole health system.

3.0 Audit Objective and Scope

The objective of our audit was to assess whether the Ministry of Health and Long-Term Care (Ministry), Boards of Health and Public Health Ontario have effective systems and processes in place to:

- oversee, co-ordinate and deliver chronic disease prevention programs and services in an equitable and cost-effective manner; and
- measure and report on the effectiveness of the programs and services in reducing the cost burden on the health-care system and improving population health outcomes.

Before starting our work, we identified the audit criteria we would use to address our audit objective. These criteria were established based on a review of applicable legislation, policies and procedures, and internal and external studies. Senior management at the Ministry, Public Health Ontario and the four public health units we visited during the audit reviewed and agreed with the suitability of our audit objective and related criteria, as listed in **Appendix 3**, and shared their concerns on the challenges with measuring and reporting on the effectiveness of programs and services in reducing the cost burden on the health-care system.

We focused on public health activities since 2014, and considered relevant data and events in the last 10 years. We conducted our audit between November 2016 and May 2017. We obtained written representation from the Ministry, Public Health Ontario and the four public health units we visited that, effective November 16, 2017, they have provided us with all the information they were aware of that could significantly affect the findings or the conclusion of this report.

As described in **Section 2.0**, public health covers a wide range of programs and services. Our Office has conducted a number of audits in the recent past that relate to these public health programs and services. These include:

- Immunization, Ministry of Health and Long-Term Care, in 2014;
- Healthy School Strategy, Ministry of Education, in 2013; and
- Diabetes Management Strategy, Ministry of Health and Long-Term Care, in 2012.

In addition, there are three other audits in this year's Annual Report that relate to public health. They are Cancer Treatment Services (**Chapter 3.02**), Emergency Management in Ontario (**Chapter 3.04**) and Laboratory Services in the Health Sector (**Chapter 3.07**).

To avoid overlapping areas covered in our previous audits and other ongoing work, the focus of this audit is on the Ministry's monitoring and funding of public health programs and services that promote healthy living to prevent chronic diseases, public health units' delivery of these programs and services, and Public Health Ontario's role in supporting the Ministry and the public health units.

Our audit was conducted primarily at the Population and Public Health Division of the Ministry, Public Health Ontario and four of the 36 public health units across Ontario: in Chatham-Kent, Durham, Thunder Bay and Toronto. We selected these four locations based on their geographic location, governance structure and an analysis of 13 different health indicators, including rates of mortality,

smoking, obesity, and hospitalization rates for cancer, diabetes, cardiovascular diseases and strokes.

In conducting our work, we met with the following:

- Ministry staff responsible for developing and monitoring the implementation of provincial policies and for oversight and funding of public health, and the Chief Medical Officer of Health;
- board chairs, management and relevant staff at public health units who oversee, plan, deliver and evaluate public health programs; and
- management and relevant staff at Public Health Ontario who provide support and research materials to the Ministry, public health units and others.

We also reviewed pertinent information and analyzed relevant data on chronic diseases and public health and researched how public health programs and services are delivered in other provinces.

To obtain perspectives on public health—specifically chronic disease prevention and health promotion programs in Ontario—we met with representatives from the Association of Local Public Health Agencies (an association that represents all 36 local health units in Ontario); Ontario Public Health Association (an association that represents members interested in public health—students, public health inspectors, epidemiologists, and other individuals); Cancer Care Ontario; the Heart and Stroke Foundation of Canada; The Lung Association – Ontario; Ontario Physical and Health Education Association; the Kidney Foundation of Canada – Ontario Branch; Diabetes Canada; and the Canadian Cancer Society – Ontario Division. As well, we met with representatives from the Healthy Kids Panel, which developed the Province's Healthy Kids Strategy in 2012 to address childhood obesity, and the Expert Panel on Public Health (discussed in **Section 2.4**).

Our audit included a review of complaints received by the Ontario Ombudsman and audits completed by the Ontario Internal Audit Division in the last five years. We considered these in determining the scope and extent of our audit work.

We also solicited feedback through surveying relevant staff from all of Ontario's 36 public health units. These groups included the oversight body (board members and chairs), senior staff responsible for reporting on public health unit performance, and staff responsible for planning, delivering and evaluating chronic disease programs. We received feedback from 200 out of 470 board members and chairs (43% response rate), 51 out of 57 Medical Officers of Health, Associate Medical Officers of Health and chief executive officers (89% response rate), 169 out of 195 senior staff responsible for reporting on health unit performance (87% response rate), and 70 out of 80 senior staff on chronic disease programs (88% response rate).

We engaged an expert with knowledge of the Ontario public health system to assist us on this audit.

4.0 Detailed Audit Observations

4.1 Province Has Not Adequately Addressed Risk Factors to Support Healthy Living and Chronic Disease Prevention

4.1.1 No Current Provincial Strategy on Preventing Chronic Diseases

The Province has no current overarching policy framework on chronic diseases. Such a framework would outline the goals and objectives of chronic disease prevention programming; provincial targets that focus on health outcomes; and the roles and responsibilities of the various parties involved in planning, delivering and evaluating public health programs designed for preventing chronic diseases.

While Ontario has established a number of strategies that relate to preventing chronic diseases, such as the Smoke-Free Ontario tobacco strategy, the Diabetes Strategy and the Healthy Kids Strategy, they do not address the entire population nor are they integrated and comprehensive to address

chronic diseases or risk factors. A comprehensive provincial strategy on chronic disease prevention is important because chronic diseases have a significant impact on health-care spending (discussed in **Section 2.2.1**).

In May 2007, the Ministry created a provincial framework on chronic disease. This framework covered aspects of both prevention and management—how the health system helps a patient to manage an already-developed chronic condition. The purpose of this framework was to guide Ministry initiatives and re-think approaches to chronic disease management while exploring ways to build health promotion and disease prevention into health-care practice. However, at the time of our audit, the Ministry did not rely on this document for policy direction regarding any of its chronic disease prevention and health-promotion programs. The Ministry indicated that it is using the 2007 framework as a reference document in its recent efforts in exploring options for policies and programs to prevent chronic diseases in Ontario.

In comparison, British Columbia released a guiding framework for public health in 2013 with long-term goals and targets to drive system-wide action and improve health outcomes, including specific performance-measure baselines and targets for modifiable risk factors related to chronic diseases. British Columbia set a number of goals to reach by 2023, including increasing the percentage of British Columbians who are meeting the guidelines for physical activity from 60% to 70% and the proportion of British Columbians (age 12 and up) who consume at least five servings of fruit and vegetables per day from 44% to 55%.

The B.C. framework was updated in March 2017 to reflect changes to data sources and the availability of updated data. In addition, the Ministry of Health in British Columbia in 2014 released an update to its *Healthy Families BC Policy Framework*, which sets out a focused approach to chronic disease prevention to provide guidance for using evidence to design interventions that address the major risk factors.

Province Has No Reporting on Overall Population Health Status

Ontario has not established performance measures and related targets to measure the overall population health status. The Ministry neither formally monitors nor publicly reports on population health indicators or on risk factors. The Institute on Governance, which is an independent, Canada-based, not-for-profit institution with a mission to advance better governance in the public interest, recommended in a 2012 report that Ontario would benefit if the Ministry identified a group to monitor long-term outcome indicators as part of a performance measurement system, such as risk factors and the prevalence of chronic conditions.

While the Province's Chief Medical Officer of Health is required to report annually to the Legislature on the state of public health in Ontario, the last reports focused on only specific topics instead of an assessment of the overall state of public health in Ontario. For instance, the Chief Medical Officer highlighted in his 2015 report the importance of local data and recommended that the Province undertake a provincial population health survey that collects data at the local community and neighbourhood levels.

In contrast, British Columbia, in its policy framework, set a number of goals to reach by 2023 regarding a measurable increase in both physical activity and eating fruit and vegetables.

RECOMMENDATION 1

To most effectively reduce the cost burden of chronic diseases on the health-care system and improve the quality of life for Ontarians, we recommend that the Ministry of Health and Long-Term Care:

- develop a provincial strategy to guide activities for chronic disease prevention, including setting measurable goals on population health, along with timelines, and defining actions and parties involved to achieve these goals; and

- publicly report on Ontario's overall population health status.

MINISTRY RESPONSE

The Ministry agrees with the importance of chronic disease prevention in supporting overall health, improving quality of life and reducing the cost burden on the health-care system.

Building on the extensive efforts and achievements to date, including the Smoke-Free Ontario Strategy, the Healthy Kids Strategy and local public health programming, the Ministry is currently developing a comprehensive provincial strategy to promote health, prevent disease and help all Ontarians lead long, healthy lives. This strategy, with phased implementation beginning in 2018/19, would include specific actions to increase adoption of healthy living behaviours (i.e., reduce chronic disease risk factors) using an integrated approach that recognizes the impact of social determinants of health. Monitoring, evaluation and continuous quality improvement are key components of the proposed strategy.

With respect to public reporting on Ontario's overall population health status, the Ministry will continue to work with its partners, including the Institute for Clinical Evaluative Sciences, Public Health Ontario and Health Quality Ontario, to monitor population health, including the burden of chronic diseases. At the local level, it will be a requirement under the modernized Ontario Public Health Standards for Boards of Health to provide local population health information to the public, community partners and other health-care providers.

4.1.2 Province Does Not Have a Comprehensive Approach to Assess Public Health Impact in Legislation and Policy Development

Public health units advocate for policy changes at the local and provincial levels. For example, many public health units have successfully influenced local policies on banning smoking at restaurants, bars, beaches, parks and playgrounds, and some of these policies were subsequently adopted by the Province. In addition, public health units have influenced local policies related to affordable recreation, bicycle lanes, and municipal alcohol policies.

Successful approaches to implementing health policy require both local and provincial policy development. The provincial government has a greater ability to influence certain health outcomes, and policies at the provincial level can sometimes result in even more significant changes than local changes. Different provincial ministries oversee different areas—for instance, taxation, education, environment, labour, community and social services, housing, transportation, economic development, agriculture, and health—that can influence population health outcomes. For example, the Ministry of the Environment and Climate Change is responsible for improving and protecting air quality. Air pollution can negatively affect people's health, in particular people with chronic diseases.

There are jurisdictions that are using the Health in All Policies (HiAP) approach. It is defined by the World Health Organization as an approach that takes into account how government decisions affect population health so that there is more accountability of policymakers. Finland was recognized as one of the pioneers of HiAP in 2006, which included the release of a report that examined the benefits of cross-government policies to improve health. In Canada, Quebec is the only province to have formally implemented the HiAP approach. All government departments in Quebec must, as directed in the *Public Health Act*, assess the effect on public health as part of the process of making policies.

In their 2012 report, *Taking Action to Prevent Chronic Disease—Recommendations for a Healthier Ontario*, Cancer Care Ontario and Public Health Ontario recommended that the provincial government adopt a whole-of-government approach for primary prevention of chronic disease, including naming a ministerial and senior public service lead to co-ordinate activities between sectors and levels of government for the improvement of health. They further recommended developing a comprehensive, multi-level health promotion and chronic disease prevention strategy for Ontario with goals and measurable outcomes (discussed in **Section 4.1.1**). These were not yet in place at the time of our audit and the Province has no plan in place to implement these recommendations but indicated it will continue to consider them in the context of development of policy direction. We discuss the lack of ministerial co-ordination in **Section 4.2**.

RECOMMENDATION 2

To encourage that the development of government policies takes into account the effect they have on population health, we recommend that the Ministry of Health and Long-Term Care work with the relevant central agencies to:

- evaluate the pros and cons of adopting an approach that requires policy-making to evaluate the impact on health; and
- develop a process to integrate this approach into setting policies, where appropriate.

MINISTRY RESPONSE

The Ministry agrees to working with the relevant agencies to evaluate the pros and cons of adopting an approach that requires consideration of health impacts during policy development processes. Depending on the results of such an analysis, consideration could be given to integrating this approach into policy development where appropriate.

4.1.3 Comprehensive Policy Developed and Dedicated Funding Provided for Tobacco Control but Not Physical Activity, Healthy Eating and Alcohol Consumption

Ontario has developed comprehensive policies and provided dedicated funding to support tobacco control, which is one of the biggest contributors to chronic diseases, but not on other important contributors, such as physical inactivity, poor diet and heavy drinking.

The 2016 Institute for Clinical Evaluative Sciences (Institute) report, mentioned in **Section 2.2.1**, further broke down the health-care spending by risk factor, with 12.8% allocated to physical inactivity, 9.9% to smoking, 1.2% to diet and 0.3% to alcohol. Similarly, a number of U.S. studies have reported that the cost burden of obesity and people being overweight has overtaken tobacco south of the border.

Among Ontarians aged 12 and older, there has been a reduction in the rate of smoking from 22.3% in 2003 to 17.4% in 2014, and the trends for physical inactivity, inadequate consumption of fruit and vegetables, and heavy drinking of alcohol have remained relatively flat. At the same time, the overweight and obese rate among those aged 18 and older increased from 49.5% to 54.6%. Being overweight or obese has been identified as major contributors to chronic diseases, such as diabetes, fatty liver diseases and end-stage renal diseases.

Smoking

In 2006, the Province enacted the *Smoke-Free Ontario Act*, which replaced the *Tobacco Control Act, 1994*. The Province focused on tobacco because, at that time, it was identified as the number one cause of preventable deaths in Ontario, killing more than 13,000 Ontarians every year. In addition to enacting the legislation in 2006, the Province also dedicated funding and resources to address tobacco control. Since 2006 to March 31, 2017, the Ministry has provided a total of \$465 million in support of this initiative. The smoking rate declined from

22.3% in 2003 to 17.4% in 2014, a reduction of just under five percentage points.

According to Cancer Care Ontario, the incidence rate of small cell lung cancer, a condition heavily associated with smoking, has been decreasing since 1987 and has remained stable from 2006 to 2012; this may be the result of the historical decline in tobacco use in Ontario. Similarly, the 2016 Institute's report (noted in **Section 2.2.1**) indicated that a decline in smoking between 2004 and 2013 was responsible for about \$4.1 billion of avoided costs, representing a significant return on investment.

Physical Activity

The 2016 Institute's report noted that the lack of physical activity accounted for the largest proportion of total health-care costs at 12.8%, compared with much lower percentages for diet and alcohol. However, we found that public health units we visited have placed more emphasis on nutrition-related services than on physical activity-related services. Based on a survey of the 36 public health units, we found that 86% ranked healthy eating either first or second when asked about resource allocation by the risk factors, while only 14% ranked physical activity first or second in terms of resource allocation.

One of the public health units we visited had 23 public health dietitians and/or nutrition promotion consultants and two employees with physical activity background (for example, a kinesiology degree) dedicated to chronic disease and injury prevention. This public health unit provided almost five times as many nutrition services to clients as physical activity-related services. Similarly, another public health unit we visited had twice as many employees dedicated to nutrition programs than to physical activity. And another health unit had 40 to 50 healthy-eating actions planned, but only four to five physical activity-related actions as part of its annual plan for the school health team.

These public health units explained that they focus more on nutrition than on physical activity

because schools and other organizations, including workplaces and community centres, are perceived to be more familiar with physical activity than with diet, and therefore request help from public health units on nutrition rather than on physical activity. However, a Toronto Student Survey conducted by Toronto Public Health in 2014 found that only 7% of Toronto students, Grades 7 to 12, were meeting the Canadian physical activity guidelines. Therefore, public health units can still do more to promote and develop programs on physical activity.

Healthy Diet

Ontario has implemented a number of measures to promote healthy diet. One such measure was the introduction of the *Healthy Menu Choices Act*, which requires restaurants with 20 or more premises in Ontario to display calorie counts on menus. Another measure was the implementation of the Northern Fruit and Vegetable Program, which provides access to fresh produce for children in rural and remote communities. However, a number of Ontario-based public health studies have suggested other measures that can also be implemented to improve healthy diet. These measures are intended to serve the following objectives—increase access to fresh food, reduce children’s exposure to sugar-sweetened beverages, and prepare children and youth to be competent in food preparation. However, at the time of our audit, the Province has not adopted these measures.

The Healthy Kids Strategy report released in 2013 had 23 recommendations on reducing childhood overweight rates and obesity, including a number of policies that could improve the healthy behaviours of children. These include both the municipal and provincial governments exploring the types of incentives used in other jurisdictions to attract stores to “food deserts”—areas where access to fresh food is limited, usually in neighbourhoods with high rates of poverty and youth crime. The incentives would include providing tax incentives and rebates; creating zoning allowances; and

providing planning support. The report noted that the U.S. Government established the Healthy Food Financing Initiative in 2010 to offset the costs associated with creating and maintaining grocery stores in underserved areas.

Another policy recommendation that the Healthy Kids Strategy suggested was banning the marketing of high-calorie, low-nutrient foods, beverages and snacks to children under age 12. It also recommended banning point-of-sale promotions and displays of high-calorie, low-nutrient foods and beverages in retail settings, beginning with sugar-sweetened beverages. Other countries, including Mexico, the United Kingdom and Sweden, have adopted similar measures to limit marketing and advertising these products to children.

In September 2016, a Senator in Canada introduced a Senate public bill to amend the *Food and Drug Act* to prohibit food and beverage marketing directed at children under 13 years of age. If passed, it would be illegal to package and advertise junk food, sugary drinks, and chewing gum to pre-teen children across Canada, and the Canadian Food Inspection Agency would be responsible for enforcing the legislation. At the time of our audit, the provincial government had not introduced any policy in this regard.

In their 2012 report, Cancer Care Ontario and Public Health Ontario published 22 evidence-based recommendations. This report recommended that the Province include compulsory food skills in elementary and secondary curricula. At the time of our audit, the Province had not implemented this recommendation.

Alcohol Consumption

In the case of ensuring effective controls on alcohol availability, we found that while public health is tasked with promoting Canada’s Low-Risk Alcohol Drinking Guidelines to reduce the burden of alcohol-related illness and disease, in 2015 the Province expanded alcohol sales in grocery stores, farmers’ markets, and LCBO e-commerce sales

channels. One public health unit released a public statement noting that this move undermines the objective of public health units' work to reduce the burden of alcohol-related illness and disease.

Similarly, in their report mentioned earlier, Cancer Care Ontario and Public Health Ontario noted that the evidence shows that increased availability of alcohol is associated with high-risk drinking and alcohol-related health problems.

RECOMMENDATION 3

To better address the risk factors that contribute to chronic diseases, we recommend that the Ministry of Health and Long-Term Care develop comprehensive policies to focus on the key risk factors of chronic diseases—physical inactivity, unhealthy eating and alcohol consumption—in addition to tobacco control.

MINISTRY RESPONSE

The Ministry agrees with the importance of developing comprehensive policies to address key risk factors for chronic diseases in the areas of physical inactivity, unhealthy eating and alcohol consumption, in addition to tobacco control. Examples of the Ministry's policy initiatives in these areas include:

- The Healthy Kids Strategy, a cross-government initiative launched in 2013, focuses on key interventions to support healthy weights among children and youth through increased physical activity and healthy eating. Examples of provincial initiatives under this strategy include implementation of the *Healthy Menu Choices Act*, effective January 1, 2017, to require the posting of calories on menu boards at regulated food premises; implementation of the Healthy Kids Community Challenge in 45 communities across Ontario; telephone counselling to support breastfeeding; and expansions to programs aimed at providing fresh fruit and vegetables to northern communities and healthy

eating and active living programming in Indigenous communities.

- The Ministry and public health units are actively involved in promoting the Low-Risk Alcohol Drinking Guidelines to support a culture of moderation and provide consistent messaging about informed alcohol choices and responsible use. Over 65 stakeholders have been consulted to inform the development of a provincial Alcohol Strategy.

Building on these achievements, the Ministry is currently developing an integrated provincial strategy to further increase adoption of healthy living behaviours across the lifespan to reduce risk factors for chronic diseases including unhealthy eating, physical inactivity, harmful use of alcohol, and tobacco use, while recognizing the impact of social determinants of health.

4.2 Lack of Co-ordination and Collaboration in Program Planning and Delivery

4.2.1 Co-ordination Needed at Provincial Level to Aid Public Health Units' Delivery of Programs to Children and Youth

In accordance with the Ontario Public Health Standards, public health units are required to work with school boards and/or school staff to promote healthy behaviours, such as healthy eating and physical activity.

We found that there is a general lack of co-ordination at the provincial level—between the Ministry of Health and Long-Term Care and the Ministry of Education, which is responsible for the school boards—to help public health units provide public health programs and services at schools. This lack of co-ordination negatively affects public health units' ability to influence healthy living behaviours in young children.

All four public health units we visited had to work with schools individually to gain access to the schools. We found that some schools are not willing

or for other reasons choose not to work with public health units. Consequently, public health units spend resources to build relationships and persuade schools to participate in effective public health programs instead of on actual service delivery. Some public health units have even used one-time events to gain access into schools, even though current evidence suggests that health promotion interventions must be longer in duration and include supporting policy changes in addition to education. According to results of our survey of senior staff of health promotion and chronic disease prevention, over half of public health units sometimes or often accept requests for one-time events from schools and less than 5% never accept such requests.

Although we noted examples of public health units working with schools—such as providing cooking lessons to help students establish better eating habits and providing training to teachers in regard to active playground games—public health units still could not easily access all schools. In 2016, one of the public health units we visited had not engaged with 28% of the publicly funded schools in its catchment area and provided only one service—for example, delivering a nutrition workshop—to 18% of the schools.

Another area where co-ordination between schools and public health agencies is lacking is the collection and sharing of data. For instance, Public Health Ontario is responsible for evaluating a multi-year, \$33-million childhood obesity reduction program funded by the Ministry. In order to collect baseline data against which to evaluate the program, Public Health Ontario planned to administer a survey in 234 schools and 57 school boards across Ontario to obtain a representative and sufficient sample size. In order to do this, Public Health Ontario had to negotiate with each of the 57 school boards, which ultimately proved infeasible and the project was abandoned. A directive from the Ministry of Education to the school boards could have made the project possible and thereby improved the quality of the evaluation.

In our 2013 audit on Healthy Schools Strategy, we recommended that the Ministry of Education and school boards work more effectively with public health units and other relevant organizations with similar goals. The lack of co-ordination was still evident during our current audit on this matter in public health.

RECOMMENDATION 4

To support public health units to more efficiently and effectively deliver health promotion initiatives to children and youth, we recommend that the Ministry of Health and Long-Term Care co-ordinate with the Ministry of Education to form collaborative and sustainable partnerships between school boards and public health units.

MINISTRY RESPONSE

The Ministry agrees that collaboration between the Ministry of Health and Long-Term Care and the Ministry of Education is important, not only to support delivery of public health programs within schools, but also to support co-ordinated provincial policy development.

Since 2013, the Ministry of Health and Long-Term Care and the Ministry of Education have co-sponsored a joint committee of the Council of Ontario Directors of Education (CODE) and the Council of Ontario Medical Officers of Health (COMOH), with the goal of optimizing the delivery of public health programs and services through enhanced partnerships between public health units and school boards. This CODE/COMOH Committee has developed a template memorandum of understanding that can be used to articulate areas of common work and collaboration between school boards and public health units.

To further support provincial-level co-ordination between the public health and education sectors, the Ministry has developed a School Health Standard within the modernized Ontario Public Health Standards, which includes all

activities delivered in and with schools. The Standard was developed with input from the Ministry of Education, as well as other partners, and aligns with the Ministry of Education's Well-Being Strategy for Education.

The Ministry of Health and Long-Term Care will continue to build on provincial collaboration between the health and education sectors through establishment of a Director's Forum with representation from the Ministry of Health and Long-Term Care, the Ministry of Education and other relevant ministries, such as the Ministry of Children and Youth Services.

4.2.2 Program Planning and Development Not Well Co-ordinated across Public Health Units

No provincial body actively updates evidence, shares best practices, and develops surveillance systems on health promotion programs on a regular basis to help the public health units design programs to meet their local needs.

Public Health Ontario funds and supports Locally Driven Collaborative Projects where interested public health units come together to work on a common topic. Since 2011, the public health units have completed eight projects related to chronic disease prevention. These projects include three on the current data gap that exists in childhood healthy weights surveillance at the local health unit level (we discuss this further in **Section 4.3.2**); two on improving young people's knowledge and skills to budget for, purchase and cook food; one on alcohol consumption and alcohol-related harm; one on health-promotion and health-education strategies on infant and child health; and one on evaluating a model to collect provincial data on population health.

In addition, the Ministry has provided funding to health promotion resource centres (described in **Figure 7**). These centres are hosted in organizations with specialities in different areas, such as Cancer Care Ontario and The Lung Association –

Ontario. The resource centres support the health sector through providing training, resources and tools on various areas, such as smoking, alcohol consumption, nutrition and child health. These resource centres received provincial funding totalling \$11 million in 2016/17. In early 2017, the Ministry informed the resource centres that it was winding down the existing funding structure for these centres and will be creating a new funding approach starting in 2018/19 to improve efficiencies of the services offered. Under the new approach, applications for funding could be made to support areas, such as evaluation, training and community development.

Despite these initiatives, we found that for the most part, public health units undertake research or develop local solutions independently, resulting in limited comparability between public health units, duplication of effort, and significant variation in the depth of the research, communication campaigns developed, and type of information gathered.

Duplication of Effort and Variability in Research

Our survey of the 36 public health units found that since 2014, about one-third of them have undertaken research on a number of common topics, including sugar-sweetened beverages, energy drinks, e-cigarettes and alcohol. This could result in duplication of effort and resources spent on research as each public health unit undertakes its own work, and could lead to significant variability in the degree of research to support program planning and development.

At two of the public health units we visited, we found that on a review of effective school-based healthy eating and physical activity interventions relevant to healthy weights, the depth of the reviews was substantially different. One public health unit assessed 18 documents in 2013 while the other health unit screened 400 documents a year earlier. The public health unit with the more in-depth review used this information to develop new school-based interventions, while the other

Figure 7: Areas of Focus and Hosting Organizations of Health Promotion Resource Centres

Source of data: Ministry of Health and Long-Term Care

Name of Resource Centre	Hosting Organization	Area of Focus
Funded by the Ministry of Health and Long-Term Care		
CAMH Health Promotion Resource Centre	Centre for Addiction and Mental Health (CAMH)	Mental health, substance and alcohol use
CAMH Training Enhancement in Applied Cessation Counselling and Health Project	CAMH	Tobacco
Ontario Tobacco Research Unit	University of Toronto	Tobacco
Program Training and Consultation Centre	Cancer Care Ontario ¹	Tobacco
Smoking and Health Action Foundation	Non-Smokers Rights Association	Tobacco
Youth Advocacy Training Institute	The Lung Association – Ontario	Tobacco and youth engagement
HC Link	Health Nexus	Healthy communities
Health Promotion Capacity Building	Public Health Ontario (PHO)	Program planning, evaluation and policy development
Health Promotion Capacity Building Alcohol Policy	PHO	Alcohol policy
Nutrition Resource Centre	Ontario Public Health Association	Nutrition
Ontario Injury Prevention Resource Centre	Parachute ¹	Injury prevention
Physical Activity Resource Centre	Ontario Physical and Health Education Association (Ophea)	Physical activity
Funded by Other Ministries		
Best Start Resource Centre ²	Health Nexus	Maternal/child health
Curriculum and School Based Health Resource Centre ³	Ophea	Healthy active living and the health and physical education curriculum

1. Funding to these resource centres flows through Public Health Ontario
2. Funded by the Ministry of Children and Youth Services
3. Funded by the Ministry of Education

public health unit used the results of the research to reinforce its current practices, such as the requirement to consider cultural attitudes and barriers when planning and putting in place interventions for healthy eating and physical activity. In addition, according to our survey, respondents from about two-thirds of the public health units reported having internally prepared a literature review on school-based programs that promote healthy weights, healthy eating or physical activity.

As well, we found that while Public Health Ontario has a mandate to provide scientific and technical support for chronic disease prevention, three of the four public health units we visited generally did not reach out to Public Health Ontario for assistance with chronic disease research or scien-

tific advice. One chronic disease prevention-related request made by the public health unit that reached out to Public Health Ontario was declined due to resource constraints and competing priorities. Other public health units indicated that either they are aware of the limited capacity at Public Health Ontario or they were under the impression that Public Health Ontario did not provide this kind of support on chronic diseases.

The survey to senior managers responsible for health promotion and chronic disease prevention asked whether there was anything Public Health Ontario could do better in the area of chronic disease prevention. Twenty of 40 comments mentioned a need for central support for updating and/or disseminating research and best practices. Public

health unit senior managers also commonly cited a need for stronger leadership and co-ordination, more central analysis of epidemiological data and evaluation support in order to decrease duplication of effort and increase effectiveness. We discuss these needs in **Section 4.3** and **Section 4.4**.

Program and Campaign Development Not Centrally Co-ordinated

Public health units generally developed their own chronic disease prevention programs from scratch and at varying levels of quality. One explanation for this was that local needs and environments require different programs. However, a number of programs at different health units were developed with similar intent and in the same context. For instance, all four health units that we visited separately developed classroom content and teaching supports for healthy eating, physical activity and substance misuse. We asked senior management in chronic disease prevention at all four public health units to describe how their programs differed from other health units' and they were not aware of how their programs differed from each other.

As well, developing centralized campaigns could be significantly more efficient for risk factors that are common across public health units. Public health units we visited noted that if communication campaigns were developed centrally, the health units would need to be able to modify them to be relevant to their population; for example, media campaigns in rural areas cannot feature images of people walking out of a subway. We noted examples where health units have adopted common campaigns in the areas of tobacco control, healthy drink choices, and alcohol consumption. However, we found that health units had not expanded their collaboration into other campaigns. For example, the four public health units we visited have separately developed or were in the process of developing a communication campaign to promote physical activity from 2014 through 2016, with no central co-ordination.

No Central System to Collect Breastfeeding Data

In 2013, the Ministry established a requirement for all public health units to report their progress toward designation under the Baby-Friendly Initiative, a World Health Organization initiative that encourages breastfeeding. A pre-requisite to designation is that the public health unit provide annual data on breastfeeding, including the number of women who initiate breastfeeding and how long they exclusively breastfeed their babies. Because Ontario has no comprehensive data collection system that records the duration of breastfeeding, each of the 36 public health units has had to develop a monitoring system to collect this data or co-ordinate among themselves.

Our survey of the public health units noted thirteen public health units were using a third-party developed system, 10 units had developed their own in-house surveillance system, and six were using the database and telephone questionnaire piloted by a shared collaboration project by the public health units. Of the remaining seven public health units, one used an external company, one used a simple survey, two did not have a system, and three did not know.

Depending on the public health unit, information may be collected via email, over the telephone, or in person, or a combination of the three. As well, the public health units collect information at different times; for instance, one health unit collected data at 48 hours after discharge from the hospital and at two weeks, while others collected data at two, six and 12 months. As a result, breastfeeding rates are not comparable from one public health unit to another, which hampers the ability to share best practices and identify public health units with low breastfeeding rates.

RECOMMENDATION 5

To foster consistency and to avoid duplication in program planning and research for effective, evidence-based public health interventions, we recommend that the Ministry of Health and

Long-Term Care work with the public health units and Public Health Ontario to develop a central approach to update, co-ordinate and share research and best practices.

MINISTRY RESPONSE

The Ministry agrees with a central approach for the sharing of research and best practices related to chronic disease prevention and other areas of focus within the public health sector.

A co-ordinated approach is being taken to support public health units in planning for, delivering and evaluating their local programs and services under the modernized Ontario Public Health Standards. The modernized standards will be supported by a public health accountability framework, outcome-focused indicators, co-ordinated data support, and a provincial surveillance and monitoring strategy with links to public reporting. A central repository for evidence, best practices, tools and data, to be developed beginning in 2018/19, will be made available to all public health units to support them in the ongoing implementation of the modernized standards. This repository will be kept up to date to ensure that the sector continues to have access to intelligence that informs the development of programs and services on an ongoing basis.

4.3 Public Health Units Do Not Have Sufficient Data or Clear Standards to Effectively Conduct Epidemiological Data Analysis

Public health units are required to collect, manage, analyze and interpret epidemiological data for their population. Epidemiology sheds light on patterns of health behaviours and how diseases and health behaviours relate to socio-demographic characteristics, such as age, education and income. Information gathered from epidemiological data analysis helps public health units to plan and

develop programs, allocate resources, monitor changes, measure performance and evaluate program effectiveness.

A report published by the World Health Organization in 2017, *Guidelines on Ethical Issues in Public Health Surveillance*, stressed the importance of collecting data that is of sufficient quality, including being timely, reliable and valid, to achieve public health goals. Similarly, Ontario's Chief Medical Officer of Health released a report, titled *Mapping Wellness: Ontario's Route to Healthier Communities* in March 2017. The report stressed the importance of good local data in targeting public health problems. The report stated: "In many cases, health units lack the high-quality local data they need to map community wellness. Without that data, public health units are flying blind."

4.3.1 Not All Public Health Units Have Access to Local Epidemiological Data

Epidemiology data relevant to chronic disease, overall health, and health behaviour risk factors is primarily collected by organizations external to public health units. For instance, York University's Rapid Risk Factor Surveillance System is a survey service that gathers information on health behaviours of individuals 18 and older. Survey participants may be asked questions about smoking, physical activity, alcohol use, sun safety, women's health issues, bicycle helmet use, and more.

Public health units can individually contract this service, but only 13 of the 36 public health units did so in both 2016 and 2017. Many public health units that did not access this service cited cost as a concern. The 2016 survey cost each of the participating public health units between approximately \$27,000 and \$141,000 to collect the data in addition to dedicated administrative and epidemiologist staff time. The Ministry has not co-ordinated the access to this service for all 36 public health units. Conversely, Alberta funds the Alberta Community Health Survey, which collects annual data including health behaviour trends and

a variety of other topics, such as salt consumption, not available through other sources.

In addition, even though Statistics Canada's Canadian Community Health Survey—which collects information related to health status, health-care use and health determinants for the Canadian population—is available to all public health units, sample sizes may be too low in some public health units to provide sufficient sub-population information within the public health units for program planning. Therefore, public health units, depending on the size of the population and local analysis needs, may need to combine a number of years of data to accumulate enough data to perform certain analyses, affecting their ability to use current information in their program development, in providing policy advice, and in monitoring performance.

4.3.2 Epidemiological Data on Children and Indigenous Populations Not Readily Available to Public Health Units

Because changing health behaviours early as opposed to later in life is more effective and has a more long-lasting impact, public health practitioners often target children as a priority population to deliver healthy living programs.

Similarly, Indigenous people in Ontario experience lower health status, including shorter life expectancy, higher infant mortality and higher rates of chronic diseases. Information that excludes the Indigenous populations can be highly misleading for northern health units; for example, the Northwestern unit has almost up to 30% Indigenous representation in its population.

We found that there is limited epidemiological data on school-age children and data on Indigenous people is generally not available to public health units.

Children

For children aged six to 12, there is minimal provincial data. A survey administered by select public

health units in 2017 found that 94% of health units that responded to the survey indicated that Ontario does not have enough data on children and youth to meet local needs for assessment and surveillance, program planning and evaluation. Although there are other institutions that collect data on children, data from these sources is not readily available or representative of their populations to the public health units. Public health units can access information from these data sources only if schools specifically grant access to them, or the public health units have to pay to increase the sample size to be more representative for them.

Even though public health units can opt to obtain data on their own through conducting their own survey, these are costly and time-consuming. For example, one public health unit completed a local student survey in 2014. That survey involved three years of planning and over 100 staff to help administer the survey, including public health nurses, dental hygienists and assistants. A large part of the planning of the survey involved negotiations with the four different school boards and with the 165 schools involved in the survey.

Indigenous People

Information on Indigenous people is owned by Indigenous people and communities based on the First Nations' Ownership, Control, Access and Possession principles. Public health units are required to follow these principles when accessing this information. As a result, public health units with high Indigenous populations do not always have sufficient epidemiological data to conduct robust population health assessments. The Statistics Canada survey on Indigenous people excludes the on-reserve population, as well as some Northern Ontario and remote areas. As well, following the principles, the administrator of the provincial pregnancy and birth database removes birth information for people who live on reserves when providing the information to public health units.

Given the importance of having complete information to undertake health assessments, it would be prudent for the Ministry to work collaboratively with, and provide support as required to, public health units and Indigenous populations to ensure their data is being used to meet their health needs, while at the same time respecting the communities' right to make their own decisions regarding why, how and by whom information is collected, used or shared.

4.3.3 Lack of Standards on Extent of Epidemiological Work Needed

The Ministry has not established any specific standards on how much epidemiological work the public health units have to undertake for most topic areas, nor assessed whether certain epidemiological analyses should be conducted centrally. As a result, there is no assurance that public health units have conducted the proper analysis of population data to design their programming.

In response to our survey, some public health units indicated that they do not have the required epidemiologist time to review and analyze the data, and some units do not have any or enough epidemiologists on staff. At the time of our audit, about one quarter of the 36 public health units reported not having one or more epidemiologists employed full-time since 2014. Further, 45% of medical officers of health and chief executive officers reported not having sufficient surveillance and epidemiological capacity at their health unit. As well, 21 public health units commented on the need for central support for epidemiology, surveillance and population health assessments.

Defining the amount of work needed is important to guide the public health units in conducting their epidemiological work. Epidemiologists at two of the health units we visited only analyzed a small fraction of the purchased epidemiological data from a public health data surveying service administered by a university. One public health unit analyzed only five of the 200 modules of data that

were available and the other expected to disseminate its 2016 data in 2018.

In contrast, Alberta's health agency has a central epidemiological analysis tool that collects information from key data sources and automatically updates and performs local analysis. This analysis includes analysis by neighbourhoods (in metropolitan areas) as well as analysis of health behaviour information by socio-economic status, age and gender. These are all types of analyses that are required of public health units in Ontario but only rarely completed in practice for all health behaviour indicators.

RECOMMENDATION 6

To support public health units to more efficiently and cost-effectively obtain and analyze epidemiological data for program planning and evaluation, we recommend that the Ministry of Health and Long-Term Care, working with Public Health Ontario and the public health units:

- evaluate the feasibility of centralizing epidemiological expertise that can perform analyses or provide assistance to all public health units;
- establish benchmarks for the extent of epidemiological analyses of chronic diseases needed and monitor whether these benchmarks are met;
- approach and work with Indigenous community leadership to obtain epidemiology data that would serve to inform program development to benefit the Indigenous communities in Ontario; and
- identify other areas in which relevant data is not consistently available to all public health units, such as data on children and youth, and develop and implement a process to gather needed data.

MINISTRY RESPONSE

The Ministry agrees with the importance of supporting public health units to obtain and

analyze epidemiological data in an efficient and cost-effective manner. As part of the modernized Ontario Public Health Standards, and in collaboration with Public Health Ontario and public health units, the Ministry will:

- provide public health units with a common set of epidemiological data and population health indicators to assist in local population health assessment, program planning and evaluation;
- assess the feasibility of establishing and monitoring benchmarks related to the extent of epidemiological analyses of chronic diseases needed through the Public Health Accountability Framework;
- continue to work collaboratively with Indigenous communities to support their efforts, as appropriate and as requested, in a co-ordinated way at the local, regional and provincial levels, to improve collection and analysis of Indigenous-specific data in accordance with the principles of ownership, control, access and possession; and
- develop a provincial surveillance and monitoring strategy beginning in 2018/19 that will include a process of identifying and addressing data gaps related to chronic disease prevention.

4.4 Limited and Inconsistent Evaluations of Promotion of Healthy Living and Chronic Disease Prevention Programs

Evaluation of chronic disease prevention programs is crucial to ensure that public health units are providing educational materials, programs and services that meet their intended objectives and contribute to better health for their local population. The evaluations aim to understand the relationship between activities and outcomes. This is particularly important for chronic disease prevention programs because the measurable impact of these programs could be years out or be affected by

other factors that might not be within the control of the public health units.

Public Health Ontario noted in an August 2016 introductory workbook for evaluating health promotion programs that a thorough program evaluation can help public health staff make ongoing decisions about the best use of time and resources, whether a program is meeting the needs of participants, and ways to improve the program. Similarly, the World Health Organization noted in a 2001 document, *Evaluation in Health Promotion – Principles and Perspectives*, that there must be evidence of health-promotion efforts' effectiveness and their relative costs, as compared with other health-promoting options, to demonstrate that the efforts remain accountable and sustainable.

Public health units are required to conduct evaluations when new programs or services are developed or put in place. For example, a public health unit that started a community pedometer lending program would be expected to assess whether the program reached the targeted people and contributed to increased activity levels. Units must also do evaluations when there is evidence of unexpected operational issues or program results. For example, a public health unit that noticed a significant drop in attendance at its tobacco cessation clinics would be expected to perform an evaluation.

4.4.1 Ministry Does Not Require Standard Methodology to Evaluate Programs

The Ministry simply instructs public health units to “use a range of methods” to evaluate programs but does not require them to use any established evaluation methodology. As a result, public health units have separately developed evaluation guidelines and templates and independently decided on acceptable levels of rigour.

Because the Ministry has not required all public health units to follow common guidelines when evaluating local programs, public health units each define what constitutes an evaluation. At the public

health units we visited, we noted that a range of evaluations was used, including:

- telephone calls to follow up with a teacher after a workshop at a school;
- a survey of the attendees who attended sessions, including questions such as “did the service meet your expectations” and “do you think the audience benefited from this service;” and
- relying on evaluations by the school where the workshops were held but having no access to these evaluation results.

We also noted that the two public health units that established their own methods of evaluation used varying approaches. One public health unit’s evaluation policy document provided only high-level guidance on evaluation: It stated that evaluation should be built into all program plans but did not describe how the evaluation should be performed. In comparison, the other public health unit’s evaluation policy is more detailed: It included steps in creating an evaluation plan, guidance on documenting the evaluation purpose, and deciding on appropriate evaluation questions.

The Ministry funds two health promotion resource centres (discussed in **Section 4.2.2**) to provide evaluation support to public health units. One of these resource centres supports research and evaluation for only one topic—tobacco. The other resource centre provides technical support for planning, training and increasing their ability related to program evaluation. Although the latter resource centre has developed an evaluation methodology, it was not used by the public health units we visited in planning their evaluation work. In addition, the resource centre offers technical and consultative advice including document reviews, but does not actually plan or implement program evaluations.

4.4.2 Most Public Health Units Self-Assessed Their Program Evaluation Ability as ‘Developing’

Most of the public health units we visited did not have enough trained staff to effectively evaluate programs. Of the four public health units visited, two had just one evaluation specialist on staff with a background or experience in academic research, and one of them had no program planner and evaluator dedicated to evaluations until the end of 2015. Twenty-five percent of public health units surveyed noted that they did not have an employee dedicated to evaluation from 2014 to present and 28% noted that they only had an evaluation specialist employed at their health unit for a portion of that period. When public health units do not have the necessary capacity to evaluate their programs, the evaluations could lack depth and coverage to effectively measure whether the programs have been successful in achieving intended outcomes.

The public health units’ evaluation capacity was assessed by a project team with representation from select public health units, using a tool adapted from another tool that was developed by an academic researcher. The project was conducted to assess the extent of evaluation capacity (including its infrastructure, dedicated personnel and resources) within and across the public health units and to identify areas for improvement.

The assessment categorized public health units as having low, developing, intermediate or established evaluation ability. Factors for having established capacity to evaluate programs include:

- a senior management team that values evaluations;
- sound data collection methods;
- evaluation skills are assessed regularly to identify gaps and corresponding training;
- policies and procedures have been established to guide evaluation activities; and
- program managers and/or staff understand the purpose of the evaluation and how it is used.

Of the 32 public health units that completed the self-assessment in 2015, only five self-ranked

as having intermediate capacity, 26 self-ranked as having developing capacity, one self-ranked as having low capacity, and none ranked themselves as having established evaluation capacity.

Key Shortcomings Identified

The self-assessments identified the following key shortcomings regarding program evaluation across Ontario's public health units:

- no existing framework or policy and procedures related to evaluations;
- lack of time and resources dedicated to evaluations;
- no clear methods of sharing evaluations; and
- use of findings tended to be limited to validating a program from a customer satisfaction approach rather than measuring program outcomes.

The project team did not officially share the results of this assessment with the Ministry but made the report available online.

As a result of this assessment, 10 public health units participated in a project to increase evaluation capacity by testing some of the strategies identified in the assessment to address the noted shortcoming. Some of the key messages from this project include: leadership at all levels is critical to have buy-in for evaluation, and staff members are eager to increase their skills and knowledge in this area. The results of this project are available online on Public Health Ontario's website.

4.4.3 Program Evaluations Not Sufficiently Completed

Under the Ontario Public Health Standards, the Ministry requires public health units to prepare program evaluations to:

- support the establishment of new programs and services;
- assess whether evidence-informed programs are carried out with the necessary reach, intensity, and duration; and

- document the effectiveness and efficiency of programs and services.

At the four public health units we visited, we found that these program evaluations were not always done. As well, the Ministry did not know this because it has no mechanism to monitor whether public health units are completing program evaluations.

We noted the following:

- One public health unit evaluated certain aspects of just three of its 42 chronic disease prevention programs and services, such as workshops, presentations and training sessions introduced in the last three years. This health unit did not evaluate new programs as required, including a billboard campaign and workshops to promote awareness and understanding of physical activity, a running program for school-age children, a food preparation program, a student nutrition program, a community gardens program, and workplace wellness programs.
- Three public health units had not evaluated a comprehensive school health approach, which addresses school health in a planned, integrated, and holistic way in order to support improvements in student achievement and well-being. One health unit explained that it did not evaluate the program because it is best practice and internationally recognized; the other two cited a lack of resources and support.
- One public health unit developed an adult food skills program drawing in part from an effective program developed in the United States. However, it delivered only one to five sessions of the program, despite an evaluation of the U.S. program showing that delivering more than 11 sessions would produce the highest impact and delivering fewer than six sessions would potentially have no effect.

In our survey of the 36 public health units, staff from 19 of them noted that their public health units completed five or fewer evaluations of chronic

disease prevention programs and services, which assessed change in knowledge, skill or attitude as a result of the public health units' actions.

Evaluations Do Not Measure Outcomes or Cost-Effectiveness

Three public health units focused their limited evaluation efforts on process and/or client satisfaction. While these evaluations can help the public health units assess whether the program was delivered according to plan and whether participants or target audiences were satisfied with the program, they do not assess outcomes, such as awareness, knowledge, attitudes, skills and a reduction in harmful behaviours. In fact, in response to our survey, 50% of public health units noted that they had performed two or fewer evaluations that assessed a change in behaviour from 2014 to spring 2017 on their chronic disease prevention programs. Fourteen percent of health units reported having no evaluation of this type.

One of the evaluations we reviewed at a public health unit was on a fruit and vegetable program that allows community members to pick fruit and vegetables that farmers would otherwise dispose of because they are not saleable. The evaluation tried to measure the amount of produce picked by the program participants, but not whether the program led to increased consumption of fruit and vegetables. The survey of program participants asked participants whether they were likely to continue eating fruit and vegetables but did not ask whether the participants ate similar amounts of fruit and vegetables prior to picking the fruit and vegetables, rendering the survey responses inadequate in measuring the impact of this program.

Another health unit frequently used client satisfaction surveys that asked clients what they learned from a workshop. However, there was no pre-activity survey nor was there a follow-up with clients at a later date. Therefore, whether anything was learned or retained is not effectively assessed.

Having benchmarks for program outcomes and resource requirements for programs that are commonly delivered across the 36 public health units can help identify where the health unit should allocate its resources and ensure that program costs do not exceed benefits. None of the program evaluations we reviewed compared the cost or investment in the program with the benefits received to assess program cost-effectiveness. In addition, almost three-quarters of the senior chronic disease prevention staff who responded to our survey indicated that their evaluation of chronic disease prevention programs or services does not compare or attempt to compare costs to benefits.

RECOMMENDATION 7

To support the public health units to effectively evaluate their chronic disease prevention programs, we recommend that the Ministry of Health and Long-Term Care:

- develop guidance material on program evaluations and require all public health units to follow common, evidence-based evaluation principles;
- monitor the public health units' efforts to increase their ability to conduct evaluations;
- ensure public health units evaluate programs as per Ministry requirements; and
- establish provincial benchmarks for public health units to use when comparing the cost of significant programs with outcomes.

MINISTRY RESPONSE

The Ministry agrees with the importance of public health unit evaluations of local chronic disease prevention programs. As part of the modernized Ontario Public Health Standards, the Ministry will:

- include specific program evaluation requirements for Boards of Health within the modernized standards, with supporting guidance material, training supports and/or reference documents, beginning in 2018/19;

- monitor public health unit efforts to increase their ability to conduct evaluations through the Public Health Accountability Framework and take appropriate follow-up actions as needed; and
- compare public health unit reporting of unit costs of service delivery as appropriate within the Public Health Accountability Framework.

The Ministry will further enhance capacity in evaluation expertise across the sector as part of the Ministry's new Health and Well-Being Grant Program, to be implemented in 2018/19.

4.4.4 Public Health Units Do Not Track Chronic Disease Prevention Programs' Progress against Goals

Public health units are required to document and monitor their chronic disease prevention program objectives, timeframes for achieving these objectives and intended results. These objectives guide the planning and development of individual public health programs and services, the evaluation of which was discussed in **Sections 4.4.1 to 4.4.3**.

All four public health units we visited had documented the objectives and intended results of their chronic disease prevention programs to varying degrees, but they did not always have measures in place for these objectives or provide a timeframe for achieving these objectives. As a result, public health units cannot demonstrate that their chronic disease prevention programs have achieved intended outcomes.

Only one of the four units had program objectives that include measurable outcome target, such as “decrease to 70% of [public health unit] residents aged 18 and over who report consuming sugar-sweetened beverages at least once in the last seven days” and “increase to 50% [public health unit] residents 12 years and older who eat fruit and vegetables five or more times daily.”

The other three health units had no measurable outcome targets for their objectives. Instead, these health units established general goals. For example,

they had goals to reduce consumption of sugar-sweetened beverages or improve eating habits in their residents, but had no baseline information or plans to measure the change in these behaviours to determine whether they achieved their objectives.

Furthermore, senior chronic disease prevention staff at 45% of public health units responding to our survey noted that progress against performance objectives related to chronic disease is only sometimes or rarely tracked in a meaningful way. The Ministry does not monitor whether the public health units are, in fact, staying informed about health behaviour trends as required. As well, it is up to the public health units to determine how much monitoring work they undertake. We found that two of the health units we visited had no regular monitoring on any of these behaviours and another updates such information as infrequently as every five years.

RECOMMENDATION 8

To effectively measure the impact of chronic disease prevention programs and services, we recommend that the Ministry of Health and Long-Term Care require public health units to develop measurable program objectives and establish timeframes for achieving these objectives.

MINISTRY RESPONSE

The Ministry agrees with the importance of effectively measuring the impact of local chronic disease prevention programs. As part of the modernized Ontario Public Health Standards, the Ministry will require public health units to develop measurable program objectives for their local programs of public health interventions to support chronic disease prevention, beginning in 2018/19.

4.5 Performance of Public Health Units Not Sufficiently Measured and Reported

4.5.1 Current Performance Indicators Do Not Fully Measure Public Health Units' Performance in Preventing Chronic Diseases and Promoting Health

Between 2014 and 2016, the Ministry required all 36 public health units to report their annual performance on 10 health-promotion performance indicators, as shown in **Figure 8**.

We found that these indicators are not solely attributable to the work of the public health units, some indicators are not meaningful, and the suite of indicators does not fully measure all key risk factors affecting chronic diseases. As a result, the Ministry could not sufficiently measure the performance of the public health units in delivering their health promotion programs and services.

In November 2015, the Minister of Health and Long-Term Care announced that the Ministry would modernize the Ontario Public Health Standards, which would include updating the indicators used to measure public health units' performance. Changes to the new standards include a focus on the

Board of Health's contribution to population health outcomes and program outcomes that represent the anticipated results achieved through delivery of public health programs and services.

As the Ministry transitions to the new standards, in 2017 it required the public health units to report on only two of the 10 health-promotion indicators: the percentage of tobacco vendors that are in compliance with youth access legislation; and the percentage of tobacco retailers inspected once a year.

The Ministry expects the new standards to come into effect in January 2018, with the finalization of the performance indicators to follow.

Indicators Not Solely Attributable to Public Health Units' Work

Public health staff have noted that changes in a number of performance indicators cannot be solely attributed to the effort of the public health units. The health promotion indicators that involve both the work of public health units and others include the following three outcome indicators:

- % of population aged 19 and up that exceeds the Low-Risk Alcohol Drinking Guidelines;
- % of youth aged 12 to 18 who have never smoked a whole cigarette; and

Figure 8: Health Promotion Indicators Used by the Ministry of Health and Long-Term Care to Measure Performance of Public Health Units, 2016

Source of data: Ministry of Health and Long-Term Care

Areas	#	Health Promotion Indicators
Tobacco	1	% of tobacco vendors in compliance with youth access legislation at the time of last inspection
	2	% of secondary schools inspected once per year for compliance with section 10 of the <i>Smoke-Free Ontario Act</i>
	3	% of tobacco retailers inspected for compliance with section 3 of the <i>Smoke-Free Ontario Act</i>
	4	% of tobacco retailers inspected once per year for compliance with display, handling and promotion sections of the <i>Smoke-Free Ontario Act</i>
	5	% of youth (ages 12-18) who have never smoked a whole cigarette
Healthy Eating	6	Implementation status of NutriSTEP Preschool Screen (a nutrition risk-screening questionnaire)
	7	Baby-Friendly Initiative status
Alcohol Use	8	% of population (aged 19+) that exceeds the Low-Risk Drinking Guidelines
Injury Prevention	9	Fall-related emergency visits in older adults aged 65+
Oral Health	10	Oral Health Assessment and Surveillance: % of all Junior Kindergarten, Senior Kindergarten and Grade 2 students screened in all publicly funded schools

- fall-related emergency visits in adults aged 65 and up.

For these indicators, public health units work with other partners, such as schools, recreation centres, cultural organizations, welcome centres, new immigrant groups, home and community-care providers, health promoters, health-care providers in Community Health Centres, and other primary care settings and not-for-profit organizations that advocate for healthy living. As such, monitoring of these indicators is likely more suited for the Ministry to assess how well the public-health sector is performing in these areas at the provincial level. These measures do not provide much insight on public health units' performance at the local level.

As well, the Ministry did not establish targets in these three areas to help drive performance improvement at the public health units. Instead, it simply collected the data as reported.

Public health units that responded to our survey noted there are indicators that reflect the performance of public health units better, such as an improved quit rate for tobacco smoking and increased healthy-eating knowledge for individuals who attend public health units' programs.

Indicators Do Not Measure More Meaningful Information

Two health-promotion indicators measure aspects of public health units' activity that are already or nearly achieved and therefore do not provide meaningful data to the Ministry. These two areas are the implementation of NutriSTEP (a nutrition risk-screening questionnaire) and the designation status of the Baby-Friendly Initiative (regarding breastfeeding). In 2016, 25 of the 36 public health units have already earned the designation, 11 of which have achieved this status since 2013 and eight are close to being designated for the Baby-Friendly Initiative and 35 out of 36 have implemented NutriSTEP.

Given that implementation has nearly been achieved for these two areas for almost all public

health units, the Ministry could now measure the quality and reach of these programs, such as the number of children screened by the NutriSTEP program and referred to appropriate resources, and the breastfeeding initiation and duration rates as a result of the Baby-Friendly Initiative implemented in the respective public health units. These measures would be more meaningful than simply asking the public health units to report on the implementation of the initiatives.

Suite of Indicators Does Not Fully Measure All Key Risk Factors

Of the five remaining health promotion indicators, four relate to tobacco control and one relates to oral health. There are no indicators to measure public health units' achievement toward reducing other key risk factors, such as physical inactivity, unhealthy eating and unhealthy weights.

About one-third of the public health staff responsible for reporting on performance indicators who responded to our survey reported that the areas in which the Ministry measures public health units are not sufficient and appropriate in measuring the public health units' performance. The respondents noted the indicators only reflect a small portion of what public health units do and do not reflect their impact on improving the health of the community.

RECOMMENDATION 9

To properly measure the public health units' performance in delivering their health promotion programs and services, we recommend that the Ministry of Health and Long-Term Care:

- put in place relevant indicators that are linked to the planned new Ontario Public Health Standards and that measure areas attributable to the public health units; and
- establish targets that reflect expected performance to promote continuous improvement.

MINISTRY RESPONSE

The Ministry agrees with the importance of measuring public health unit performance in delivering local programs and services. As part of the modernized Ontario Public Health Standards, the Ministry will:

- implement a Public Health Indicator Framework that will include specific indicators to measure chronic disease prevention outcomes across the province that are consistent with the program outcomes specified in the modernized standards; and
- monitor public health unit actual versus expected performance and outcomes through required submission of planning and reporting tools by Boards of Health to the Ministry, including the Board of Health Annual Service Plan and Budget Submission, performance reports and an Annual Report.

These tools will enable Boards of Health to demonstrate that they are meeting defined expectations and provide appropriate Ministry oversight for public funding and resources.

4.5.2 Lack of Public Reporting on Public Health Units' Chronic Disease Prevention Performance

While some public health units individually report their performance on the 10 health promotion indicators to their Board of Health through meetings that are open to the public, the Ministry does not publicly report the performance results of all public health units. Respondents to our survey expressed that the Ministry should publicly release overall data so that the public health units can understand how the sector is performing as a whole; specifically, health units can gain a better sense of the public-health sector's performance against targets, and how individual public health unit performances compare with other health units' and the provincial results.

The public disclosure of performance results could contribute toward continually improving the

quality of services and programs and enhancing public health units' accountability to taxpayers, who fund and use their services and programs.

4.5.3 Limited Ministry Insights on Public Health Units' Use of Resources

The Ministry has limited insights into whether public health units' use of provincial funding is cost-effective. The performance indicators included in the Public Health Funding and Accountability Agreement between the Boards of Health and the Ministry measure areas only regarding health promotion and health protection, but do not extend to any operational aspects of the public health units.

Outside of performance indicator reporting, the public health units provide the number of full-time equivalents devoted to chronic disease prevention, other mandatory programs and the entire organization, as well as the related salary cost to the Ministry through their annual funding request. In 2016, of the estimated total 7,500 full-time equivalents for the public health units, about 980 were allocated to chronic disease prevention under the Ontario Public Health Standards.

While the 36 public health units on average devoted 12% of their full-time equivalents to chronic disease prevention, 17 devoted less than the provincial average, with three health units devoting 6% and two health units devoting up to 20% of their total full-time equivalents to chronic disease prevention. While the differences could be attributed to local decisions of the Boards of Health that are independent of each other and the priorities of each public health unit, the Ministry does not know whether these differences are justified.

Without measuring how efficient the public health units are at using provincial funding to provide chronic disease prevention programs, the Ministry cannot demonstrate that provincial funding on chronic disease prevention has resulted in positive outcomes on each public health unit's overall program objectives.

RECOMMENDATION 10

To continually improve the accountability and transparency of the public health sector's performance, we recommend the Ministry of Health and Long-Term Care:

- publicly report on the public health units' performance, including annual results and targets of their performance indicators; and
- develop a procedure to monitor the amount of their resources public health units invest in chronic disease prevention programs against the outcomes of those programs.

MINISTRY RESPONSE

The Ministry agrees with the importance of continually improving the accountability and transparency of the public health sector's performance. Transparency and accountability are key components of the modernized Ontario Public Health Standards. As part of the Public Health Accountability Framework, which supports the modernized standards, the Ministry will:

- require Boards of Health to publicly report on their performance through an annual financial and performance report beginning in 2018/19; and
- develop procedures to monitor the amount of resources public health units invest in chronic disease prevention programs against the outcomes of these programs.

4.6 Full Rollout of Needs-Based Funding Model May Take Up to 10 Years

The current level of provincial funding to the public health units has been primarily driven by historical decisions and is not based on any distribution formula.

Over the years, public health units' funding has been influenced by many factors, such as historical unequal allocations, traditional arrangements

with municipalities to share costs, and provincial priorities for program expansions and/or programs and services required to meet local needs. However, demographics and local needs have evolved over time.

As a result, per capita funding of public health spending varies widely across the 36 public health units in the province. In 2016/17, per capita funding per public health unit averaged \$64.40, and ranged from the lowest of \$36.89 for Halton Region to the highest of \$133.61 for Timiskaming, as shown in **Figure 9**.

We noted that this concern of funding disparity had been identified in our two previous audit reports on public health in 1997 and 2003, as well as in the Ministry's Local Public Health Capacity Review Committee in 2006.

New Funding Model Recommended in 2013

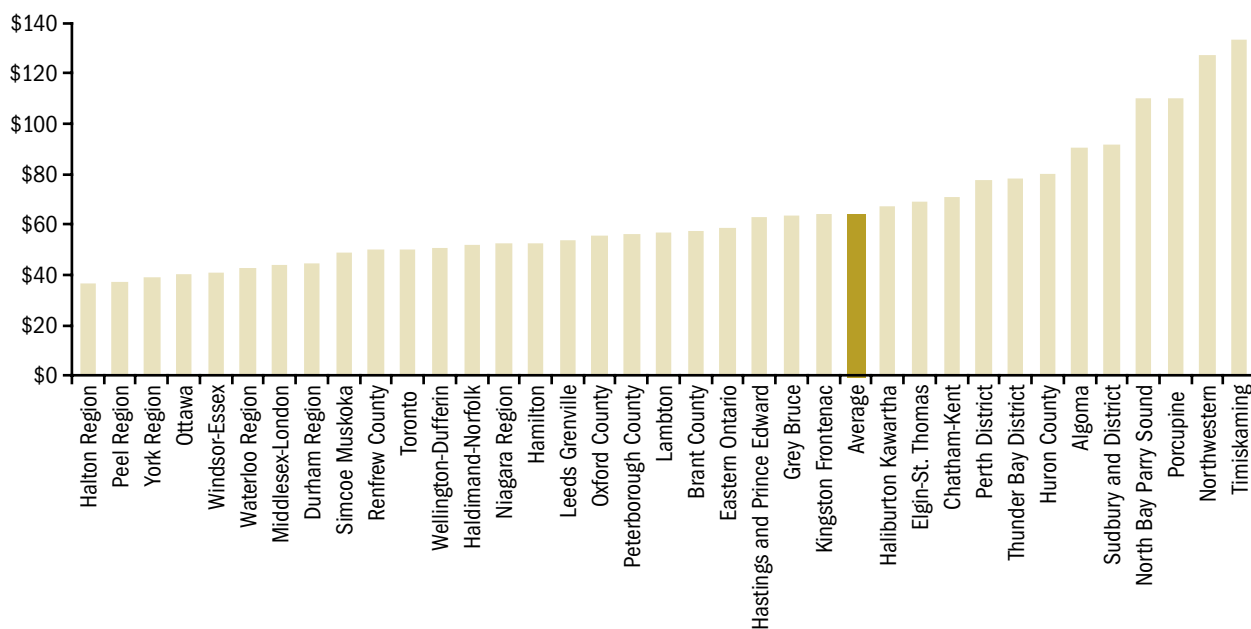
In 2010, the Ministry convened a Funding Review Working Group to investigate the status of public health funding at that time, provide advice to the Ministry on a future public-health funding model, and advise the Ministry on principles for setting up the funding model. The objectives of the review were to develop a needs-based approach to public health funding and reduce funding inequities among public health units over time.

The Working Group presented its final report to the Ministry in December 2013. It recommended using a new model to identify an appropriate funding share for each public health unit. The model is based on many factors, including population, health risks, cost of living, low birth rates, preventable mortality rates, geography, language, immigrant status, and education.

Since the recommendation by the Working Group, the Ministry provided increases of 2% (\$11 million) to eight public health units in 2015 and 1% (\$6 million) to 10 public health units in 2016 for the health programs and services set out in the *Health Protection and Promotion Act* using the new funding model. The Ministry did not give any

Figure 9: Provincial Per Capita Funding of All 36 Public Health Units, 2016/17

Source of data: Ministry of Health and Long-Term Care



increase in funding to the public health units using the funding model in 2017.

The Ministry has not set a target date for when public health units will reach their modelled share of funding. It has estimated it could take 10 years to ensure public health funding is more equitably allocated to all health units, assuming a 2% growth rate and that future incremental funds are targeted to units that do not yet receive their modelled share of funding. The final report of the Expert Panel on Public Health released in July 2017 recommended that the 36 public health units be reorganized into 14 regional public health entities. If the Ministry adopts the recommendation, the funding model recommended by the Funding Review Working Group in 2013 may become obsolete and a new funding model would have to be established.

We also found that the Ministry generally does not finalize funding decisions for the public health units until the last quarter in the year. This leaves very little time for the public health units to deal with any unexpected changes in funding. Over 80% of the Medical Officers of Health and chief execu-

tive officers of the local public health units who responded to our survey identified that timeliness of funding approvals is a problem. They noted that it is challenging to plan programs and services without having the assurance of how much funding would be available to the public health units.

RECOMMENDATION 11

To reduce funding inequities among public health units and to support proper planning for programs and services, we recommend that the Ministry of Health and Long-Term Care:

- expedite its application of the model on public health units' funding developed by the Funding Review Working Group or establish a new funding approach that supports more equitable funding for public health units; and
- finalize the annual funding for public health units as early in the current fiscal year as possible.

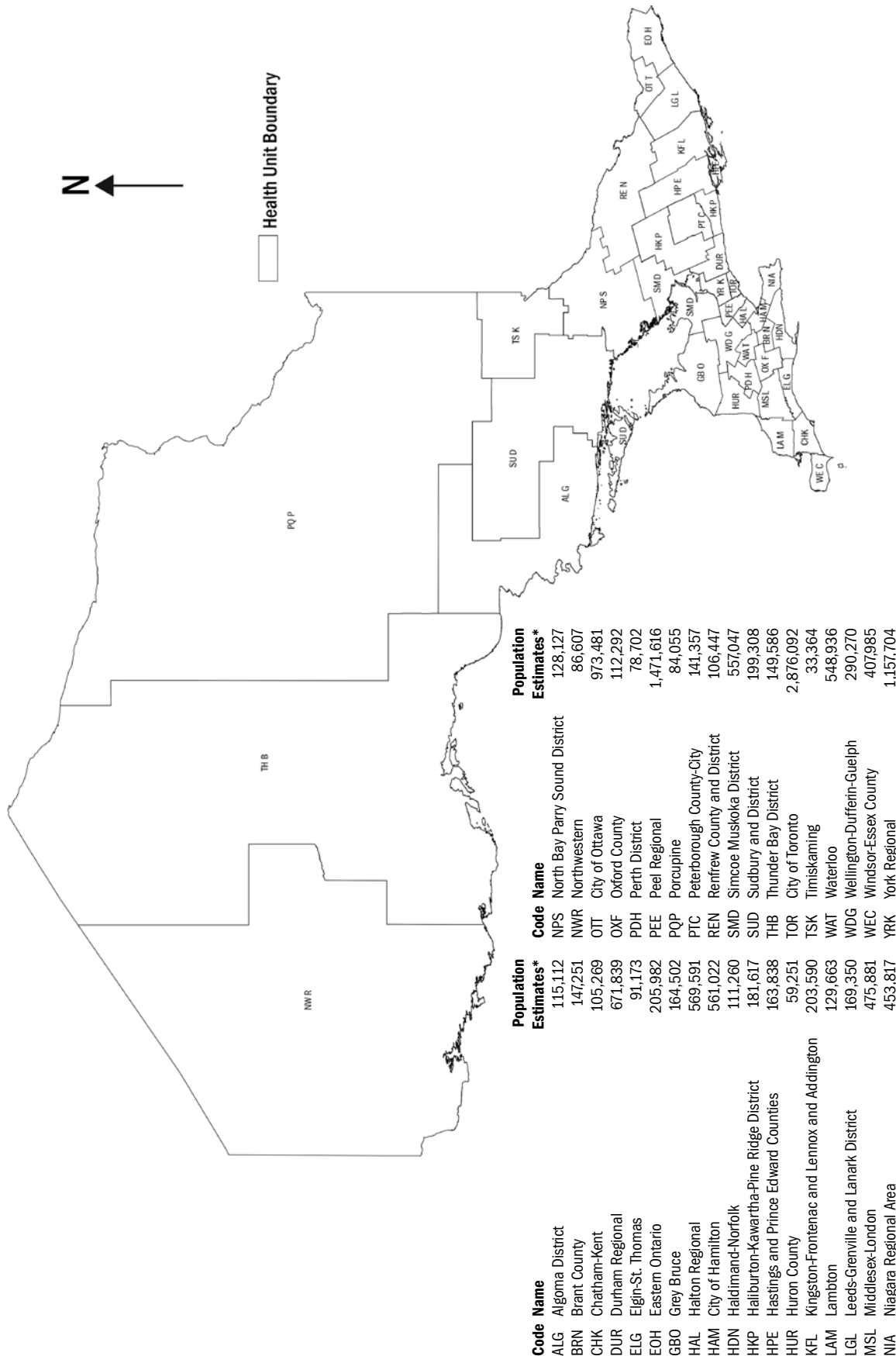
MINISTRY RESPONSE

The Ministry agrees with the importance of timely and equitable funding for public health units. To this end, the Ministry will:

- review the public health funding model in the context of public health transformation and make adjustments, as appropriate, in support of equitable funding approaches;
- continue to work toward finalizing annual funding adjustments for public health units as early in the current Ministry fiscal year as possible;
- continue to provide informal planning targets to the sector as early as possible to assist with budget planning and programming; and
- work toward extending the period of time public health units are permitted to use provincially approved funding to March 31 from December 31.

Appendix 1: Ontario Public Health Units

Source of data: Public Health Ontario, Statistics Canada



Code Name	Population Estimates*	Code Name	Population Estimates*
ALG Algoma District	115,112	NPS North Bay Parry Sound District	128,127
BRN Brant County	147,251	NWR Northwestern	86,607
CHK Chatham-Kent	105,269	OTT City of Ottawa	973,481
DUR Durham Regional	671,839	OXF Oxford County	112,292
ELG Elgin-St. Thomas	91,173	PDH Perth District	78,702
EOH Eastern Ontario	205,982	PEE Peel Regional	1,471,616
GBO Grey Bruce	164,502	PQP Porcupine	84,055
HAL Halton Regional	569,591	PTC Peterborough County-City	141,357
HAM City of Hamilton	561,022	REN Renfrew County and District	106,447
HDN Haldimand-Norfolk	111,260	SMD Simcoe Muskoka District	557,047
HKP Haliburton-Kawartha-Pine Ridge District	181,617	SUD Sudbury and District	199,308
HPE Hastings and Prince Edward Counties	163,838	THB Thunder Bay District	149,586
HUR Huron County	59,251	TOR City of Toronto	2,876,092
KFL Kingston-Frontenac and Lennox and Addington	203,590	TSK Timiskaming	33,364
LAM Lambton	129,663	WAT Waterloo	548,936
LGL Leeds-Grenville and Lanark District	169,350	WDG Wellington-Dufferin-Guelph	290,270
MSL Middlesex-London	475,881	WEC Windsor-Essex County	407,985
NIA Niagara Regional Area	453,817	YRK York Regional	1,157,704

* Based on 2016 data from Statistics Canada.

Appendix 2: Summary of Standards, Requirements and the Related Goals in the Ontario Public Health Standards for Ontario's Public Health Units

Prepared by the Office of the Auditor General of Ontario using data from the Ministry of Health and Long-Term Care

Standards	Goal	Examples of Requirements on the Public Health Units
Foundational Standard		
1 Population Health Assessment, Surveillance, Research and Knowledge Exchange, and Program Evaluation	Public health practice responds effectively to current and evolving conditions, and contributes to the public's health and well-being	<ul style="list-style-type: none"> Tailor public health programs and services to meet their local needs, and communicate public health information to the public, health-care providers, and community partners Monitor programs and services to determine whether intended outcomes are being achieved and whether performance can be improved through changing the reach, intensity, or duration of programs
Chronic Diseases and Injuries Program Standards		
2 Chronic Disease Prevention	To reduce the burden of preventable chronic diseases of public health importance	<ul style="list-style-type: none"> Develop policies and increase awareness of healthy eating, weights, tobacco controls, alcohol use, physical activity, and ultraviolet radiation exposure
3 Prevention of Injury and Substance Misuse	To reduce the frequency, severity, and impact of preventable injury and of substance misuse	<ul style="list-style-type: none"> Develop and promote healthy policies on alcohol and other substances, falls prevention, road and off-road safety
Family Health Program Standards		
4 Reproductive Health	To enable individuals and families to achieve optimal pre-conception health, experience a healthy pregnancy, have the healthiest newborn(s) possible, and be prepared for parenthood	<ul style="list-style-type: none"> Promote pre-conception health, healthy pregnancies, reproductive health outcomes, and preparation for parenting
5 Child Health	To enable all children to attain and sustain optimal health and developmental potential	<ul style="list-style-type: none"> Promote positive parenting, breastfeeding, healthy family dynamics, healthy eating, weights and physical activity, growth and development, and oral health
Infectious Diseases Program Standards		
6 Infectious Diseases Prevention and Control	To prevent or reduce the burden of infectious diseases of public health importance	<ul style="list-style-type: none"> Improve public knowledge on infectious diseases that are locally relevant, respiratory etiquette (sneezing/coughing), hand hygiene, vaccinations and medications, infection prevention and control Manage cases and outbreaks of infectious diseases
7 Rabies Prevention and Control	To prevent the occurrence of rabies in humans	<ul style="list-style-type: none"> Improve public knowledge on rabies prevention and control

Standards		Goal	Examples of Requirements on the Public Health Units
8	Sexual Health, Sexually Transmitted Infections, and Blood-Borne Infections (including HIV)	To prevent or reduce the burden of sexually transmitted infections and blood-borne infections; to promote healthy sexuality	<ul style="list-style-type: none"> Promote healthy sexuality and access to sexual health services Prevent adolescent pregnancies, and sexually transmitted and blood-borne infection
9	Tuberculosis Prevention and Control	To prevent or reduce the burden of tuberculosis	<ul style="list-style-type: none"> Surveillance of active tuberculosis and individuals with latent tuberculosis Provide or ensure access to tuberculosis medication at no cost
10	Vaccine Preventable Diseases	To reduce or eliminate the burden of vaccine preventable diseases	<ul style="list-style-type: none"> Maintain records and report on the immunization status of children Promote and provide immunization to all eligible persons
Environmental Health Program Standards			
11	Food Safety	To prevent or reduce the burden of food-borne illness	<ul style="list-style-type: none"> Surveillance of food-borne illnesses and inspection of food premises
12	Safe Water	To prevent or reduce the burden of water-borne illness related to drinking water; and to prevent or reduce the burden of water-borne illness and injury related to recreational water use	<ul style="list-style-type: none"> Surveillance of drinking water systems and drinking water illnesses, public beaches and public beach water illnesses
13	Health Hazard Prevention and Management	To prevent or reduce the burden of illness from health hazards in the physical environment	<ul style="list-style-type: none"> Increase public awareness of indoor or outdoor air quality, extreme weather, climate change, exposure to radiation Respond to and manage health hazards
Emergency Preparedness Program Standard			
14	Public Health Emergency Preparedness	To enable and ensure a consistent and effective response to public health emergencies and emergencies with public health impacts	<ul style="list-style-type: none"> Develop plans to keep critical services operational during emergencies

Appendix 3: Audit Criteria

Prepared by the Office of the Auditor General of Ontario

1. Roles and responsibilities are clearly defined and accountability requirements are in place to support the cost-effective delivery of public health programs.
2. Co-ordination between the Ministry, Public Health Ontario, Boards of Health and other parties (including other ministries, other levels of governments, and stakeholder associations) are in place to facilitate development, delivery and evaluation of programs.
3. Current evidence and best practices are used to inform the development of strategies, action plans and programs to meet population needs.
4. Programs are established and delivered in an equitable and cost-effective manner.
5. Strategies and programs are continuously evaluated and revised as needed using acceptable program evaluation methods.
6. Oversight entities exercise their responsibilities to ensure compliance with legislated requirements and policies and ensure timely corrective action is taken to address identified areas of concerns.
7. Resource provision is sustainable, predictable and allocated based on areas of identified need. Annual funding is finalized on a timely basis.
8. Performance measures and targets are established, monitored and compared against actual results to ensure that the intended outcomes are achieved and that corrective actions are taken on a timely basis when issues are identified.