

# Review of Oral Health Services in Ontario

Final Report

October 7, 2014

## Review of Oral Health Services in Ontario

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## EXECUTIVE SUMMARY

Oral health consists of much more than healthy teeth and gums. The World Health Organization defines oral health as “... a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity” (Petersen, 2003). Oral health also relates to quality of life factors such as appearance and the ability to speak and socialize. The most common aspects of oral health care are the prevention, diagnosis and treatment of dental decay (i.e., caries), periodontal disease and other oral diseases.

The majority of oral conditions are preventable; they often occur when people do not take preventive action themselves or are unable to get adequate support from oral health professionals.

### Review of Oral Health Services in Ontario

The College of Dental Hygienists of Ontario (CDHO) is aware of reports that certain segments of Ontario's population have poor access to oral health services. The CDHO felt that a public report, in addition to other publications (such as the *Canadian Oral Health Strategy* and the *Oral Health: More than Just Cavities* report (Federal, Provincial, Territorial Dental Directors, 2005; King, 2012)), describing the current state of access to and delivery of oral health services, identifying strengths and weaknesses, would provide a foundation for stakeholders (e.g., government, regulators, educators, associations) to engage in active discussions about policy, investments and activities regarding oral health services.

In 2013, the CDHO engaged Barry Monaghan, working in collaboration with OPTIMUS | SBR and Dr. Barry Maze as clinical advisor (collectively the “Review Team”), to identify existing and emerging themes relating to access to and quality of oral health services as well as barriers and enablers to improve access to services. The CDHO provided funding for the review and engaged the Review Team, and encouraged the team to work independently. The CDHO was consulted in the development of the work plan and in the interpretation of issues that were raised during the conduct of the review.

### Methods

The Review Team made every effort to identify evidence-informed from published literature and input from expert and public stakeholders through:

- A review of published and grey literature;
- A review of the organization of oral health services in Ontario and other jurisdictions;
- Thirty-six key informant interviews involving 46 individuals; and
- Focus groups with representatives of the public (12 participants).

## The Policy Environment

For the past several years, policy makers and funders have been concerned about the growing costs of health care in a context of shrinking fiscal resources to meet these needs. As a consequence, Ontario has undertaken health system reform to ensure population needs are met within a sustainable health system. Oral health services have not figured prominently in this agenda or the health policy discussions it has created.

## Summary Findings and Opportunities

### *Strengths of Ontario's Oral Health System*

Overall, many positive statements can be made about the delivery of oral health services in Ontario:

- Despite the fact that oral health services are not covered by the Ontario Health Insurance Plan (OHIP) or other sources of public funding available to the majority of Ontarians, the majority of Ontario's population has access to services (predominantly through employment-related dental insurance) and enjoys relatively good oral health status.
- No issues related to quality of services were identified during the review.
- Many programs are delivered through Public Health for school-age children to provide screening and some preventive services for this population. The Ministry of Health and Long-Term Care is currently amalgamating six programs into a single program to improve access, with a concurrent examination of the program parameters evidence based services that deliver desired outcomes
- Access to oral health services in Ontario compares favourably to most provinces in Canada and reasonably well to many jurisdictions outside of Canada.

### *Access to Oral Health Services*

One utilization measure that is relatively broadly available is the proportion of the population that has visited a dentist in the past 12 months. Although this is not necessarily an appropriate measure of good access, it was used as a proxy for lack of a better measure. According to the Canadian Health Measures Survey, 76.7% of Canadian adults (40-59 years) had visited a dentist in the past 12 months in 2007 to 2009 (Health Canada, 2010). Assuming results are similar for Ontario, despite the lack of a comprehensive publicly funded program, approximately three out of four adult Ontarians have access to oral health services.

While extrapolating from the relatively sparse data is difficult, they suggest that as many as 2 to 3 million Ontarians have not seen a dentist in the past 12 months, or even longer. These underserved populations include:

- The unemployed, contract and part-time workers and retired seniors who do not have insurance benefits and cannot afford the services.

- Children of low-income families. A recent study reported that many Toronto children included in a survey had never seen a dentist, and that children from low-income families were most likely not to have seen a dentist (Darmawikarta et al., 2014).
- Those living in small, rural and remote communities that do not have a sufficiently large population to support a dental practice or have not been able to attract oral health professionals.
- Vulnerable populations where the social determinants of health are likely to contribute to poor overall population health (e.g., First Nations, Inuit and Métis, the homeless, new immigrants, refugees).
- Residents of institutions (e.g., long-term care homes) and those with complex needs (e.g., with mental health and addiction issues, medically complex patients).

Programs funded by municipal, provincial and federal governments are available for some of these vulnerable populations, including First Nations, Inuit and Métis, children and low-income adults. However, many of these programs were criticized by stakeholders as inadequate due to:

- Restrictive eligibility criteria (e.g., income thresholds to qualify for benefits are too low),
- A focus on services and treatment rather than outcomes and prevention (e.g., paying for the treatment of cavities but not for regular preventive services),
- Non-comprehensive coverage,
- Approvals being denied for services recommended by oral health professionals,
- Fee schedules below the profession's provincial fee guides and onerous administrative processes that treating these individuals unattractive to some oral health professionals.

Not all vulnerable populations are eligible for publicly funded programs (e.g., residents of long-term care homes, retired seniors and the working poor):

- Ontario is experiencing a trend towards “precarious employment,” which is characterized by part-time or contract employment that does not provide health insurance benefits.
- Even for those with insurance, many companies are moving away from comprehensive benefit plans (i.e., reducing the provided coverage) or allowing employees to select the level of coverage they would like. Many employees will assign a low priority to dental to reduce monthly costs.
- Many of Ontario's seniors have enjoyed oral health insurance through most of their working lives; however, this insurance usually stops at retirement, leaving them to cover their own expenses out of their retirement income, just as their oral health needs intensify.

### ***Barriers to Access to Oral Health Services***

The Review Team identified three primary barriers to access to oral health services in Ontario; often, underserved populations faced more than one of these barriers:

- **Financial Barriers.** In Ontario, 98.7% of expenditures for oral health services are funded through third-party insurance or paid out-of-pocket, and only 1.3% are publicly funded, the lowest provincial rate in Canada (Public Health Ontario, 2012), making cost a major barrier to access.
- **Geographic Barriers.** For residents of First Nations, Inuit and Métis communities in the north (and some in the south) and of small, rural and northern communities across Ontario, residents can only access services by leaving the community (at some cost to the individual), since many oral health professionals prefer to live and practice in larger urban centres.
- **Lack of Awareness of the Importance of Oral Health.** An individual must value the services sufficiently to allocate limited financial resources to oral health services, in light of competing needs. For the unemployed and low- and middle-income earners, oral health is not always perceived as a priority within their budget.

### Opportunities to Improve Access to Oral Health Services in Ontario

The findings of this review are consistent with the findings of the Canadian Oral Health Framework (COHF) 2013-18, produced by the Federal, Provincial and Territorial Dental Working Group (Federal, Provincial, Territorial Dental Directors, 2012). The Review Team identified a number of opportunities to enhance the planning and delivery of oral health services that can contribute to improved access for these underserved populations:

1. For representatives of public health, oral health professionals and primary care practitioners to come together to build a consensus on strategic priorities for oral health services in Ontario and provide advice to the Ministry of Health and Long-Term Care, Local Health Integration Networks and Health Quality Ontario on those priorities and supporting policies. These priorities should include the identification of data requirements to support the planning and delivery of services as well as quality metrics.
2. For representatives of public health, oral health professionals, primary care practitioners and relevant specialist physicians to create a forum for discussion about oral health research priorities (both clinical and oral health system) and strategies to support this research.
3. For Local Health Integration Networks to recognize oral health services as an important component of the overall health system and to facilitate planning for oral health services in their regions.
4. For Local Health Integration Networks to support Community Health Centres, Aboriginal Health Access Centres, Family Health Teams, and Community Care Access Centres in the development and implementation of strategies to incorporate oral health assessments, referrals and services to better integrate oral health services into the health system.

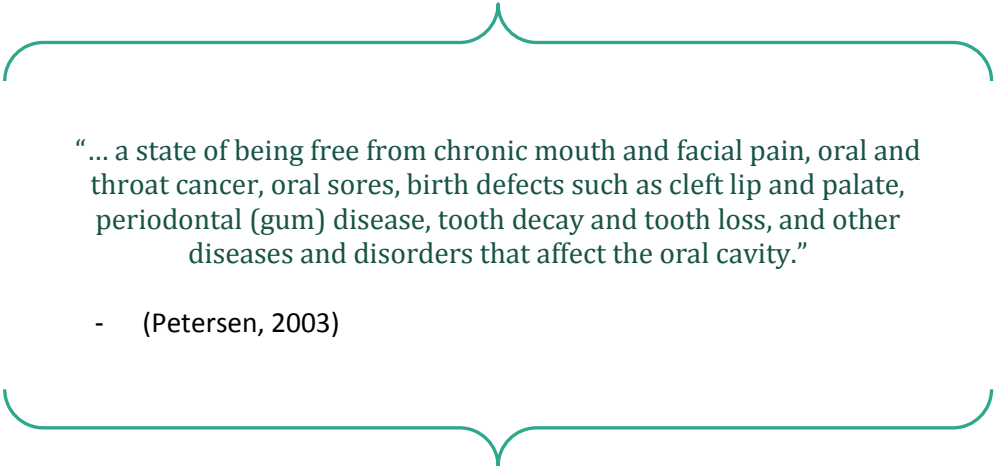
5. For increased awareness of the importance of good oral health through strategies to promote oral health across all populations and targeted programs to educate at-risk populations through social programming, visits with primary care practitioners, public health nurses and dental hygienists and school-based programs in at-risk neighbourhoods.
6. For representatives of public health, oral health professionals, health service providers and educators to continually look for and nurture opportunities for developing strong and sustainable models for interprofessional care in the delivery of oral health services.



## 1.0 INTRODUCTION

### 1.1 Oral Health

Oral health consists of much more than healthy teeth and gums. The World Health Organization defines oral health as:



“... a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity.”

- (Petersen, 2003)

Oral health also relates to quality of life factors such as appearance and the ability to speak and socialize. The most common aspects of oral health care are the prevention, diagnosis and treatment of dental decay (i.e., caries), periodontal disease and other oral diseases.

The majority of oral conditions are preventable; they often occur when people do not take preventive action themselves or are unable to get adequate support from oral health professionals. Preventive measures to maintain oral health include brushing at least two times a day and flossing every day, the use of dental products with fluoride (e.g., toothpaste), regular checkups with an oral health professional, and community water fluoridation.

In Ontario, oral health care services are provided by dentists, dental specialists (e.g., orthodontists, oral surgeons, pediatric dentists, periodontists), dental hygienists, denturists, dental technologists and dental assistants.

### 1.2 Impetus for this Review

The Regulated Health Professions Act (RHPA), and the Health Professions Procedural Code (Schedule 2 to RHPA), sets the mandate for Ontario’s health professional regulatory colleges. According to the RHPA, the colleges have two duties:

1. To work in consultation with the Minister to ensure, as a matter of public interest, that the people of Ontario have access to adequate numbers of qualified, skilled and regulated health professionals (Government of Ontario, 2013); and
2. To serve and protect the public interest (Government of Ontario, 2013).

The College of Dental Hygienists of Ontario (CDHO) has taken the position that the public interest can be safeguarded in at least two ways:

1. Direct regulation of the clinical activities of an individual registrant of the College; and
2. Investigation, research and commentary on the system of oral health service delivery that is preventing any person in Ontario from accessing appropriate care.

The CDHO has increased its focus on the duty to serve and protect the public interest for a number of reasons:

- The public face of health care tends to be dominated by the mainstream health care sector (i.e., physicians, nurses and hospitals), and does not tend to highlight issues in predominantly privately delivered and funded services such as oral health care.
- While there is scientific evidence in dentistry that helps inform public policy decisions for oral health care, there is considerably less evidence for the other three oral health professions (dental hygiene, dental technology and denture therapy), resulting in relatively less focus on these roles in public policy decisions.
- Dental hygiene is characterized as a preventive health profession, which has always been the “poor cousin” to diagnostic and treatment services.

The CDHO is also aware of reports that certain segments of Ontario's population have poor access to oral health services. These segments include disadvantaged groups in society such as the working poor, new Canadians, the homeless, residents of rural and remote communities in Ontario, First Nations, Inuit and Métis<sup>1</sup> individuals, and residents in long-term care homes. These reports suggested to the CDHO that it was not fulfilling its obligation to work with the Minister to ensure access to oral health services for these populations. The CDHO felt that a public report describing the current state of access to and delivery of oral health services, identifying strengths and weaknesses, would provide a foundation for stakeholders (e.g., government, regulators, educators, associations) to guide policies, investments and activities regarding oral health services.

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<sup>1</sup> Throughout this report, Canada's native population is referred to as “First Nations, Inuit and Métis,” except where the source publication used a different term.

### 1.3 The Review

In 2013, the CDHO engaged Barry Monaghan, working in collaboration with OPTIMUS | SBR and Dr. Barry Maze as clinical advisor (collectively the “Review Team”), to conduct a review to identify existing and emerging themes relating to access to and quality of oral health services as well as barriers and enablers to improve access to services. For information on the key Review Team members, see Appendix A.

The purpose of the review was to:

- Raise the awareness and interest of those consulted during the review in contemplating the state of oral health services in Ontario, its relationship to overall health system priorities and possibilities for improving access and quality of oral health services.
- Develop a public document for use by interested stakeholders and decision-makers as a basis for policy discussions to inform the future of oral health services delivery in Ontario (including an assessment of the status of oral health service delivery in Ontario).
- Identify specific gaps in and barriers to access to the delivery of oral health services.
- Identify potential opportunities and strategies to address the identified gaps and barriers.

The CDHO provided funding for the review and engaged the Review Team, and encouraged the team to work independently from the CDHO. The CDHO was consulted in the development of the work plan and in the interpretation of issues that were raised during the conduct of the review. The CDHO was provided with regular progress reports and this final report.

### 1.4 Organization of the Report

The next section provides a short overview of the approach to this work, with additional detail on the methodology provided in the appendices. The following sections document the findings of the Review Team in all of the areas identified as being of interest by the CDHO as follows:

- Section 3 presents evidence to support the importance of oral health for overall health and how it can contribute to a more efficient health system;
- Section 4 describes oral health needs and how they change over a person’s life and what services are delivered to meet those needs;
- Section 5 provides an assessment of the prevalence of various oral health conditions and the oral health status of Ontario’s population;
- Section 6 outlines elements of the current policy environment that have influenced and will continue to influence oral health policy in Ontario;
- Section 7 describes how oral health care services are organized in Ontario and trends in the delivery of care.

- Section 8 looks at the characteristics of a well-performing oral health system and provides a comparison of Ontario with other provinces in Canada and other jurisdictions outside of Canada.
- Section 9 presents the Review Team's assessment of the barriers to access and identifies populations that are well served and those that are particularly vulnerable.
- Section 10 looks at future trends that will affect the supply of and demand for oral health services over the next 5 to 10 years.
- Section 11 presents the Review Team's summary conclusions on oral health services in Ontario and highlights opportunities for Ontario to improve access to oral health services, particularly for those who are at-risk of poor oral health.

Each section has a summary of the key findings. If the reader is familiar with the contents of any section, it can be skipped without losing context for the remainder of the report.

## 2.0 METHODS

### 2.1 Approach to the Review

The Review Team made every effort to identify evidence-informed information regarding the state of oral health services in Ontario and focused most intensely on published literature and input from expert and public stakeholders. Specifically, the Review Team conducted research through a variety of methods:

- A review of published and grey literature (See Appendix B for the detailed methodology);
- A review of the organization of oral health services in Ontario and other jurisdictions (See Appendix B for the detailed methodology);
- Thirty-six key informant interviews involving 46 individuals (See Appendix C for the detailed methodology including the interview guide and Appendix D for a list of interviewees); and
- Focus groups with representatives of the public (12 participants in total). (See Appendix E for more detail on the methodology.)

The findings, observations and recommendations were documented in a draft report, which was sent to two secondary reviewers for comment. The names and background for the secondary reviewers are provided in Appendix F.

## 2.2 Limitations of the Review

This document is not intended to summarize evidence for health or oral health interventions or to provide a comprehensive review. It represents key findings from the literature as well as our assessment of certain stakeholders' assessments of the issues described. Given that some key sector stakeholders declined to participate in the key informant interviews (See Appendix D for those who participated and those who declined to participate), this report does not represent all views held in the Ontario oral health sector.

The research regarding oral health services in Ontario is somewhat limited relative to the bodies of research for other areas of health care; however it appears to be rapidly expanding. The growth in interest in oral health is understandable, given the increasing recognition that oral health can have a broad impact on health outcomes, general population health and health care budgets, indirectly and directly. However, research opportunities are quite limited by the lack of data on utilization, oral health status and clinical outcomes.

## 3.0 WHY ARE WE TALKING ABOUT ORAL HEALTH?

Good oral health is important because it can have a significant impact on an individual's overall health and quality of life, as well as wages for certain populations. Gaps in access to oral health services can also result in inappropriate utilization of other health services (e.g., emergency departments) contributing to costs in the health care system and to the overall economy in lost productivity.

### 3.1 What is Oral Health?

The World Health Organization defines oral *health* as “...a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity” (Petersen, 2003). The Canadian Dental Association adds that oral health “...should positively contribute to physical, mental and social well-being and to the enjoyment of life's possibilities, by allowing the individual to speak, eat and socialize unhindered by pain, discomfort or embarrassment” (Canadian Dental Association, 2014b).

Oral *health care* involves “the diagnosis and treatment of oral diseases such as dental caries, periodontal disease, oral lesions, temporomandibular (jaw) joint disorders, soft tissue injuries and oral cancer” (King, 2012):

- Dental caries, also known as tooth decay or cavities, are caused by bacteria on the tooth surface that produce acid, leading to progressive destruction of the tooth surface (Selwitz, Ismail, & Pitts, 2007).
- Periodontal diseases, such as gingivitis and periodontitis, are chronic inflammation of gum tissue, soft tissue and bone supporting the teeth caused by bacteria on the oral surfaces (U.S. Department of Health and Human Services, 2000).
- Temporomandibular (jaw) joint disorders and other sources of chronic facial pain may be caused by trauma, overuse or nerve pain. These conditions can cause pain and discomfort to the jaw joint and surrounding areas. (U.S. Department of Health and Human Services, 2000).
- Oral and pharyngeal cancers include any cancers occurring on the tongue, the lips, and the floor of the mouth and are usually squamous cell carcinomas—cancers originating in skin cells (King, 2012).

## 3.2 Good Oral Health is Related to Good General Health

Relative to the body of research on overall health care and services, there is little research conducted specific to oral health care. Most of the research in oral health is focused on preventing caries or new techniques in dentistry, and does not focus on promotion or prevention at the population level, or links with overall health to the same degree as in other health professions.

This lack of research can be attributed in part to the private sector role in the industry. Very few oral health professionals continue their formal education to the PhD level, where most health research is initiated and conducted (Stakeholder Interviews, 2014).

Despite the relative lack of research, oral health is increasingly recognized as an important component of overall health, making oral health services a critical part of the overall health care system. In addition to the potential impact of dental conditions on the quality of life, studies have shown that poor oral health can affect growth, development and learning for children, communication, nutrition, self-esteem and various systemic conditions (King, 2012). Emerging research reveals associations between poor periodontal health and diabetes, cardiovascular disease and chronic respiratory disease (King, 2012) and a potential association between pre-term and low-weight births (Hwang, Smith, McCormick, & Barfield, 2012; Madianos et al., 2001).

### 3.2.1 Oral Health and Quality of Life

Oral pain, missing teeth or oral infections can influence the way a person speaks, eats and socializes. Research findings have pointed to emerging associations between chronic oral

infections with adverse health-related quality of life (U.S. Department of Health and Human Services, 2000).

A study from Norway to assess the effect of oral health on aspects of daily life found that items most frequently reported to be positively or negatively influenced by oral health were chewing and biting, eating, smiling and laughing, feeling comfortable and appearance (Dahl, Wang, & Öhrn, 2012). In a systematic review of the literature that analyzed the relationship between the number and location of missing teeth and oral health-related quality of life (Gerritsen, Allen, Witter, Bronkhorst, & Creugers, 2010), all studies reviewed found that tooth loss is associated with low quality of life scores (Gerritsen et al., 2010).

In the elderly, bone-related and inflammatory conditions have been associated with lower oral health status. Individuals with inflammation and soreness of the mouth, difficulty eating, problems with taste and difficulty caring for their own mouths can suffer weight loss, dehydration and infirmity (Hase, 2010; Simons, Kidd, & Beighton, 1999). Similarly, a severe form of dental caries, termed Early Childhood Caries, are a painful condition that affects the child's ability to eat, sleep, communicate and socialize, ultimately influencing optimal growth and development and potentially constituting a "failure to thrive" (Kraglund & Cooney, 2008).

### 3.2.1 Periodontal Disease and Diabetes

Evidence suggests a two-way association between periodontal disease and diabetes (Sima & Glogauer, 2013). Individuals with diabetes are more susceptible to infections and are, therefore, at greater risk of developing gum disease, suggesting that diabetes contributes to poor oral health status. At the same time, oral infections have been found to increase blood sugar levels, thereby increasing the severity of the diabetes (Kuo, Polson, & Kang, 2008). These findings suggest that patients with uncontrolled diabetes are more susceptible to periodontal diseases, and that poor oral health can contribute to poorer overall health by exacerbating existing chronic conditions (Kuo et al., 2008; Sima & Glogauer, 2013).

### 3.2.2 Periodontal Disease and Cardiovascular Disease

Certain studies have found that people with periodontal disease have a higher incidence and prevalence of cardiovascular disease (CVD) (Humphrey, Buckley, Freeman, & Helfand, 2008). These studies suggest that periodontal disease may be significantly associated with CVD, although the increased risk between subjects with or without periodontal disease in the general population is modest (Janket, Baird, Chuang, & Jones, 2003).

Currently, there is lack of evidence to establish a causal relationship between periodontal diseases and CVD; however, a recent study found that patients who received intensive

periodontal treatment improved the functioning of their blood vessels and decreased their cardiovascular risk (Tonetti et al., 2007).

### 3.2.3 Periodontal Disease and Respiratory Disease

A number of studies have found that older adults with poor oral hygiene have an increased risk for respiratory diseases (Azarpazhooh & Leake, 2006; Mojon, 2002; Scannapieco, 1999). The oral cavity can act as a reservoir for respiratory infections, and microorganisms from dental plaque can be released into salivary secretions and then aspirated into lower respiratory tract to cause pneumonia (Shereef, 2012). A greater burden of oral infection may also exacerbate chronic obstructive pulmonary disease (COPD) in susceptible or high risk populations (Agado & Bowen, 2012). However, a causal association between respiratory diseases (pneumonia or COPD) and periodontal diseases has not been established (Agado & Bowen, 2012).

### 3.2.4 Periodontal Disease and Preterm Low Birthweight Babies

More recently, some debate is emerging around the association between maternal periodontal disease and the risk of delivering preterm low birthweight babies. Some studies suggest that a relationship exists (Hwang et al., 2012; M. K. Jeffcoat, Geurs, Reddy, Goldenberg, & Hauth, 2001; Madianos et al., 2001), while others suggest that there is insufficient evidence to support this conclusion (Cullinan, Ford, & Seymour, 2009; Davenport et al., 2002).

In one study, women who did not receive dental care or have a teeth cleaning during pregnancy were at slightly higher risk of delivering preterm (Hwang et al., 2012). Another suggests that infection in the mother that is related to periodontal disease is associated with preterm low birthweight babies (Madianos et al., 2001). An Australian study has recognized that there is potentially an association between the two conditions, but also suggests that further study is required (Cullinan et al., 2009). At this point, researchers do not appear to have established a causal relationship between periodontal disease and preterm or low birthweight babies.

## 3.3 Poor Oral Health Impacts the Health Care System

The Review Team identified 3 areas where poor oral health may contribute to avoidable utilization of health system resources, including:

- Avoidable visits to the emergency department for non-traumatic dental emergencies.
- Day surgery to treat cavities in young children.
- Management of diabetes.



### 3.3.1 Avoidable Emergency Department Visits

The oral health care system and the broader oral health system are related. A recent study found that about 1% of all emergency department (ED) visits in Ontario were for dental care unrelated to trauma (C. Quiñonez, Gibson, Jokovic, & Locker, 2009). In a 3-year period, more visits were for tooth abscesses, toothaches and dental caries (0.93% of ED visits) than for either diabetes (0.44%) or hypertensive diseases (0.35%) (C. Quiñonez et al., 2009). In absolute numbers, a total of 141,365 visits to the ED within this time period by 116,357 unique patients were for dental problems of non-traumatic origin (C. Quiñonez et al., 2009).

Another study conducted at St. Michael's Hospital in Ontario noted that in 2012, there were 58,000 visits to hospital EDs across the province for oral health problems, estimated to be at a minimum cost of \$513 per visit, resulting in an overall cost of at least \$30 million to the acute care system in 2012 (Association of Ontario Health Centres, 2013). The researchers suggested that one of the main reasons that people went to the ED for dental problems was because they could not afford the cost of private dental care (Association of Ontario Health Centres, 2013).

These non-traumatic dental care visits have been described by policy stakeholders as highly inefficient and costly to the healthcare system, mainly because treatment typically involves antibiotics and/or analgesics without any definitive resolution of the underlying oral health condition. These visits are seen as a burden on an already stretched care system (C. Quiñonez et al., 2009). It has been proposed that a more effective oral health care system could alleviate this burden.

### 3.3.2 Day Surgery to Treat Cavities in Young Children

Early childhood caries (ECC) is an infectious disease that causes the decay of primary teeth. This decay can cause pain, affect the child's ability to eat and sleep and reduce the child's quality of life. If the disease progresses sufficiently, day surgery may be required to extract the teeth, generally under general anesthesia.

Data were not available to measure the prevalence of ECC; however, one study did measure the number of day surgeries for ECC performed in hospital to treat advanced cases (CIHI, 2013d). In Ontario, during the 2-year period from 2010/11 to 2011/12, 9,610 day surgeries were performed for ECC, a rate of 8.4 per 1,000 children age 1 to younger than 5. The study also estimated the hospital's cost for these surgeries at an average of \$1,408, resulting in a total cost of \$13 million over the 2-year period. This estimate does not include physician charges to OHIP, nor does it include the distress for the young child undergoing an avoidable surgery, or the time and cost to the family to travel to the hospital for the procedure.

Surgical rates for ECC vary considerably by population as follows (CIHI, 2013d):

- Children in rural communities have a higher rate (31.7 per 1,000 children) compared to children in urban communities (10.1).
- The most affluent have a rate of 6.9 compared to 27.2 for the least affluent.
- Rates in Aboriginal communities range from a low of 10.8 to a high of 93.1, well above the Canadian average of 12.5.

### 3.3.3 Management of Diabetes

Researchers are beginning to explore whether providing oral health care can reduce overall health care costs, particularly for periodontal care and diabetes. These studies indicate associations between the two, but no firm causal conclusions as yet. One observational study using insurance data found that periodontal care was associated with lower per member per month medical costs for an insured population, though it could not control for factors such as smoking and socioeconomic status (Albert, Sadowsky, Papapanou, Conicella, & Ward, 2006).

Another observational study using insurance data investigated whether periodontal treatment in particular might contribute to the successful management of diabetes and lead to reduced costs for the health system (M. Jeffcoat, Tanna, Hedlund, Hahn, & Genco, 2011). It found a statistically significant difference in medical costs between diabetic members with presumed diagnoses of periodontal disease that had received active periodontal care versus the same type of members who had not received this care. For those who did receive periodontal treatment, medical costs were an average of \$2,483 or 23% less per year per patient relative to the benchmark group's costs of \$10,672 (M. Jeffcoat et al., 2011). While the authors of this study were careful to note that their data could not control for significant clinical indicators, that the findings represent an association only and not a cause and effect of periodontal care on medical costs, and that the generalizability of these results is not known, the results are suggestive.

## 3.4 Economic Burden of Oral Health Conditions and Care

Oral health conditions can compromise our ability to work at home, at school, or on the job, and by implication the country's economic productivity. Poor oral health can also lead to financial problems due to high dental treatment costs or wages lost from missed time at work. Poor oral health can also affect people's wages and incomes – in particular women of low socioeconomic status (Glied & Neidell, 2010).

Productivity losses – beyond expenditures on oral health care itself – due to oral health conditions and care are not generally significant in cost relative to the economy as a whole, though the number of days of work lost is large in absolute terms. It is estimated that 2.26

million school days and 4.15 million working days for adults are lost due to dental visits or dental sick-days every year in Canada (Health Canada, 2010). However, these figures suggest a potential loss of less than 0.1% of Canada's annual GDP when they are assigned a value based on the Canadian average weekly wage.

The more important burden of oral health conditions documented in the literature is the one borne by women with poor oral health. The most rigorous study done on this subject to date, an article entitled "The Economic Value of Teeth," identified the impact of poor oral health on wages by exploring geographic variation in Americans' childhood exposure to community water fluoridation (CWF). It found that a lack of exposure to fluoridated water in childhood reduced women's (but not men's) wages by four percent (Glied & Neidell, 2010). This effect was concentrated among women of low socioeconomic status such that women who were not exposed to CWF during childhood earned 12% less than women who were – an impact of approximately \$1/hour in 1998 dollars. The authors also estimated the "marginal value of a tooth" – i.e., the effect of losing a tooth – to be 3.3% of hourly earnings for women. While these results are based on American data, they are likely still relevant for the Ontario context.

## 4.0 ORAL HEALTH NEEDS AND SERVICES

Oral health needs change during one's lifetime, and the nature of services required also changes as these needs evolve. An effective program to prevent the development of caries is a prerequisite for good oral health. The importance of promotion and prevention throughout one's lifetime in maintaining good oral health cannot be overstated.

### 4.1 Oral Health Needs Change as We Age

#### 4.1.1 Children (6 to 11 years old)

As a child ages, the focus of oral health care is on preventive care and developing the right behaviours that will allow the child to maintain good oral health throughout life, with the understanding that poor oral health can have a severe impact on wellbeing and development. Untreated decay can lead to issues with eating, speaking, and attending to learning, as well as issues with self-esteem and other medical risks (Lewis, Grossman, Domoto, & Deyo, 2000).

The major condition of concern among children between 6 and 11 years of age is coronal dental caries (i.e., tooth decay), which are the single most common chronic disease of childhood, affecting 60-90% of school children and a large majority of adults in most industrialized

countries (Petersen, 2003). While the severity of caries can vary, the condition is generally progressive; without treatment, caries can result in the breakdown of teeth, pain or infection with potential for extensive restorative treatment needs or permanent tooth loss.

Children typically receive oral health services at this age for reasons that include preventive treatments, such as cleanings and sealants, restoration or extraction of decayed teeth, or the treatment of dental trauma (Health Canada, 2010). Preventive self-care practices such as flossing and tooth brushing can considerably impact population rates (Wolfe, Ishaque, & Aung, 2013).

Good oral health education is important to encourage the development of the right behaviours from a young age – many programs and services offered to children within Ontario include an educational component with oral health promotion and prevention messaging.

#### 4.1.2 Adolescents (12 to 19 years old)

As people reach adolescence, their oral health needs generally become much more complex. Some of the distinctive characteristics of adolescents that can lead to higher risk include (American Academy of Pediatric Dentistry, 2010):

- a potentially high caries rate;
- increased risk for traumatic injury and periodontal disease;
- a tendency for poor nutritional habits;
- an increased aesthetic desire and awareness;
- complexity of combined orthodontic and restorative care (e.g., congenitally missing teeth);
- dental phobia;
- potential use of tobacco, alcohol, and other drugs;
- pregnancy;
- eating disorders; and
- unique social and psychological needs.

Many of the issues listed above can both increase the need for and act as barriers to adolescents accessing oral health care services. As a result of these potential issues, preventive and treatment efforts can be increasingly complex and challenging.

Orthodontic treatments are also common for adolescents and increasingly common among adults. The treatments use techniques such as braces, headgear, or surgery to correct the alignment of teeth and bite-related problems with the purpose of alleviating or preventing pain and other physical health problems (Canadian Association of Orthodontists, 2013).

### 4.1.3 Adults and Elderly (20 to 80+ years old)

Into adulthood and old age, oral health care needs become differentiated depending on individual circumstances. For example, adults who are dentate (e.g., still have teeth) will have different needs than adults who are edentulous (i.e., have no teeth).

Adults will visit the dentist for preventive care, maintenance or replacement of oral appliances or dental implants, treatment of any number of conditions, and urgent care, such as in the event of trauma. This group may also visit other oral health care specialists, such as orthodontists, dental therapists, and others depending on care needs.

As people age further, oral health needs continue to evolve:

- For seniors, the treatment of root caries and cracked teeth and the maintenance of previous restorations can be more complex than for younger adults.
- Seniors often have other health issues that may contribute to a deterioration of oral health status including, for example, the increased incidence of dry mouth (xerostomia), which is often associated with some medications prescribed for chronic conditions.
- Dementia, or other mental health issues, can contribute to poor oral hygiene practices, which can contribute to deterioration in a senior's oral health status.
- Changes in lifestyle (e.g., due to loss of mobility) may compromise a senior's ability to access oral health services.

## 4.2 Oral Health Services

### 4.2.1 Promotion

The World Health Organization held its first international conference on Health Promotion in 1986 whereby it created a "Charter" with a central focus of crystalizing the notion that health for all could be achieved through a new public health movement. They define health promotion as *"the process of enabling people to increase control over and to improve their health"* (World Health Organization, 2014).

Five action areas for health promotion were identified in the charter (World Health Organization, 2014):

1. Build healthy public policy
2. Create supportive environments
3. Strengthen community action
4. Develop personal skills
5. Reorient health services toward prevention of illness and promotion of health.

Health promotion is a fundamental principle in the area of oral health. The three basic strategies for health promotion include advocacy, enabling and mediation to support collaboration, which have been applied in different ways within the oral health sector to promote good oral health behaviours within the population (World Health Organization, 2014).

The prevention of periodontal diseases and other oral health conditions is best accomplished through health promotion addressing the determinants of health, education on the causes and effects of periodontal disease and oral health conditions, reduction of the contributing factors such as tobacco and alcohol, and preventive professional care with a frequency based on the individual's needs (Federal, Provincial, Territorial Dental Directors, 2005).

#### **4.2.2 Prevention of Oral Conditions**

While the majority of oral conditions are preventable, they often occur when people do not take preventive action themselves or are unable to get adequate support from oral health care professionals. Preventive measures to maintain oral health include brushing at least 2 times a day and flossing every day, and the use of dental products with fluoride (e.g., toothpaste) and community water fluoridation.

##### ***Brushing and Flossing***

According to the Canadian Health Measures Survey, about 73% of Canadians brush twice or more per day and over a quarter (28%) floss five times a week (Health Canada, 2010). Partly as a result of these preventive care behaviours becoming more common, overall improvements in prevalence rates over the years have been realized (Health Canada, 2010).

##### ***Regular Checkups***

Regular checkups are recommended for people of all ages to prevent future oral health issues and to help identify problems before they become bigger issues (Canadian Dental Association, 2013a).

According to the Canadian Health Measures Survey conducted from 2007 to 2009, nearly three quarters (74.5%) of Canadians reported making a dental visit within the past 12 months, with varying rates depending on age. The age group with the highest rate of visiting is children between 6 and 11 years old (91%), followed by adolescents aged 12 to 19 years (84%). Young adults (20 to 39 years) have the lowest rate of visits, with 67.8% visiting a dental professional in the past year, followed closely by 68.4% of older adults (40 to 65 years) making visits (Health Canada, 2010).

### *Community Water Fluoridation*

Water fluoridation has been demonstrated to be an important and effective preventive oral health treatment that has been used in Ontario communities for decades. With life-long exposure to water fluoridation, adults experience a 20 to 40% reduction in tooth decay (American Dental Association, 2005). As of 2008, 45.1% of all Canadians and 75.9% of Ontarians have access to fluoridated water (Government of Canada, 2011).

Multiple major reviews of the effects of water fluoridation have concluded that it is the most cost-effective way of providing the benefits of fluoride to the majority of the population regardless of age, socioeconomic factors, employment, or dental insurance status (King, 2012). As a result of these consistent findings, the first recommendation provided by Ontario's Chief Medical Officer of Health in her 2012 report on the status of oral health in Ontario was to complete a review of policies and mechanisms to ensure that all Ontarians have access to optimally fluoridated drinking water (King, 2012).

#### **4.2.3 Screening for Oral Health Conditions**

Detection of oral health conditions among Ontarians takes place through public health programs, visits to publicly or privately funded oral health care providers, and through other mechanisms within the local context, such as dental and primary care clinics and programs.

Public health expectations for oral health in Ontario are outlined in the 2008 Ontario Public Health Standards (OPHS) report, which sets out the minimum standards for fundamental public health programs in the province (Ministry of Health and Long-Term Care, 2008). For children, public oral health programs and services are expected to achieve timely and effective detection and identification of children who are at risk of poor oral health outcomes as well as to identify their associated risk factors and emerging trends, and to provide clinically essential preventive services (Ministry of Health and Long-Term Care, 2008).

The OPHS Child Health Program Standard has mandated public health units to provide oral health screening in elementary schools. In the 2010-2011 school year, over 600,000 elementary school children were screened, with 4% of children receiving a topical fluoride treatment and 3% receiving scaling or cleaning free of charge (King, 2012). For the remainder of Ontarians, detection of oral health conditions is dependent upon visits to oral health care providers.

Periodic visits to oral health care providers also contribute to the detection of broader health issues and conditions, alerting patients that they may need to see other health care professionals. Similarly, poor oral health can affect nutritional status, particularly in the elderly, and oral health care professionals can play a role in overall care by identifying the need for additional medical attention.

Different types of oral cancer affect different oral tissues and have varied outcomes and survival rates. It is estimated that 75% of these cancers are directly related to tobacco and/or alcohol use; the risk of oral cancer increases dramatically when both smoking and alcohol abuse are present (Federal, Provincial, Territorial Dental Directors, 2005). Early detection of oral cancers, together with reductions in smoking rates have been credited with reducing oral cancer incidences in men by 1% per year and fatality rates by 2.4% for men and 1.9% for women (Canadian Cancer Society, 2011).

#### 4.2.4 Treatment

The major condition of concern among children between 6 and 11 years of age is coronal dental caries, or tooth decay, particularly prevalent among First Nations, Inuit and Métis children (83.9% have caries) and children of low-income families (60.9%) (e.g., families receiving support from Ontario Works or the Ontario Disability Support Program) (Health Canada, 2010).

Among Canadian adolescents, 58.8% have experienced decay in one or more permanent teeth. Prevalence is higher among those with public insurance (81.9%) relative to both the privately insured (56.5%) and the non-insured (60.1%), and is also higher among Aboriginal adolescents (75.6%) and past smokers (74.6%) (Health Canada, 2010). When adolescents receive oral health care services from a dentist, in addition to cleanings, services typically received include sealants (50.6% of adolescents have sealants), restoration of decayed teeth, and occasionally treatment for trauma (Health Canada, 2010).

## 5.0 ORAL HEALTH STATUS

According to the Canadian Health Measures Survey (2007-2009), 84.5% of Canadians report their oral health status to be “good,” “very good,” or “excellent,” whereas 15.5% rate their oral health status to be “fair” or “poor.”

In Ontario, approximately 2 to 3 million people report fair or poor oral health, including those who are most affected by the social determinants of health, especially First Nations, Inuit and Métis (living both on and off reserve), low-income adults and their children, recent immigrants and the elderly.

### 5.1 How Prevalent are Oral Health Conditions in Ontario?

The 2 most common dental conditions are caries and periodontal diseases (King 2012). According to a *Report on the Findings of the Oral Health Component of the Canadian Health*



*Measures Survey from 2007-2009*, 56.8% of children, 58.8% of adolescents, and 95.9% of adults have had caries (Health Canada, 2010).

Oral diseases such as dental caries, periodontal disease and oral cancer are more prevalent among people of lower socioeconomic status (Federal, Provincial, Territorial Dental Directors, 2005). People with low income or who are First Nations, Inuit or Métis, recent immigrants, and those with compromised health conditions have the highest dental caries rates (Federal, Provincial, Territorial Dental Directors, 2005). While these individuals typically have less access to oral health services, studies have shown that people on the lower end of the economic scale have dental caries rates and treatment needs that 2.5 to 3 times greater than those of people with higher income (Federal, Provincial, Territorial Dental Directors, 2005). The dental caries rates for First Nations, Inuit and Métis people of all ages range from three to five times greater than those who do not identify with these groups (Federal, Provincial, Territorial Dental Directors, 2005).

Among Canadian adults, 95.9% have experienced dental decay, 32.3% have had gingivitis (Score 2 and 3), and 23.8% have had one or more lost or traumatized anterior teeth (Health Canada, 2010).

Of dentate adults (people who still have their teeth), 6.0% have had severe periodontal disease, and the rate is higher amongst older adults (Health Canada, 2010). Periodontal conditions fall under three categories: mild gingivitis, severe gingivitis, and obvious pockets/loose teeth (measured by 'loss of attachment,' or LOA<sup>2</sup>). Among Canadian adults aged 20-64, 21.1% have lost 4 mm or more and 5.7% have had their worst loss of attachment at 5 mm and 6.0% have lost 6 mm or more (Health Canada, 2010). 12% of Canadians report that they had ongoing pain in their mouth in the past year (Health Canada, 2010). Meanwhile, 3.5% of Ontarians avoided social interactions, such as conversation, laughing or smiling in the past year because of an oral condition. Ontarians in the lowest income group were most likely (8.5%) to report that oral conditions caused them to avoid such social interactions (Public Health Ontario, 2012).

Approximately 3,400 new cases of oral cancer are diagnosed and over 1,000 deaths due to oral cancer occur per year in Canada (Canadian Cancer Society/National Cancer Institute of Canada, 2008).

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<sup>2</sup> Loss of attachment refers to where the gingiva (and bone support for the tooth) attach to the tooth, compared to where they used to attach. It is generally accepted that a 'pocket' of greater than 3mm is a concern and is an indication of disease.

## 5.2 What is the Oral Health Status of Individuals in Ontario?

While the oral health status of the majority of Ontarians is good, the burden of disease is mostly concentrated amongst certain disadvantaged groups. People who are most affected by the social determinants of health and those of different age groups, especially the elderly, have less favourable overall health status.

95% of dentate adults – that is, adults with teeth - have had one or more decayed, missing or filled teeth (DMFT); prevalence is higher among the elderly and the affluent, counter to trends seen in other age groups (Health Canada, 2010). Among adults with teeth, 42.3% have all 28 teeth and 14.6% have fewer than 21 teeth. On average, dentate adult Canadians have 24.53 teeth (Health Canada, 2010). In addition, periodontal conditions are prevalent among adults but are difficult to measure; these conditions are related to the structures that surround the teeth to keep them in place, such as the gums and bones (Health Canada, 2010).

In Canada, 6.4% of adults have no natural teeth (this population is referred to as “edentulous”), with higher rates existing among older adults, and lower rates among the younger adults, those who visited a dentist within the last year, never smoked, have higher income and education, and possess private insurance (Health Canada, 2010).

Less than 1% of dentate adults have received implants, but those aged 40-59 with high income and who visited the dentist within the last year are most likely to have them (Health Canada, 2010). 16.6% of dentate adults have removable partial dentures either on the top, bottom or both arches; dentures are most common among females with public or no insurance (Health Canada, 2010).

A summary comparison of key indicators for Canada by population is provided in Table 1. Unfortunately, the Review Team did not find a single source that had all of these indicators by population for Ontario.

**Table 1: Comparison of Oral Health Indicators by Age and Income, Canada, 2007-2009**

	Children (6-11 years)	Adolescents (12-19 years)	Young Adults (20-39 years)	Adults (40-59 years)	Seniors (60-79 years)	Low Income adults
<b>Access to Services</b>						
Visited dentist in past 12 months (%)	91.0	84.0	67.8	76.7	68.4	58.9
<b>Dental Insurance</b>						
% with private insurance	67.0	71.4	66.7	67.1	38.6	32.5
% with public insurance	11.7	6.2	3.5	4.3	8.2	17.7
% who have no insurance	21.3	22.3	29.8	28.6	53.2	49.8
<b>Oral Health Status</b>						
Average # of decayed, missing, filled teeth (dentate)	2.5*	2.5	6.9	12.3	15.7	10.4
% edentulous (have no teeth)	0.0	0.0	ND	4.4	21.7	10.9
<b>Population size</b>						
% of total Canadian Population	7.4	11.4	30.9	33.4	16.9	15.4

\* combined primary and permanent teeth

ND= no data

Source: Report on the Findings of the Oral Health Component of the Canadian Health Measures Survey (2007-2009), Health Canada (Health Canada, 2010)

The data in the table confirm the following:

- The proportion of a population that has seen a dentist in the past 12 months decreases from a high of 91% for children 6 to 11 years of age to a low of 67.8% for young adults, peaks for adults 40 to 49 years of age (when they are most likely to have employment related dental insurance) and falls again for seniors.
- Low-income adults are even less likely to have seen a dentist than seniors.
- Over one-half of low-income adults have no dental insurance.

## 6.0 WHAT IS THE CURRENT POLICY ENVIRONMENT?

For the past several years, policy makers and funders have been concerned about the growing costs of health care in the context of shrinking financial resources to meet these needs.

Although many stakeholders expressed a wish for a fully publicly funded oral health system, most acknowledge that this is not realistic in the current fiscal environment, especially given that some populations (i.e., the well insured) do have good access to services. However, there is an increasing awareness of the challenges of some vulnerable populations in accessing oral health services and of the relationship between good oral health and overall health, and population health and the utilization of the overall health system.

In 2010, only 1.3% of expenditures on oral health services in Ontario were publicly funded, far below the national average of 4.9%.

Ontario's health care system, in common with most developed economies, has been moving towards a fiscal crisis for many years. The last few years have seen a sudden shift in Ontario's resolve to undertake health system reform. Following the release of the *Report of the Commission on the Reform of Ontario's Public Services* (the Drummond Report) (Drummond, 2012) and through the launch of Ontario's ambitious *Action Plan for Health Care* (Ministry of Health and Long Term Care, 2012), the Ministry of Health and Long-Term Care (MOHLTC) has embarked on a transformation of the entire health care system.

Oral health services have not figured prominently in this agenda or the health policy discussions it has created; this is expected, because the majority of oral health services are not publicly funded and do not significantly factor into the budgets.

### 6.1 Minority Government, Sluggish Economy and Fiscal Restraint

The Ontario Action Plan, Drummond Report, and Ontario Budgets are largely about achieving health care system integration goals within a very tight fiscal environment. It is important to note, however, that while the Drummond Report made 105 recommendations for health care, it is the Ontario Action Plan for Health Care and Ontario Budget that actually represent government policy.

Until the recent financial crisis, health care costs had historically outpaced economic growth in most industrial democracies over the past few decades. In Ontario, health care costs have been projected to grow by 6.5% annually over the next 2 decades without significant reform, primarily due to the impacts of an aging population, inflation, and the cost of new drugs and

related technology. In contrast, the Drummond Report estimates that the economy will grow at only 2% until 2017 (Drummond, 2012). As a consequence, limiting the growth of health care costs and ensuring value for the money spent has been a central focus of the health care system in Ontario.

Until the 2014 provincial election ushered in a majority government, Ontario had also been operating under a minority government since 2011, which made long-term planning for provincial services that fall outside of the government's core transformation agenda more challenging. In this environment, neither the government nor opposition parties were likely to spend significant political capital on issues that are not prominent in the minds of either policymakers or broad segments of the public as a whole. While the Ontario government has consolidated some oral health programs, there is no transformation agenda underway for oral health services comparable to the one for the overall health system.

In 2009, \$5.9 billion was spent on dental care in Ontario, and only 1.3% of this spend was public funding, usually dedicated to those with low income or on social or disability assistance (Public Health Ontario, 2012). Given the fiscal restraints that exist within the overall health system, Ontario public expenditures on oral health services are unlikely to increase dramatically in the near future without some significant change in policy direction. Past Canadian initiatives that have addressed oral health within the general population have often been scaled back over the years (Clovis, J. B. in Canadian Centre for Policy Alternatives, 2011). The exception to this has been oral health initiatives targeted at specific priority populations, in which programs have generally been initiated or enhanced (Clovis, J. B. in Canadian Centre for Policy Alternatives, 2011).

## 6.2 Health Priorities

In Ontario, the current health priorities are outlined in a series of policy reports and communications, one of which is the 2012 report entitled *Ontario's Action Plan for Health Care*. This report calls for **"better patient care through better value from our health care dollars"** (Ministry of Health and Long Term Care, 2012). Through a series of initiatives, the MOHLTC has planned to support Ontarians to become healthier, to create faster access and a stronger link to family health care, and to get the right care, at the right time, in the right place (Ministry of Health and Long Term Care, 2012).

Ontario's health care transformation agenda has also been characterized by:

- A drive for person- or patient-centered care that treats the patient as a whole person and recognizes that chronic disease management requires the patient's active input and participation;

- A recognition that a small proportion of the population, usually with one or more chronic conditions (one to five percent) typically incurs a disproportionate share (one-third to two-thirds) of the overall health system's costs;
- An emphasis on collaboration, coordination, and integration of care to improve the quality of care, the patient's experience, and value for money;
- Health System Funding Reform, which is designed to make more systematic and effective funding incentives for health system providers to provide high quality care at a reasonable cost.

The commitments described in the *Action Plan* that are perhaps of most relevant to the oral health system are the need to provide timely, preventive care that will allow for more effective chronic disease management, which will, in turn, reduce avoidable acute care utilization and improve the quality of life of patients (Ministry of Health and Long Term Care, 2012). The *Action Plan* also acknowledges the need to place more focus on the needs of seniors, with a push to keep this group healthy and living at home (Ministry of Health and Long Term Care, 2012).

The *Action Plan* is complemented by a recent report, entitled *Ontario's Seniors Strategy – Living Longer, Living Well*, which emphasized the following five principles: access, equity, choice, value and quality (Sinha, 2013). Although this report was relatively silent on oral health services, Dr. Sinha did make one relevant recommendation that the MOHLTC “**encourage the inclusion of questions regarding continence, sexual, oral and nutritional health, and the frequency of falls in all informal and formal tools used to assess the health of older adults**” (Sinha, 2013, p. 14). As more and more seniors are cared for in the community rather than in an institution, the inclusion of oral health assessments and the provision of services will be increasingly important.

Many groups have also begun to focus on issues of inequity for priority populations. For example, the current Strategic Plan for 2014-2019 by Public Health Ontario clearly acknowledges the unique barriers that are faced by particular population groups within the health care system, regarding the social determinants of health and have committed to identifying and understanding health inequities within priority populations (Public Health Ontario, 2014).

### 6.3 Funding of Oral Health Services in Ontario

In the days of early health policy development in Canada, dental services were excluded from the Medicare program for a variety of reasons, but largely because oral health was viewed as an individual responsibility rather than a social one. At the time, it appeared that mass water fluoridation was a more viable option than offering large scale treatment as part of Medicare. In addition, there were limited human resources and a significant decrease in dental caries since

water fluoridation became widespread, leading to thinking that these efforts would be sufficient to ensure good oral health of the population (C. R. Quiñonez, 2013).

While not necessarily the consensus view, Dr. Quiñonez' study has put forward several hypotheses for why oral health policy developed the way it did in Canada, some of which were echoed in our stakeholder interviews.

The first is legislative in nature; despite being first considered in 1937 by the Royal Dominion Commission on Provincial Relations, there was no significant movement in federally/publicly funded dental care until the early 1960s when the Commission entered into agreements with the provinces to fund dental care for children, expectant mothers and public assistance recipients. The view that it is incumbent on the individual and not the government to take responsibility for one's own dental care has carried forward with the exception of continued support for children and recipients of social assistance programs (C. R. Quiñonez, 2013).

The second was described as a professional reason, where dentists themselves played a major role in maintaining the private pay system for dental care for various reasons. Some primary issues of concern in the 1950s were the view that the government should not interfere with the relationship between practitioner and patient, the need for individual responsibility for their oral health, high human resource needs for public delivery and the economic risk that public delivery systems placed on governments (C. R. Quiñonez, 2013).

A third reason related to socio-cultural factors stemmed from the perception that "successful" individuals were able to manage their own health and that the need to seek out Medicare support for oral health services was only among the less affluent (C. R. Quiñonez, 2013).

The fourth, and perhaps most unavoidable reason, was simply economic in nature. To fund a Medicare program that included dental care would add significant financial burden to the system.

The final reason noted was epidemiological in that with advances in water fluoridation and a population engaged in regular oral health promoting activities, there was a decrease in dental caries that reduced the public perception that oral health issues were a major social health issue (C. R. Quiñonez, 2013).

Notwithstanding Canada's long policy debate over whether to include oral health services within our publicly funded system for the general population or special populations, the current environment is such that as of 2009, the market for dental services in Canada was estimated to be \$12.8 billion, of which 94% was spent in the private sector and the remaining 6% in the public sector (Canadian Dental Association, 2010). According to the Canadian Institute of Health Information, oral health spending is inclusive of the professional fees of dentists, dental

hygienists, denturists and dental assistants, as well as the costs of materials and supporting services, such as laboratory charges (CIHI, 2013a).

In Ontario in 2010, the publicly funded share of total expenditures for dental services was only 1.3% (Canadian Institute for Health Information (CIHI), National Health Expenditure Database 2010 (NHEX), in Canadian Centre for Policy Alternatives, 2011) - the lowest in the country and far below the national average of 6.0% (Health Canada, 2010).

The following sections describe the current funding structure of oral health services in Ontario.

### 6.3.1 Privately Funded Oral Health Services

The vast majority of oral health services are provided by professionals working within private dental practices. In 2011, dental services were second only to drugs as the largest share of private-sector health spending in Canada, at \$11.2 billion. Of this amount, \$6.6 billion was paid by insurance firms and \$4.6 billion by households (CIHI, 2013c).

Payment for services is usually the responsibility of the individual, with 94% of the services being funded through out-of-pocket payments in 41% of cases, or employer-provided insurance 53% of the time (CIHI, 2013c; King, 2012; Kraglund & Cooney, 2008). According to the Canadian Health Measures Survey, 63% of Canadians have some form of private dental insurance, but the amount and type of insurance coverage can vary greatly (Health Canada, 2010). Individuals who have private dental coverage may struggle to access and pay for dental care because of high deductibles and payment limits that do not cover the full cost of services.

About 32% of Canadians report having no insurance at all (Health Canada, 2010). Income status was found to be closely related to having dental insurance, where people in the higher income brackets are more likely to have dental insurance than those in the lower brackets (80% as compared to 30%, respectively) (Health Canada, 2010).

### 6.3.2 Publicly Funded Oral Health Services

Of the total amount spent in Ontario on oral health services, only 1.3% of the funding is provided through public sources (CIHI, 2010).

The federal government funds about 40% of public dental expenditures by providing services to the First Nations, Inuit and Métis populations, Veterans, Canadian Forces personnel, Royal Canadian Mounted Police, refugees and inmates in federal penitentiaries (Kraglund & Cooney, 2008). Provincial governments contribute 59% and the territorial governments one percent of the total public funding expenditure by providing oral health services for children, seniors, persons with disabilities, vulnerable populations and hospital inpatients (Kraglund & Cooney, 2008). The oral health services funded for each group vary by province and territory.



Ontario covers some limited surgical dental services delivered in-hospital under the Ontario Health Insurance Plan (OHIP), as well as through other oral health programs that are in place to target specific groups. Dental services covered under OHIP are set out in both the Health Insurance Act and the Schedule of Benefits for Dental Services under the Health Insurance Act (King, 2012). The schedule of benefits lists the services or procedures that are covered, which can include dental consultations, diagnostic consultations, reconstructive procedures, and cleft lip and cleft palate surgery (King, 2012). Medically necessary dental services covered under OHIP must be performed in a public hospital.

### 6.3.3 Publicly Funded Oral Health Programs

A number of programs are provided in Ontario that are intended to improve access to oral health services among certain populations. Table 2 below provides a summary overview of the publicly funded programs offered within the province for adults. Children of adults who are covered by Ontario Works and the Ontario Disability Support Program are also eligible through these programs. Three additional programs are provided for children, as summarized in Table 3.

Additional details on each program are provided in Appendix G.

**Table 2: Description of Provincial Oral Health Programs and Services for Adults and Children**

Program/Service	Funding Source	Eligibility Criteria
<b>Ontario Works (Ministry of Community and Social Services, 2009)</b>	Ministry of Community and Social Services	<ul style="list-style-type: none"> <li>Adults over 18 receiving Ontario Works benefits</li> <li>Eligible family members: Children of adults receiving Ontario Works benefits and children over 18 years of age through discretionary benefits.</li> </ul>
<b>Ontario Disability Support Program (ODSP) (Central West LHIN, n.d.; Ministry of Community and Social Services, 2012)</b>	Ministry of Community and Social Services	<ul style="list-style-type: none"> <li>Adults receiving income support through ODSP</li> <li>Eligible family members: spouse, children under 18 years old</li> </ul>

Benefits under Ontario Works are administered through the regional municipalities, which have the discretion to tailor the services provided to best meet the needs of their communities. This discretion has led to significant variations in the services provided and access to these services across jurisdictions within the province (Stakeholder Interviews, 2014).

Although the Local Health Integration Networks (LHINs) are not specifically mandated to fund oral health, some have recognized the relationship between oral health and overall health and the need for these services within their local populations. Some LHINs have even begun to fund limited oral health services for certain populations through CHCs leveraging the availability of dental suites in many CHCs.

**Table 3: Description of Provincial Oral Health Programs and Services for Children**

Program/Service	Funding Source	Eligibility Criteria
<b>Assistance for Severely Disabled Children (ASDC) (Central West LHIN, n.d.)</b>	Ministry of Community and Social Services	<ul style="list-style-type: none"> <li>Child under 18 years of age, living with parent/guardian</li> <li>Must have a severe disability</li> <li>Extraordinary costs incurred due to disability</li> <li>Family income evaluation</li> </ul>
<b>Children in Need of Treatment Dental Program (Ministry of Health Promotion, 2009)</b>	Joint funding between Ministry of Health and Long Term Care and municipality in which child resides	<ul style="list-style-type: none"> <li>Ontario resident</li> <li>Under 18 years of age</li> <li>Dental conditions requiring emergency or essential care</li> <li>Family has no dental insurance coverage and cost of dental treatment would create financial hardship; not receiving support from ODSP, OW, ACSD (use funding through these resources first)</li> </ul>
<b>Healthy Smiles Ontario (Ministry of Health and Long Term Care, 2010)</b>	Ministry of Health and Long Term Care	<ul style="list-style-type: none"> <li>Ontario resident</li> <li>Under 18 years of age</li> <li>Members of household with adjusted family net income of \$21,513/year or below for the first child, with \$1500 added for each additional dependent child within the family</li> <li>No access to any form of dental coverage; not receiving funding from ODSP, OW, ACSP</li> </ul>

In addition, in Ontario, the MOHLTC requires that Boards of Health conduct surveillance of children in schools and refer those who may be at risk of poor oral health outcomes in accordance with the Oral Health Assessment and Surveillance Protocol (Ministry of Health and Long Term Care, 2008a) and the Population Health Assessment and Surveillance Protocol, 2008 (or as current) (Ministry of Health and Long Term Care, 2008b).

In addition to the provincially funded programs, our literature review and stakeholder interviews identified a number of regional and local oral health programs targeted at specific populations, some of which are:

- Halton Oral Health Outreach Program (adults with special needs, elderly);
- Sioux Lookout Fluoride Varnish Program (Aboriginal children);
- Region of Peel Mobile Dental Clinic (low income children and youth without dental insurance);
- Seniors Dental Care Program, Region of Peel (low-income Seniors);
- South East Local Health Integration Network (vulnerable populations through community health centres);
- Toronto Public Health, dental services (low-income adults, children under 17, seniors over 65).

In addition to the provincial funded programs, some residents of Ontario are eligible for funding under one of three federally funded programs, which are listed in Table 4.


**Table 4: Description of Federal Oral Health Programs and Services for Adults and Children**

Program/Service	Funding Source	Eligibility Criteria
<b>Non-insured Health Benefits Program (Health Canada, 2012)</b>	Health Canada	<ul style="list-style-type: none"> <li>▪ Canadian resident</li> <li>▪ Registered Indian according to the Indian Act; or, an Inuk recognized by one of Inuit Land Claim organizations</li> <li>▪ An infant under 1 year of age whose parent is an eligible client</li> <li>▪ Is not otherwise covered under a separate agreement with federal, provincial or territorial governments</li> </ul>
<b>Canadian Forces (Government of Canada, 2013)</b>	Federal	<ul style="list-style-type: none"> <li>▪ Regular Force Personnel</li> <li>▪ Reserve Force (limited)</li> </ul>
<b>Veterans Affairs (Veterans Affairs Canada, 2013)</b>	Federal	<ul style="list-style-type: none"> <li>▪ In receipt of Veteran's Affairs benefits</li> </ul>

#### 6.4 Evolution of attitudes towards public funding of oral health services

Over the past few years, more attention has been placed on the importance of oral health, which has been evidenced by the greater presence of oral health issues in public discourse. In

December of 2013, Ontario's Minister of Health and Long-Term Care announced an expansion of eligibility criteria for the Healthy Smiles Ontario program that will allow an additional 70,000 children and youth in low-income families to have improved access to services such as cleanings, diagnostic services and basic treatment (Ministry of Health and Long Term Care, 2013c). To be eligible, families must have "an Adjusted Family Net Income of \$21,513 or less for one child, increasing by approximately \$1,500 for each additional child" (Ministry of Health and Long Term Care, 2013b). The previous threshold for eligibility was \$20,000 for one child, no matter how many children were in the family.



"Good oral health is an important component of good overall health. That's why we have taken important steps to increase access to free dental services for more kids in low-income families and to make it easier for families to access oral health services."

- Deb Matthews, Minister of Health and Long-Term Care, 2013



In addition, efforts will be made to amalgamate six existing programs into one by August of 2015, to ensure that access to timely oral health services is as simple as possible, in alignment with Ontario's five-year Poverty Reduction Strategy. The programs to be integrated include (Ministry of Health and Long Term Care, 2013b):

1. Healthy Smiles Ontario
2. Children in Need of Treatment (CINOT)
3. Oral health preventive services provided by Public Health Units
4. Ontario Works
5. Ontario Disability Support Program Income Support
6. Assistance for Children with Severe Disabilities Program

The efforts of the MOHLTC regarding oral health services are supported by advocates who work within the system. Those who support increased access to oral health services suggest that investment in a better system of treatment, prevention, and health promotion for individuals and populations will result in a healthier population. In addition, it is noted that the provinces and territories have committed to population-based approaches to health, and must, therefore, consider health inequities and oral health as part of overall health when making policy decisions (Clovis, J. B. in Canadian Centre for Policy Alternatives, 2011).

However, the stakeholder interviews revealed some concerns about the planned amalgamation – specifically, that the changes are expected to make the eligibility criteria strictly financial, whereas today, program administrators had some discretion based on clinical and financial need (Stakeholder Interview, 2014).

Moving forward, two approaches have been proposed in the literature and by many of the key informants:

- First, a Denticaid approach, in which our policies and funding continue to focus on preventive care, especially within at-risk population groups.
- Second, to take a more Denticare approach, in which basic oral health care is considered part of primary care, and basic services are funded through the public system (Marchildon, G, P. in Canadian Centre for Policy Alternatives, 2011).

The debate regarding public versus private funding is not new to either health care in general or oral health care. Proponents of oral health services being funded through the public purse argue that oral health is an important component of general health, and that other jurisdictions throughout the world are able to provide publicly funded oral health along with general health services at the same cost as or for less than is spent in Canada. In the historical context, however, oral health services have not been funded publicly in Canada for various economic, epidemiological, legislative, and socio-cultural reasons, as discussed in Section 6.3.3 (C. R. Quiñonez, 2013). Influencing the policy agenda in Ontario to consider changing the current public-private balance would require a deep understanding and analysis of this history, in the context of what is now understood about the relationship between oral health and overall health. However, in the current political environment, policy makers in Ontario are not necessarily open to such a change.

## 7.0 HOW ARE ORAL HEALTH SERVICES ORGANIZED IN ONTARIO?

### 7.1 The Oral Health Care Team

Oral health services are delivered by a variety of professionals with diverse types and levels of training and specialization. On an oral health care team, the dentist works closely with the dental hygienist and the dental assistant, but may be complemented by additional professionals, either within the clinic or through referral, depending on the services and skills required.

### 7.1.1 Dentists

Working in private-practice clinics, hospitals, universities and/or public health facilities, the role of dentists is to contribute to the overall health of teeth, mouth and surrounding tissues and structures through diagnosis, prevention and treatment (CIHI, 2011). To practice within Canada, a dentist must hold a doctor of dental surgery (DDS) or doctor of dental medicine (DMD) degree from an accredited program, as well as pass the National Dental Examining Board of Canada Written Examination and Objective Structured Clinical Examination (CIHI, 2011). In addition, one must register with a provincial or territorial regulatory body; within Ontario, dentists must register with the Royal College of Dental Surgeons of Ontario (Royal College of Dental Surgeons of Ontario, 2014b).

According to the Canadian Dental Association, in 2010, approximately 89% of dentists were in general practice, and 11% were specialist dentists (Canadian Dental Association, 2010). Dentists can specialize in any number of specialties such as:

- Dental public health, which involves the diagnosis, prevention and control of dental diseases and the promotion of oral health through organized community efforts, research and education (Ontario Dental Association, 2013b).
- Oral and maxillofacial surgery, which involves the diagnosis, and surgical and non-surgical treatment of problems involving the hard and soft tissues of the oral and maxillofacial (jaws and face) regions and related structures (Ontario Dental Association, 2013b).
- Endodontics, which involves the care of the inside of teeth (e.g., root canals, treatment of traumatic injuries). (Ontario Dental Association, 2013b).
- Orthodontics, which focuses on the diagnosis, prevention and treatment of dental and facial irregularities, using corrective appliances and other treatments.
- Pediatric dentistry, which involves working with infants, children, adolescents and people with special needs to provide routine, primary and comprehensive dental care. (Ontario Dental Association, 2013b).
- Periodontics, which is the diagnosis, prevention and treatment of the diseases and conditions of the supporting tissues around teeth, including the gums (Ontario Dental Association, 2013b).

### 7.1.2 Dental Hygienists

According to the *Dental Hygiene Act, 1991*, “The practice of dental hygiene is the assessment of teeth and adjacent tissues and treatment by preventive and therapeutic means and the provision of restorative and orthodontic procedures and services” (CDHO, 2012). This practice includes preventive, educational, and therapeutic dental hygiene services that include dental hygiene assessments and diagnoses. In Ontario, only people registered with the College of Dental Hygienists of Ontario (CDHO) may refer to themselves as dental hygienists or registered

dental hygienists (RDH). Working within a larger dental practice alongside dentists or independently, the dental hygienist is responsible for cleaning, polishing and applying fluoride to teeth, as well as taking X-rays and impressions. These regulated professionals are also involved in the development of home-care oral health care routines tailored for each individual (Canadian Dental Association, 2014c).

To practice within Ontario, a dental hygienist must have a diploma in dental hygiene from an accredited program and have passed a written certification examination.. In some provinces, the entry to practice standard for dental hygiene is a baccalaureate. Dental hygienists can continue their education with specialized courses.

In 1994, the requirement that dental hygienists must be supervised by dentists was eliminated with the Dental Hygiene Act and the initiation of self-regulation. At that time, independent practice was possible but impractical because the main controlled acts, such as scaling and root planing, still required an order from a dentist. On September 1, 2007, changes to the Dental Hygiene Act in Ontario allowed dental hygienists to self-initiate these procedures, making independent practice more achievable (College of Dental Hygienists of Ontario, 2012b).

### 7.1.3 Dental Assistants

A dental assistant may be involved in both clinical and administrative roles, working in a dental office with dentists, dental hygienists, and other professionals (Ontario Dental Assistants Association, 2014b). The dental assistant prepares the patient for treatment, sterilizes instruments and assists the dentist during procedures, among other duties as required (Canadian Dental Association, 2014c). In Ontario, dental assistants are not regulated.

In Ontario, there are 2 levels of dental assistants with different levels of training:

- Level I Dental Assistants are chair-side assistants who prepare the clinical area, clean and sterilize equipment and perform basic supportive procedures.
- Level II Dental Assistants perform the same chair-side activities, but are also certified to do more advanced intraoral tasks (Ontario Dental Assistants Association, 2014b).

### 7.1.4 Denturists

A denturist is an independent health professional who works directly with the public to provide removable denture prosthetic devices. Denturists are registered and trained to perform required intraoral procedures and to fabricate, repair and adjust complete dentures, partial dentures and removable implant retained dentures. Denturists are able to perform both clinical and laboratory aspects of denturism (“Denturist Act 1991,” 1991).

Members of the public do not need a referral from another oral health professional to use the services of denturists (The Denturist Association of Ontario, 2014).

### 7.1.5 Dental Technologists

Dental technologists are regulated professionals who are largely responsible for the design, construction, repair or alteration of dental prosthetics and restorative and orthodontic devices that are prescribed by dentists, orthodontists or denturists (College of Dental Technologists of Ontario, 2012a). These professionals do not usually work directly with patients; rather, they support dentists and other professionals in the technical aspects of dental technology and laboratory procedures.

To become a dental technologist, one must successfully complete the College of Dental Technologists of Ontario (CDTO) Registration Examination and register with the College. Training is designed to allow dental technologists to have expertise in the following areas: complete and partial dentures, ceramics, fixed prostheses, orthodontic appliances, and implants (College of Dental Technologists of Ontario, 2012a).

## 7.2 Regulation and Scope of Practice

As a critical part of Ontario's overall health care system, oral health professions abide by similar rules of regulation and governance as do other regulated health care professionals. In 1993, the proclamation of the Regulated Health Professionals Act (RHPA) by Ontario's legislature supported the regulation of oral health services in Ontario by the colleges responsible for specific oral health professionals. The colleges set standards for their respective health professions ensure that the professions comply with the RHPA and related laws (Royal College of Dental Surgeons of Ontario, 2014a). The RHPA applies to 26 health professions and 24 regulatory colleges.

The College of Dental Technologists of Ontario, the College of Denturists of Ontario, the College of Dental Hygienists of Ontario, and the Royal College of Dental Surgeons of Ontario are the colleges responsible for governing and regulating professionals within the oral health care system. Prior to 1993, dental hygiene in Ontario was regulated by the Royal College of Dental Surgeons of Ontario; but the RHPA resulted in the establishment of a separate college for dental hygiene.

Working with the Minister of Health and Long-Term Care, these colleges are responsible for ensuring that the people of Ontario have access to skilled and qualified oral health professionals. This responsibility includes developing, maintaining and sustaining (Government of Ontario, 2013):



- Qualification standards to certify individuals
- The quality of practice for the professionals within the college through programs and standards
- Continuing education ensure knowledge and skill levels of professionals are improved
- Collaboration among other health professionals
- Ethical standards for its members
- Programs which assist members, respond to changes in practice environments, advances in technology and other emergent issues.

A table showing the details of regulation, affiliated associations, scopes and standards of practice, and governance and for five professional members of the oral health team, including dentists, dental hygienists, dental assistants, dental technologists, and denturists is provided in Appendix H. To represent the scopes and standards of practice for each profession, the table provides “scope of practice statements” and/or “practice statements” with links to full legislation, as available.

Dental assistants are not currently regulated by a college or specifically acknowledged in the RHPA; however, the Ontario Dental Assistants Association (ODAA) has developed a “Scope of Practice,” for its members. The profession was recently under review by the Health Professions Regulatory Advisory Council (HPRAC) to become regulated, but was unsuccessful (HPRAC, 2013).

### 7.2.1 The Impact of Regulation and Registration in Oral Health

Both in the literature and among the key informants, two opposing views were expressed about the impact that registration (more generally referred to as “occupational licensing” in certain contexts) and related practice regulations could have on the quality, output, and prices of a given good or service, whether in health care or other sectors of the economy:

- One view is that regulation provides a way of improving service quality and reducing uncertainty in the eyes of the consumer, particularly when a consumer may have difficulty evaluating a provider’s quality. When delivered by a provider with a particular registration or license, care quality may be higher and less variable (Kleiner, M. & Kudrle, R. T., 2000). This can benefit both the individuals receiving a good or service and society at large.
- The other view is that registration is a barrier to occupational entry that serves the interests of providers over the public, inevitably leading to higher prices and a potentially negative effect on the output (and even quality) of services (Kleiner & Wheelan, 2010). Consumers are prevented from choosing lower quality, lower priced providers. They may also do without or try to obtain those services through other means (e.g., unregulated providers, travelling out-of-country for less expensive care). Put another way, “Bad things happen when people decide to pull their own teeth” (Kleiner & Wheelan, 2010, p. 31). It may also be the case that registration or licensure itself does not improve quality – qualifications are not

the same thing as quality. Finally, registration or licensure tends to reduce labour mobility, restricting the choices of those who would otherwise engage in activities that they are barred from via regulation.

These views apply to debates about occupational regulation across the economy – for example, in health care generally (doctors, nurse practitioners, nurses), law (lawyers) and accounting (chartered accountants). Note, however, that the two views are not necessarily mutually exclusive: one can believe that regulation is necessary to ensure a given level of quality but that, after a point it becomes more restrictive than necessary. More importantly, as Kleiner and Wheelan (2010, p. 32) noted: “Occupational licensure, like most forms of regulation, is neither inherently good nor bad. It is a tool with the potential to protect society from dangerous service providers (and the consumers who hire them); the same tool can distort labor markets in ways such that the social costs far outweigh the benefits.” Accordingly, they urge policymakers to consider the impact of any regulation regime on stated goals, private and social costs, availability of services, and consumers (Kleiner & Wheelan, 2010, pp. 32-33).

Kliener, his coauthors and other researchers have done considerable research on the impact of licensing and practice regulations relating to dentists and dental hygienists using American data. For instance, Kleiner and Kudrle (2000), using a dental health dataset for incoming American Air Force personnel, “...find little support for the position that tougher state regulations for dentists are associated with improved quality of outcomes” (p. 549). They also find that “tough regulations...are associated with slower growth in the number of dentists in the state, higher prices for the service examined, and higher hourly earnings for dentists. These estimates are consistent with theoretical models of occupational regulation that imply higher costs to consumers with few benefits” (p. 549). Similarly, Wing and Marier (2014) studied “the effects of licensing regulations on the transaction prices of seven basic dental services: prophylaxis, fluoride treatment, local anesthesia, nitrous oxide, sealant application, amalgam restoration, and x-rays” (p. 4). They found that “...regulations that constrain the practice authority of hygienists increase the price of basic dental services by about 12% relative to a counterfactual market in which both dentists and dental hygienists are legally allowed to provide the service” (p. 4).

Kleiner and Park (2010) studied the effects of licensing on employment and earnings for dentists and dental hygienists and found that “the ability of hygienists to be self-employed is associated with an earnings increase of approximately 10 percent. Further, when hygienists are able to work without the supervision of a dentist, there is an associated increase in the state-level employment growth of hygienists, but lower employment growth and earnings for dentists” (p. 1).

Overall, these findings tend to support the idea that the recent legislative changes in Ontario have the potential to improve access for basic oral health services. While there is no comparable research using data from Ontario or Canada, one economist has concluded from looking at oral health services price data that, across Canada, *“Prices for services provided by hygienists are increasing more slowly than prices for other dental services”* (Woolley, 2011).

## 7.3 The Evolving Role of Dental Hygienists in Ontario

### 7.3.1 Self-Initiation and Proposed Drug Regulation Changes

As of 1994, dental hygienists may “self-initiate” care – that is, provide select dental hygiene services outside of the supervision of a dentist, in independent clinics or in the community, including clients’ homes, offices, and long-term care homes. However, dental hygienists were unable to self-initiate any of their authorized acts, such as scaling and root planing without an order from a dentist. Since 2007, “Dental hygienists now have the option to proceed with their authorized act of “scaling teeth and root planing, including curetting surrounding tissue” on their own initiative or under an order from a member of the Royal College of Dental Surgeons of Ontario (RCDSO)” (College of Dental Hygienists of Ontario, 2012b). These acts involve more invasive techniques and require clinicians to have additional skills and training to perform them safely; for example, curetting of surrounding tissue involves the use of a curette, a scoop-like tool, to remove diseased tissue, requiring additional skill.

According to a sociological study in Ontario that looked at attitudes towards independent dental hygiene practice completed prior to the change in legislation, dentists generally did not support the changes that would allow dental hygienists to practice without dental orders, and dental hygienists generally did support the movement towards independence (Adams, 2004). Previous studies found that among dental hygienists, variation existed in which some were proponents of independent practice and others were satisfied working under the supervision of dentists.

In 2008, the CDHO applied for an amendment to the Regulated Health Professions Act that would allow trained dental hygienists to, “administer substances, prescribe, compound and dispense drugs that are essential to preventive oral care that includes the management of pain and anxiety during dental hygiene treatment and also enhances dental hygienists’ ability to respond to emergencies” (College of Dental Hygienists of Ontario, 2008, p. 3). If successful, proponents believe that it will enable dental hygienists to have more autonomy from other regulated health professionals, to more fully support self-initiation (College of Dental Hygienists of Ontario, 2008).

Since the initial application to the MOHLTC, the CDHO and other organizations have contributed to the dialogue in an effort to move the proposed amendment forward. At this time of this report, the regulation has not been approved.

Ontario falls behind many provinces in the granting of expanded scope of practice to dental hygienists. As shown in Table 5, independent practice is an emerging issue across the provinces. More detail on the scope of practice for local anesthesia by province is provided in Appendix I.

**Table 5: Scope or Practice (Local Anesthesia) for Dental Hygienists, By Province, 2013**

Province	Details pertaining to dentists' supervision
<b>Alberta</b>	N/A
<b>British Columbia</b>	Clients must have been examined by a dentist within the previous 365 days for a dental hygienist to provide services (as of July 2012 new category for DH exemption). Administer local anaesthesia, but only under the supervision of a dentist or other emergency-trained professionals.
<b>Manitoba</b>	Services must be provided under the supervision of a dentist, unless a dental hygienist has practised dental hygiene for more than 3000 hours and the client does not present with a complex medical condition, but only be provided in certain settings.
<b>New Brunswick</b>	Still under full supervision – new rules pending (to no supervision), waiting for approval from Minister of Health
<b>Newfoundland and Labrador</b>	ND
<b>Northwest Territories</b>	The scope of practice for a dental hygienist includes the: <ul style="list-style-type: none"> <li>• performance of dental services of a preventive and educational nature;</li> <li>• performance of dental prophylaxes;</li> <li>• application on teeth of topical fluoride or other anticariogenic agents;</li> <li>• rendering of first aid; and taking and developing X-rays.</li> </ul>
<b>Nova Scotia</b>	N/A
<b>Nunavut</b>	ND
<b>Ontario</b>	Since 2007 in Ontario, registrants who have been approved by the College of Dental Hygienists of Ontario can self-initiate their treatment; dental hygienists can now scale and root plane teeth and curettage surrounding tissues without an order from a dentist
<b>Prince Edward Island</b>	DH must be employed by or practice under contract with: <ol style="list-style-type: none"> <li>a. an employer that employs or has established a formal referral or consultation process with a dentist; or</li> <li>b. a dentist.</li> </ol>
<b>Quebec</b>	A dentist must ensure that the DH possesses sufficient knowledge and training to perform that act. A dentist must ensure the performance and quality of the act performed by a DH before the patient leaves his office.
<b>Saskatchewan</b>	DH must be employed by or practise under contract with:

Province	Details pertaining to dentists' supervision
	a. an employer that employs or has established a formal referral or consultation process with a dentist; or b. a dentist.
<b>Yukon</b>	ND

N/A = Not Applicable      ND = No Data Available

Source: (Canadian Dental Hygienists Association, 2013)

### 7.3.2 Impact of Increased Independence of Dental Hygienists on Access to Oral Health Services

While there are no hard data on how many dental hygienists have started their own practices under the new legislation, stakeholder estimates suggest about 300 to 500 have started independent clinics in Ontario. Similarly, there are no data yet on whether or how much this independence has improved access to some services, although many stakeholders lauded the independent practice of dental hygienists as a major contribution to improved access and to more affordable services (Stakeholder Interviews, 2014).

Many stakeholders elaborated on the value of allowing dental hygienists to apply local anesthetics when they are working independently. Some patients have sensitive teeth, and if the dental hygienist cannot apply a local anesthetic, services cannot be provided because of the patient's discomfort. This ability would be particularly appreciated in northern and remote communities where dental hygienists provide on-site independent clinics (Stakeholder Interviews, 2014).

There was less consensus among stakeholders on the value of allowing dental hygienists to do radiographs, which would allow the hygienist to assess and diagnose the patient's condition. However, the patient would still have to be referred to a dentist for treatment, and it is likely that the dentist would retake the X-rays, at increased cost to the patient. Some stakeholders felt that the dental hygienist could make more appropriate referrals, whereas others felt it would simply result in a duplication of services (Stakeholder Interviews, 2014).

## 7.4 Business Models in Ontario

### 7.4.1 Practice Environments

There are a variety of models for providing oral health services, including private practices, community clinics (both with and without a medical component), hospital-based programs, mobile clinics, portable dental equipment, and teledentistry.

### *Private Practice Offices*

Private practice offices are the most common delivery system for oral health services. In Canada and the United States, 90% of dental professionals work in private practices (Canadian Dental Association, 2010). Staffing usually includes one or more dentists, dental assistants, dental hygienists and an office manager or receptionist. Depending on the size of the clinic, additional oral health professionals may work in the office on a full- or part-time basis.

### *Community Clinics*

A limited number of community clinics are available within Ontario to provide service to those who meet specific criteria and who are unable to access oral health services through other means (e.g., insurance coverage). These clinics help fill gaps in access to services and may be publicly funded through local, provincial or federal governments; satellites of dental schools; or run by non-profit organizations. For example, the West End Oral Health Clinic in Toronto is run by a volunteer dentist, and dental hygienist and dental assistant students from a local college. The clinic provides basic services free of charge, such as general checkups, cleanings, fillings, extraction, X-rays and oral self-care instruction, and also provides referrals (Parkdale Community Health Centre, 2013). However, there are too few of these clinics to meet the entire need for these populations.

### *Hospital-Based Programs*

Hospital dental programs exist to provide dental care within the hospital setting to people who are medically compromised and/or mentally or physically disabled (Canadian Dental Association, 2005). These clinics can also provide services for patients with complex treatment challenges that cannot be accommodated elsewhere (Stakeholder Interviews, 2014). With the fiscal constraints faced by hospitals, many have closed ambulatory clinics – including dental clinics – in an effort to balance their budgets. This trend has led to a reduction in the number of hospital-based clinics available to those who need to be cared for in this setting.

Hospitals also provide a safety net to ensure that those facing financial barriers are able to access emergency care. Unfortunately, oral health services delivered in an emergency department are limited to providing relief for symptoms (e.g., pain killers) or antibiotics, which does not address the underlying condition, and the patients often return after several months for more medication. Further, many of these individuals cannot afford to fill the prescriptions (Stakeholder Interviews, 2014).

In addition, hospital-based programs play a role in the research and management of complex oral disorders or manifestations of systemic disease, and support education of future oral health professionals (Canadian Dental Association, 2005).

### *Mobile Clinics*

Through Healthy Smiles Ontario, an initiative of the MOHLTC, mobile dental clinics are operational in a few communities across the province. For example, the Mobile Dental Clinic within Toronto is a “40-foot customized coach that is fully accessible and is equipped with two dental stations, a sterilization centre and a reception area. The clinic is staffed by a dentist, registered dental hygienist and a certified dental assistant” (City of Toronto, 2012). This clinic travels through Toronto to visit neighbourhoods and community agencies, providing services to those who meet eligibility requirements (City of Toronto, 2012). Similarly, the Simcoe Muskoka Health Unit operates a “dental bus” that travels to various communities across the rural region, providing similar types of services (Simcoe Muskoka Health Unit, 2014).

Dentists, dental hygienists and denturists can also create mobile clinics to provide services on a temporary basis in rural and remote communities that do not have a permanent clinic and/or in an institutional setting (e.g., long-term care homes). With the recent ability to practice independently, dental hygienists are increasingly engaged to provide on-site clinics in remote communities in northern Ontario (Stakeholder Interviews, 2014). Indeed, the Non-insured Health Benefits program initiated a pilot whereby it agreed to pay for the services of independent dental hygienists in First Nation communities.

#### **7.4.2 Dental Corporations**

Dental corporations have begun operating in Canada as organizations for general and specialist dental practices. The general practice model is for the organization to provide a range of services and back office support, allowing the dental practices to focus on the clinical aspects of the business.

This business model has received significant reaction from the oral health industry in Ontario. This structure can provide a convenient practice model for young dentists who do not want to invest in their own private practice at this time, female dentists who may not want to work full time when they have young children, and dentists approaching retirement who wish to reduce their hours. One criticism of this approach is a concern about the focus on maximizing revenue, potentially at the expense of quality or safety (Stakeholder Interviews, 2014). However, the Review Team did not find other evidence to corroborate this concern.

## 8.0 HOW ARE ORAL HEALTH SERVICES ORGANIZED IN DIFFERENT JURISDICTIONS?

The characteristics of an ideal oral health system are similar to those for health systems in general. Jurisdictions vary in the mix of private and public resources they use to both fund and deliver oral health services, and also in the amount of data they collect to assess oral health system outcomes.

For those who have oral health insurance, the Canadian system works well. People with dental insurance are 2.7 times more likely to have visited a dentist than non-insured.

Most of the oral health care systems in developed countries have a mix of public and private funding and are facing the same challenges related to access to oral health services for those who are poor or elderly, who live in remote communities and who are most affected by other social determinants of health.

### 8.1 Characteristics of a Well Performing Oral Health System

While there is no single, definitive list of criteria that defines a high performing oral health system, the efforts of different countries to produce such a definition exhibit substantial overlap. Models for delivering oral health services have garnered increased attention in recent years worldwide. There is a heightened sense of urgency to provide an oral health system that better prevents oral diseases and seeks to eliminate disparities in oral health to ensure there is equitable access to basic oral health services.

#### 8.1.1 The Ideal Oral Health System

An American study sought to determine what characteristics an ideal oral health system would possess by investigating the principles of the leading authorities on the public's health. Following a review of policy statements and position papers of leading national and international public health agencies and organizations, the authors described a number of attributes that would contribute to the ideal oral health system, described below (Tomar & Cohen, 2010):

**The ideal oral health system would integrate with the general health care system and would emphasize health promotion and disease prevention.** Similarly to Canada, oral health care coverage in the United States is separate from medical insurance. Also, the majority of the education required of dental health professionals is distinct from the education of physicians and nurses. However, since there is tremendous overlap in oral health and general health, an



integrated system may lead to increased benefits from health promotion and disease prevention; a large proportion of oral diseases are preventable and it has been shown that community-based prevention generally is cost saving when compared to a treatment-focused approach. Prevention of oral diseases can lead to improved oral health-related quality of life and can reduce the number of school days or work days missed. The ideal oral health system would create an environment conducive to optimal health by preventing the occurrence of disease and intervening as early as possible during the disease process (Tomar & Cohen, 2010).

**Through monitoring of the oral health status and needs of the population, the ideal health care system would provide continuous quality assessment and assurance.** Ongoing assessment of the effectiveness of health care programs within communities and populations can help identify emerging and existing risk factors, health problems and priorities for targeting interventions. Evidence-based dentistry uses a formalized process of identifying and interpreting the results of the best scientific evidence. This paradigm has long been extended to medicine with the clinicians' experience and judgement, the patients' preferences and values as well as the clinical circumstances which are used when making patient care decisions.

The ideal oral health system must make use of the programs and policies found to be effective through the application of principles of scientific reasoning. The use of an ongoing mechanism for monitoring the structure, process and outcomes of care can ensure that the care provided reflects current science and best practices. Therefore, to provide valid and reliable quality measures it is necessary to maximize benefits, minimize the risks, meet the needs of patients while being transparent to consumers (Tomar & Cohen, 2010).

**The ideal oral health system would be effective, sustainable and cost effective.** An ideal oral health system must be able to sustain optimal levels of oral health for individuals and communities as well as be able to demonstrate improvements in health outcomes over time. Additionally, attention to necessary changes for the future to the models for care delivery, types of health care personnel and payment mechanisms are needed to avoid dependence on a specific system. The models for the delivery of oral health services should be continuously monitored for performance and cost. An ideal oral health system would use the least resource-intensive, socially acceptable approach while at the same time providing oral health services that are preventive, restorative and rehabilitative to reach desired health outcomes (Tomar & Cohen, 2010).

Similarly to how all leading public health systems are envisioned, **the ideal oral health system would provide equal access to comprehensive, culturally competent, community-based oral health services.** In an ideal system, oral health coverage would be universal and available to all members of a society as oral health services are deemed an essential type of primary health care. Additionally, any oral health system would adhere to the tenets of professional ethics as

well as respect and incorporate the individual's and the community's cultural background, cultural beliefs, values and needs (Tomar & Cohen, 2010).

Every person in every community should be provided with equal access to comprehensive and culturally competent oral health services that empower communities and individuals. An ideal oral health system would provide every member of society with the tools to effectively mitigate the threats to general health and oral health (Tomar & Cohen, 2010).

Likewise, the National Oral Health Plan in Australia follows a number of principles to enhance the general health and well-being of the Australian population through improved oral health (National Advisory Committee on Oral Health, 2004):

- **“Accessibility and appropriateness:** Services, including prevention and health promotion, should be accessible to all who need them, across cultures, language groups, communities of place and interest, abilities and socio-economic groups, with recognition and respect for individual needs and views.
- **Consumer involvement** is an essential part of policy development, service planning and evaluation, and decision-making at the individual intervention level.
- **Changing needs across the life span** must be recognized in service planning and delivery.
- **A population health approach,** including health promotion and proactive prevention and early intervention, will maximize health gains across the community.
- **Working together** across sectors, services and professions will address oral health promotion and care needs across the population in a coordinated and integrated way. This includes:
  - a team approach involving the range of oral health practitioners; and
  - a partnership approach involving a wide range of services and workers, including general medical practitioners, child health nurses, pharmacists, community nurses, teachers, aged care providers, physiotherapists, speech pathologists, community services, the media, the education sector, employer bodies and workplaces, and communities.
- **An evidence-based approach** underpins intervention that is effective, provides the best value for money, and achieves the best outcomes at individual and population levels.
- **Use of the full team of oral health providers** (general and specialist dentists, dental hygienists, dental therapists, oral health therapists, prosthetists, dental assistants) achieves effective and efficient use of resources to address oral health promotion and care needs.
- **A broad range of oral health workers** needs to be available to provide an appropriate and multidisciplinary range of professional expertise, with exchange of skills and expertise across the staff team, to address oral health promotion and care needs.
- **A commitment to continuous quality improvement** is a requirement of all health services through implementing the guiding principles of safety, effectiveness, appropriateness,

accessibility, efficiency and consumer participation” (National Advisory Committee on Oral Health, 2004; p. 13-14).

### 8.1.2 Patient-Centered Care

Not surprisingly, there is a shift towards a patient-centered clinical approach to oral health care. A patient-centred clinical care method that is specific to the dental profession was developed recently for use in socially and economically deprived areas of Montreal (Loignon et al., 2010). To address the clinical needs of people living in poverty, these dentists identified the necessary skills and attitudes that would be beneficial for the oral health professional to include in their practices (Bedos, 2011; Loignon et al., 2010). A list of these facets of patient-centered care is provided in Table 6. They developed their approach based on years of personal experience and external interviews with dentists practicing in disadvantaged communities in Montreal (Bedos, 2011; Loignon et al., 2010). The results of this study discovered that using this approach can overcome difficulties encountered by dentists treating people living in poverty and meet the needs of this population (Loignon et al., 2010).

**Table 6: Facets of Patient-Centered Care**

Facet	Definition
<b>Understanding patients’ social context</b>	Show an openness and interest in patients’ living conditions, social and cultural background, and how this impacts their needs and expectations.
<b>Taking time and showing empathy</b>	Take time to talk with patients to better understand them personally and to improve the clinical relationship.
<b>Avoiding moralistic attitudes</b>	Avoid blaming patients and accept compromises to find common ground.
<b>Overcoming social distances</b>	Adopt a humanistic attitude when interacting with underprivileged patients.
<b>Favouring direct contact with patients</b>	Establish close and warm contacts with patients to create a therapeutic alliance based on trust and respect.

Source: (Loignon et al., 2010)

The use of a patient-centred approach can help oral health professionals interact more effectively with their patients, particularly those with different social or cultural backgrounds. The benefit of this approach can help improve a patient’s adherence to treatment and more importantly help improve health-related behaviours such as oral hygiene and nutrition (Loignon et al., 2010).

## 8.2 Delivery of Oral Health Care in Canada

### 8.2.1 Best Practices for Oral Health Care in Canada

The best practices for oral health care in Canada comprised community-based health promotion and disease prevention interventions that aim to improve access to care and oral health outcomes of the population. The attributes of an oral health best practice approach in Canada that must be considered was outlined in the most recent Canadian Health Measures Survey (Health Canada, 2010):

1. **Access to Care:** Community programs should be designed to address the barriers to access to care. The Canadian Oral Health Strategy defines four types of barriers (financial, geographic, social-cultural, and legislative) that limit or preclude access to preventive or curative oral health care for a significant percentage of the population.
2. **Sustainability:** Community oral health programs need to be politically and financially sustainable. Since programs are funded mostly from general revenues, they must be able to demonstrate accountability in terms of improving the health of the population or providing access to care to the more vulnerable populations.
3. **Cost-effectiveness and Efficiency:** Community programs should be cost-effective and efficient through providing evidence-based services in the most cost-effective manner.
4. **Community Involvement:** Particularly for Aboriginal programs and interventions for culturally diverse communities, involvement of the community can help to gain acceptance and overcome some of the cultural barriers that affect access to care. Community involvement helps to provide 'ownership' of the program which in turn improves health outcomes.

### 8.2.2 Funding of Health Care in Canada

In Canada, the predominant delivery method of oral health care service is the private practice model on a fee-for-service basis. The majority of private dental practices typically consist of one dentist or two dentists (54% and 19% percent respectively) (Canadian Dental Association, 2010). Group private dental practices are rarer with 7% of dentists working in a practice with five or more dentists (Canadian Dental Association, 2010). Approximately 2% are in an academic setting, 1% in public health, 1% in the military and 3% in other settings or retired (Canadian Dental Association, 2010).

For those who can access it, this delivery system has served the Canadian population well and has contributed towards an overall improvement in oral health over the past three decades (Federal, Provincial, Territorial Dental Directors, 2005). However, the majority of individuals who made use of those services are typically younger, employed and have dental insurance. People with dental insurance are 2.7 times more likely to have visited a dentist than non-insured

(Sabbah & Leake, 2000). Additionally, most of the individuals who receive dental care are healthier and/or have higher incomes with people in the highest income bracket 2.8 times more likely than lowest bracket (Sabbah & Leake, 2000).

### 8.2.3 Provincial and Territorial Systems

Public spending on oral health care in Canada varies extensively by province and territory. While all provinces and territories provide some public support for dental care, no jurisdiction has a comprehensive, current oral health strategy.

Currently, 4.9% of funding for dental care is derived from public sources across Canada. Ontario is the most populous province, but with only 1.3% of funding for dental care coming from public sources, Ontario brings the national public spending average down (CIHI, 2010). Additionally, Ontario has the lowest per capita public sector spending on dental services (as of 2010), at \$5.67 per person (compared to the national average of \$19.54) (Canadian Centre for Policy Alternatives, 2011; King, 2012). Table 7, listed below, shows the most recent information on per capita spending in the private and public sector broken down by province (CIHI data, 2013 in Canadian Centre for Policy Alternatives, 2011).

**Table 7: Oral Health Care Spending In Canada, 2010<sup>3</sup>**

Province	Total Spending on Dental Services (\$000s)	Per Capita Private Sector Spending (\$s)	Per Capita Public Sector Spending (\$s)	Public Sector Spending as % of Total (%)
Newfoundland	97,804	174.25	18.46	9.6
Prince Edward Island	38,262	248.81	21.59	8.0
Nova Scotia	287,033	290.33	15.48	5.1
New Brunswick	266,428	341.36	13.73	3.9
Quebec	2,317,252	273.05	20.59	7.0
Ontario	5,871,274	438.11	5.67	1.3
Manitoba	401,744	290.45	35.27	10.8
Saskatchewan	320,706	264.08	43.91	14.3
Alberta	1,763,577	427.65	40.95	8.7
British Columbia	2,205,291	459.16	27.67	5.7
Yukon Territories	14,707	305.4	125.9	29.2

<sup>3</sup> Note that per capita spending for some provinces and the territories may not be comparable to the Ontario data due to high proportion of the population eligible for the federally funded Non-insured Health Benefits (NIHB) Program.

Province	Total Spending on Dental Services (\$000s)	Per Capita Private Sector Spending (\$s)	Per Capita Public Sector Spending (\$s)	Public Sector Spending as % of Total (%)
Northwest Territories	18,913	248.55	183.26	42.4
Nunavut	14,685	101.12	349.34	77.6
Canada	13,617,677	379.36	19.54	4.9

Source: (Canadian Centre for Policy Alternatives, 2011); Data Source: Canadian Institute for Health Information (CIHI), National Health Expenditure Database 2010 (NHEx); from 2010

Canadian governments increased per capita public expenditures on dental services from less than \$11 in 1975 to just \$19.54 in 2010 (CIHI data, 2013 in Canadian Centre for Policy Alternatives, 2011). In the private sector, spending almost tripled over the same 35 year period across Canada, from \$135 per capita in 1975 to \$379 in 2010 (CIHI data, 2013 in Canadian Centre for Policy Alternatives, 2011). There are large differences in spending between the provinces and territories, with Ontario reporting per capita public sector spending on dental services of \$5.67 per person.

Several provinces and territories had proposed initiatives that addressed oral health concerns by increasing the amount of public spending on dental care programs. The proportion of dental care expenditures from public funding peaked at the beginning of the 1980s, rising to 15.3% in 1981 (Romanow, 2002).

In the 1990s, all provinces and territories had a full-time (1 FTE) Dental Director or Consultant to represent their province or territory regarding oral health issues within a provincial/territorial context (Kraglund & Cooney, 2008). They also worked together at the national level as the Federal, Provincial and Territorial Dental Directors (FPTDD) Working Group to enhance the effectiveness of public dental programs in order to improve the oral health of Canadians (Kraglund & Cooney, 2008). Currently, not every province employs a full-time Dental Director or Consultant.

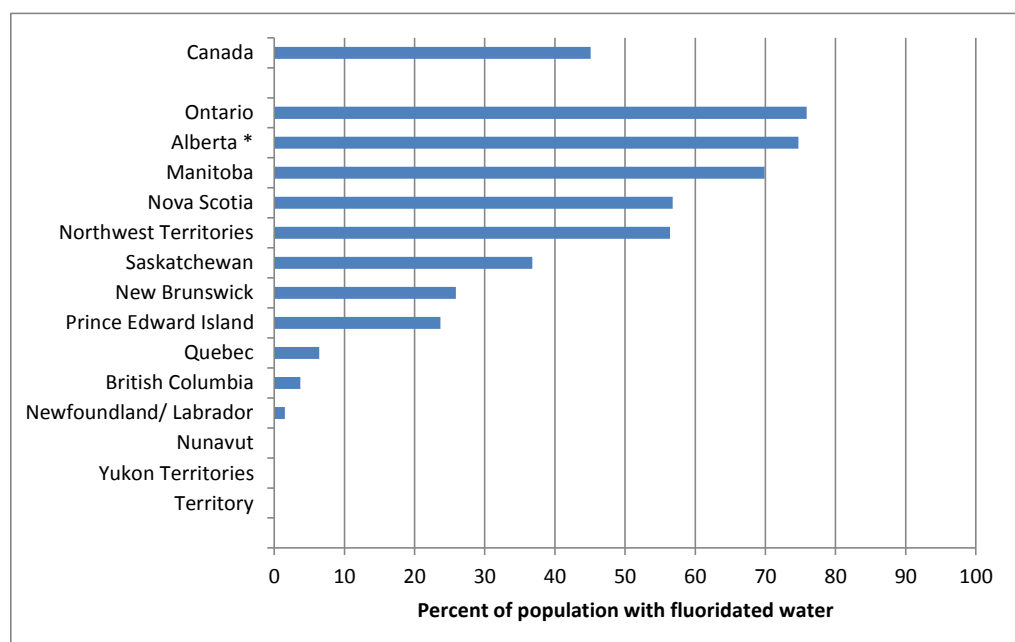
Around 1950, Newfoundland and Labrador introduced the first province-wide dental care program in Canada (Leake, 2006). Provincial programs for children were introduced in the 1970-80s in British Columbia, Saskatchewan, Manitoba, Quebec, Nova Scotia and Prince Edward Island and also for seniors in Alberta and the Northwest Territories (Leake, 2006). Saskatchewan and PEI first initiated programs guaranteeing that all children had access to preventive and basic curative dental care by bringing care directly to the children in elementary schools throughout the province (Yalnizyan, A. and Aslanyan, G. in Canadian Centre for Policy Alternatives, 2011). This school-based approach was soon emulated by other provinces. However, a shift in the political climate and an increased focus on deficit reduction have resulted in a diminishing share of public funding for dental care services. This trend led to the cancellation of provincial dental

programs for children in British Columbia, Saskatchewan and Manitoba, and reductions in proportionate funding in Newfoundland and Labrador's children's program and in Alberta's seniors program.

In Alberta, the delivery of publicly funded oral health services falls under the umbrella of Alberta Health Services (AHS). The Alberta Health Care Insurance Plan (AHCIP) provides 21 oral health care services (Wolfe et al., 2013). Services include consultations, examinations, procedures and services that are generally performed by an oral maxillofacial surgeon, oral pathologist, or anaesthesiologist in a hospital or acute care setting. In addition, Alberta Health and Wellness funds a number of public health programs and services for dental health care through the Income and Employment Supports Act, Assured Income for the Severely Handicapped (AISH), Dental and Optical Assistance for Seniors Programs (DASP), and the Children's Health Benefit (Wolfe et al., 2013).

Each municipality is responsible for decisions and costs associated with water fluoridation (Wolfe et al., 2013). As shown in Figure 1, Ontario has the highest rate of water fluoridation among Canadian provinces.

**Figure 1: Percent of population with fluoridated water by province (Wolfe et al., 2013)**



Note that Calgary discontinued its community water fluoridation program in 2013, which would not be reflected in these data.

Source: (Canadian Centre for Policy Alternatives, 2011); Data Source: Canadian Institute for Health Information (CI HI), National Health Expenditure Database 2010 (NHEx); from 2010

### 8.3 Oral Health Care Systems Around the World

Oral health care systems vary greatly by country and within a country. However, many have similar characteristics and challenges. For example, the same factors that affect general health systems, such as economics and available human resources, are found to influence oral health care systems (Kandelman, Arpin, Baez, Baehni, & Petersen, 2012).

Many countries give a low priority to oral health, making it difficult to acquire population data and establish effective oral care programs. Often, there is a lack of oral health care policies, an absence or low commitment of third-party payers, poor oral hygiene, and challenges associated with cultural beliefs and health care traditions (Kandelman et al., 2012). In addition, many countries face similar challenges of health inequity for particular groups; those who are poor, racialized, elderly, living in remote areas, and affected by other social determinants of health experience comparable difficulties in accessing oral health services worldwide.

The majority of countries provide oral health services through a blended public and private funding model, with a wide range of funding structures.

#### *Developed Countries*

Oral health services are costly. Across OECD countries in 2009, treatment for oral health conditions accounted for an average of 5% of total health expenditures, and 16% of private health expenditures (OECD, 2011).

Many industrialized countries offer both preventive and curative oral health services through systems that are supported by various combinations of public and private funding (Petersen, 2003). In some countries, such as Japan and Norway, as much as 75% of oral health services are covered through public funding, whereas others are almost wholly funded through private means (Yalnizyan, A. and Aslanyan, G. in Canadian Centre for Policy Alternatives, 2011). Only 4.9% of oral health services in Canada are funded through public means, while the remainder are funded through private-pay models of varying types (Health Canada, 2010).

Within Europe, a variety of different health systems exist, differentiated by the types of services provided, level of coverage and funding structure. For example, some Scandinavian countries offer largely public oral health services whereas many central European countries offer statutory sickness insurance systems, and southern European countries provide private services with little government intervention (Kandelman et al., 2012).



Similar to Canada and Ontario in particular, most developed countries have major disparities in access to oral health services that can be linked to socioeconomic status, race, ethnicity, age, gender or the general state of health of the individual and population (Yalnizyan, A. and Aslanyan, G. in Canadian Centre for Policy Alternatives, 2011).

Countries track oral health status in different ways, most commonly through national health/oral health surveys that collect data on clinical factors such as prevalence of dental caries, tooth presence, periodontal conditions, and oral health behaviours (Crocombe, Mejia, Koster, & Slade, 2009). The European Union in particular has invested significant resources in identifying and moving towards common oral health system surveillance and data collection methods through the Public Health Programme of the European Commission, and past projects such as the European Global Oral Health Indicators Development Project (European Commission, 2014). Through the literature review and key informant interviews, a number of jurisdictions were identified that, collectively, provide examples of a range of strategies for the planning, funding and delivery of oral health services. Specifically, the unique characteristics of oral health care systems in the following nations are discussed in the following sections:

- The United States (US), where the approach is similar to Canada's.
- The United Kingdom, which provides subsidized oral health services through its National Health System,
- Denmark, which emphasizes prevention particularly for children,
- Germany, which requires all residents to purchase oral health insurance, and
- Japan, which also requires all residents to purchase oral health insurance and has achieved superior outcomes with its oral health strategy.

All five of these countries provide oral health services through public and private funding; however, each has unique characteristics regarding the share of public funding and how the public programs are designed.

A summary of the key oral health statistics for select OECD countries, including Canada and the five countries noted above, is presented in Table 8, and discussion follows.

**Table 8: Oral Health Indicators by Jurisdiction, Various Sources and Dates**

Country	Decayed Missing Filled Teeth (DMFT) Score, 12 year olds (Data Year) <sup>1,7</sup>	Water Fluoridation Status/Coverage	Total expenditure on health as % of GDP <sup>6,7</sup>	Total expenditure on oral health as % of GDP/GNP <sup>6,7</sup>	% of all ages who saw a dentist within the last year <sup>7</sup>	% of those older than 65 years, edentulous <sup>7</sup>
<b>Ontario</b>	1.7 (2005) <sup>3</sup>	70% water fluoridation <sup>2</sup>	11.5 (2013) <sup>10</sup>	0.94 (2011) <sup>15</sup>	71 <sup>2</sup>	22.6 <sup>2</sup>
<b>Canada</b>	1.0 (2007-09)	45.1% water fluoridation	11.6 (2012)	0.85 (2012) <sup>13</sup>	74.5 <sup>2</sup>	21.7 <sup>8</sup>
<b>Denmark</b>	0.6 (2012)	None	9.5 (2011)	0.33 (2010)	85	17
<b>Germany</b>	0.7 (2009)	67% salt fluoridation	10.2 (2011)	0.8 (2010)	74	23
<b>UK</b>	0.7 (2010-11)	11% water fluoridation	9.6 (2011)	0.5 (2010)	71	23
<b>Netherlands*</b>	0.8 (2002)	None	10 (2011)	0.5 (2010)	80	40
<b>Sweden</b>	0.8 (2011)	None	9.2 (2011)	0.68 (2010)	73	6
<b>Australia</b>	1.4 (2007)	80% water fluoridation	8.8 (2005) <sup>8</sup>	0.83 (2005) <sup>13</sup>	64.0 (over 5 yrs) <sup>14</sup>	20 <sup>8</sup>
<b>United States</b>	1.19 (1999-2004)	64% water fluoridation	15.2 (2005) <sup>8</sup>	0.71 (2005) <sup>13</sup>	61.6 (18-64 yrs) <sup>12</sup>	23 (2008) <sup>5</sup>
<b>Finland</b>	1.2 (2006)	None	8.2 (2011)	0.4 (2010)	54	40
<b>France</b>	1.2 (2006)	65% salt fluoridation	11.1 (2011)	0.45 (2010)	45	16
<b>Japan</b>	1.4 (2011)	None	8.2 (2005) <sup>8</sup>	N/A	50.3 <sup>11</sup>	7 (65-69 yrs) (2005) <sup>4</sup>

<sup>1</sup> Unless noted otherwise, source: (Malmo University, 2011)

<sup>2</sup> (Public Health Ontario, 2012)

<sup>3</sup> (Canadian Institute for Health Information, 2005)

<sup>4</sup> (Medical Excellence Japan, 2014)

<sup>5</sup> (Centers for Disease Control and Prevention, 2012a)

<sup>6</sup> Unless noted otherwise, source: (Patel, 2012)

<sup>7</sup> Unless noted otherwise, source: (Council of European Chief Dental Officers, 2014)

<sup>8</sup> (Health Canada, 2010)

<sup>9</sup> (CIHI, 2012)

<sup>10</sup> (CIHI, 2013b)

<sup>11</sup> (Yuich, Tomohiro, Kakuhiro, & Atsushi, 2012)

<sup>12</sup> (US Department of Health and Human Services, 2012)

<sup>13</sup> Calculated based on figures in: (Kandelman et al., 2012)

<sup>14</sup> (Chrisopoulos & Harford, 2012)

<sup>15</sup> Calculated based on figures in: (Statistics Canada, 2013a, 2013b)

### 8.3.1 United States

In the United States, oral health education, service delivery and funding are largely independent of the rest of the US health care system. More than 90% of care is paid for either out-of-pocket by dental consumers or through private dental insurance (Kandelman et al., 2012). As a result, cost is the primary barrier to dental care for many Americans, preventing groups affected by the social determinants of health from accessing oral health services. In 2005-08, over 40% of people with low income between the ages of 20 and 64 years had untreated dental caries, relative to 16% of those with high income in the same age range (OECD, 2011). In 2009, the average number of dentist consultations per capita was 1.0 for the United States, comparable to other countries such as Denmark, Italy, Austria and Switzerland (0.9, 0.9, 1.2, 1.2, respectively), and lower than the OECD average of 1.3 (OECD, 2011).

Millions of Americans suffer from periodontal diseases and other oral conditions; the low prioritization of periodontal treatment in the US is reflected in the high prevalence of gingivitis other periodontal conditions (Kandelman et al., 2012). According to data from the National Health and Nutrition Examination Survey (2005-08), more than 20% of people had untreated dental caries and close to 23% of adults over 65 years were edentulous (Centers for Disease Control and Prevention, 2012b); this is comparable to the 24.6% of Canadians between 65 and 74 years with no natural teeth (Statistics Canada, 2010).

According to the American Dental Association (ADA), there are significant access problems for specific groups. Even though programs such as Medicaid and the State Children's Health Insurance Programs (SCHIP) are supposed to provide care to select groups, they are often unable to do so because of financial constraints. In addition, individuals are often unable to access funded care because of challenges such as the lack of transportation to appointments or the inability to miss work (American Dental Association, 2014).

The ADA also states that many Americans lack a basic understanding of oral hygiene practices because of the absence of public health education on this topic, and that many areas within the country have no access to fluoridated drinking water (American Dental Association, 2014). The groups at highest risk for oral disease are the poor, those with less education and minorities who typically have lower rates of using dental care services than the US average (Kandelman et al., 2012).

Public Health and not for profit organizations in the United States have been increasingly looking to innovation in practice models to reach underserved populations. For example:

- The Pew Charitable Trusts examined the use of dental therapists in dental clinics and found that significant numbers of underserved patients were able to get care, and

dentists were able to focus on more complex procedures that generate higher revenue (The Pew Charitable Trusts, 2013).

- The National Center on Health's Head Start and Early Head Start programs free learning and development services to children ages birth to five and pregnant women from low income families (Head Start, 2014).
- The Maternal Infant Early Home Visiting program in Arizona was established to improve health and developmental outcomes of children in at-risk communities. Efforts are currently underway to incorporate oral health education in the home visits (Arizona Department of Health Services, 2014).
- Across Oregon, 16 coordinated care organizations (CCOs) are working on a local level to transform the health care delivery system to achieve better outcomes at lower cost through the integration of physical, mental and oral health in one care setting (State of Oregon, 2014).

### 8.3.2 United Kingdom

The United Kingdom provides subsidized dental care as a component of the publicly funded health program, the National Health Service (NHS). The OECD reports that the average number of dentist consultations per capita in the UK in 2009 was 0.7 consultations, relative to an average of 1.3 among OECD countries and similar to countries such as Luxembourg, Chile, Hungary and Poland (0.6, 0.7, 0.8, 0.8, respectively)(OECD, 2011).

Depending on the services required, the individual pays one of three standard fees that covers treatments needed to keep the mouth, teeth and gums healthy and free of pain, unless they meet certain exemptions (e.g., under the age of 18, pregnant or recently gave birth, inpatient or outpatient of an NHS hospital, on specific forms of income support, holder of an NHS tax credit exemption certificate (National Health Service, 2014b; OECD, 2011). If certain procedures are not included within the NHS list of free services, private professionals are available to provide services at a cost.

Services are generally provided by NHS-commissioned dental professionals in primary and community settings and in hospitals when needs are more specialized (National Health Service, 2014a). Many dentists who provide NHS-commissioned services also provide private services within their clinics.

According to the NHS, the oral health of the population has improved over the last 40 years, through an increased focus on prevention, the establishment of dental public health programs and better overall access to care (National Health Service, 2014a); in the 1980s, 12-year olds in England had an average of 3.1 decayed missing or filled teeth (DMFT), but efforts have reduced this score to only 0.7 DMFT in the 2000s, comparable to Germany and Denmark (both scores of

0.7 DMFT) and less than other European countries such as France, Ireland, Italy and Spain (1.23, 1.4, 1.1, 1.3, respectively)(Patel, 2012).

NHS recognizes that work is necessary to continue driving positive change within the oral health system; a strategic framework is being called for that would use a preventive approach to focus on improving access to oral health, clinical outcomes, and patient experience, while reducing health inequalities and system inefficiencies, all in line with the 2013 document, “The NHS belongs to the people – a call to action” (National Health Service, 2014a). Within the last few years, the Department of Health and the British Association for the Study of Community Dentistry have produced a toolkit that has been implemented with the intent of preventing oral disease by primary health care teams; this tool is called “Delivering Better Oral Health: An evidence-based toolkit for prevention,” and gives advice on the prevention of oral health conditions (Patel, 2012).

### 8.3.3 Denmark

Denmark provides oral health services through a mixed public and private model in which children under the age of 18 receive care for free (through municipalities), and adults can access care through private practitioners with the support of government subsidies depending on the amount of third-party support that is available to the individual (Patel, 2012). The services provided to children include periodic check-ups and treatments, as well as referrals to orthodontics if necessary (European Observatory on Health Systems and Policy, 2012b). 70.5% of the total dental expenditure was considered out-of-pocket in 2009, relative to an average of 54.2% among all OECD countries and 44.1% in Canada (OECD, 2011). In addition, the OECD reports that the average number of dentist consultations per capita in Denmark in 2009 was 0.9 consultations, relative to an average of 1.3 among OECD countries (OECD, 2011).

The country is recognized for its approach to oral health services using a preventive model – each municipality in Denmark must establish local clinics that provide all children and adolescents with free and comprehensive oral health services, to include education and prevention. Attendance is monitored and parents are informed that their children are entitled to free care; the participation rate is nearly 100% (European Observatory on Health Systems and Policy, 2012b; Patel, 2012). Further, oral health education is emphasized through tailored guidance for each individual, and through reinforcement of messages by staff working in other health, social, and education settings (Patel, 2012).

This initiative has moved the oral health status of Danish children from among the poorest in Europe 40 years ago to one of the best. Among 12-year old children in Denmark, the average number of decayed missing filled teeth (DMFT) fell 78% to 0.98 between 1974 and 2000; this success is attributed to Denmark’s preventive approach to public oral health care (Patel, 2012).

The 1986 Danish Act on Dental Care has ensured that health promotion, systematic prevention and curative care are provided free to those under 18 years old, and has also ensured accountability within the municipalities for the oral health status of their regions. Municipalities are required to report oral health data to a national recording system, which is managed by the National Board of Health (European Observatory on Health Systems and Policy, 2012b). No direct monitoring of dental service quality occurs in Denmark; however, dentists must negotiate with the regions who look at services provided and outcomes, and complaints processes are in place to address concerns with quality (European Observatory on Health Systems and Policy, 2012b).

#### 8.3.4 Germany

Oral health services are provided in Germany through a public-private mixed funding model, in which residents are required to purchase health insurance; the type of insurance required varies based on income level and individual situation. A comprehensive listing of oral health services is included within the funded scope of services (European Observatory on Health Systems and Policy, 2012a).

An interesting model has shown success in Cologne, Germany, in which peer leaders in schools have been used to promote good oral health behaviours. Students in Grade 4 developed a toothbrushing instruction program for Grade 1 children in their school, and improved their own skills in the process (Patel, 2012).

In Germany, surveys between 1997 and 2005 have suggested that there has been a decline in caries among children, reduced tooth loss in adults and seniors, and more prosthetic dental care, but an increase in the prevalence of severe periodontal disease and root caries (Crocombe et al., 2009). According to the World Health Organization, nearly 20% of Germans suffer from periodontitis (European Observatory on Health Systems and Policy, 2012a). However, the percentage of elderly dentate people has increased due to an improved standard of dental care, causing those who care for the elderly to change practices to recognize signs of oral conditions and work with the dental team to meet the needs of patients (Nitschke, 2001).

The OECD reports that the average number of dentist consultations per capita in Germany in 2009 was 1.4 consultations, relative to an average of 1.3 among OECD countries (OECD, 2011). In 2009, 25.9% of total dental expenditures was paid out-of-pocket by patients, compared to an average of 54.2% among all OECD countries and 44.1% in Canada (OECD, 2011).

#### 8.3.5 Japan

The Japanese health care system provides services through a statutory health insurance system, the National Health Insurance (NHI), in which over 3,500 insurers who are federally regulated

fund health care for the population (Esmail, 2013). Individuals have limited choice in terms of their insurers, who are assigned based on factors such as occupation and industry, place of residence and age. One third of the health insurance system was funded by the Japanese government in 2008, the remainder through insurance premiums and co-payments. Co-payments are generally based on 70% reimbursement, and higher for children (80%) and the elderly (80-90%) (Esmail, 2013). Dental care is fully covered within the benefits packages of Japanese insurance companies, subject to the same co-payments.

The Japanese dental care system is recognized for having good clinical outcomes relative to other jurisdictions – according to a 2005 study, Japanese between the ages of 65 and 69 have a seven percent rate of edentulousness, relative to 23% in the United States (Centers for Disease Control and Prevention, 2012b; Petersen, Bourgeois, Ogawa, Estupinan-Day, & Ndiaye, 2005). This rate is potentially attributable to the therapeutic principle practiced in Japan that natural teeth should be preserved as long as possible, avoiding drilling and extraction whenever possible, and the use of advanced medical technology and materials (Medical Excellence Japan, 2014).

The average number of per capita visits to a dentist was 3.2 in 2009 in Japan, the highest of all OECD countries, and the Japanese had the lowest out-of-pocket dental expenditures in 2009, at 23.6% of total dental expenditures (as compared to an average of 54.2% among all OECD countries and 44.1% in Canada) (OECD, 2011).

## 9.0 WHERE AND WHY ARE THERE GAPS IN ACCESS TO ORAL HEALTH SERVICES IN ONTARIO?

In our primarily privately funded oral health system, access to services is highly dependent on having insurance (e.g., as an employment benefit) or being able to afford services without insurance. Currently, 71% of Ontario's adults have access to oral health services (i.e., reported having visited a dentist once in the past 12 months). However, for the many unemployed or working poor, new immigrants, seniors and members of First Nations, Inuit and Métis communities, the cost of preventive and treatment services can be prohibitive, resulting in poor access to services for these vulnerable populations.

### 9.1 What are the Barriers to Access to Services?

The oral health system mirrors the general health care system in that access to services varies by population within the province, but perhaps to a greater extent. Groups that are socially and

economically marginalized experience the greatest barriers to oral health services and have poor outcomes as a result; in particular, these outcomes include more cavities, gum disease, tooth ache, and loss of time from work or school because of oral health complaints (Ontario Association of Public Health Dentistry, 2012).

The additional challenge faced by many in these groups when seeking oral health services is the cost of care, which is often a lower priority than other basic needs such as food or rent. To add to the challenge, these groups have some of the lowest levels of employment-based dental insurance, which further prevents access (Ontario Association of Public Health Dentistry, 2012). Additional discussion regarding barriers to care is presented below.

### 9.1.1 Financial Barriers

Oral health services in Ontario are largely funded through private means, with very little funded through public sources. Therefore, the cost of accessing oral health services is generally the responsibility of the individual, either through the workplace or out-of-pocket payments. Many people, particularly those who are unemployed or underemployed, are unable to afford the high cost of care, or they may believe that the cost is too great relative to the perceived benefit of using oral health services and choose not to seek care.

In Canada, people who are least affected by the various social determinants of health tend to have the best dental insurance coverage and also the best oral health status; the proportion of Canadians who have private insurance coverage is 62.6%, who have public insurance is 5.5%, and who have no insurance is 31.9%, with coverage being highest among middle-aged individuals through private means (Health Canada, 2010). Similarly, the mean frequency of dental visits increases with age until middle age, but then drops substantially among the elderly (Kraglund & Cooney, 2008).

Many who have some dental insurance through the workplace may still be unable to afford the financial cost of services because of high deductibles and limits to insurance coverage. The individuals and families who fall within this group may be above the threshold for eligibility in low income programs, and often choose to forego oral health services altogether in lieu of paying for rent, food, and other necessities (Stakeholder Interview, 2014).

According to the Canadian Health Measures Survey, adults without private dental insurance and who have lower income and education levels visit dental health professionals the least and also have the worst oral health outcomes (Health Canada, 2010).



### 9.1.2 Geographic Barriers to Access

#### *Rural and Remote Communities*

As is the case in the health care system in Ontario, rural and remote areas often experience a shortage of health care professionals relative to the supply in urban areas. The same trend holds in the oral health system, in which more dental professionals choose to work in urban centres, leaving an undersupply of professionals in rural and remote areas (Canadian Dental Association, 2010; Pitblado, 2007).

According to a 2010 report by the Canadian Dental Association, significant variation exists in the regional distribution patterns of dentists and dental hygienists within Canada; in July 2009, there were 57.6 dentists per 100,000 people in Canada, with wide variations province to province (Newfoundland and Labrador was lowest with 34.6 dentists per 100,000, and British Columbia highest with 66.3 dentists per 100,000), and also wide variation in distribution of dentists between urban and rural areas. Overall, there were about three times as many dentists serving the urban areas than the overall population in Canada (Canadian Dental Association, 2010).

The result of this distribution is variations in dental utilization rates between regions, which in turn, results in access issues in regions that have a greater demand for oral health services than is available.

Since the expansion of scope for dental hygienists allowing them to work independently from dentists, some dental hygienists have arranged to travel to remote communities to establish clinics to provide basic preventive care; however, challenges exist (e.g. logistical difficulties, lack of access to equipment, etc.) that impact their ability to diagnose and treat some conditions (despite the legislative authority to do so) and the inability to administer local anesthesia limits their ability to provide care a full basket of services to these communities, because some services cannot be provided without anesthesia (Stakeholder Interviews, 2014).

#### *Transportation*

A significant barrier to accessing oral health services for people living in rural or remote communities is the need to have to travel great distances to visit an oral health professional. In some cases, people who live far away from clinics may have a limitation that prevents them from accessing care (e.g., unable to travel or to drive) or may choose to not access services because of the cost or difficulty of arranging transportation to accommodate their physical condition. In particular, many rural and remote communities have inadequate transportation services for those with accessibility challenges. If the services are even available, the hassle of scheduling and other complications is often frustrating enough that the individual's desire to

visit an oral health professional is outweighed by these challenges. In other cases, options for transportation may simply not be available (Stakeholder Interviews, 2014).

### 9.1.3 Socioeconomic Barriers to Access

Prominent in the literature is the idea of social determinants of health, which have been defined as “the conditions in which people are born, grow, live, work and age,” and are determined by the “distribution of money, power and resources at global, national and local levels” (World Health Organization, 2012). The concept suggests that if an individual is negatively affected by one or more of these determinants of health, he or she is more likely to have poorer health outcomes than others who remain untouched by the determinants. These determinants are also suggested to be associated with inequality in oral health status (Federal, Provincial, Territorial Dental Directors, 2005; King, 2012). This section discusses the challenges in thinking about oral health as a causal result of other circumstances, some of the identified correlations between oral health status and external factors, and the situations faced by select priority populations (First Nations, Inuit and Métis communities, low-income families and their children, new immigrants and seniors).

An issue that presents itself when considering the relationships between overall health status, oral health status, and each of the identified social determinants of health is the uncertainty that exists in determining the causal links between all of these factors. Because many of the socioeconomic variables are correlated with each other, it becomes difficult to understand the independent impact of any factor on the health status of an individual (Fuchs, 2004). Further, the research on causal evidence is severely limited because many of these variables cannot be controlled. Therefore, when *social determinants* are discussed in the context of oral health care and the social factors that may impact an individual’s oral health status, it is important to be critical of the types of relationships that are identified and to understand that the majority of the links are *social correlates* rather than causal relationships.

According to a 2012 report released by Public Health Ontario regarding access to dental care and oral health inequalities in Ontario, findings have suggested that the majority of

#### **Social Determinants of Health:**

1. Income and social status
2. Social support networks
3. Education and literacy
4. Employment/working conditions
5. Social environments
6. Physical environments
7. Personal health practices and coping skills
8. Healthy child development
9. Biology and genetic endowment
10. Health services
11. Gender
12. Culture

Canadians have good oral health and adequate access to dental care; however, certain subgroups have poorer oral health and cannot appropriately access dental care (Public Health Ontario, 2012). These subgroups tend to be associated with social determinants of health (listed in Box 1)(Public Health Agency of Canada, 2001):

- Although 68% of all Ontarians have dental insurance, 85% of those with the highest incomes are insured. In contrast, 36% of older adults, 40% of those with low income, and 41% of those with low education levels have dental insurance (Public Health Ontario, 2012).
- 72% of Ontarians visited a dentist in 2005; among those with lower income and less education, about half visited the dentist (Public Health Ontario, 2012).
- Of those Ontarians who did not visit a dentist in the last three years, 20% cited cost as a barrier; those who cited cost as a barrier most often were young adults, the uninsured, and those with some post-secondary education (Public Health Ontario, 2012).
- More than 80% of Ontarians brush their teeth at least twice a day, with the proportion increasing along with higher education and higher annual household income. Women are significantly more likely to brush their teeth at least twice a day (Public Health Ontario, 2012).
- Lower income Ontarians are more likely to abstain from social interactions, such as conversation, laughing or smiling, in the past year because of a mouth condition (8.5% of lower income Ontarians, versus 3.5% of all Ontarians) (Public Health Ontario, 2012).
- Ontarians over the age of 65 and those with lower income, less education, and no insurance are more likely to only visit the dentist in cases of emergency, rather than for preventive purposes (Public Health Ontario, 2012).
- Fewer immigrants report having dental insurance than their non-immigrant counterparts, and fewer immigrants reported visiting a dentist in the last year (Public Health Ontario, 2012).

The financial barriers to access, which figure prominently in access to oral health services, were discussed in the preceding section. The following section provides a discussion of other social determinants of health and their impact on access to oral health services.

### **Education**

Awareness of the impact of poor oral hygiene is a main concern of Ontario's Chief Medical Officer of Health, as described in her 2012 report, entitled *Oral Health – More Than Just Cavities* (King, 2012). She has described a situation in which most Ontarians are not fully aware of the connection between oral health and general health, highlighting a particular lack of awareness within First Nations, Inuit and Métis communities.

Attitudes towards oral health care are influenced by a number of factors, one being the level of education of the individual, in general and in relation to oral health. In 2012, the *Report on*

*Access to Dental Care and Oral Health Inequalities in Ontario* indicated that those with lower than secondary school graduation were less likely to have dental insurance or to visit the dentist in the last year outside of emergency cases, and to be more likely to be edentate and experience related social limitations, and to brush their teeth less frequently (Public Health Ontario, 2012).

The impact of low levels of awareness and a detached attitude towards oral health prevents many Ontarians from engaging in preventive behaviours, such as regular tooth brushing and visiting oral health professionals for regular cleanings.

### ***Language, Cultural or Social Situation***

Ontario is home to many people with varying social and cultural characteristics; Ontarians speak many languages and have varying beliefs, which can change the way that they need services to be provided. As a result, services provided to Ontarians should accommodate the unique characteristics of the population. Providing funding and general clinics that are geographically accessible will not necessarily result in full utilization by all Ontarians, as some groups would only choose to access services if they are held in their native language and if they respect their cultural beliefs. First Nations, Métis, Inuit and new immigrant populations are particularly relevant to consider in this context, as members often are reluctant to visit dentist offices where they do not feel welcome and that do not respect their culture, understand their social situation and do not speak their language (Federal, Provincial, Territorial Dental Directors, 2005) (Stakeholder Interviews, 2013).

People who have precarious living situations, such as the homeless, have significant challenges with accessing oral health services. A 2013 study of the oral health status of the Toronto adult homeless population found that 97% of those surveyed in Toronto shelters needed dental treatment (relative to 34% in general population), 40% were in need of emergency dental treatment, 35% had not visited a dentist within four years, and 70% were without any insurance coverage for dental care (Figueiredo, Quiñonez, & Hwang, 2013). Awareness of oral health issues was identified as a particular problem – 20% said they had no dental problems, whereas only 3% were problem-free (Figueiredo et al., 2013).

Stakeholders also noted that the homeless and those with mental illness or addiction issues and were unlikely to seek out services in a dental office because they are uncomfortable in this formal care environment. When individuals from these high need populations seek medical care (e.g., in a Community Health Centre), although there may be an assessment of oral health issues, there are often more severe medical or social issues that require priority treatment, and oral health care is deferred until other more urgent issues are resolved. (Stakeholder Interviews, 2014).

#### 9.1.4 Policy Barriers to Access

##### *Lack of Integration with Medical Care*

Many of the stakeholders questioned why dental care was not covered by Medicare. Indeed, the interviewers were reminded in many ways that “an infection in any part of the body would be treated under Medicare, except if the infection is in a tooth or its surrounding structures” (Oral Health: Its Place in a Sustainable Health Care System for Canadians. A Submission to The Commission on the Future of Health Care in Canada from the Federal/Provincial/Territorial Dental Directors, January, 2002).

Perhaps as a result of the different approaches to the funding of oral and other medical care, these two fields are generally practised in isolation of one another. Despite the potential impact of poor oral health on overall health, the medical system does not necessarily consider oral health in its assessment of patients.

Historically, there has been a lack of integration between primary dental and primary medical care, which may have prevented some opportunities to improve patient care, avoid discrepancies in patient information and reduce the need for secondary referrals. In fact, multiple bodies have promoted and encouraged expanding the role of the dental professionals into the treatment of tobacco dependence and in preventing oral health disease (King, 2012).

##### *Eligibility Criteria for Programs and Services*

Access to oral health services for some populations within Ontario is heavily influenced by the eligibility criteria for publicly funded programs and services.

Through various provincial initiatives, certain groups of Ontarians are able to get some support to access oral health services. (An overview and discussion of publicly funded programs within Ontario, including eligibility criteria, is presented in Section 6.3.3 and in more detail in Appendix G). An analysis of the eligibility criteria for publicly funded programs in Ontario suggests that children under the age of 17 and the elderly have the most access to these programs, while adults between the ages of 18 and 65 have fewer options.

Although the income threshold to qualify for dental benefits for low-income families was recently increased (allowing more families to qualify for benefits), many stakeholders, while recognizing the improvement in the program to account for additional dependents, felt that the absolute thresholds were still far too low, and were much lower than for similar programs in other provinces (Stakeholder Interviews, 2014).

### ***Reimbursement Rates for Publicly Funded Services***

The fee guides for professional services and oral devices used by some of the publicly funded oral health programs are far lower than the comparable fees for privately-funded services (which are generally established by the professional associations). As a result, some dental offices do not accept patients who receive these benefits (e.g., Ontario Works, Ontario Disability Support Program) because the fees are too low (First Nations Non-Insured Health Benefit Strategy Forum, 2014). Similarly, the reimbursements for some devices are below the denturists' cost of production (Stakeholder interview, 2014).

### ***Inconsistent Benefits Across Regions***

Dental benefits provided through Ontario Works are administered through the local municipalities. With the downloading of services and costs in the 1990s, many regions no longer retained public health dentists and curtailed or eliminated dental benefits as they were seen as more discretionary than other benefits. As a result, access to dental services among this population is inconsistent – and, therefore, inequitable – across the province (Stakeholder Interviews, 2014).

#### **9.1.5 Limits on the Oral Health System's Capacity to Provide Services**

Two principle means exist through which human resource availability of oral health professionals can affect access to oral health services:

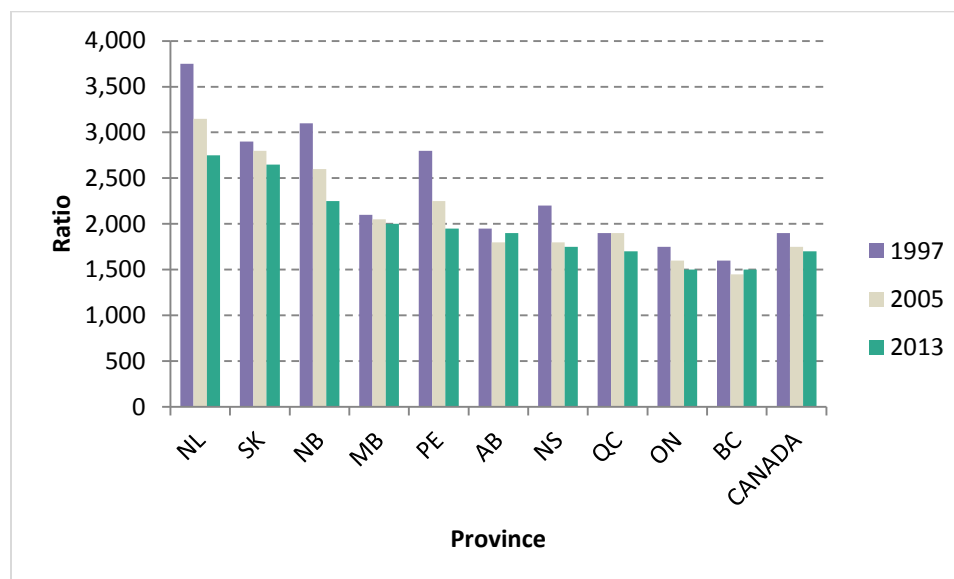
- Availability in absolute numbers; and
- Limits on how those human resources can be used to provide oral health services – in other words, limits imposed by regulation and/or scope of practice.

### ***Availability of Oral Health Professionals***

There are approximately 19,600 registered dentists in Canada, and over 9,000 in Ontario, with about 89% in general practice and the remaining practicing as specialist dentists (Health Canada, 2010). The specialty with the highest number of dentists is orthodontics, with approximately 735 orthodontists in Canada in 2010 (Health Canada, 2010). The specialty with the fewest number of specialists is oral radiology, with only 12 specialists in Canada in 2010.

As of January 2009, there were approximately 22,000 dental hygienists, 2,200 denturists, 300 dental therapists and at least 30,000 dental assistants in Canada (Health Canada, 2010). According to statistics from the Canadian Dental Association, the population-to-dentist ratios for each province have been declining over the years, adding capacity to the oral health systems in each province and territory to meet demand. Figure 2 shows the trends that have been observed (Canadian Dental Association, 2013b).

**Figure 2: Population to Dentist Ratios, Canadian Provinces, 1997, 2005 and 2013**



Source: (Canadian Dental Association, 2013b)

The figure also shows that Ontario and British Columbia have the lowest (i.e., most favourable) ratios in Canada. However, the figure does not show the distribution of these health professionals, who are usually concentrated in the larger urban centres.

### *Limits Posed by Professional Regulations*

The regulatory and organizational context in which dentists, dental hygienists, and other oral health professionals interact to provide oral health services also affects the volume of services available, their price, and how they are performed.

Dental hygienists in Ontario do not have the authority to administer local anesthetics and order radiographs. These restrictions have implications for access in situations where independent dental hygienists are willing to hold clinics in isolated communities or institutional setting. There is also a cost impact, as the fees for services provided by dental hygienists in an independent clinic are typically about 30% lower than fees for comparable services provided by a dental hygienist in a dentist's office (Stakeholder Interviews, 2014).

Ontario also falls behind some provinces in the use of dental therapists. Dental therapy was started by the University of Toronto with the concept of training students from remote communities in basic preventive, restorative and surgical treatments who would then practice in rural and remote communities. Approximately 300 dental therapists are registered to work primarily for First Nations, Inuit and Métis people on crown lands in several provinces (i.e.,


British Columbia, Alberta, Saskatchewan, Manitoba, Nova Scotia, New Brunswick, Newfoundland and Labrador), but cannot be registered in Ontario.

The only school that trained dental therapists in Canada closed a few years ago, and, although there is consideration for a new training program, none has been established.

## 9.2 What Populations are Well Served?

In 2009, 71% of adults in Ontario visited a dentist (Health Canada, 2010). This statistic is one measure of the proportion of the population for which oral health needs are being met, but is not a comprehensive measure of access to oral health services or oral health status of the population. Although an individual may visit a dentist, this measure does not provide information as to their oral health outcomes or whether care was preventive or urgent, for example.

Key informants identified the well-served populations as those who could afford dental care either through third-party insurance through their employer and those who were affluent enough to afford dental care without insurance. However, even those who could afford oral health services were not necessarily well served if they lived in rural or remote communities where there is a shortage of oral health professionals. Key informants also noted that unless individuals are aware of the importance of good oral health, even with insurance, they may choose to not seek oral health services on a regular or preventive basis (Stakeholder Interviews, 2014).



“Then there are a lot of people who don’t have access because it’s a low priority in their budget or they don’t recognize the value. I know lots of educated people who have plans who don’t regularly go to the dentist. They have good oral hygiene, but don’t go unless they have a toothache. They don’t like to go to the dentist”

- Stakeholder Interview, 2014





### 9.3 What Populations Are Particularly Vulnerable?

Certain populations, particularly the community of First Nations, Inuit and Métis, new immigrants, low-income families and their children, and seniors, have more difficulty than others in accessing oral health services in Ontario. Specific issues related to each population are discussed in the following section.

#### 9.3.1 First Nations, Inuit and Métis Communities

When considering overall health status, people within First Nations, Inuit and Métis communities have among the lowest levels of health accessibility and the poorest health outcomes in all of Canada (King, 2012). Oral health is no exception to this trend; among 6 to 11-year old children studied within the First Nations Regional Longitudinal Health Survey (RHS, 2008/10), 83.8% received dental care within the last year compared to 91.3% of the general Canadian population and to Aboriginals living off-reserve (92.2%) (The First Nations Information Governance Centre, 2012). In addition, at the time of this survey, 71.1% of nine to 11-year old First Nations children were in need of a check-up and preventive care, and 14.3% required orthodontic care (The First Nations Information Governance Centre, 2012).

The Children's Oral Health Initiative was introduced in 2004 as a national initiative to prevent dental caries and improve oral health among young First Nations and Inuit children living on reserves as a response to the documented oral health needs of Aboriginal children. Funding is provided by the federal government directly to the communities, who then provide services through contribution agreements that allow the communities to provide services themselves; the program has now been implemented in 231 communities across Canada (King, 2012; Lawrence, 2010).

Among First Nations adults, 83.4% reported visiting the dentist within the past 12 months, compared to 76.7% of Canadian adults aged 40 to 59 in 2007–09 (Health Canada, 2010). Eligible individuals who identify as members of the Aboriginal community may access a range of oral health services through Health Canada's Non-insured Health Benefits Program. However, poor access to basic oral health services and a lack of awareness of the importance of oral health have resulted in poor oral health outcomes within this population (King, 2012).

Some oral health services for First Nations children and adults are reimbursed through the federal Non-Insured Health Benefits program. About a year ago, the approval and payment processing for the dental services under the NIHB were centralized, which resulted in unacceptably long delays for payments (reportedly as long as 10 weeks). As a result, many dentists are "shying away from taking on NIHB patients" or "disengaging from the program". Others are asking for payment upfront from the patient, who would later be reimbursed by the

NIHB (First Nations Non-Insured Health Benefits Strategy Forum, 2014). There was also concern about the approval process, noting that only 3% of requests for orthodontic services are approved (Stakeholder Interview, 2014).

In addition to these process issues, issues were also raised about the NIHB not approving some travel requests. There are also new transportation costs when a patient has to travel to a neighbouring community when their local dentist no longer accepts NIHB patients (First Nations Non-Insured Health Benefits Strategy Forum, 2014).

Key measures of challenges for First Nations, Inuit and Metis populations are shown in Table 9.

**Table 9: Oral Health Indicators for First Nations, Inuit and Métis populations Canada, 2007-2009**

Measure	Young Children (3-5 Years)	Children (6-11 years)	Adolescents (12-19 years)	Young Adults (20-39 years)	Adults (40+)
Avoided going to dentists in past 12 months because of cost (Wtd %)	2.1		5.8		
Have family insurance or government program that covers all or part of dental expenses (%)	87.1		81.4		
Site of usual dental care – on-reserve/in community (%)	11.3		8.3		
Site of usual dental care – off-reserve/out of community (%)	75.5		82.0		
Decayed Missing Filled Teeth (DMFT), mean	7.6 (primary teeth)	6.6 (primary and permanent teeth)	6.2	99.8	100.0
Adults with Gingivitis Score 2 or 3 (Wtd %)	ND	ND	ND	43.9	

ND = No Data Wtd % = Weighted percent

Source:(The First Nations Information Governance Centre., 2012)

### 9.3.2 New Immigrants

Fewer immigrants report having dental insurance than their non-immigrant counterparts, and fewer immigrants reported visiting a dentist in the last year (Public Health Ontario, 2012). Only about 6 out of 10 immigrants aged 12 years and older reported having dental insurance (59.2%) and only 66.0% of them visited a dentist in the last year compared to 73.8% of non-immigrants

(Public Health Ontario, 2012). A large majority of immigrants reported seeking dental care only in emergency cases (Public Health Ontario, 2012). Additionally, immigrants report tooth loss due to dental diseases in the last year more frequently than non-immigrants (Public Health Ontario, 2012).

Stakeholders also noted the lack of awareness of the importance of good oral health among many of the new immigrant populations, which also contributes to lower utilization even if other socio-economic barriers are removed (Stakeholder Interviews, 2014).

Refugee populations have limited publicly funded health benefits, which were cut back further in 2012 when the Interim Federal Health Program changes took effect and cut the temporary health care coverage provided to refugee claimants and refugee claimants whose claims have been denied (Ministry of Health and Long Term Care, 2013a). The result has been to limit funding to supplemental care, including dental and vision care, which significantly affects the ability of these groups to access oral health services, especially because many have low income and cannot afford private services.

Key measures of challenges for immigrant and non-immigrant populations are shown in

Table 10.

**Table 10: Oral Health Indicators for Immigrant Population, 2013**

Measure	Immigrant	Non-Immigrant
Visited a dentist in the last year (%)	66.3	73.8
Reported that cost was a barrier (%)	19.3	20.2
Only visited dentist in emergency (%)	25.3	17.2
Has dental insurance	59.2	71.7
Edentulous (%)	5.9	5.7
Frequent tooth brushing (at least twice a day) (%)	82.7	82.9

Source: (Public Health Ontario, 2012)

### 9.3.3 Low-Income Families

Although a variety of programs in Ontario help more people gain access to oral health services, even for those with private dental insurance, the deductibles and payment limits can act as barriers to many people (King, 2012). The Canadian Health Measures Survey indicated that 17.3% of Canadians avoid visiting the dentist and 16.5% reported declining recommended care because of the cost. Lower-income families and those without insurance avoid care 3 to 4 times more frequently than higher income Canadians (Health Canada, 2010).

The survey also indicated that Canadians from lower income families have oral health outcomes that are two times worse than their higher-income counterparts, which may be linked to issues of accessing proper oral health services. Lower-income Canadians have significantly:

- Lower rates of visiting within the last 12 months;
- Lower rates of visiting annually for check-ups, prevention, or treatment;
- Lower prevalence of sealant application (adolescents);
- Lower rates of receiving orthodontic treatment;
- Higher proportions avoiding dental visits because of costs; and
- Higher proportions declining recommended care because of costs (Health Canada, 2010).

The same group of Canadians with lower income have worse outcomes, as measured by:

- Self-reported fair or poor oral health;
- Decayed/Missing/Filled Teeth (DMFT) among adolescents;
- The ratio of decayed teeth to total DMFT among adolescents and adults;
- Edentulism (those with no teeth);
- Both the number of decayed (i.e., unfilled) and missing (due to disease) teeth among adults;
- Prevalence of untreated coronal and root caries;
- Highest debris and calculus scores;
- Severe attachment loss ( $\geq 6$  mm); and
- Having 1 or more soft tissue lesions (Health Canada, 2010).

Lower income Canadians, therefore, have higher treatment needs; 46.6% of lower income Canadians (dentate) need one or more types of treatment, whereas only 25.6% of higher income Canadians need treatment (Health Canada, 2010).

Although Ontario has several programs for children of low-income families, this population is still underserved. A recent study in Toronto examined risk factors associated with having dental cavities among 2,505 children who received early dental care. Based on this examination, 44% of the elementary schools (Kindergarten to Grade 8) were designated as “high risk” based on the condition of the students’ teeth. Children from low-income families and children who had prolonged bottle use or high intake of sweetened drinks were most likely to have never seen a dentist. Among those who had been to a dentist, children of low-income families and those of East Asian maternal ethnicity were more likely to have cavities (Darmawikarta et al, 2014).

### 9.3.4 Seniors

With advanced age comes a multitude of health and oral health problems that can affect one’s quality of life and overall health status. For instance, poor oral health and tooth loss can prevent

an individual from chewing properly, which can lead to malnutrition and systemic health problems (Hase, 2010; Kraglund & Cooney, 2008). A decrease in manual dexterity can further complicate the ability to properly clean the oral cavity. Additionally, the large number of medications taken by seniors can result in dry mouth, which can in turn lead to periodontal disease and dental caries (Kraglund & Cooney, 2008). Assistance to maintain oral health may be needed for frail or functionally dependent seniors, seniors with dementia as well as seniors with loss of strength, mobility, dexterity or any other functional loss (Hase, 2010).

With few pension plans including dental benefits after 65 years of age, these increased needs and associated expenses occur after the individual no longer has any insurance to cover these expenses.

Seniors who are residents of long-term care homes were identified in the stakeholder interviews as one population that has limited access to oral health services. Long-term care homes are obligated through their regulations to ensure that residents' teeth are cleaned (by themselves or by an employee) twice a day. However, often, the workers assigned to this task do not have the skills to provide effective care. Also, the mouth is a private area, and it is often difficult to get a resident to allow you to put your hand in their mouth to clean their teeth. There is also the danger for the worker that the resident might bite them (Stakeholder Interviews, 2014).

Another complication for treatment in long-term care homes is the high prevalence of dementia. Studies suggest that nationally more than two-thirds of residents have some form of dementia (Alzheimer Society Ontario, 2010).

Some homes do bring in dental professionals to provide on-site clinics; however, provision of these services is at the discretion of the Long-term Care home's management and dependent on the availability of oral health professionals willing to provide an on-site clinic. Where these services are not provided free of charge, the financial cost may be a final barrier even when these services are provided on-site.

The Registered Nurses' Association of Ontario (RNAO) has developed best practice guidelines for oral health care in long-term care homes. The RNAO has 15 coordinators across Ontario who work with the approximately 630 LTC homes to implement its guidelines. It is estimated that approximately one-half the homes in Ontario have implemented some or all of the oral health best practice guidelines (Stakeholder Interview, 2014).

## 10.0 WHAT FUTURE TRENDS CAN WE EXPECT TO SEE IN ORAL HEALTH?

Although the majority of Ontario's population has access to oral health services today, the continued growth in numbers of some vulnerable populations (e.g., seniors, retirees who no longer have health benefits, those who are employed without benefits) will likely result in a growing proportion of our population that has poor access to oral health services.

This section describes trends in the demand for and delivery of oral health services and the future challenges that Ontario faces in ensuring access to oral health services and good oral health outcomes for its population. Most of the material presented in this section is based on the stakeholder interviews and focus group interviews conducted as part of this work.

### 10.1 Trends in the Demand for Services

Two demographic trends were identified that are having a major impact the demand for oral health services: the aging population and the trend towards precarious employment.

#### 10.1.1 Ontario's Aging Population

Seniors have been identified as one population that has challenges in access oral health services. This population is growing in absolute numbers, and:

- Oral health needs intensify with age, as new conditions appear and existing work needs to be maintained. Approximately 78.3% of seniors still have some of their teeth, which means a higher requirement for services than if they had dentures, and many have expensive dental work (e.g., implants, elective bridge work, veneers) that require ongoing – and expensive – upkeep.
- Seniors are also living longer, with multiple complex health issues, making the delivery of care and services more complex. Polypharmacy and the related oral health issues (e.g., dry mouth) will become increasingly an issue (Stakeholder Interviews, 2014).
- Seniors are also living longer in the community, as our health system tries to care for them in their home rather than in an institutional (e.g., acute care, long-term care) setting. An important part of maintaining overall health will be to also address the senior's oral health needs within the home care services (Stakeholder Interviews, 2014).
- There are few publicly funded programs for seniors requiring oral health services. Just as these needs become more intense, seniors are less able to cover these expenses due a drop in income as they retire and the loss of employment-related insurance benefits.

- Seniors in institutional settings (e.g., long-term care homes) have unique barriers to access to care. Many of these individuals have cognitive impairment (e.g., dementia), which further complicates the provision of care.

### 10.1.2 Precarious Work

Almost every stakeholder interviewed mentioned the trend in Ontario towards what is being called “precarious work”. Youth entering the work force are more often finding part-time or contract work or self-employment, rather than full-time permanent work with benefits. As a result, a greater proportion of the population is finding itself without health insurance, which was identified as one of the key prerequisites for access to services. Interviewees noted that trends in utilization (e.g., proportion of the population that has seen a dentist in the past year) are already showing the impact of this trend (Stakeholder Interviews, 2014). However, one interviewee suggested that this decline in utilization could also be attributed to improved oral health care for children, resulting in improved oral health status for people entering the job market, with a resulting decrease in utilization of treatment services (Stakeholder Interview, 2014).

## 10.2 Trends in the Delivery of Oral Health Services

### 10.2.1 Independent Practice Models

Despite the delays in creating the regulations needed for dental hygienists to practice more independently to their full scope of practice, Ontario has already benefited from their ability to provide some services as independent practitioners. Indeed, there are an estimated 300 to 500 dental hygienists in Ontario who are now practising independently of dentists, and sometimes with other oral health professionals (e.g., denturists) (Stakeholder Interviews, 2014).

Anecdotally, these independent practices are improving access to care for individuals in rural and remote communities and in some institutional settings (e.g., long-term care homes) where these individuals have established on-site clinics. They are also providing services at lower cost than the same services provided at a clinic managed by a dentist (Stakeholder Interviews, 2014).

There was some concern expressed about the acceptance of insurance claims from these independent practices; however, this may have been a temporary condition while the insurance companies updated their approval processes in light of the new regulations (Stakeholder Interviews, 2014).

### 10.2.2 Increasing Supply of Oral Health Professionals in Ontario

The number of dentists in Ontario has risen from one for every 2,277 people in Ontario in 2002 to one for every 1,992 in 2011; nationally, there were 1,709 people per dentist in 2009 (Blackwell, 2013). Although this statistic does not inherently address whether the population to dentist ratio is appropriate, it does indicate a trend towards a greater per capita supply, despite population growth. Based on reports of continued lack of dental clinics in small and remote communities, and an increase in the number of dentists refusing to take some patients enrolled in publicly funded oral health service programs, it does not appear that this increase in supply has necessarily increased access to care for some priority populations.

At the same time, an increasing proportion of Ontario's population is expected to have little or no insurance (e.g., due to precarious employment) and/or is enjoying greater oral health than previous generations (e.g., due to community water fluoridation and increased awareness of the importance of good oral health). Although the need for care among those who cannot afford services is not changing, the demand for services may decrease as a greater proportion of the population cannot afford care.

It is unclear how the changing relationship between supply, demand and price for dental services will play out.

About 10 years ago, many private schools opened for dental hygienists (approximately 30 in the Greater Toronto Area alone), resulting in a sudden increase in the number of graduating professionals in the province (Stakeholder Interview, 2014). Many interviewees commented that there is an oversupply of dental hygienists in large urban areas, resulting in poor employment prospects. However, smaller and remote communities are still reportedly experiencing shortages of all oral health professions, including dentists and dental hygienists (Stakeholder Interviews, 2014).

### 10.2.3 Technology

As in all health care sectors, advances in technology are being introduced to improve the quality and cost of services and devices. For example, several interviewees mentioned the use of computer-aided design and computer-aided manufacturing (CAD-CAM) technology to create oral devices, without having to involve a dental laboratory. Such a trend could increase the timeliness of production in some communities (i.e., there would be no requirement to work with a laboratory in a distant location), and could potentially result in lower cost (assuming there was sufficient volume to recover the initial investment). The ability of three-dimensional printers to produce oral devices was also noted during several of the interviews (Stakeholder Interviews, 2014).



Many of the new advances in dentistry, such as computer-generated restoration and/or dental implants are high-end technologies and are less available to disadvantaged populations due to cost. At the same time, many new dental graduates are keenly interested in dental cosmetics, dental implants and other high-end technologies, and choose to locate their practice where they can provide these services (Stakeholder Interviews, 2014).

Teledentistry (i.e., the use of telecommunications and digital-imaging technology to deliver services to distant locations) was also cited by stakeholders as an emerging practice to improve access to oral health services where oral health professionals are unavailable. Applications for teledentistry are typically limited to consultations, care planning, and education, all of which are important components of oral health services. Although little used today in Ontario, intra-oral cameras are being explored as a means to extend the reach of oral health professionals into First Nations' communities (Stakeholder Interviews, 2014).

#### **10.2.4 Business models**

The arrival of dental corporations in Ontario was not reported as a significant trend; however, since these corporations are profit driven, some interviewees felt that the quality of care was being compromised due to a pressure to complete each task quickly to maximize revenues (Stakeholder Interviews, 2014). However, no evidence was provided that this is, indeed, happening.

#### **10.2.5 Closure of Hospital-based Dental Clinics**

Hospitals have two roles in the oral health system: to train oral practitioners and to provide access to patients who are medically complex (e.g., intubated). As hospitals face increasing fiscal pressures, these clinics are at risk of closure. Access to hospital-based clinics has already become an issue in the Greater Toronto Area (Stakeholder Interview, 2014).

### **10.3 Future Challenges**

Key informants were asked what they felt would be the main challenges facing the oral health system in the next 5 to 10 years. Most of the comments related to the growing and aging population, increasing pressure for improved public programs for vulnerable populations, and trends in fluoridation.

#### **10.3.1 Ontario's Growing and Aging Population**

Ontario's population is aging, with an ever increasing population of seniors, which will continue to significantly stretch the existing capacity to provide oral health services. As the population

grows and ages, the shortage of some professionals, especially in the smaller communities, will become an even greater issue.

Within the medical sector, the Baby Boomer population that is entering its golden years has shown itself to be demanding of access to quality and cost-effective care. There is an expectation that they will make similar demands for oral health services. Indeed, many stakeholders indicated that the senior population is the next area where Ontario should invest in public programs for oral health services, and pressure to make this investment is intensifying (Stakeholder Interviews, 2014).

### 10.3.2 Pressure for Improved or Expanded Public Programs

Stakeholders expressed much concern over the vulnerable populations that do not have good access to oral health services. Many wondered aloud why oral health services were not universally funded (as are medical services); however, most acknowledged that this would be impractical in today's fiscal environment. Nevertheless, many stakeholders expressed strong views that there is a need for improved and expanded programs for the public funding of these services, especially to vulnerable – and growing – populations (Stakeholder Interviews, 2014).

Suggestions for improved or expanded public programs included, for example (Stakeholder Interviews, 2014):

- Improved access for First Nations, Inuit and Métis communities (e.g., on-site clinics, revised program approval process, revised fee schedule).
- Financial assistance for low-income seniors.
- Appropriate clinics (e.g., within a community health centre) for the homeless, those with mental health and addiction issues, refugees and recent immigrants and members of First Nations, Inuit and Métis communities.
- Expanded prevention and screening programs in schools.
- Initiatives to educate the public and other health professionals on the importance of good oral health to raise awareness.

### 10.3.3 Community Water Fluoridation

Despite good evidence on the value of community water fluoridation programs, Ontario has experienced growing opposition to this practice. Indeed, two jurisdictions (i.e., Sarnia, Regional Municipality of Waterloo), no longer fluoridate their water supply, and opponents to fluoridation are challenging many other communities in Ontario to stop this practice. Local politicians, looking for ways to reduce costs for their taxpayers, are being lobbied to stop fluoridation of the water supply.

Many stakeholders expressed concern about this growing anti-fluoridation movement and feared that it could have a long term impact on the oral health status of Ontarians. It has also become time consuming for representatives from public health and from professional associations to work through the process of reconsidering fluoridation at a local level.

Many stakeholders believe that this movement will continue to grow and to threaten community water fluoridation programs across the province, unless the provincial government chooses to consider the issue on behalf of all provincial jurisdictions (Stakeholder Interviews, 2014).

#### 10.3.4 Reductions in Coverage for the Insured Population

Even among the relatively well-served populations, Ontarians are experiencing an erosion of insurance coverage for oral health services, resulting in escalating out-of-pocket costs for many (Stakeholder Interviews, 2014):

- The trend towards “precarious work” is likely to continue, resulting in more and more Ontarians have no employment-related oral health benefits.
- As the cost of dental care increases, many employers, especially small-to medium-sized companies, are struggling to maintain health insurance coverage for their employees. Many employers, in an effort to reduce costs, have reduced the level of benefits provided for oral health services (e.g., no longer offer “Cadillac” dental plans). Similarly, employers have taken the step of paying based on the fee schedule from a prior year (i.e., not the current’s fee schedule), leaving the individuals with a larger share of the cost of the services.
- As some jurisdictions defining their benefit programs as the “payor of last resort”, insurance companies are facing higher costs, resulting in increased premiums or reduced benefits.

## 11.0 SUMMARY FINDINGS AND OPPORTUNITIES

When Medicare was introduced in Canada through the passing of the Hospital Insurance and Diagnostic Act in 1957 providing universal access to health care, oral health services were not included in the scope of publicly funded services. Since then, a growing body of research has provided evidence of an important link between oral health and overall health, and the importance of promotion and prevention at an early age to create a sound basis for life-long oral health. However, given the current fiscal environment in Ontario, stakeholders acknowledged that it is highly unlikely that these services will be brought into a comprehensive publicly funded insurance program.

Although oral health services are funded separately from Medicare in Canada, there is a growing awareness of the importance of good oral health on overall health. Emerging research reveals

associations between poor periodontal health and diabetes, cardiovascular disease and chronic respiratory disease (King, 2012) and a possible association between pre-term and low-weight births (Hwang et al., 2012; Madianos et al., 2001).

The Review Team identified three areas where poor oral health can contribute to avoidable utilization of health system resources, including:

- Avoidable visits to the emergency department for non-traumatic dental emergencies.
- Day surgery to treat cavities in young children.
- Management of diabetes.

### 11.1 Access to Oral Health Services

The Review Team was asked to examine access to oral health services in Ontario. This task was frustrated by the lack of any generally-accepted and consistently reported indicators to measure access, in addition to a lack of timely, comprehensive and meaningful data to calculate these indicators.

One utilization measure that is relatively broadly available is the proportion of the population that has visited a dentist in the past 12 months. Although this is not necessarily an appropriate measure of good access, it was used as a proxy for lack of a better measure. According to the Canadian Health Measures Survey, 76.7% of Canadian adults (40-59 years) had visited a dentist in the past 12 months in 2007 to 2009 (Health Canada, 2010). Reliable data was not available for people younger than 40 or older than 59. Despite the lack of a comprehensive publicly funded program, approximately three out of four adult Ontarians have access to oral health services.

In Ontario, several programs are available for children of low-income families, and Public Health offers some services to primary school children. According to the same study, 91.0% of Canadian children (6-11 years) had visited a dentist within 12 months, between 2007 and 2009 (Health Canada, 2010).

Stated another way, over 23% of adult Ontarians (approximately 1 in 4 adults) have not seen a dentist in the past 12 months, or even longer. For the population as a whole, underserved populations include:

- The unemployed, contract and part-time workers and retired seniors who do not have insurance benefits and cannot afford the services.
- Children of low-income families.

- Those living in small, rural and remote communities that do not have a sufficiently large population to support a dental practice or have not been able to attract oral health professionals.
- Vulnerable populations where the social determinants of health are likely to contribute to poor overall population health (e.g., First Nations<sup>4</sup>, Inuit and Métis, the homeless, new immigrants, refugees).
- Residents of institutions (e.g., long-term care homes) and those with complex needs (e.g., with mental health and addiction issues, medically complex patients).

Programs funded by municipal, provincial and federal governments are available for some of these vulnerable populations, including First Nations, children and low-income adults. However, many of these programs were criticized by stakeholders as inadequate due to:

- Restrictive eligibility criteria (e.g., income thresholds to qualify for benefits are too low),
- A focus on services and treatment rather than outcomes and prevention (e.g., paying for the treatment of cavities but not for regular preventive services),
- Non-comprehensive coverage.
- Approvals being denied for services recommended by oral health professionals,
- Fee schedules below the profession's provincial fee guides and onerous administrative processes (e.g., for pre-approvals and payments) that have led to some oral health professionals not accepting patients who are insured by these programs or asking for upfront payment from the patient (a practice that is allowed by the federal Non-insured Health Benefits (NIHB) program, but not provincial programs in Ontario).

Not all vulnerable populations are eligible for publicly funded programs (e.g., residents of long-term care homes, retired seniors and the working poor). Stakeholders noted that these populations are becoming an increasingly larger part of our population:

- Ontario is experiencing a trend towards “precarious employment,” which is characterized by part-time or contract employment that does not provide health insurance benefits as part of the employment contract.
- Even for those with insurance, many companies are moving away from comprehensive benefit plans (i.e., reducing the provided coverage) or allowing employees to select the level of coverage they would like. When choosing which benefits to purchase, many employees will assign a lower priority to dental benefits than to other health benefits and may choose less comprehensive coverage in an attempt to reduce their monthly costs.

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<sup>4</sup> Throughout this report, Canada's native population is referred to as “First Nations, Métis and Inuit,” except where the source publication used a different term.

- The aging of Ontario's population is well documented, and this segment of the population is expected to continue to grow significantly. Many of Ontario's seniors have enjoyed oral health insurance through most of their working lives and have a higher rate of dentation than ever before; however, this insurance usually stops at retirement, leaving them to cover their own expenses out of their retirement income. Seniors must then carry the cost of repairing cracked teeth and old fillings that break down. Maintaining the dental work they had during their working years may also present a financial burden, and neglecting these ongoing maintenance expenses can have consequences for their oral and overall health.

## 11.2 Significant Trends in the Delivery of Services

### 11.2.1 Establishing Good Oral Health Practices Early in Life

Along with the growing awareness of the importance of oral health, public health authorities are also recognizing the importance of oral health promotion as early in life as possible. First Nations, Inuit and Métis communities spoke of the need for education and promotion strategies for pregnant women and newborns, to ensure that children have the best start possible.

In the US, many programs sponsored by public health authorities and volunteer organizations target pregnant women and newborns, to ensure that the new mothers understand the importance of oral health and can adopt best practices (e.g., limiting juice intake, not allowing a baby to sleep with a bottle). In Ontario, the importance of an early start is recognized through the publicly funded oral health programs for children of low-income adults and school age children and in-school programs. However, there is no formal or province-wide strategy for reaching pregnant women and newborns and preschoolers other than for low-income families.

### 11.2.2 Local Activism Against Community Water Fluoridation

Water fluoridation has been demonstrated to be an important and effective preventive oral health treatment that has been used in Ontario communities for decades. With life-long exposure to water fluoridation, adults experience a 20 to 40% reduction in tooth decay (American Dental Association, 2005). As of 2008, 45.1% of all Canadians and 75.9% of Ontarians have access to fluoridated water (Government of Canada, 2011).

Despite good evidence on the value of community water fluoridation programs, Ontario has experienced growing opposition to this practice. Indeed, two jurisdictions (i.e., Sarnia, Regional Municipality of Waterloo), no longer fluoridate their water supply, and opponents to fluoridation are challenging many other communities in Ontario to stop this practice. Local politicians, looking for ways to reduce costs for their taxpayers, are being lobbied to stop fluoridation of the water supply.

Many stakeholders believe that this movement will continue to grow and to threaten community water fluoridation programs across the province, unless the provincial government chooses to consider the issue on behalf of all provincial jurisdictions (Stakeholder Interviews, 2014). Experience in the US suggests that the discussion of fluoridation has moved away from a discussion of the evidence-based and scientific arguments as community activists mobilize to reduce municipal costs.

### 11.2.3 Increasing Supply of Oral Health Professionals in Ontario

The supply of dentist has been increasing at the same time as the demand for services (due to fewer people having dental coverage and/or reduced benefits within their dental plans). It is unclear how the changing relationship between supply, demand and price for dental services will play out.

Stakeholders also described an oversupply of dental hygienists, particularly in urban areas. Similar to the situation with dentists, this oversupply does not yet appear to have increased access to services in small and remote communities.

### 11.2.4 Changes in Scope of Practice

The oral health sector is beginning to experience the redefinition of scope of practice for some of its professionals similar to recent developments in medical care, where the nursing scope of practice has been expanded to allow nurse practitioners to take on an enhanced role in the delivery of primary medical care. When first introduced, this role was not well received among many physicians; however, nurse practitioners now play an important and valued role in primary care – especially in small and remote communities that cannot attract a physician – and in acute care.

In the oral health services sector, the equivalent progression has begun with dental hygienists. As of 2007, dental hygienists in Ontario may “self-initiate” care, which means they may provide select dental hygiene services (e.g., scaling teeth and root planing, including curetting<sup>5</sup> surrounding tissue) without an order from a dentist, in independent clinics or in the community, including clients’ homes, offices, and long-term care homes.

While there are no hard data on how many dental hygienists have started their own practices under the new legislation, key informant estimates suggest that about 300 to 500 work independently in Ontario. Similarly, there are no data yet on whether or how much this independence has improved access to some services, although many stakeholders lauded the independent practice of dental hygienists as a major contribution to improved access and to

<sup>5</sup> Curetting of surrounding tissue involves the use of a curette, a scoop-like tool, to remove diseased tissue.

more affordable services. Specifically, a pilot program for the Non-insured Health Benefits (NIHB) program allowing dental hygienists to bill the program for some services has been well accepted by the First Nations' communities that hygienists can now serve more fully. Other benefits cited by key informants included the expanded provision of dental hygiene services in long-term care homes and a lower cost option for clients (i.e., the fee schedule for some services can be significantly lower than the ODA fee schedule).

In 2005, the CDHO began the process of applying for an amendment to the Dental Hygiene Act that would allow trained dental hygienists to administer local anesthetics for clients who experience pain or anxiety during dental hygiene treatment. Some patients have sensitive teeth, and if the dental hygienist cannot apply a local anesthetic, services cannot be provided because of the patient's discomfort. The ability to apply a local anesthetic would be particularly valuable in northern and remote communities where dental hygienists provide on-site independent clinics. However, without the removal of the requirement for a dentist's order, self-initiating local anaesthetics did not make sense until that was removed (See Table 5 on page 44 for a comparison of this scope of practice by province).

Another potential resource for providing services to clients in remote locations is the dental therapist. Dental therapy was initiated through the University of Toronto for the Medical Services Branch of the Government of Canada with the concept of training students from remote First Nations, Inuit and Métis communities in basic preventive, restorative and surgical treatments who would then practice in rural and remote First Nations, Inuit and Métis communities. Approximately 300 dental therapists are registered to work for First Nations people on crown lands in several provinces (i.e., British Columbia, Alberta, Saskatchewan, Manitoba, Nova Scotia, New Brunswick, Newfoundland and Labrador), and are registered in 3 states in the US, and are being considered in at least 4 others. However, the profession has not evolved in Ontario.

### 11.3 Strengths of Ontario's Oral Health System

Overall, many positive statements can be made about the delivery of oral health services in Ontario. For example:

- Despite the fact that, unlike medical services, oral health services are not covered by the Ontario Health Insurance Plan (OHIP), the majority of Ontario's population has access to services (predominantly through employment-related dental insurance) and enjoys relatively good oral health status.
- No issues were identified in the literature or raised in the interviews and focus groups about the quality of services provided by oral health professionals in Ontario.



- Programs delivered through Public Health for school-age children provide screening and some preventive services for this population. Publicly funded mobile oral health clinics have been a welcome service for some small and remote communities in Ontario.
- The Government of Ontario recognizes the importance of good oral health through its programs for low-income families and school-age children. The Ministry of Health and Long-Term Care is currently amalgamating six programs into a single program to improve access, and is examining the overall program at the same time to ensure that it is evidence based and provides the most appropriate services to deliver the desired outcomes. It is acknowledged that this process will take time.
- Access to oral health services in Ontario compares favourably to most provinces in Canada and reasonably well to many jurisdictions outside of Canada. Ontario has the highest rate of water fluoridation among the Canadian provinces (Wolfe et al., 2013).

## 11.4 Barriers to Access to Oral Health Services

The Review Team identified three primary barriers to access to oral health services in Ontario; often, underserved populations faced more than one of these barriers.

### 11.4.1 Financial Barriers

In Ontario, 98.7% of expenditures for oral health services are privately funded through third-party insurance or paid out-of-pocket, and only 1.3% are publicly funded, the lowest provincial rate in Canada (see Table 7 on page 53). Accordingly, the cost of oral health services was cited by almost all stakeholders as the largest barrier to access in Ontario. Even when a person has insurance, the cost of the deductible and costs above what the insurance will cover can be prohibitive or a strong disincentive for those with low or fixed incomes to seek care.

### 11.4.2 Geographic Barriers

A second major barrier is geographical. For First Nations, Inuit and Métis communities in the north (and some in the south), residents can only access services by leaving the community (often by air and at some cost to the individual) or if they are lucky enough to have a mobile clinic serving their community. Residents of small and rural communities in Southern Ontario may also have challenges in accessing local services, since many oral health professionals prefer to live and practice in larger urban centres.

Similarly, residents of long-term care homes and individuals who find it difficult to leave their home (e.g., frail seniors) may not be able to access services unless they can arrange for travel to and from the health professionals office.

### 11.4.3 Lack of Awareness of the Importance of Oral Health

A third major barrier to access is a lack of awareness and education of the importance of good oral hygiene (and overall oral health) and how to maintain good oral health. Since oral health services are not covered under Medicare, an individual must value the services sufficiently to allocate limited financial resources to oral health services, in light of competing needs. For the unemployed and low and middle income earners, oral health is not always perceived as a priority within the family's budget. Citizens may take cues about an activity's importance from the extent to which a government communicates, invests, delivers services, oversees or simply registers certain events – consider vaccination, anti-smoking campaigns, and major life milestones such as marriage or birth. As one stakeholder noted: *"If it were important, the government would pay for it."*

In Ontario's multi-ethnic population, many new immigrants are from societies where there is less emphasis on and understanding of the importance of oral health. Even if they are encouraged to seek oral health services, these populations may face additional barriers in accessing culturally sensitive care.

Health promotion campaigns to address smoking and obesity are well established in Ontario; many stakeholders suggested that the next wave of health promotion campaigns should be on oral health.

## 11.5 Opportunities to Improve Access to Oral Health Services in Ontario

Although many Ontarians enjoy good access to oral health care, approximately 2 to 3 million likely do not. These findings in this report are consistent with the findings of the Canadian Oral Health Framework (COHF) 2013-18, produced by the Federal, Provincial and Territorial Dental Working Group (Federal, Provincial, Territorial Dental Directors, 2005). The Review Team identified a number of opportunities to enhance the planning and delivery of oral health services that can contribute to improved access for these underserved populations, as discussed below, which are also consistent with many of the strategies outlined in the COHF.

### 11.5.1 Need for an Oral Health System

“We don’t have an oral health system; we have an oral treatment system.

In the acute care sector, there are dozens of groups that purport to be leading the system. The MOH, the OMA, the RNAO, the OHA. But there’s no de facto leader in oral health. Groups are providing care, but there is no sense of a system or sense of a need for a system.”

- Stakeholder Interview, 2014


Our Review Team agrees that there is a need for an oral health system in Ontario; delivery of services is currently fragmented, with no overall provincial strategy for the delivery of timely, quality, accessible and cost-effective oral health services. This sector lacks a common vision and direction, and leadership is diffuse; the various provider groups do not have a history of collaborating well together on moving towards an effective oral health system.

Although there is a National Oral Health Framework 2013-18 (which replaced the previous National Oral Health Strategy), and some regional municipalities have strategic plans for oral health services in their regions (e.g., through Public Health), there is no oral health strategy for the province to:

- Undertake coordinated promotional programs to raise the awareness of the importance of good oral health among health professionals and the public.
- Collect sufficient data on utilization and outcomes to conduct surveillance of the oral health status of its population.
- Identify underserved populations and emerging trends that affect access so that effective and targeted programs can be developed to support these vulnerable populations.
- Use the existing health human resources to their full scope of practice as cost-effectively as possible.
- Ensure that publicly funded programs are evidence-based and cost-effective.
- Address potential shortages and/or maldistribution of oral health professionals in Ontario.
- Provide accountability to the system for the expenditures made.


Stakeholders identified many vulnerable and marginalized populations that require an investment in services to improve access to care. Without a coordinated provincial strategy,

these populations will continue to experience a standard of care well below what other residents of Ontario enjoy.



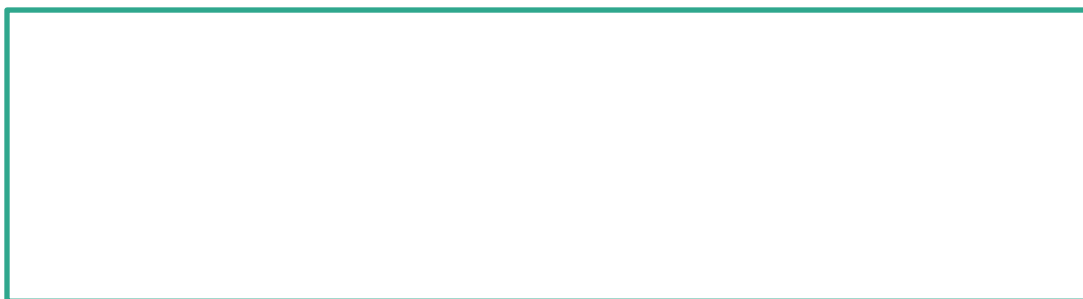
“We have very poor oral health data ... there is no survey to tell us what dental health status is. We have general information for some populations, but no hard cold data to take to the government to define the oral health needs for children, adults and seniors. We need money to do surveillance to get some hard core local data. If we had data to show the need, the politicians would have to pay attention.”

- Stakeholder Interview, 2014



Most oral health services are delivered by private-sector providers, who do not have the same requirements to collect and report utilization and outcome data as in the public sector. Accordingly, there is very little data on oral health at the individual or provincial level other than one-off surveys of utilization and health status. The lack of data makes it difficult to identify underserved populations; track trends in utilization, outcomes or health status; or otherwise plan programs to ensure that quality, timely and cost-effective services are available to those who need them. Similarly, when plans and programs are developed, it is difficult to evaluate them due to the lack of baseline or ongoing data.

Oral health services are not a part of recently developed electronic health record systems for patients within Ontario’s health care system. Many stakeholders were concerned that oral health was being “left behind” due to this omission.



The forum for the development of a provincial strategy for oral health could take any number of forms, including, for example:

- A provincial commission similar to the federal Commission on the Future of Health Care in Canada (commonly referred to as the Romanow Commission) in 2002.
- A provincially appointed expert to lead the development of a provincial strategy, similar to the appointment of Dr. Samir Sinha for the recently completed Seniors' Care Strategy for Ontario, or Dr. Charles Pascal for early childhood education in Ontario.
- An expert or consensus panel, with representatives of oral health, primary care and public health professionals, health policy makers, funders, and the public with a mandate to develop a provincial strategy.
- The development of a white paper that examines options for the delivery models and publicly funded programs to meet the needs of underserved populations.

At a minimum, a provincial oral health strategic plan should identify priorities that emerge from sector-wide responses for:

- Identifying the most cost-effective means and policy tools to significantly improve access to care for First Nations, Inuit and Métis populations, living on or off reserve, in consultation with the Non-Insured Health Benefits program.
- Determining whether a promotional campaign to educate health service professionals and targeted members of the public about the importance of good oral health is effective and actually contributes to improved outcomes
- Determining how best the province and its municipalities can communicate their commitment to community water fluoridation, both in terms of existing regulations and responding to future movements against it.
- Creating evidence-based provincial programs to improve access to oral health services for underserved or vulnerable populations (e.g., low income adults and their children, pregnant women and newborns, pre-school and school-age children, seniors) that address financial, geographic and socio-economic barriers to access.
- Identifying oral health system surveillance measures and outcomes that will indicate whether the strategic plan is achieving its objectives.

### 11.5.2 Additional Research on Oral Health


“There is broad and strong consensus that there are linkages between oral health and overall health, based on intuitive links and some evidence. But unlike some areas of research in health care, there’s a general consensus that there is more research to be done. But researchers are not necessarily picking up on that.”

- Stakeholder Interview, 2014

In addition to frustrating attempts to plan or evaluate services, the lack of data makes research into the oral health system very difficult. The lack of data, combined with the lack of focus on health system or outcomes research in the oral health sector, also contributes to the lack of quality data on relationships between oral health and overall health. The oral health services sector in Ontario needs more and better research into the relationships between clinical practice, utilization and outcomes, as well as interrelationships between oral health, overall health and the health system. Research is also needed to better understand the current oral health services sector and to develop a foundation to monitor system performance.


**Opportunity 2:** For representatives of public health, oral health professionals, primary care practitioners and relevant specialist physicians to create a forum for discussion about oral health research priorities (both clinical and oral health system) and strategies to support this research.

### 11.5.3 Better Integration Between Oral Health and the Health System



“One of the biggest things is the separation of oral health from your overall health. You have a chief medical officer and a chief dental office, and they are separate. I wonder if they shouldn’t be under the same umbrella ... so the oral cavity is included in overall health care.”

- Stakeholder Interview, 2014



Although the literature has identified several linkages between oral health and overall health, the oral cavity is still very much separate from the rest of the body in medical practice. More work needs to be done to ensure that health professionals outside of the traditional oral health professions have a clear understanding of the impact of poor oral health on overall health – for an individual and for a population. Increased collaboration and referral systems would help to ensure that patients receive a complete suite of services to maximize the health of the individual.

In Ontario, integration at the planning level could be facilitated through Local Health Integration Networks (LHINs). LHINs have a mandate to plan health services. Although oral health services are not explicitly included in their mandate, the most-thinking LHINs already recognize that overall health status cannot be maintained without addressing oral health needs. If every LHIN were to include oral health services in its Integrated Health Service Plan (IHSP), such a requirement would go a long way to raising the profile of the importance of good oral health among the public and health service providers, and bringing oral health into health system planning.

**Opportunity 3:** For Local Health Integration Networks to recognize oral health services as an important component of the overall health system, and to facilitate planning for oral health services in their regions.

#### 11.5.4 Better Integration of Oral Health and Health Care Delivery

Integration of services at the delivery level could be facilitated through a number of avenues:

- Community health centres (CHCs) are one promising link between primary care and oral health care. CHCs, which have a mandate to advance health equity, are typically in either in low-income, rural or remote areas, where people have challenges accessing health care, and serve vulnerable populations such as First Nations, the homeless, new immigrants and refugees. CHCs focus on addressing the social determinants of health and provide programs and services for health promotion, disease prevention and community development based on the needs of the local community. They provide culturally competent services to these difficult to serve populations. In some parts of the province, CHCs have included some oral health services as part of their overall basket of services (including the operation of dental suites within the centres). CHCs could be an excellent venue for providing oral health services to underserved and at-risk individuals.
- Similarly, Aboriginal Health Access Centres (AHACs) deliver culturally-oriented, inter-generational programs and services that enhance the well-being of the First Nations, Inuit and Métis clients they serve. Similar to the CHCs, some AHACs have developed innovative programs for the delivery of oral health services in addition to overall health services.
- Family Health Teams (FHTs) and Community Care Access Centres (CCACs) could also be encouraged to incorporate an oral health assessment and appropriate referrals for services into their initial intake and subsequent visits.

**Opportunity 4:** For Local Health Integration Networks to support community health centres, Aboriginal health access centres, family health teams, and community care access centres in the development and implementation of strategies to incorporate oral health assessments, referrals and services to better integrate oral health services into the health system.

#### 11.5.5 Health Promotion and Prevention for Life-long Oral Health

As noted earlier, the majority of oral conditions are preventable; they often occur when people do not take preventive action themselves or are unable to get adequate support from oral health professionals. It was also noted earlier that one barrier to access to oral health services is a lack of awareness of the importance of good oral health for good overall health.

Access to oral health services could be improved through a variety of initiatives to raise awareness, including, for example:

- A broad-based promotion campaign (perhaps similar to the success smoking cessation strategy embraced by Ontario in prior years).



- A program to educate pregnant women and provide well-baby visits, particularly for at-risk populations (e.g., low-income; First Nations, Inuit and Métis).

The value of improving oral health habits early in life has been demonstrated in other jurisdictions, most notably in Denmark where providing comprehensive and free oral health services for all children under 18 years of age contributed to the oral health status of Danish children moving from among the poorest in Europe 40 years ago to one of the best (Patel, 2012). Ontario could do more to ensure that all residents develop an appreciation of the importance of oral health and an understanding of good oral health habits early in life.

Ontario's Public Health Units already offer services for children and are well positioned to manage the delivery of these programs.

**Opportunity 5:** For increased awareness of the importance of good oral health through strategies to promote oral health across all populations and targeted programs to educate at-risk populations through social programming, visits with primary care practitioners, public health nurses and dental hygienists and school-based programs in at-risk neighbourhoods.

#### 11.5.6 Building Stronger Interprofessional Teams

There is an opportunity in Ontario to strengthen collaboration among oral health providers so that they can work in closer partnership to identify key priorities for oral health to improve access to care for those marginalized and vulnerable populations who have poor access to services and correspondingly poor oral health status.

Stakeholders told the Review Team of many innovative approaches to providing oral health services through interprofessional teams within Ontario (with particular mention of the teaching clinics at George Brown College). The Review Team is also aware of many innovative interprofessional models of care being adopted in the US to deliver oral health services for vulnerable populations. These initiatives provide a convenient one-stop service location for clients, where the health professionals work collaboratively to meet all health needs – including oral health needs – of their clientele.

The Review Team believes that changing the culture and behaviour of health professionals to work more collaboratively begins in the education sector. The interprofessional activities should not be restricted to oral health providers, but should also involve health services providers for a truly integrated approach to the delivery of services.

**Opportunity 6:** For representatives of public health, oral health professionals, health service providers and educators to continually look for and nurture opportunities for developing strong and sustainable models for interprofessional care in the delivery of oral health services.

## APPENDIX A: REVIEW TEAM

### **Barry Monaghan, Lead Reviewer**

Mr. Monaghan is an experienced health care executive with senior leadership roles in government and as CEO of several hospitals and the Toronto Central Local Health Integration Network. Recently, Barry has acted as interim CEO for the Waterloo Wellington Community Care Access Centre (CCAC), the Georgian Bay General Hospital, Muskoka Algonquin Healthcare and the LHIN Collaborative (LHINC). Barry has been a board member and chair for a variety of provincial organizations (e.g., Cardiac Care Network, Heart and Stroke), and has led multiple third-party reviews of hospitals and CCACs.

### **Dr. Barry Maze, Clinical Advisor**

Dr. Maze has considerable experience in developing and evaluating public health programs and monitoring health outcomes. He is a dentist by training and in his career he has practiced as a private dentist, taught at the National School of Dental Therapy, worked on the front line as a clinician in a public dental program and was the Director of Dental Public Health for the province of Prince Edward Island. As a member of the Federal, Provincial and Territorial Dental Working Group, Dr. Maze was also instrumental in the development of the response to the Romanow Commission (2002), the Canadian Oral Health Strategy - 2005-10, and the Canadian Oral Health Framework - 2013-18.

### **David Lynch, OPTIMUS|SBR, Lead Researcher**

Mr. Lynch led the literature and jurisdictional reviews supported by his colleagues Andrea Spencer, Deborah Emerson; Jennifer Wolter and Alison Outtrim. Mr. Lynch is a Senior Manager in OPTIMUS | SBR's healthcare practice and has overseen and supported numerous health system planning and strategic planning engagements, as well as project managing numerous operational reviews and process engagements. Mr. Lynch also holds a Master's Degree in Public Administration and a PhD in Public Policy.

### **Marcella Sholdice, Project Manager**

Ms. Sholdice is an independent health policy consultant. She has managed expert and consensus panels for the Cardiac Care Network of Ontario, Cancer Care Ontario, the Ontario's Ministry of Health and Long-Term Care. She has also participated in peer reviews and operational reviews of several hospitals and a community care access centre.

## APPENDIX B: DETAILED METHODOLOGY FOR THE LITERATURE AND JURISDICTIONAL REVIEWS

The Review Team conducted a rigorous literature review on a range of topics, including a grounded assessment of the current state of oral health in Ontario, complemented by some consideration of models and practices in other jurisdictions nationally and internationally, as well as potential future trends and innovations. Topics that were studied included:

- Broad overview of oral health and oral health services in Ontario
- Benefits of good oral health care
- The economic burden of oral health disease
- Regulation of oral health services in Ontario and Canada
- Sources of funding and spending trends for oral health services
- Access to oral health services in Ontario and barriers to accessing services
- Oral health care systems in different jurisdictions
- Oral health policy perspectives.

The research regarding oral health services in Ontario is somewhat limited relative to the bodies of research for other areas of health care; however it appears to be rapidly expanding. The growth in interest in oral health is understandable, given the increasing recognition that oral health can have a broad impact on health outcomes, general population health and health care budgets, indirectly and directly.

### *Overview of the Process*

The literature and jurisdictional reviews were led by a research team from OPTIMUS | SBR. The methodology for the literature and jurisdictional review included five main steps:

1. **Development of research questions:** The research team jointly reviewed a first pass of relevant literature and identified commonalities to develop an initial set of research questions. The team reviewed health policy papers that discuss the role of oral health care in Ontario's health reform strategy, as well as some unpublished guidance documents.
2. **Identification of key documents:** The research team identified relevant program policies and standards, governance documents and clinical information from the Ontario Ministry of Health and Long-Term Care and its partners in health reform, including Health Quality Ontario and various colleges and associations operating within the sector.
3. **Development of the draft report structure:** The research team developed a rough draft of the report that provided a 'straw dog,' enabling the team to identify areas to be researched and informed by various types of input. The team relied heavily on clinical

expert advisors and the College of Dental Hygienists of Ontario in developing the report outline.

4. **Deep analysis of literature:** Using the draft report structure as a guide, the team located over 200 sources that provided input into the following report components:

- An environmental scan of publicly financed dental care in Canada
- Access to funded dental programs in Ontario
- Attitudes to independent dental hygiene practices in Ontario
- Attributes of an ideal oral health care system
- A comparative study of dental hygiene regulations in Canada
- Best practices of oral health outreach programs in Ontario
- Current state of oral health for seniors, children, Aboriginal, and ethnic groups
- Oral health-related quality of life and its association with various general health conditions
- Oral health care models in other jurisdictions
- The political economy of dentistry in Canada
- The role of health-related behaviors in the socioeconomic disparities in oral health

The research team carried out a content analysis of the searched items, tagged and excerpted relevant sections from high quality articles, and incorporated the information into the second draft of the report. This draft was validated by external subject matter experts to identify areas that needed further evidence as well as to check consistency of ideas with other reports. Additional targeted searches were completed to fill gaps.

1. **Stakeholder Engagement:** Throughout the process, multiple opportunities were presented to key stakeholders to contribute to the review, including interviews, focus groups, and invitations to submit written perspectives. Findings from each of these streams were incorporated into the appropriate sections of the report.

## *Literature Sources*

### **1. Subscription-based database research**

Commercial databases provide access to full text articles published by quality magazines and journals as well as conference papers and proceedings. In addition, they allow researchers to use sophisticated methods to search documents by subjects or key words and, hence, generate most valuable documents. For this Report, some of the key databases used include:

ProQuest Medline  
ProQuest Scholar Portal  
EMBASE  
HealthStar/Ovid Healthstar

## 2. Custom Search Engine of health and government web sites

The researchers created a Google Custom Search Engine that searched for PDF documents on the following sites.

- a. Ministry of Health and Long-Term Care web directories of health.gov.ca containing professional publications and research:
  - health.gov.on.ca/english/providers/
  - health.gov.on.ca/en/common/ministry/publications/reports/
  - health.gov.on.ca/en/pro/
- b. Canadian sites on Oral Health and Oral Health System
  - Health Canada (hc-sc.gc.ca/)
  - Public Health Agency of Canada Best Practice Portal (cbpp-pcpe.phac.gc.ca/)
  - Federal/Provincial/Territorial Dental Working Group (fptwg.ca/)
  - Network for Canadian Oral Health Research (ncohr-rcrsb.ca/)
  - Oral Health Magazine (oralhealthgroup.com/)
- c. Health professions and stakeholder sites
  - College of Dentists and Dental Surgeons of Ontario (cdso.on.ca/)
  - Canadian Association of Dental Hygienists (cdha.ca)
  - College of Dental Hygienists (cdho.ca)
  - College of Denturists
  - College of Dental Technologists
  - All association websites related to professions
- d. International health research sites
  - Agency for Healthcare Research and Quality (AHRQ) (ahrq.gov/)
  - Institute for Healthcare Improvement (IHI) (ihi.org/)
  - World Dental Federation (fdiworlddental.org/)
  -
3. PubMed Central Canada (<http://pubmedcentralcanada.ca>)

PubMed Central Canada comprises PubMed Central with additional Canadian repositories. PubMed allows for highly precise searches using controlled vocabularies, but doesn't prioritize by popularity or impact.

4. Google Scholar (<http://scholar.google.com>)

Google Scholar prioritizes the best known documents through its relevance ranking, but does not screen for high quality or provide the detailed faceted searches that PubMed does. It is increasingly recognized as a good complement to PubMed and other specialized search engines.

5. Health Evidence (<http://www.healthevidence.org/>)

This Canadian research engine searches for systematic reviews and published literature regarding public health and health promotion interventions.

The service also searches 46 public health and health promotion journals, the list of which is updated annually based on advice from subject matter experts, plus the following evidence services - National Collaborating Centre for Methods and Tool's Public Health+; Knowledge Translation+; Best Evidence for dental Hygiene+; MacPLUS Federated Search; Health Systems Evidence.

## 6. Review of background documents provided by external experts

### *Search terms*

The following keywords, in various combinations, were used to identify relevant articles and documents (this is not an exhaustive list):

- |                       |                   |
|-----------------------|-------------------|
| ▪ dental health       | ▪ barriers        |
| ▪ dental hygiene      | ▪ benefits        |
| ▪ dental hygienist    | ▪ cost            |
| ▪ dental program      | ▪ funding         |
| ▪ dental practices    | ▪ model           |
| ▪ oral health         | ▪ quality of life |
| ▪ oral healthcare     | ▪ regulations     |
| ▪ periodontal disease | ▪ structures      |
| ▪ access              | ▪ trends          |
| ▪ best practices      |                   |

The researchers used Zotero, an academic reference manager, to share, track and categorize documents.

The initial focus of these searches was to identify systematic reviews, validated research and related supporting materials for insights, examples and other high quality relevant studies for further review. Where further information on cited studies was required, the abstract (obtained via PubMed) and/or the source publication was also reviewed.

## APPENDIX C: KEY INFORMANT INTERVIEW GUIDE

### Key Informant Interview Methodology

An interview guide was developed to address the perspectives of key informants on the following topics:

1. What sectors of Ontario's population are well served by the oral health care system? What sectors are not well served?
2. What are the primary barriers to access?
3. What are the primary challenges you see for the delivery of quality and accessible oral health services in the next 5 to 10 years?
4. What suggestions would you make to improve access to oral health care services?

A copy of the key informant interview guide is provided on the following page.

Candidate interviewees were selected based on their knowledge about or experience with the regulation, education, funding, and delivery of health services including oral health services in Ontario. The initial list of interviewees was developed in consultation with the CDHO; additional interviewees were identified through the Review Team's clinical advisor and through the key informants as they identified other knowledgeable spokesperson for the industry.

Some candidates did not respond to our request to be interviewed, and some declined to be interviewed. Wherever possible, alternate interviewees were identified. A list of the interview candidates who participated in interviews or who declined to be interviewed is provided in Appendix D.

Thirty-six one-hour key informant interviews involving 46 individuals were conducted in person and by telephone. Detailed notes were recorded during each interview, and these notes were used to identify issues requiring further research and to supplement the literature and jurisdictional reviews. Each participating individual was also invited to submit written comments to supplement the interview. One organization sent written comments.



## **Review of Oral Health Services in Ontario**

### **Key Informant Interview Guide**

#### **Oral Health Care System**

1. Could you briefly describe your organization's role in the oral health care system?
2. What is the relationship between oral health care and overall health of the population?

#### **Access**

3. What sectors of Ontario's population are well served by the oral health care system? What sectors are not well served?
4. What are the barriers preventing the delivery of/access to oral health care services?
5. What are the major trends (e.g., technology, demographics, socio-economics, workforce supply) affecting oral health care and oral health care professions? How will these changes affect the overall oral health services system in the future?
6. What are the primary challenges you see for the delivery of quality and accessible oral health services in the next 5 to 10 years?
7. How is the public's access to oral health care affected by scope of practice or occupational licensure regulations?
8. What suggestions would you make to improve access to oral health care services?

#### **System Performance**

9. Does the current structure in Ontario enable all the providers to work collaboratively and to their best ability to the benefit of Ontarians?
10. Does your organization have policies and/or positions on any issues related to oral health care (in Ontario? In Canada)?
11. How do you think Ontario's oral health system (e.g., outcomes, access, quality) compares with other systems in Canada and/or around the world?

## APPENDIX D: KEY INFORMANT INTERVIEWEES

### Oral Health Associations

Nicole Brunnelle, Executive Director, Dental Hygiene Practitioners of Ontario

Marg Carter, Executive Director, Ontario Dental Hygienists Association

Calla Effa, President, Canadian Dental Assistants Association

Ondina Love, Executive Director, Canadian Dental Hygienists Association

Judy Melville, Executive Director, Ontario Dental Assistants Association

Franklin Parada, President, Association of Dental Technologists of Ontario

Peter Doig, President, Canadian Dental Association (Declined to be interviewed)

Linda Gough, President, Federation of Health Regulatory Colleges of Ontario (Declined to be interviewed)

Tom Magyarody, Chief Executive Officer, Ontario Dental Association (Declined to be interviewed)

Michael Vout, President, Denturists Association of Canada (Declined to be interviewed)

### Public Health

Dr. Pat Abbey, Oral Health Director, Durham Region Health Department

Dr. Peter Cooney, Chief Dental Officer of Canada and Penny White, Registered Dental Hygienist, Health Canada

Paul Sharma, Ontario Association of Public Health Dentistry

Dr. Hazel Stewart, Head of Public Health Dentistry, Toronto Public Health

Susan Makin, President, Ontario Public Health Association (No response)

Dr. David McKeown, Director, Toronto Public Health (No response)

### Other Healthcare Associations

Daniel Burns, Interim Chief Executive Officer, Ontario Association of Community Care Access Centres (OACCAC)

Nancy Cooper, Director of Policy & Professional Development, Ontario Long-Term Care Association (OLTCA)

Susan Laing, Chief Executive Officer, Ontario Association of Non-Profit Homes and Services for Seniors (OANHSS)

Dr. Bob Lester, Ontario Hospital Association (OHA)

Monique Lloyd, Lynda McKeown, and Heather Woodbeck, Registered Nurses Association of Ontario

Jacquie Maund, Policy and Communications Manager, Oral Health Issues Lead, Association of Ontario Health Centres (AOHC)

Ron Sapsford, Chief Executive Officer, Ontario Medical Association (OMA) (Declined to be interviewed)

### **Regulatory Colleges**

Abena Buahene, Registrar & Anita Kiriakou, President & Mordey Shuhendler, VP and Denturist, College of Denturists of Ontario

David MacDonald, Registrar, College of Dental Technologists of Ontario

Brad Sinclair, Registrar & Chief Administrative Officer, & Angela Moore, Associate Registrar, & Lisa Taylor, Deputy Registrar, College of Dental Hygienists of Ontario

Irwin Fefergrad, Registrar, Royal College of Dental Surgeons of Ontario (Declined to be interviewed)

Deanna Williams, Supervisor, College of Denturists of Ontario (Declined to be interviewed)

Anne Coghlan, Executive Director & Chief Executive Officer, College of Nurses of Ontario (Declined to be interviewed)

Rocco Gerace, Registrar, College of Physicians and Surgeons of Ontario (Declined to be interviewed)

### **Educators**

Catherine Ranson, Professor, George Brown College

Lila McIndoe, Program Co-ordinator, Toronto College of Dental Hygiene and Auxiliaries

Linda McKay, Professor, George Brown College

Dr. Pat Main, Associate Professor, Faculty of Dentistry, University of Toronto

Dr. Carlos Quinonez, Head, Dental Public Health, Faculty of Dentistry, University of Toronto (Declined to be interviewed)

### **Funders and Policy Makers**

Natalie Atkinson, Outreach Officer and Aboriginal Lead, North East Local Health Integration Network

Alexandra Hall, Integration Consultant, Health System Design. South East Local Health Integration Network

Bill MacLeod, Chief Executive Officer, Mississauga Halton Local Health Integration Network

Elizabeth Walker, Director Public Health Planning and Liaison Branch, & Jacky Sweetnam, Ministry of Health and Long-Term Care

Suzanne McGurn, Assistant Deputy Minister, Health Human Resources Policy Division, Ministry of Health and Long-Term Care (Declined to be interviewed)

Dr. Sandra Bennett, Health Promotion and Performance Accountability Unit, Ministry of Health and Long-Term Care (Declined to be interviewed)

Dr. Alison Pilla, Assistant Deputy Minister, Strategic Policy and Planning Division, Ministry of Aboriginal Affairs (Declined to be interviewed)

### **Primary Care**

Robert Gagnon, Weeneebayko Area Health Authority

Dr. Amalia Cristea, Dentist

Fiona McDougall, Project Director, South Toronto *Health Link*

Diana Noel, Executive Director, Village Family Health Team, Toronto

Melissa Deleary and Angel Maracle, Ontario Federation of Indigenous Friendship Centres (OFIFC)

### **Private Insurance**

Karen Voin, Canadian Life and Health Insurance Association

### **Other**

Bernadette DeGonzague, Ontario Regional Chief, Chiefs of Ontario

Elise Kayfetz, Policy Advisor, Canadian Association of Retired Persons (CARP)

Christine LeGrand, Senior Knowledge Translation Specialist, Canada & Bev Powell-Vinden, Manager, Mission Content, Ontario, Heart and Stroke Foundation

Dr. Josh Tepper, CEO, Health Quality Ontario (Partial interview)

## APPENDIX E: INTERVIEWS TO SOLICIT PUBLIC INPUT

Soliciting the opinions, perceptions, and knowledge of the public was essential in developing a comprehensive view of the oral health care system within the province. It was the Review Team's intention to gather input from members of the public through focus groups. Participants were identified to represent various geographical regions, a mix of urban and rural or remote communities, and some populations that have historically faced barriers to accessing of oral health services (e.g., new immigrants, First Nations, Inuit and Métis). However, due to challenges in the scheduling of in-person focus groups (e.g., the cost of travel, the need for time off work), the Review Team determined that it would be better to conduct these sessions by teleconference.

In total, two teleconferences were conducted with 12 participants. Participants provided important insights from personal experiences that were unique from the perspectives of those who work in the industry as an administrator or provide. These discussions provided information related to issues of cost, quality, experience and access that validated and enriched previous findings and were incorporated into the report.

## APPENDIX F: SECONDARY REVIEWERS

### Steven Lewis

Based in Saskatoon, Steven Lewis is an Adjunct Professor of Health Policy at the University of Calgary and was recently Visiting Scholar at Vancouver's Simon Fraser University, where he is also works as an adjunct professor. He has headed a health research granting agency and spent seven years as CEO of the Health Services Utilization and Research Commission in Saskatchewan. He has served on various boards and committees including the Governing Council of the Canadian Institutes of Health Research (CIHR), the Saskatchewan Health Quality Council, the Health Council of Canada, and the editorial boards of several journals including the newly launched Open Medicine. His published work covers topics such as reforming and strengthening Medicare, improving health-care quality, primary health care, regionalization and integration, and the management of wait times.

### Tom Closson

Tom Closson is a health systems management consultant. He was President and CEO of the Ontario Hospital Association (OHA) before stepping down in 2012. Prior to his term at the OHA, Tom was President and CEO of University Health Network (UHN). Before joining UHN, Tom served as President and CEO at Sunnybrook Health Sciences Centre and worked in Victoria, British Columbia as President and CEO of the Capital Health Region. Tom also has extensive experience in consulting as an owner of Medicus Canada and as a Partner with KPMG. His experience in government includes working with the Ontario Ministry of Health and Long-Term Care, the Ministry of Community and Social Services and the Management Board Secretariat.

## APPENDIX G: DETAILED DESCRIPTION OF ORAL HEALTH PROGRAMS AND SERVICES IN ONTARIO

Program/Service	Services Offered	Funding Source	Eligibility Criteria
<b>Children in Need of Treatment Dental Program (Ministry of Health Promotion, 2009)</b>	Diagnostic Preventive Restorative Endodontic Periodontal Prosthodontic Oral and Maxillofacial Surgery Adjunctive general services (sedation, labs, etc.) Urgent or emergency care	Joint funding between Ministry of Health and Long Term Care and municipality in which child resides	Ontario resident Under 18 years Dental conditions requiring emergency or essential care Family has no dental insurance coverage and cost of dental treatment would create financial hardship; not receiving support from ODSP, OW, ACSD (use funding through these resources first)
<b>Healthy Smiles Ontario (Ministry of Health and Long Term Care, 2010)</b>	Examination and Diagnosis Preventive Restorative Endodontic Periodontal Oral and Maxillofacial Surgery Adjunctive general services (sedation, labs, etc.) No urgent or emergency care, orthodontics, or cosmetic dentistry	Ministry of Health and Long Term Care	Ontario resident Under 18 years Members of household with adjusted family net income of \$21,513/year or below for the first child, with \$1500 added for each additional dependent child within the family No access to any form of dental coverage; not receiving funding from ODSP, OW, ACSP, etc.

Program/Service	Services Offered	Funding Source	Eligibility Criteria
<b>Ontario Works (Ministry of Community and Social Services, 2009)</b>	Adults, dependent children over 18 years: Discretionary Services, emergencies Can include: Diagnostics, Radiographs, Tests, Restorative (Trauma control, restorations), endodontics, surgical Children: Examination and Assessment; Radiographs Preventive Services Restorative Services Periodontal Services Adjunctive general services	Ministry of Community and Social Services	Emergency dental coverage for adults over 18 receiving Ontario Works benefits, dependents over 18 years of recipients of OW support Children of adults receiving Ontario Works benefits
<b>Ontario Disability Support Program (Central West LHIN, n.d.; Ministry of Community and Social Services, 2012)</b>	Basic dental services Diagnostic Preventive Restorative Endodontic Dentures Oral surgery Adjunctive general services Additional services if the disability, prescribed medications or prescribed treatment affects oral health	Ministry of Community and Social Services	Receiving income support through ODSP: Have substantial physical or mental disability lasting (or expecting to last) more than one year, and that makes it difficult to care for self or take part in community life or work Over 18 years old Are in financial need Eligible family members: spouse, children under 18 years old
<b>Non-insured Health Benefits Program (Health Canada, 2012)</b>	Diagnostic Preventive Restorative Endodontic Periodontal Removable prosthodontic services Orthodontic services (limited) Oral surgery Adjunctive services	Health Canada	Canadian resident Registered Indian according to the Indian Act; or, an Inuk recognized by one of following Inuit Land Claim organizations – Nunavut Tunngavik Incorporated, Inuvialuit Regional Corporation, Makivik Corporation An infant under 1 year of age whose parent is an eligible client Is not otherwise covered under a separate agreement with federal, provincial or territorial governments Excluded: First Nations and Inuit clients incarcerated in a federal, provincial/territorial or municipal corrections facility First Nations children who are in the care of a provincial/territorial social service agency; and, Individuals in a provincially/territorially funded institutional setting, ie. nursing homes



Program/Service	Services Offered	Funding Source	Eligibility Criteria
<b>Assistance for Severely Disabled Children (ASDC) (Central West LHIN, n.d.)</b>	Diagnostic Preventive Restorative Endodontic Periodontal Prosthodontics Oral surgery	Ministry of Community and Social Services	Child under 18 years old, living with parent/guardian Must have a severe disability Extraordinary costs must be present, incurred due to disability Family income evaluation
<b>Canadian Forces (Government of Canada, 2013)</b>	Diagnostic Services Preventive Services Periodontal Services Restorative Services Prosthodontic Services Orthodontic Services Endodontic Services Surgical Services Adjunctive General Services	Federal	Regular Force Personnel Reserve Force (limited) Other exceptions may exist
<b>Veterans Affairs (Veterans Affairs Canada, 2013)</b>	Diagnostic Services Preventive Services Periodontal Services Restorative Services Prosthodontic Services Orthodontic Services Endodontic Services Surgical Services Adjunctive General Services	Federal	In receipt of Veteran's Affairs benefits

#### Examples of Local Oral Health Programs:

- Halton Oral Health Outreach Program (adults with special needs, elderly)
- Sioux Lookout Fluoride Varnish Program (Aboriginal children)
- Region of Peel Mobile Dental Clinic (low income children and youth without dental insurance)
- Seniors Dental Care Program, Region of Peel (low-income Seniors)
- Toronto Public Health, dental services (low-income adults, children under 17, seniors over 65)

## APPENDIX H: ORAL HEALTH SERVICES IN ONTARIO: REGULATION, SCOPE/STANDARDS OF PRACTICE AND GOVERNANCE

Profession	Regulating Body	Association	Scope of Practice/Standards of Practice	Governance
<b>Dentist</b>	Royal College of Dental Surgeons of Ontario (Royal College of Dental Surgeons of Ontario, 2014b)	Ontario Dental Association (Ontario Dental Association, 2013a)  Canadian Dental Association (Canadian Dental Association, 2014a)	According to the Dentistry Act 1991 the Scope of Practice for Dentists includes:  “The practice of dentistry is the assessment of the physical condition of the oral-facial complex and the diagnosis, treatment and prevention of any disease, disorder or dysfunction of the oral-facial complex. 1991, c. 24, s. 3” (Government of Ontario, 1991c)	<p>Within Canada, the National Dental Examining Board of Canada (NDEB) is, “the organization responsible for establishing and maintaining a national standard of competence for dentists,” through which all dentists must be certified (National Dental Examining Board of Canada, 2014).</p> <p>Each province and territory has unique governing bodies; the Dentistry Act, 1991 and the Regulated Health Professions Act, 1991 determine how dentistry is regulated in Ontario (Government of Ontario, 1991c, 2013).</p> <p>The Royal College of Dental Surgeons of Ontario (RCDSO) “has a number of different forms of authority to regulate and guide the dental profession in addition to the Regulated Health Professions Act (RHPA). They include:</p> <ul style="list-style-type: none"> <li>the Dentistry Act (the legislation, specifically for dentists, that sets out the scope of practice and controlled or authorized acts for the profession)</li> <li>Regulations</li> <li>By-laws</li> <li>Standards of Practice/Guidelines/Practice Advisories” (Royal College of Dental Surgeons of Ontario, 2014a).</li> </ul>

Profession	Regulating Body	Association	Scope of Practice/Standards of Practice	Governance
				<p><i>Links to Relevant Sources:</i></p> <p>Regulated Health Professions Act, 1991: <a href="http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_91r18_e.htm">http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_91r18_e.htm</a></p> <p>Dentistry Act, 1991: <a href="http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_940205_e.htm">http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_940205_e.htm</a></p> <p>RCDSO By-Laws: <a href="http://www.rcdso.org/KnowledgeCentre/RCDSOLibrary">http://www.rcdso.org/KnowledgeCentre/RCDSOLibrary</a></p>
<b>Dental Hygienist</b>	College of Dental Hygienists of Ontario (College of Dental Hygienists of Ontario, 2014)	<p>Canadian Dental Hygienists Association (The Canadian Dental Hygienists Association, 2014)</p> <p>Ontario Dental Hygienists Association (Ontario Dental Hygienists Association, 2014)</p>	<p><i>Scope of Practice:</i></p> <p>“According to the Dental Hygiene Act, 1991, scope of practice includes the following:</p> <p>The practice of dental hygiene is the assessment of teeth and adjacent tissues and treatment by preventive and therapeutic means and the provision of restorative and orthodontic procedures and services c. 22, s. 3” (Government of Ontario, 1991a).</p> <p><i>Standards of Practice:</i></p> <p>“The CDHO Dental Hygiene Standards of Practice evolved from the CDHA Practice Standards for Dental Hygienists in Canada and has been adapted to conform with provincial regulations. Where appropriate, standards have been added specific to the practice of</p>	<p>Each province and territory has unique governing bodies for the profession of Dental Hygiene; the Dental Hygiene Act, 1991 and the Regulated Health Professions Act, 1991 determine how dental hygiene is regulated in Ontario (Government of Ontario, 1991c, 2013).</p> <p>The College of Dental Hygienists of Ontario (CDHO) has a number of different forms of authority to regulate and guide the dental hygiene profession in addition to the RHPA, including:</p> <ul style="list-style-type: none"> <li>the Dental Hygiene Act (the legislation, specifically for dental hygienists, that sets out the scope of practice and authorized acts for the profession)(Government of Ontario, 1991a)</li> <li>Regulations</li> <li>By-laws</li> <li>Standards of Practice/Guidelines/Practice Advisories</li> </ul>

Profession	Regulating Body	Association	Scope of Practice/Standards of Practice	Governance
			<p>dental hygiene in Ontario.</p> <p>The CDHO Dental Hygiene Standards of Practice has three major components:</p> <p>Structure: refers to the practice environment and the available resources that support and enable the delivery of safe and effective dental hygiene services/programs.</p> <p>Dental hygiene process: refers to the assessment, planning, implementation and evaluation of dental hygiene services/programs</p> <p>Outcomes: refers to the results/client outcomes of dental hygiene services/programs” (College of Dental Hygienists of Ontario, 2012a).</p>	<p><i>Links to Relevant Sources:</i></p> <p>Regulated Health Professions Act, 1991: <a href="http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_91r18_e.htm">http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_91r18_e.htm</a></p> <p>Dental Hygiene Act, 1991: <a href="http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_91d22_e.htm">http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_91d22_e.htm</a></p>
<b>Dental Assistant</b>	N/A	<p>Canadian Dental Assistants Association (Canadian Dental Assistants Association, 2014a)</p> <p>Ontario Dental Assistants Association (Ontario Dental Assistants Association, 2014b)</p>	<p>According to the Canadian Dental Assistants Association, the “Scope of Practice” for varying levels of dental assistants in Ontario is as follows (Canadian Dental Assistants Association, 2014b):</p> <p>Dental Assistant Level I:</p> <ul style="list-style-type: none"> <li>▪ Chairside</li> <li>▪ Radiography</li> <li>▪ Dietary Counselling</li> </ul>	<p>This profession is not currently regulated however an excerpt from their Provincial Association cites the following:</p> <p>“On August 03, 2011 the Health Professionals Regulatory Advisory Council (HPRAC) invited the Ontario Dental Assistants Association (ODAA) to submit a proposal to regulate Dental Assistants under the RHPA, 1991” (Ontario Dental Assistants Association, 2014b).</p> <p>The application and evaluation process is still underway.</p> <p>Certification:</p>

Profession	Regulating Body	Association	Scope of Practice/Standards of Practice	Governance
			<ul style="list-style-type: none"> <li>Take and Record Vital Signs</li> <li>Recall Consultations with Dentists</li> <li>Assessing and Reporting Oral Health Status</li> </ul> <p>Preventive Dental Assistant:</p> <ul style="list-style-type: none"> <li>All skills in Dental Assistant I, and</li> <li>Preliminary Impressions</li> <li>Dental Dam</li> <li>Selective Coronal Polishing</li> <li>Oral Hygiene Instruction</li> <li>Fluoride Application</li> </ul> <p>Dental Assistant level II:</p> <ul style="list-style-type: none"> <li>All skills in Preventive Dental Assistant, and</li> <li>Fabricate &amp; Insert bleaching trays</li> <li>Pit &amp; Fissure Sealants</li> <li>Topical Anaesthetic</li> <li>Desensitizing agents</li> <li>Polish Amalgams</li> <li>Fabricate Mouthguards</li> <li>Fabricate Occlusal Rims</li> </ul> <p><a href="http://www.cdaa.ca/da-promotion/scope-of-practice/">http://www.cdaa.ca/da-promotion/scope-of-practice/</a></p>	<p>A dental assistant becomes certified in Ontario by becoming a member of the Ontario Dental Assistants Association (ODAA), and then applying for certification. To qualify, one must have completed the required educational components and must have passed the appropriate entry to practice examination, depending on level; for Level I assistants and receptionists, this is the ODAA certification examination. For Level II or intraoral assistants, one must fulfill all National Dental Assisting Examining Board (NDAEB) exam requirements. In addition, all must abide by a Code of Ethics (Ontario Dental Assistants Association, 2014a).</p> <p><i>Links to Relevant Sources:</i></p> <p>Canadian Dental Assistants Association: <a href="http://www.cdaa.ca/">http://www.cdaa.ca/</a></p> <p>Ontario Dental Assistants Association: <a href="http://www.odaa.org/">http://www.odaa.org/</a></p>
<b>Dental</b>	College of Dental Technologists of	Association of Dental Technologists of Ontario (Association of	<i>Scope of Practice</i>	The RHPA, 1991 and the Dental Technology Act, 1991 regulate how the profession of Dental Technologists is practiced in

Profession	Regulating Body	Association	Scope of Practice/Standards of Practice	Governance
<b>Technologists</b>	Ontario (College of Dental Technologists of Ontario, 2012a)	Dental Technologists of Ontario, 2014)	<p>"The practice of dental technology is the design, construction, repair or alteration of dental prosthetic, restorative and orthodontic devices. 1991, c. 23, s. 3" (Government of Ontario, 1991b).</p> <p><i>Standards of Practice</i></p> <p>The College of Dental Technologists of Ontario provides documented Standards of Practice through their website, for each of the following practice areas (College of Dental Technologists of Ontario, 2012b):</p> <ul style="list-style-type: none"> <li>▪ Full dentures</li> <li>▪ Partial dentures</li> <li>▪ Crown and bridge</li> <li>▪ Implants</li> <li>▪ Orthodontics</li> </ul> <p>These documents can be found at the following link:</p> <p><a href="http://www.cdto.ca/standards_practice.aspx">http://www.cdto.ca/standards_practice.aspx</a></p>	<p>Ontario (Government of Ontario, 1991b, 2013).</p> <p>The College of Dental Technologists of Ontario (CDTO) has a number of different forms of authority to regulate and guide the dental technology profession in addition to the RHPA, 1991, including:</p> <ul style="list-style-type: none"> <li>▪ the Dental Technology Act (the legislation, specifically for dental technologists, that sets out the scope of practice and authorized acts for the profession) (Government of Ontario, 1991b)</li> <li>▪ Regulations</li> <li>▪ By-laws</li> <li>▪ Standards of Practice/Guidelines/Practice Advisories</li> </ul> <p><i>Links to Relevant Sources:</i></p> <p>Regulated Health Professions Act, 1991: <a href="https://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_91r18_e.htm">https://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_91r18_e.htm</a></p> <p>Dental Technology Act, 1991: <a href="http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_91d23_e.htm">http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_91d23_e.htm</a></p>
<b>Denturists</b>	College of Denturists of Ontario (College of Denturists of Ontario, 2014)	The Denturist Association of Ontario (The Denturist Association of Ontario, 2014)	<p><i>Scope of Practice</i></p> <p>"The practice of denturism is the assessment of arches missing some or all teeth and the design, construction, repair, alteration, ordering and fitting of removable dentures.</p>	<p>The RHPA, 1991 and the Denturism Act 1991 regulate how the profession of Denturism is practiced in Ontario (Government of Ontario, 1991d, 2013).</p> <p>The College of Denturists of Ontario (CDO) has a number of different forms of authority to regulate and guide the denturism</p>

Profession	Regulating Body	Association	Scope of Practice/Standards of Practice	Governance
			<p>1991, c. 25, s. 3" (Government of Ontario, 1991d).</p> <p><i>Standards of Practice</i></p> <p>Standards of Practice for Denturists can be accessed using the following link:</p> <p><a href="http://cdo.in1touch.org/site/practicestandards?nav=04">http://cdo.in1touch.org/site/practicestandards?nav=04</a></p>	<p>profession in addition to the RHPA, including:</p> <ul style="list-style-type: none"> <li>the Denturism Act, 1991 (the legislation, specifically for denturists, that sets out the scope of practice and authorized acts for the profession)(Government of Ontario, 1991d)</li> <li>Regulations</li> <li>By-laws</li> <li>Standards of Practice/Guidelines/Practice Advisories</li> </ul> <p><i>Links to Relevant Sources:</i></p> <p>Regulated Health Professions Act, 1991: <a href="https://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_91r18_e.htm">https://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_91r18_e.htm</a></p> <p>Denturist Act, 1991: <a href="http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_91d25_e.htm">http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_91d25_e.htm</a></p>

## APPENDIX I: SCOPE OF PRACTICE (LOCAL ANESTHESIA) FOR DENTAL HYGIENISTS, BY PROVINCE

Province	Body	Year Regulation became Mandatory	Year Regulation achieved	Self-was	Details pertaining to dentists' supervision	Can Provide Local Anesthesia at Entry to Practice	Number of Active Registered Dental Hygienists
<b>Alberta</b>	College of Registered Dental Hygienists of Alberta	1990	1960		N/A	Yes	2,638
<b>British Columbia</b>	College of Dental Hygienists of British Columbia (CDHBC)	1952	1993		<p>Clients must have been examined by a dentist within the previous 365 days for a dental hygienist to provide services (as of July 2012 new category for DH exemption).</p> <p>Administer local anaesthesia, but may only do so under the supervision of a dentist or other emergency-trained professionals.</p>	Yes, additional education required	3,145
<b>Manitoba</b>	College of Dental Hygienists of Manitoba (CDHM)	1952	2005		Supervision restrictions: dental hygiene services must be provided under the supervision of a dentist, unless a dental hygienist has practised dental hygiene for more than 3000 h and the client does not present with a complex medical condition. However included practices can only be provided in certain settings.	Yes	660
<b>New Brunswick</b>	New Brunswick College of Dental Hygienists / Ordre des hygienistes dentaires du Nouveau Brunswick	1950s	2009		Still under full supervision – new rules pending (to no supervision), waiting for approval from Minister of Health	Not permitted until Rules are approved	443
<b>Newfoundland and Labrador</b>	Newfoundland Dental Board is in place until the new DH college	1969	2010		ND	No	ND



forms in response to the 2010 legislation							
<b>Northwest Territories</b>	Northwest Territories Professional Licensing, Government of Northwest Territories	1990	Regulated by Government	The scope of practice for a dental hygienists includes the: <ul style="list-style-type: none"> <li>• performance of dental services of a preventive and educational nature;</li> <li>• performance of dental prophylaxes;</li> <li>• application on teeth of topical fluoride or other anticariogenic agents;</li> <li>• rendering of first aid; and taking and developing X-rays.</li> </ul>	Additional Education Required	22	
<b>Nova Scotia</b>	College of Dental Hygienists of Nova Scotia	1973	1990	N/A	Additional Education Required	623	
<b>Nunavut</b>	Government of Nunavut, Department of Health and Social Services	ND	N/A - regulated by gov't due to small numbers of DHs	ND	Additional Education Required	ND	
<b>Ontario</b>	College of Dental Hygienists of Ontario	1951	1994	Since 2007 in Ontario, registrants who have been approved by the College of Dental Hygienists of Ontario can self-initiate their treatment; dental hygienists can now scale and root plane teeth and curettage surrounding tissues without an order from a dentist	N/A	9,894	
<b>Prince Edward Island</b>	Dental Council of Prince Edward Island	1974	Regulated by government. Under Dental Act	DH must be employed by or practice under contract with: <ul style="list-style-type: none"> <li>a. an employer that employs or has established a formal referral or consultation process with a dentist;</li> <li>or</li> <li>b. a dentist.</li> </ul>	N/A	98	
<b>Quebec</b>	Ordre des	1975	1975	Before letting a DH perform an act, a dentist	N/A	5,450	

	hygiénistes dentaires du Québec			must ensure that the DH possesses sufficient knowledge and training to perform that act. A dentist must ensure the performance and quality of the act performed by a DH before the patient leaves his office.			
<b>Saskatchewan</b>	Saskatchewan Dental Hygienists Association	1950	1998	DH must be employed by or practise under contract with: a. an employer that employs or has established a formal referral or consultation process with a dentist; or b. a dentist.	Yes, Education Required	Additional	550
<b>Yukon</b>	Government of Yukon	1958	Regulated by government	ND			23

N/A = Not Applicable

ND = No Data Available

Source: (Canadian Dental Hygienists Association, 2013)

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