2015
Oral Health Status Report

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Executive Summary

Oral health is essential to overall health and quality of life (World Health Organization [WHO], 2012). However, in Canada over half of children and the majority of adults have experienced oral diseases (Health Canada, 2010). Practicing good oral health behaviours consists of routine oral hygiene, a nutritious diet and receiving professional dental care. Oral health diseases are largely preventable through these practices, yet the rate of tooth decay remains high. Having dental insurance is a valuable asset to overcome the financial barriers of costly professional dental services, yet 32% of Canadians do not have access to dental insurance (Health Canada, 2010). Those who have the most difficulty accessing and affording dental insurance are also those who experience the highest level of oral health problems (Canadian Academy of Health Sciences [CAHS], 2014). These vulnerable populations include: children, low-income adults and families, seniors, and people living in rural and remote areas (Canadian Dental Association [CDA], 2010).

Key Findings

Poor oral health status and access to dental care are important issues in Wellington-Dufferin-Guelph (WDG). This report explores the current oral health status and barriers to good oral health faced by WDG residents.

- By Grade 2, almost half of WDG children will have experienced tooth decay.
- Approximately one fifth of WDG residents do not brush their teeth twice per day as recommended.
- Approximately one third of WDG residents experience teeth sensitivity and one tenth experience bleeding gums.
- Income is a barrier to receiving oral care: 70% of low-income Guelph residents reported that dental treatment was recommended to them which they cannot afford.
- Having dental insurance helps to overcome the cost of dental care. However, approximately two thirds of WDG residents and less than one third of seniors have dental insurance.
- Only 70% of WDG residents have seen a dentist in the last 3 years.
- Poor oral health is associated with heart disease, diabetes, premature delivery, low birth weights and negative social impacts. In a survey of low-income Guelph residents, half reported their poor oral health affect how they feel about themselves, and over a quarter report their oral health needs affect their social relationships and mental health status.

Recommendations

WDG Public Health delivers oral health education and preventive services to address these concerns among those most at risk. Although local public health initiatives make a difference

in the lives of residents more work is required to improve the oral health status of children, low-income adults and seniors in WDG. Evidence presented in this report provides support for the following recommendations to improve oral health status and access to dental care among residents in WDG and Ontario. WDG Public Health will engage with our partners, where applicable, to pursue these recommendations.

1. Support advocacy strategies to improve access to oral health care for those facing barriers including seniors, low-income individuals and families, and those from priority populations.

2. Support education initiatives that encourage evidence-based behaviours that prevent oral disease.

3. Support the expansion of oral health outreach programs to make oral care and education more accessible to vulnerable families. Rural portable oral health clinics are one example of an outreach initiative that provides oral care to children with limited access to oral health programs.

4. Continue to provide preventive services through public health clinics to children for whom access to oral health care is difficult, including those from low-income families and other priority populations.

5. Expand the provision of the Fluoride Varnish Initiative in schools, based upon identified need.

6. Advocate for improved provincial and national data regarding the oral health status of the population to support evidence-based planning and programming at local levels.

7. Investigate opportunities to include adult pregnant women who do not have dental benefits into a publicly-funded model in order to promote optimal prenatal oral health and improved oral health for newborns and young children.

Introduction

Oral health is a fundamental component of health and well-being, yet many Canadians experience poor oral health. The Canadian Dental Association (CDA) defines oral health as a state that contributes positively to one's physical, mental and social well-being by allowing the individual to speak, eat and socialize unhindered by pain, discomfort or embarrassment (CDA, 2015d). This includes being free from mouth and facial pain, oral and throat cancer, oral infection, gum disease, tooth decay, tooth loss, and other associated diseases (WHO, 2012).

Dental caries (known as tooth decay) and periodontal disease (known as gum disease) are two serious forms of oral disease (CDA, 2015c). Tooth decay is the result of bacteria weakening the structure of teeth, and can lead to pain, infections, abscesses and gastrointestinal disorders (Ontario Ministry of Health and Long-Term Care [MOHLTC], 2012), while gum disease is caused by the buildup of plaque and bacteria, causing infections in the gums. If untreated, tooth decay and gum disease can lead to severe health complications, such as heart disease, diabetes and other chronic conditions (MOHLTC, 2012). Furthermore, there is evidence to suggest that poor oral health in pregnancy may contribute to premature delivery and low birth weight among newborns (MOHLTC, 2012). Poor oral health also results in negative social consequences. Tooth decay causes eating, sleeping and speech difficulties, poor self-esteem, and can affect children's growth and development (CIHI, 2013; MOHLTC, 2012).

Maintaining good oral health is integral to general health and overall well-being (WHO, 2012). Good oral health practices begin at an early age and must be maintained throughout the lifespan by: practicing proper oral hygiene, eating a healthy diet, and receiving professional dental care (CDA, 2015d; WHO, 2012). Access to dental care is particularly important in early life as preventive and restorative measures can improve children's future health (MOHLTC, 2012). Vulnerable populations, including low-income families and seniors, have the most difficulty accessing and affording oral health care, and experience the highest level of oral health problems (CAHS, 2014; CDA, 2010).

The Canadian Academy of Health Sciences (CAHS) recommends that both public and private oral health care systems must do more to provide affordable and equitable access to dental care (2014). Public health units currently play a key role in providing dental services to vulnerable groups within their communities. For many families, these services are the only form of professional dental care their children receive; and for others, public health is their entry point into publicly-funded dental programs.

This report provides an overview of WDG's oral health status, and details the programs and services offered by WDG Public Health to improve oral health and access to dental care in WDG.

Methods

APHEO Indicators

Indicators for this report were chosen from the list of core indicators recommended by the Association for Public Health Epidemiologists of Ontario (APHEO). APHEO has recognized the need for consistency among health reports (APHEO, n.d.a). Its Core Indicators Working Group (CIWG) has aimed to systematically define and operationalize a core set of health indicators in Ontario, which includes indicators for oral health (APHEO, n.d.a). The CIWG works to ensure the Core Indicators are accurate and up-to-date, and reflect the legislative requirements set in the Ontario Public Health Standards (APHEO, n.d.a).

The four APHEO Child and Adolescent Health indicators assessed in this report include: (1) the proportion of the number of teeth decayed, missing/extracted or filled because of decay to the total number of teeth examined among children at school entry (kindergarten) (Data Source: Ontario Dental Indices Survey); (2) the percentage of the children at school entry who have never had any cavities (Data Source: Ontario Dental Indices Survey); (3) the proportion of children with dental treatment needs (Data Source: Ontario Dental Indices Survey, Oral Health Screening, and Children In Need Of Treatment (CINOT)); and (4) the proportion of children at school entry who have decayed, missing/extracted or filled teeth consistent with the pattern of ECTD to the total number of teeth examined among children (Data Source: Ontario Dental Indices Survey) (APHEO, 2011).

Additional indicators were chosen for examination based on consultations with the WDG Public Health Dental Consultant, and the manager and staff of the Oral Health Services Team around data needs. Consideration was also paid to meeting the data requirements set out in the Ontario Public Health Standards, the Accountability Agreement Indicators of the Ministry of Health and Long-Term Care, and WDG Public Health's Key Performance Indicators for monitoring the 2011-2016 Strategic Plan.

Levels of Geography

Data are shown for Wellington-Dufferin-Guelph and for the province of Ontario to provide a comparison. Additionally, where possible, figures were calculated for Wellington and Dufferin Counties and the City of Guelph. However, in some cases small numbers prevented the release of figures for these stratified geographies. Some national level data was also provided.

Time Period

WDG Public Health data from health unit programs and services are reported for calendar years and school years. The time period is specific to the data sources.

Data Sources

Data sources used in this report were acquired from internal and external sources.

Canadian Community Health Survey (CCHS)

Canadian Community Health Survey (CCHS) data for 2007 to 2011 are collected from persons aged 12 and over living in private dwellings in the 115 health regions covering all provinces and territories. Excluded from the sampling frame are individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions. The CCHS covers approximately 98% of the Canadian population aged 12 and over (Statistics Canada, 2013a).

All reported estimates (percentages) from the CCHS conform to the reporting guidelines described in the 2011 CCHS User Guide (Statistics Canada, 2013b). As per these guidelines, all reported estimates whose coefficient of variation (CV) falls within the marginal range ($16.6 \leq CV \leq 33.3$) are considered for general unrestricted release but are accompanied by a notation within its corresponding figure cautioning of their high sampling variability. The remaining reported estimates, which are not accompanied by a CV, can be interpreted with confidence as their CV falls within the acceptable range ($0.0 \leq CV \leq 16.5$). All estimates with a CV within the unacceptable range ($CV > 33.3$) were not included in this report.

Canadian Health Measures Survey (CHMS)

The Canadian Health Measures Survey (CHMS) collected health data from Canadians aged 6 to 79 years between 2007 and 2009. This survey was conducted by Statistics Canada in support by Health Canada, the Public Health Agency of Canada and the Department of National Defence. Data were collected from approximately 6,000 people in 15 communities randomly selected across Canada, and represent 97% of the Canadian population aged 6 to 79 years of age (Health Canada, 2010).

Ontario Association of Public Health Dentistry (OAPHD)

Since 2012, the Ontario Association of Public Health Dentistry (OAPHD) has encouraged public health units to volunteer data from their mandated school screenings. Using these data, OAPHD analyzes the severity of tooth decay among Ontario school children in Junior Kindergarten, Senior Kindergarten and Grade 2. OAPHD data were acquired for the 2012-2013 school year and are compared to WDG Public Health data for the same school year. WDG Public Health data were included in OAPHD's analysis of the 2012-2013 school year (OAPHD, 2015).

Oral Health Survey targeting low-income Guelph residents

In 2014 WDG Public Health supported the Oral Health Survey, which collected oral health information specifically from low-income Guelph residents. This survey was administered to 356 respondents, aged 18 to 94 years, by the Guelph and Wellington Task Force for Poverty Elimination [PTF] (Oral Health Action Committee; Research and Knowledge Mobilization Committee) with support from a University of Guelph student (PTF, 2014).

Elementary School Screenings (WDG Public Health)

WDG Public Health has collected Elementary School Screening data since the 2010-2011 school year. Data are collected from students in Junior Kindergarten, Senior Kindergarten and Grade 2 from all WDG publicly-funded elementary schools. Data from the 2012-2013 school year are compared to results from the OAPHD Report.

Preventive Clinics (WDG Public Health)

WDG Public Health has collected Preventive Clinic data since 2011 for children aged 17 and under.

Oral Health Outreach Programs (WDG Public Health)

WDG Public Health offers several oral health outreach programs, including: the Fluoride Varnish Initiative, Rural Portable Clinics, Oral Health Education and Preventive Services for Pregnant and Postpartum Women, the JK/SK Oral Health Education Initiative, and the Grade 9 Oral Health Education Initiative. Data collection for Oral Health Outreach Programs began in 2007, and data are routinely collected as new programs are introduced. Data are collected for a variety of age groups, depending on program targets. Programs administered to children are for those aged 17 and under, while the Oral Health Education and Preventive Services for Pregnant and Postpartum Women project has collected data on women aged 25 to 38 years.

Dental Intake Line (WDG Public Health)

WDG Public Health has maintained records of all Dental Intake Line phone calls since 2012. No data are collected on the age of Intake Line callers.

Healthy Smiles Ontario (HSO) (WDG Public Health)

WDG Public Health has collected data on the Healthy Smiles Ontario (HSO) program since 2011. Data are collected for program eligible children: aged 17 years and under.

Children In Need of Treatment (CINOT) (WDG Public Health)

WDG Public Health has collected data on the Children In Need of Treatment (CINOT) program since 2011. Data are collected for program eligible children: aged 17 years and under.

A Profile of Wellington-Dufferin-Guelph

Wellington-Dufferin-Guelph Public Health (WDGPH) is one of 36 local health departments in Ontario. The area served by WDGPH is located in southwestern Ontario, approximately 100 km west of Toronto, and comprises two counties: Wellington County and Dufferin County. The municipality of the City of Guelph is geographically located within Wellington County *(See Figure 1)*. In this report, the area served by WDGPH is referred to as Wellington-Dufferin-Guelph (WDG).

Figure 1: Municipalities in Wellington-Dufferin-Guelph, Southwestern Ontario

Mandate

The mandate of WDGPH is to improve the health of the population through activities that promote health, protect health, and prevent disease and injury.
Wellington-Dufferin-Guelph Public Health is an essential community health service with dedicated staff that focus on promoting and protecting the health of our community. We offer programs and services and advocate for healthy public policies that:

- Promote healthy infant and child development, responsive parenting, healthy lifestyles, and positive mental, reproductive, sexual, and dental health.
- Protect our communities from communicable and infectious diseases, and environmental hazards such as contaminated food and water.
- Prevent disease and injuries.

Table 1: Sociodemographic Profile of Wellington-Dufferin-Guelph compared to Ontario

Indicator	Wellington-Dufferin-Guelph	Ontario
Population (Census 2011, Statistics Canada)	265,240	12,851,820
Geographical Profile:		
Percentage of geographical area that is rural (Census 2011, Statistics Canada)	98% (97.53%)	N/A
Percentage of geographical area that is urban (Census 2011, Statistics Canada)	2% (2.47%)	N/A
Population Profile (Census 2011, Statistics Canada)	46% of the population lives in urban areas	N/A
Population Growth (from 2006-2011) (Census 2011, Statistics Canada)	4.1% increase	5.7% increase
Projected Population Growth from 2011 to 2016 (Census 2006, Statistics Canada)	6.1% increase to 295,000 residents.	N/A
Diversity:		
Immigrant Status (National Household Survey 2011, Statistics Canada)	15.7%	28.5%
Percentage increase of new immigrants from 2001-2006 compared with 1996-2001 (Census 2006, Statistics Canada)	24%	N/A
Visible minority population (National Household Survey 2011, Statistics Canada)	9.0%	25.9%
Largest visible minority groups (National Household Survey 2011, Statistics Canada)	South Asian, Chinese, Southeast Asian, Black, Filipino	South Asian, Chinese, Black, Filipino, and Latin American
Education (Census 2006, Statistics Canada)	47.7% of the population aged 15 years and older has completed post-secondary education*.	52.7% of the population aged 15 years and older has completed post-secondary education*
Percentage of Population With No Knowledge of Official Languages (Census 2011, Statistics Canada)	0.8%	2.3%
Median 2005 Family Income After Tax (Census 2006, Statistics Canada)	$65,284	$63,441
Unemployment Rate (2012, 15yr+) (CANSIM Table 109-5324, Statistics Canada 2013)	5.1%	7.8%
Percentage of Children <6 years of age Living in Low-income Households (Census 2006, Statistics Canada)	6.8%	14.8%

*Post-secondary education includes apprenticeship degrees/certificates, college degrees, and university degrees

Oral Health Care in Canada

Although good oral health is an important component of one's overall health, most dental care in Canada is not publicly-funded, and the majority of adult Canadians have experienced oral health conditions. The Canadian Health Measures Survey (CHMS) found that 57% of children, 59% of adolescents, and 96% of adults have suffered from tooth decay (Health Canada, 2010).

Income and dental insurance are two of the most important factors that determine whether someone will visit a dentist. The CHMS found that 62% of Canadians have private dental insurance, only 6% have publicly-funded insurance, and 32% have none (Health Canada, 2010). People with lower incomes and without dental insurance seek dental care three times less than those with higher incomes and with private dental insurance, and 17% of Canadians reported they specifically avoided going to a dentist in the last year due to cost (Health Canada, 2010). Income is also associated with oral health status. The CHMS found that twice as many lower income Canadians have cavities that need a filling compared to higher income Canadians, yet 50% of Canadians in the lower income bracket do not have any dental insurance (Health Canada, 2010). The most vulnerable populations who experience poor oral health include: children, low-income households, seniors, people with disabilities, people living in rural and remote areas, Aboriginals, and immigrants and refugees (CAHS, 2014; CDA, 2010; Rowan-Legg, 2013).

A recent report from CAHS identified a number of issues with access to oral health care: (1) vulnerable groups living in Canada have both the highest level of oral health problems and the most difficulty accessing oral health care; and (2) the public and private oral health care systems in Canada are not effective in providing reasonable access to oral health care for all vulnerable people living in Canada (CAHS, 2014). As of 2012, total dental care expenditures (public and private) equaled $12.6 billion, yet the publicly funded share was only 6% (MOHLTC, 2012).

Canadians can access dental insurance in three ways: (1) through third-party insurance (e.g. through their employer); (2) by paying directly out-of-pocket (e.g. purchasing private dental insurance, or paying dental fees on a case by case basis; or (3) through government-subsidized programs. However, publicly-funded programs vary by province and territory, are limited, and have strict eligibility requirements, leaving many vulnerable populations without dental insurance (Rowan-Legg, 2013; Wellesley Institute, 2014).

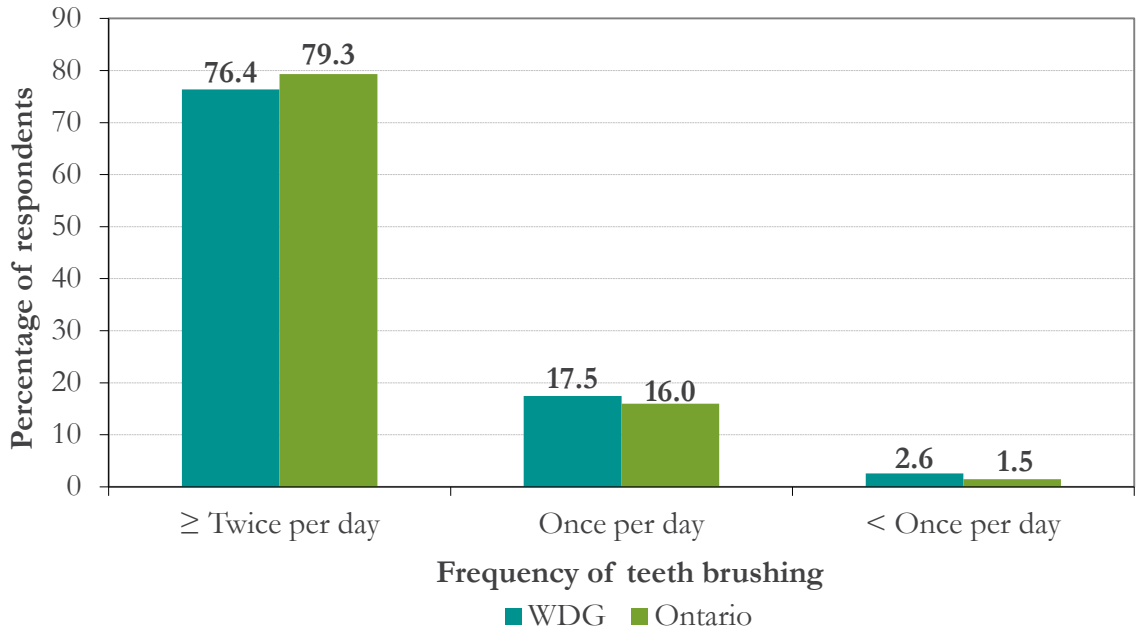
Many researchers and public health professionals have highlighted the importance of professional preventive care, including Ontario's Chief Medical Officer of Health. In Dr. King's 2012 report she referenced many studies that identified oral health preventive services to be cost-effective in reducing the need for restorative care (MOHLTC, 2012). Maintaining good oral care and having access to dental insurance, especially among vulnerable populations, is a national issue in Canada. Efforts should continue to raise the profile of oral health and to advocate for equitable access to dental insurance for Canadians.

Oral Health Status in Wellington-Dufferin-Guelph

Oral Health Status

To maintain good oral health, it is important to practice healthy oral habits. In addition to a healthy diet and routine professional care, the CDA recommends brushing teeth twice per day and flossing once per day as part of good oral hygiene (CDA, 2015a). In the CHMS Survey, 73% of Canadians followed this recommendation (Health Canada, 2010). In the Canadian Community Health Survey (CCHS), 79.3% and 76.4% of Ontario and WDG respondents, respectively, reported brushing teeth at least twice daily. Although, this is higher than the national average, one fifth of WDG respondents (20.1%) are still not meeting the daily tooth brushing recommendation to maintain good personal oral hygiene.

Figure 2: Teeth Brushing Frequency in Wellington-Dufferin-Guelph compared to Ontario, CCHS 2013



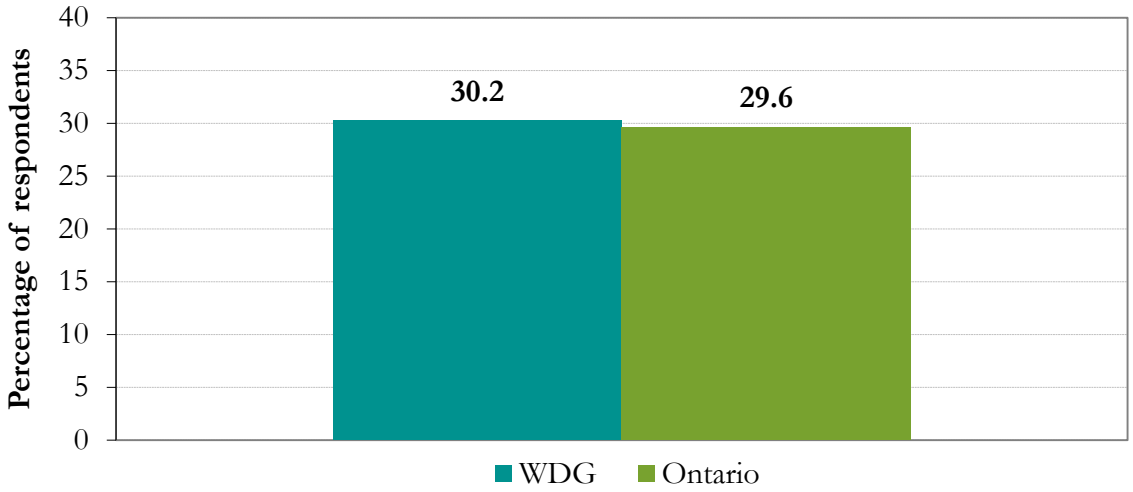
Note. The WDG estimate of "< Once per day" has a coefficient of variation (CV) that falls within the marginal range (CV = 29.41), and should be considered with caution due to high sampling variability.

Poor oral health behaviours are described as personal oral hygiene habits that do not meet the CDA's recommendations (CDA, 2015a). These can lead to a range of oral health conditions, varying from sensitive teeth, to acute pain and severe oral infections.

In the CCHS, approximately one third of WDG respondents (30.2%) and Ontario respondents (29.6%) reported having sensitive teeth. Tooth sensitivity is a common symptom of poor oral health, where people experience pain when their teeth are exposed to stimuli (such as hot or cold foods and liquids). Tooth sensitivity is most commonly caused

by tooth decay and gum disease, and is largely preventable through proper oral hygiene and a diet low in acidic foods (Miglani, Aggarwal, & Ahuja, 2010).

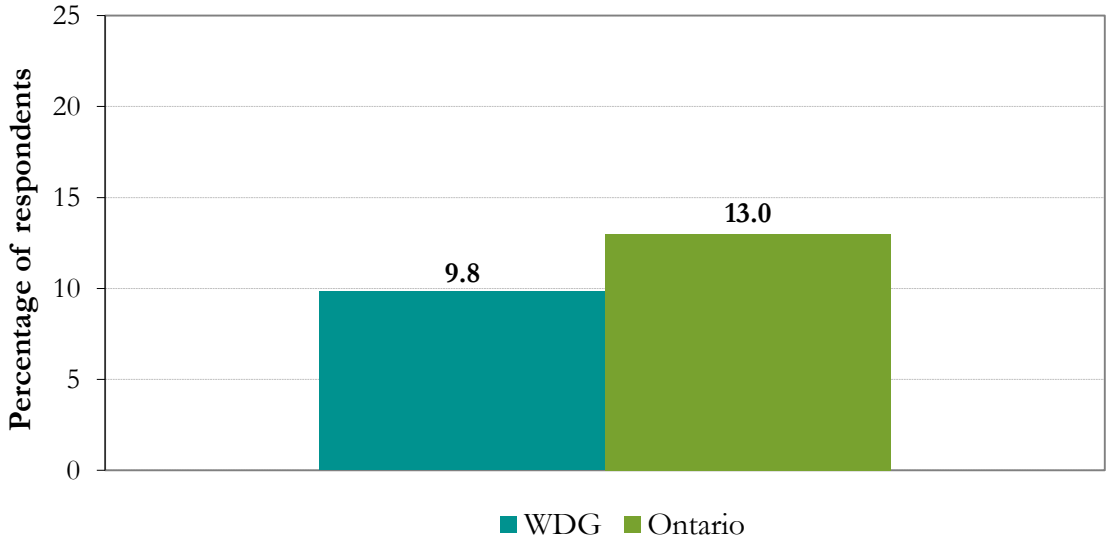
Figure 3: Respondents Reporting Teeth Sensitivity to Hot or Cold in Wellington-Dufferin-Guelph compared to Ontario, CCHS 2013



Note. Includes those who said they had their own teeth (or provided no response) or did not provide a response to the frequency of dental visits

Bleeding gums are another common sign of poor oral health, and are often caused by plaque buildup due to bacteria and improper tooth brushing and flossing (CDA, 2015b). This sign indicates that the individual may have periodontal disease and require professional dental care. Periodontal disease can lead to infection and tooth loss. According to the CCHS, 9.8% of WDG respondents reported they had bleeding gums in the last month, compared to 13.0% of Ontario respondents.

Figure 4: Respondents Reporting Bleeding Gums in the Past Month in Wellington-Dufferin-Guelph compared to Ontario, CCHS 2013



Practicing good oral hygiene and receiving professional oral care are important components of preventing tooth decay and gum disease. This is especially true at a young age as over half of children aged 6 to 11 years (57%) have experienced tooth decay (Health Canada, 2010).

In 2012 the Ontario Association of Public Health Dentistry (OAPHD) encouraged health units to volunteer data from their mandated school screenings. This was in response to a lack of provincial reporting on elementary student oral health indicators (Ito, 2012). Using this information, the OAPHD released a report that summarized data on the severity of tooth decay among Ontario school children during the 2009-2010 and 2010-2011 school years (Ito, 2012). This work proved valuable to health units as no national or provincial database on oral health indicators currently exists. The OAPHD has since released data on additional school years.

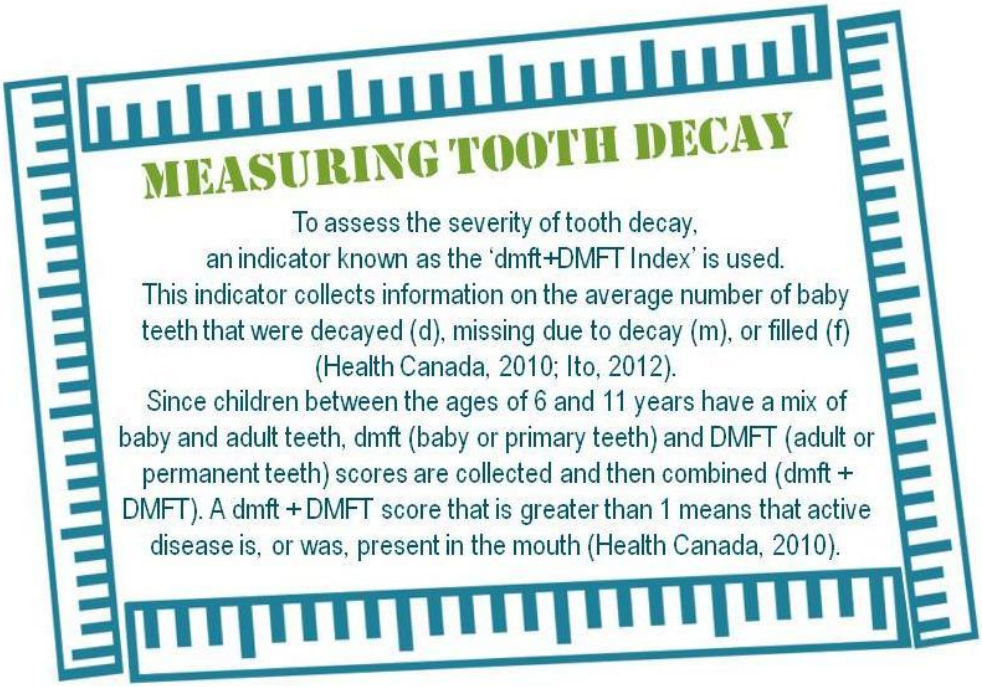


Table 2 compares WDG Public Health's findings on tooth decay for the 2012-2013 school year with those reported by OAPHD for children in Junior Kindergarten (JK), Senior Kindergarten (SK) and Grade 2 (OAPHD received JK data from 23 public health units, and data for SK and Grade 2 from 24 public health units). During the 2012-2013 school year, WDG's dmft+DMFT score increased with each grade suggesting that WDG children are more likely to develop tooth decay as they age. OAPHD's data also identified this trend among Ontario children during the same school year.

During the 2012-2013 school year the weighted mean dmft+DMFT scores reported by OAPHD ranged from 0.95 to 2.22 (OAPHD, 2015). WDG's average dmft+DMFT scores for JK and SK students are lower than those reported by OAPHD, but greater than those

reported for Grade 2 students. Despite these differences, WDG student tooth decay scores are comparable to Ontario levels.

Table 2: dmft+DMFT Average by Grade, comparing Wellington-Dufferin-Guelph with OAPHD Data

Grade	Average dmft+DMFT in Ontario, OAPHD 2012-2013 (weighted mean)	Average dmft+DMFT in WDG, WDG Public Health 2012-2013
JK	0.95	0.8
SK	1.55	1.2
Grade 2	2.22	2.4
Overall Average	**1.57**	**1.5**

Note. OAPHD reported 'dmft+DMFT' as 'deft+DMFT' in its report, however the indicators are the same.

During the 2012-2013 school year, the percentage of Ontario children who had caries (tooth decay) ranged from 24.0% to 50.0% (OAPHD, 2015). In WDG, the percentage of children who had caries during this school year ranged from 19.9% to 49.0%. WDG observed a lower percentage of children in JK and SK who have had caries compared to Ontario. However, WDG's average for Grade 2 students is similar to that of Ontario. Both WDG and Ontario report increasing rates of caries among children as they age, with half of Ontario children (50.0%) having experienced tooth decay by Grade 2 (OAPHD, 2015).

Table 3: Percentage of Children who have had Dental Caries by Grade, comparing Wellington-Dufferin-Guelph with OAPHD Data

Grade	% of Ontario children who have had Caries, OAPHD 2012-2013 (weighted)	% of WDG children who have had Caries, WDG Public Health 2012-2013
JK	24.0	19.9
SK	34.4	28.6
Grade 2	50.0	49.0
Overall Average	**36.1%**	**32.5%**

Note. The indicator in this table was originally documented by OAPHD as "percentage of caries-free children". It has been edited in this report to identify the percentage of children who have had caries.

As tooth decay and gum disease are largely preventable, practicing good oral hygiene is essential. However, knowledge and attitudes towards oral health can influence one's motivation to practice personal oral hygiene.

In 2006, an American study examined the impact of people's attitudes towards oral health on their own oral health behaviours. The study found that the 'negative attitude' group reported

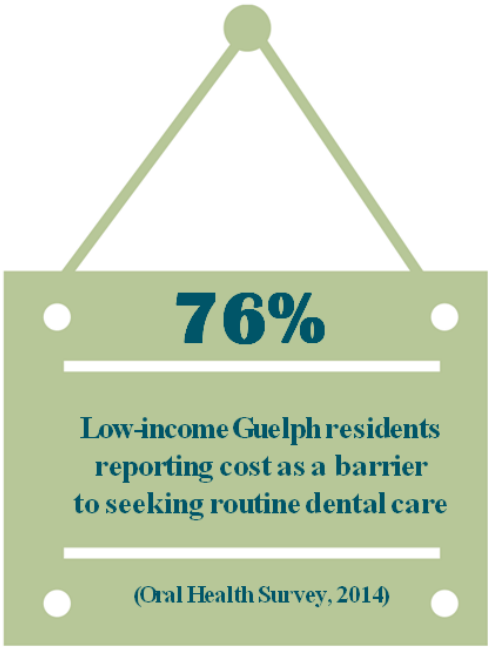
the least preventive care and the most oral health concerns, while the group with 'favourable attitudes' about dental care reported the highest number of preventive and restorative visits and the lowest point-prevalence of toothache pain, temperature sensitivity, and painful gums (Riley, Gilbert, & Heft, 2006).

Practicing personal oral hygiene is a learned behaviour, one that Sinton and McIntosh (2006) argue is taught by parents and peers to children. Their research identified that some parents have negative attitudes towards practicing oral hygiene, which were exemplified by their children. Among the reasons cited, the most common were that parents found it challenging and unrealistic to get their children and themselves to practice brushing and flossing recommendations (Sinton & McIntosh, 2006). The importance of teeth brushing cannot be understated, as children who brush their teeth only once a day are at least twice as likely to develop tooth decay as children who brush twice a day (Sinton & McIntosh, 2006). If parents lack an understanding of proper oral hygiene or do not value it themselves, they are less likely to teach proper oral hygiene behaviours to their children.

Income is a critical factor that influences a person's oral health behaviours and perspectives. Income directly impacts the ability to afford the basic prerequisites of health, including food and access to dental care (Mikkonen & Raphael, 2010). Income level impacts the ability to afford basic oral hygiene products such as toothbrushes, toothpaste and dental floss. In the Oral Health Survey (PTF, 2014), over a third of low-income Guelph respondents reported they do not have regular access to personal oral care products (20% are sometimes able, and 19% are unable to afford personal oral care products on a regular basis). Children in families which are unable to afford the necessary tools to practice personal oral hygiene are already at a disadvantage for maintaining oral health.

Access to Dental Care

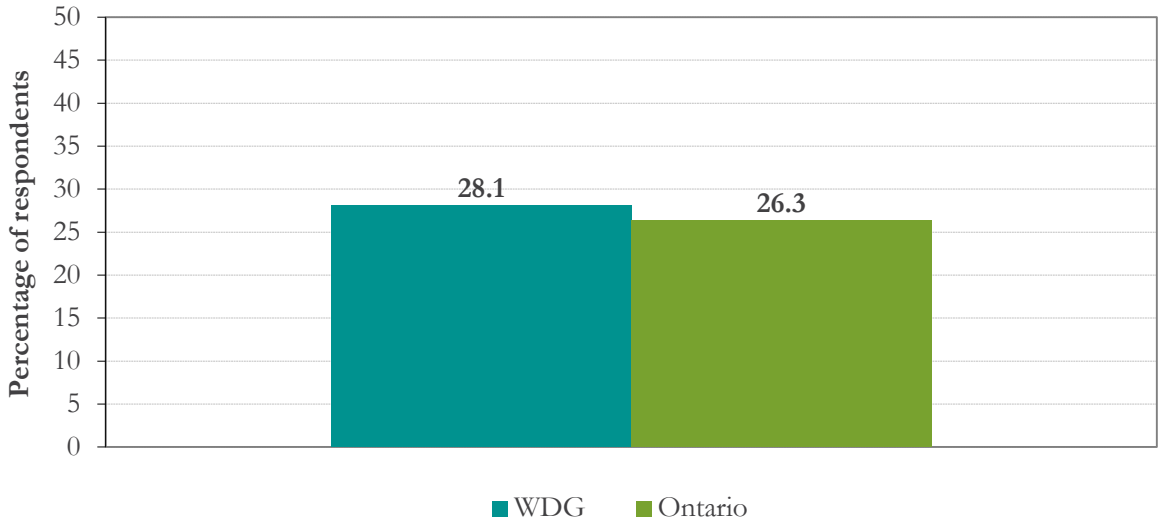
The second key component to maintaining good oral health is access to professional dental care, as it is essential for the prevention, diagnosis, and treatment of oral health conditions (CDA, 2010). Many Canadians do not have access to dental insurance, placing them at an increased risk for oral health issues. Among those most affected are low-income populations, children and seniors (CDA, 2010).



In contrast to physician and hospital-based services, Ontarians (as well as Canadians) are largely responsible for financing their own professional oral care (Rowan-Legg, 2013). Yet for many Ontarians, the cost of professional dental care poses a significant barrier. In the 2013 CCHS, 70.9% of respondents from WDG reported having seen a dentist within the last 3 years. Of those respondents who had not seen a dentist within the last 3 years or who did not have a definite

response to seeing a dentist in the past 12 months, cost was reported as a barrier by over a quarter of WDG residents (28.1%). This is slightly higher than Ontario (26.3%).

Figure 5: Respondents with no Visit to Dentists due to Cost in Wellington-Dufferin-Guelph compared to Ontario, CCHS 2013



Note. Includes respondents who have not seen a dentist within the last 3 years or did not have a definite response to seeing a dentist in the past 12 months.
Note. The WDG estimate has a coefficient of variation (CV) that falls within the marginal range (CV = 24.19), and should be considered with caution due to high sampling variability.

Cost not only impacts the affordability of routine care, but is a barrier to seeking treatment for oral health conditions. Among low-income Guelph residents 35% reported they require a teeth cleaning and 27% reported they require a filling to repair a cavity (PTF, 2014). However, 70% reported that oral treatment was recommended to them which they cannot afford.

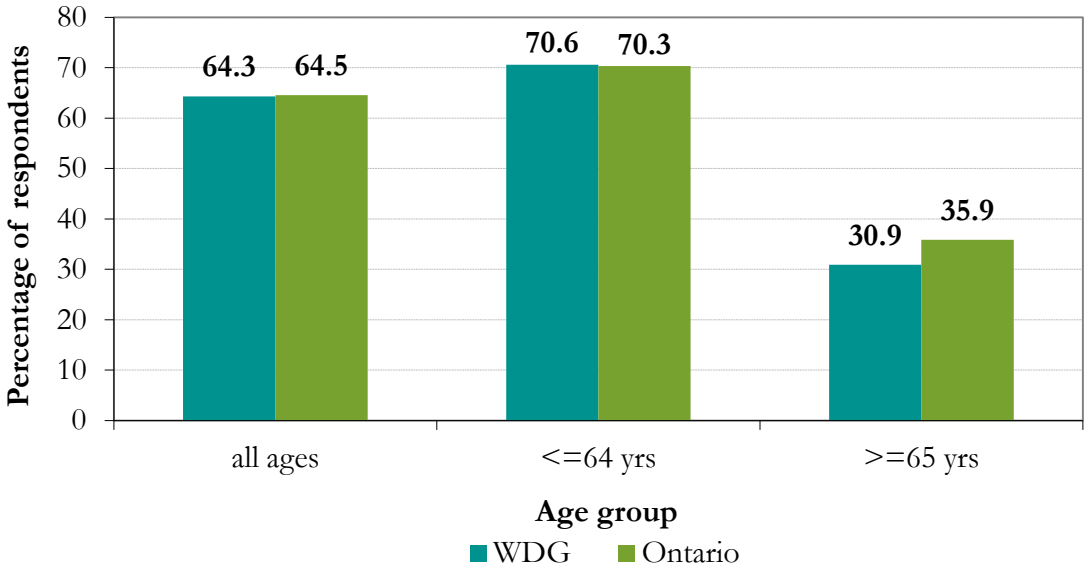
One of the most common ways to overcome the barrier of affording professional dental care is by having dental insurance. Some people have access to employer-provided benefit plans. However, a recent report by the Wellesley Institute identified that only 64% of Ontario employees received dental insurance through their employer in 2011 (Wellesley Institute, 2015). People with low earnings are less likely to receive employer-provided dental insurance than higher income earners. This is especially common for those working at or near minimum wage (Wellesley Institute, 2015). Those who are unable to acquire dental insurance through an employer have the option to apply to publicly-funded programs. However, these programs have strict financial eligibility requirements. This is problematic given that people in paid employment are ineligible for most of Ontario's publicly-funded dental programs, forcing these individuals to either pay out-of-pocket or forgo dental care due to financial barriers (Wellesley Institute, 2015). Furthermore, people with dental insurance may be unable to access their insurance if they cannot afford to pay deductibles, if

their insurance does not cover the procedures they require, or if their treatment needs exceed the maximum cost their insurance covers.

This trend is also seen in WDG. Among low-income Guelph residents whose primary source of income is through employment, 57% reported they have no dental benefits. Furthermore, 44% of those who have employer-provided benefits cannot afford regular dental care (PTF, 2014).

In the 2013 CCHS survey, 64.3% of WDG residents reported they had insurance that covered all or part of their dental expenses. This is similar to the 2013 and 2011 provincial averages (64.5% and 64%, respectively). However, this data identifies that access to dental insurance is not equitable across age groups, as only 30.9% of WDG respondents 65 years and older reported they have dental insurance. This highlights a serious gap in access to and affordability of oral health care among the growing population of seniors. Results from the CHMS also identified inequitable dental insurance across age groups as a concern, as 53% of Canadian adults between 60 and 79 years of age reported they do not have any dental insurance (Health Canada, 2010). Furthermore, in the 2014 Oral Health Survey among low-income Guelph residents 36% of respondents reported they have stopped visiting a dentist for routine oral care due to inadequate insurance (PTF, 2014). This data confirms that populations who require professional dental care the most are those with limited or no access to dental insurance.

Figure 6: Respondents with Dental Insurance by Age Group in Wellington-Dufferin-Guelph compared to Ontario, CCHS 2013



When untreated oral conditions become severe those without dental insurance must seek available urgent care, often at hospital emergency rooms (ER). Data collected by the Local Integration Health Networks (LHINs) reported that 1,379 WDG residents visited an

Ontario hospital ER in 2012 for oral health concerns. A total of 1,640 ER visits by WDG residents for oral health needs took place, indicating that some patients returned for multiple ER visits to address on-going oral health conditions (MOHLTC, 2013). Among low-income Guelph residents who reported experiencing a dental emergency (PTF, 2014), 22% reported visiting a hospital for their most recent emergency. Other sources of emergency care identified were visiting a dentist (65%), addressing the dental emergency on one's own (15%), and visiting a family doctor or walk-in clinic (11%).

ER physicians can provide temporary treatment for oral health needs through prescriptions for pain relief and antibiotics. However, they are unable to provide definitive care through dental treatment procedures. Making hospital ERs accessible to people with urgent oral health needs is important in order to provide care in emergency cases. However, a shift to more equitable access to dental care is needed to prevent the occurrence of emergency oral health needs and the added pressure and costs on the health care system.

More advanced treatment is needed for certain cases in hospitals. For example, children who experience early childhood caries (ECC), a severe form of tooth decay that is largely preventable, often require day surgery to treat their condition. Day surgery for ECC is the leading cause of day surgery among children 5 years and under, with 19,000 surgery operations performed each year across Canada among children this age (Canadian Institute for Health Information [CIHI], 2013). The public cost associated with just one aspect of day surgery for ECC: hospital care, is $21.2 million per year for children age 1 to less than 5 years (CIHI, 2013), while the average cost per child is $1,408 in Ontario (CIHI, 2013). This does not include costs associated with anesthesia and travel.

Day surgery for ECC is most common among vulnerable families, whose limited access to preventive oral care results in urgent needs. Day surgery rates are 3.9 times as high for children from the least (versus the most) affluent neighbourhoods, and are 3.1 times as high for children from rural (versus urban) neighbourhoods (CIHI, 2013). Between 2010 and 2012, 387 children aged 1 to less than 5 years of age in the Waterloo Wellington LHIN received day surgery for ECC, a rate of 5.5 per 1,000 children (CIHI, 2013).

Day surgery for severe tooth decay is just one example of the immense cost associated with treating urgent oral health needs, which for the most part are largely avoidable through access to professional preventive care.

Impacts of Poor Oral Health

Good oral health is more than just the absence of tooth decay and gum disease. Oral health contributes to mental and social well-being, including self-esteem (CDA, 2015d; MOHLTC, 2012). There is evidence from both the CCHS and Oral Health Survey (PTF, 2014) that suggests poor oral health can negatively impact quality of life.

"I have been suffering with depression for several years and I haven't taken good care of my teeth lately. I am feeling better but have no income or benefits to cover this any longer. I got an estimate for $750 due to severe plaque build up - I can't afford this. I don't know what to do."

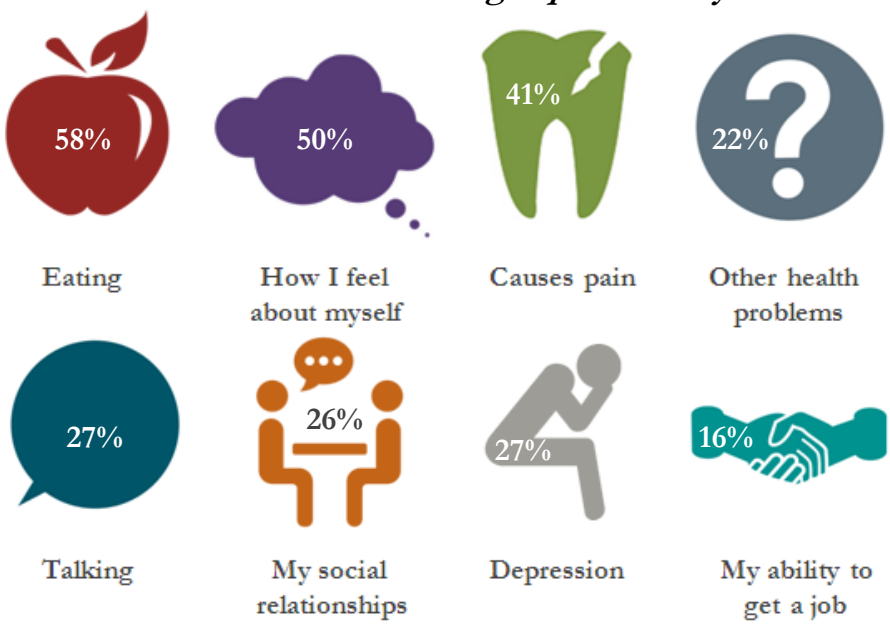
-Quote from Oral Health Survey respondent

According to the CCHS, 4.2% of WDG respondents indicated they experience social limitations due to poor oral health. This was further explored in the Oral Health Survey among low-income Guelph residents (PTF, 2014). In this survey 41% of respondents reported that their oral health care needs cause pain; over half of respondents (58%) reported their needs affect their eating; and over a quarter (27%) reported they affect their ability to speak.

When exploring other personal outcomes, half of respondents (50%) reported their oral health needs affect how they feel about themselves, and over a quarter reported it impacts levels of depression (27%) and their social relationships (26%). Oral health needs were also reported to impact respondents' ability to gain employment (16%).

Figure 7: Social and Health Impacts of Poor Oral Health, Oral Health Survey (2014)

My poor oral health affects the following aspects of my life:



WDG Public Health Programs

WDG Public Health is mandated by the Ontario Public Health Standards (OPHS) to provide programs and services that enable all children to attain and sustain optimal health and developmental potential, including oral health (MOHLTC, 2014) (*See Appendix 1*).

The aims of WDG Public Health's oral health programs and services include:

- Oral health education
- Early identification of oral diseases
- Prevention of oral diseases
- Access to oral care; and
- Raising the health status of vulnerable groups (as outlined in the health unit's Population Health Strategies (WDG Public Health, 2011))

These components are delivered through the following oral health programs and services:

1. **School Screenings**
2. **Preventive Services**
3. **Oral Health Outreach Programs**
4. **Dental Intake Line**
5. **Financial Assistance Programs**

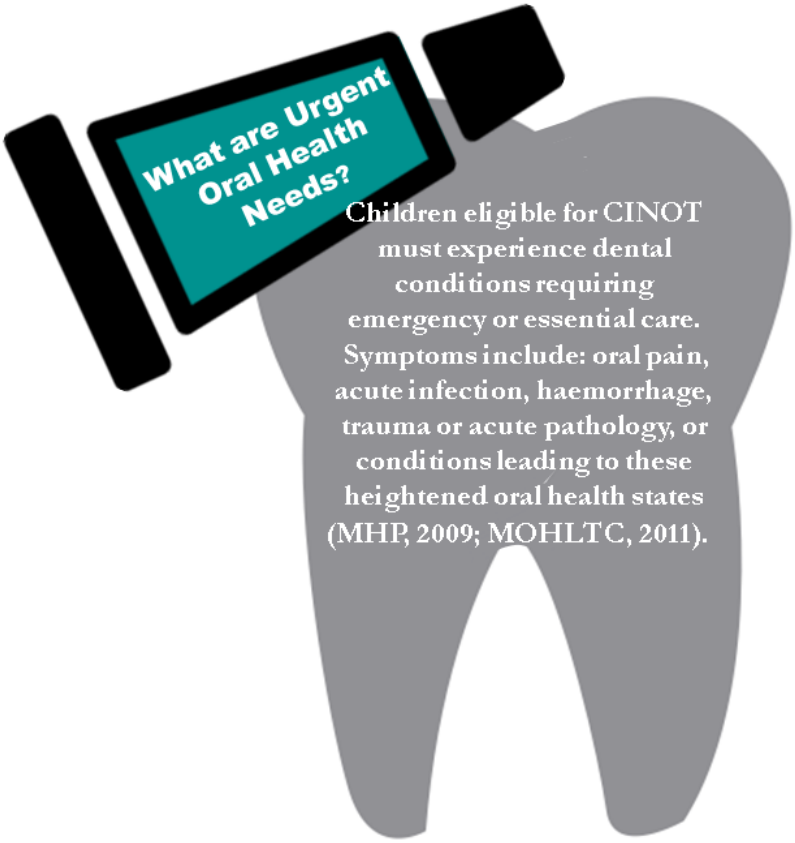
1. School Screenings

WDG Public Health conducts oral health screenings of students in elementary schools. Dental staff conduct a visual check of students' teeth and identify children with oral health needs. Eligible children are referred to the Healthy Smiles Ontario (HSO) and Children In Need of Treatment (CINOT) provincially-funded programs for additional routine and urgent care.

Under the OPHS, WDG Public Health is required to provide oral health screenings to students in JK, SK and Grade 2 (G2) at all WDG publicly funded schools (*See Appendix 1 for further information on school screening protocols*). WDG Public Health screens 100% of students in these mandated schools on an annual basis, meeting this Ministry of Health and Long-Term Care accountability indicator. During the 2013-2014 school year, WDG Public Health screened students in parochial and private schools, as well as all JK, SK and G2 students at 84 publicly-funded schools. Since September 2010, over 39,000 oral health screenings were conducted for WDG elementary students and a total of 1,384 children were identified with urgent oral needs.

Table 4: Number of Wellington-Dufferin-Guelph Elementary Students Receiving Oral Health Screening per School Year

School Calendar Year	Children Screened	Children Identified with Urgent Dental Needs	Percentage of screened children identified with Urgent Dental Needs
2010-2011	7850	338	4.3%
2011-2012	10335	408	4.0%
2012-2013	10461	309	3.0%
2013-2014	10978	329	3.0%
Total	**39624**	**1384**	**3.6%**



2. Preventive Services

WDG Public Health's preventive clinics provide oral health education and prevention services at no cost to eligible children and youth aged 17 and under. These clinics improve children's access to oral health care by offering the following services: screening, dental cleanings, pit and fissure sealants, topical fluoride applications, scaling, selective polishing and oral health education. Clinics are located at health unit locations in Guelph, Fergus, Orangeville, Shelburne and Mount Forest. These preventive clinics refer eligible children to the HSO and CINOT programs.

Table 5: Preventive Services Performed in Wellington-Dufferin-Guelph Clinics

Year	Preventive Clinic Services			
	Children Screened	No. of Children with Urgent Needs	No. of Dental Cleanings	No. of Children who Received Sealants
2011	1232	357	855	99
2012	1214	286	801	44
2013	1101	304	844	37
2014	1181	314	895	63
Total	**4728**	**1261**	**3395**	**243**

Since 2011, over 4,700 children have been screened at the health unit's preventive clinics, and over a quarter of them (26.7%) were identified with urgent oral health needs (1,261 children). Most children who receive a dental cleaning also receive a topical fluoride application.

Table 6: Children with Urgent Oral Health Needs Identified through Preventive Clinics in Wellington-Dufferin-Guelph

Year	Percentage of Children Screened with Urgent Needs			
	Wellington	Dufferin	Guelph	Total
2011	38.4%	32.5%	23.4%	**29.0%**
2012	28.9%	14.2%	24.5%	**23.6%**
2013	38.3%	25.4%	24.2%	**27.6%**
2014	25.4%	26.5%	27.0%	**26.6%**
Total	**32.8%**	**24.7%**	**24.8%**	**26.7%**

3. Oral Health Outreach Programs

WDG Public Health offers innovative programs to improve access for vulnerable individuals to oral health services.

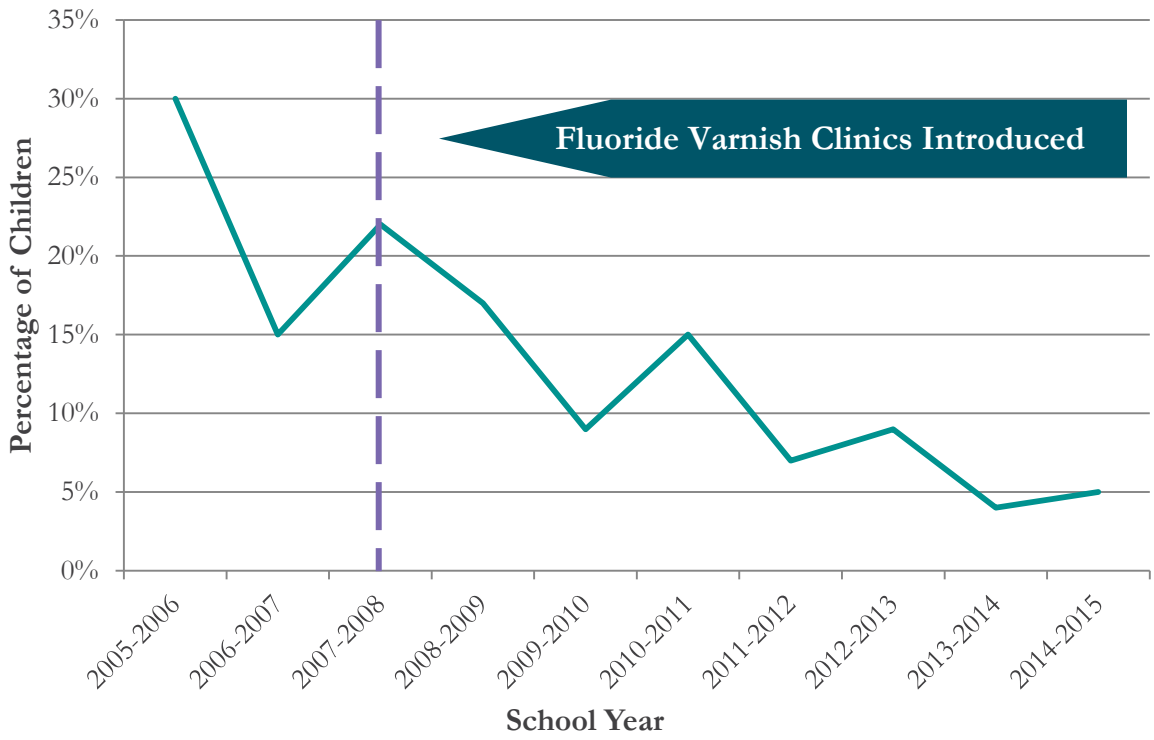
3A. Fluoride Varnish Initiative

Fluoride varnish is an evidence-based practice that is recognized as a safe, effective intervention for reducing tooth decay (Marinho, Worthington, Walsh, & Clarkson, 2013). WDG Public Health provides topical fluoride varnish as a preventive oral health strategy to students in seven WDG elementary schools through its Fluoride Varnish Initiative. This initiative has been supported by HSO funding.

This initiative began as a pilot during the 2007-2008 school year at Centre Peel Public School in response to extraordinarily high levels of oral disease among the students. In 2005, over 30% of the children had urgent oral health needs and a further 13% were identified with non-urgent needs. During the pilot, public health staff offered topical fluoride varnish to all

Centre Peel students, and 97% of the students received the fluoride varnish. During the past seven years, teachers and school administration worked with public health staff to support the Fluoride Varnish Initiative. A local dental practice now provides tooth brushing supplies to augment the program. Over the course of the initiative, the number of children at Centre Peel identified with urgent needs has fallen from 22% in 2007 to a low of 5% in 2014. The cost savings to families and publicly-funded programs is significant.

Figure 8: Percentage of Children at Centre Peel with Urgent Oral Health Needs

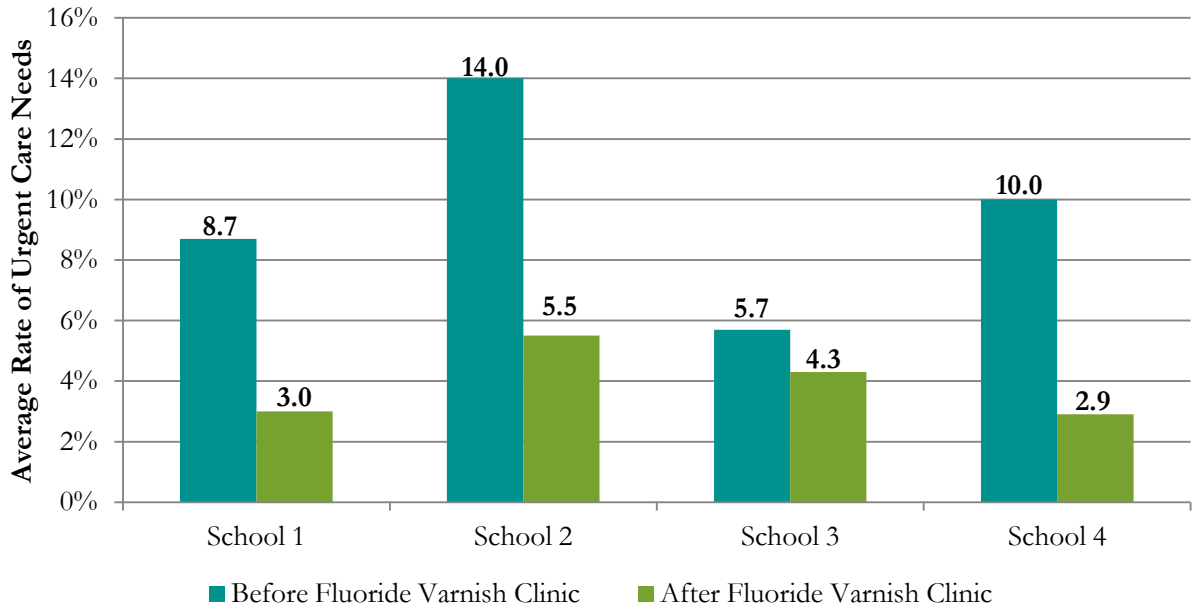


The decision to expand the Fluoride Varnish Initiative to other schools was based on the success achieved at Centre Peel. The initiative has expanded to seven elementary schools and is offered to all students. These schools were identified as most likely to benefit from preventive oral health services based on a history of higher rates of urgent oral health needs identified during routine school screenings. Offering oral health screening and fluoride varnish to all students in each of these schools reduced the stigma of accepting preventive services for those most vulnerable, and enabled children who might otherwise not receive preventive services to participate. Student participation rates in six schools participating prior to 2014 ranged from 44% to 72%.

In each of the WDG schools involved in the Fluoride Varnish Initiative a trend is observed toward decreasing percentages of children identified with urgent and non-urgent oral health needs. This trend is stronger in some schools than others, possibly due to transient school populations and the identification of urgent needs not preventable by fluoride varnish, such as gum disease.

Figure 9 demonstrates the impact this initiative has had on levels of urgent oral health needs. It compares the average rate of urgent needs in the three years prior to and the three years after the introduction of the Fluoride Varnish Initiative at four participating elementary schools. All four schools have experienced a reduction in their average rate of urgent oral health needs.

Figure 9: Levels of Urgent Oral Health Needs at Four Schools Participating in the Fluoride Varnish Initiative



3B. Rural Portable Clinics

WDG Public Health provides preventive oral health services in temporary sites (portable clinics) primarily within rural communities. This program, which is supported by municipal and community partners, provides oral health screening and care services to eligible children and youth in an accommodating and culturally sensitive environment. Clients include diverse cultural and ethnic groups, children who are home schooled, and those in preschool and high school. These clinics offer individualized oral health education to parents and children, and referrals for eligible children to HSO and CINOT programs.

In 2014, WDG Public Health ran a total of seven portable clinics which took place in: Arthur, Drayton, Erin, Grand Valley, Moorefield and Palmerston with support from the local community. One of the portable clinics was offered at a high risk secondary school in Guelph. Four-hundred and thirty-four children and youth were examined at these clinics: 119 (27%) of whom were subsequently enrolled into the HSO program and 84 (19%) of whom were identified as having urgent oral health needs.

This program provides oral health services to children and youth who would likely not have access to oral care. These clinics often serve as an entry point for families into the publicly-funded oral health system.

3C. Oral Health Education and Preventive Services for Pregnant and Postpartum Women

In May 2013, a pilot project was launched to provide oral health education and limited preventive services to pregnant and postpartum women who are at an increased risk of poor oral health and who face barriers to accessing oral health services. The pilot was based on evidence that pregnant women are receptive to oral health education; and are more likely to value their children's oral health and seek professional dental care as a result of educational services (Lin, Harrison, & Aleksejuniene, 2011). It is important for women to maintain good oral health during pregnancy as evidence suggests poor oral health may contribute to premature delivery and low birth weight among newborns (MOHLTC, 2012). Furthermore, a review of clients who attended WDG Public Health prebirth clinics in 2009 found that 25% of women reported they had not received dental care in the past year. The main reason cited for failing to seek care was financial (WDG Public Health, 2014).

The majority of pilot participants are recruited through WDG Public Health's Canadian Prenatal Nutrition Program (CPNP) in Guelph. Eligible participants are offered individualized oral health education, dental screening and basic preventive services.

The pilot aims to:

- improve participants' knowledge about oral hygiene;
- reduce the risk of dental disease in at-risk pregnant clients;
- contribute to efforts to reduce the risks of poor pregnancy outcomes;
- improve parental knowledge about oral health practices for newborns and young children, and;
- provide education about publicly funded oral health services.

Between May 2013 and December 31, 2014, thirty-four women attended an initial visit for education and screening. Sixty-three scaling appointments and 22 postpartum visits have been completed, and an additional 17 active clients were scheduled to return for scaling and postpartum visits. Participant discussions during visits identified an unanticipated barrier: several women revealed that although they had dental benefits, they were uncertain about how to access care or use the benefits for themselves or their children. One-to-one education enables these women to access their benefits for themselves and their families.

3D. JK/SK Oral Health Education Initiative

The goal of this educational initiative is to improve oral health practices in young children. It is based on the evidence of rates of tooth decay by Grade 2 and the efficacy of good oral hygiene in preventing tooth decay. During OPHS mandated school screenings, oral health staff teach JK and SK students about the importance of brushing their teeth twice a day for two minutes. Students receive a toothbrush, two-minute timer and brushing chart, as well as a letter for their parents. This program began during the 2013-2014 school year with presentations at 99 schools and is continuing in the current 2014-2015 school year. This initiative is supported by the County of Wellington as well as principals and teachers.

3E. Grade 9 Oral Health Education Initiative

In April 2013, WDG Public Health began a campaign targeting high school students aged 14 to 17 years. "Rock Your Smile" promoted awareness about the importance of oral health and the availability of publicly-funded programs for eligible youth. With the support of principals and teachers, oral hygiene kits were distributed to Grade 9 health classes in public and catholic secondary schools. Kits were also distributed to shelters and alternative schools frequented by youth with high needs. This initiative is continuing in the 2014-2015 school year and received support from the County of Wellington.

4. Dental Intake Line

WDG Public Health's Dental Intake Line is a toll-free phone number residents can call to ask questions about their oral health and to inquire about local oral health services and programs.

The Dental Intake Line has recorded an increase each year in the number of incoming calls, receiving 2,065 calls from the public in 2014. Staff who answer the Intake Line assist families with inquiries about HSO and CINOT applications, renewals, expenses and appointment bookings. A separate line is available for dental professionals and their office staff who have enquires regarding client claims and eligibility. The Dental Intake Line staff play a key role in informing vulnerable families about services, and in supporting them to access the oral health care their children require.

Table 7: Number of Calls to the WDG Public Health Dental Intake Line

Year	Wellington	Dufferin	Guelph	Total Calls
2011	229	299	579	**1181**
2012	350	342	1013	**1890**
2013	370	386	889	**1906**
2014	398	410	988	**2065**
Total Calls	**1347**	**1437**	**3469**	**7042**

Note. Calls per region do not equal the Total Calls per year, as some calls had an undocumented region or were made by non-WDG residents.

5. Financial Assistance Programs

Access to oral health care is largely influenced by income, and households of low socioeconomic status which do not have dental insurance are less likely to seek oral care services due to out-of-pocket costs (Health Canada, 2010). Children of low-income families are at high risk of poor oral health as they are unable to seek the preventive professional care they require to promote long-term health.

Fortunately, publicly-funded oral health care programs are available for children and youth aged 17 years and under who meet the financial and eligibility requirements. In Ontario these programs include: Healthy Smiles Ontario (HSO), Children In Need of Treatment (CINOT), Ontario Disability Support Program (ODSP): Dental Special Care Plan, Assistance for Severely Disabled Children (ASDC), and Ontario Works (OW).

WDG Public Health connects children and families predominantly to the HSO and CINOT programs, which provide routine preventive and urgent oral care services, respectively (*See Appendix 2*). WDG Public Health also plays an important role administering HSO and CINOT services to WDG program recipients. Since 2011, 13,457 oral health procedures have been performed in WDG under the HSO program, and 21,834 procedures have been performed under CINOT. Overall, each year the HSO and CINOT programs have experienced an increase in the number of performed procedures and the number of children receiving this care. In 2011 alone, 6,449 CINOT procedures were performed for over 700 children. This data highlights the growing need for both oral health preventive and urgent services among children from low-income families.

The ability of WDG Public Health to ensure care to so many children depends upon the support from participating providers. Dental providers receive only a portion of the rate given in the Ontario Dental Association suggested fee guide for procedures, when they treat HSO and CINOT clients. Nonetheless, participation rates by local providers in the HSO and CINOT programs have remained fairly stable.

Table 8: HSO and CINOT Procedures in Wellington-Dufferin-Guelph

Year	HSO			CINOT		
	# of procedures	# of children receiving care	# of participating providers	# of procedures	# of children receiving care	# of participating providers
2011	1655	236	76	6449	729	172
2012	3212	394	120	4932	596	153
2013	3733	496	126	5049	602	140
2014	4857	643	149	5404	608	169
Total	**13457**			**21834**		

Table 9 affirms the intended roles of the HSO and CINOT programs. In 2013, the most common HSO procedures performed were preventive (38.7%) and diagnostic (28.9%), followed by restorative (24.6%). The most common CINOT procedures performed were restorative (49.0%) and diagnostic (23.0%), along with more advanced urgent care including oral surgery (7.5%) and sedation services (8.4%), such as general anesthesia.

Table 9: HSO and CINOT Procedures Performed in Wellington-Dufferin-Guelph, 2013

Procedure	HSO		CINOT	
	Number	% of all procedures	Number	% of all procedures
Diagnostic	1081	28.9%	1162	23.0%
Preventive	1446	38.7%	320	6.3%
Restorative	918	24.6%	2475	49.0%
Endodontic	33	0.9%	289	5.7%
Periodontal	4	0.1%	0	0.0%
Prosthodontic	0	0.0%	0	0.0%
Oral Surgery	151	4.1%	377	7.5%
Sedation	100	2.7%	422	8.4%
Total	**3733**	**100.0%**	**5045**	**100.0%**

Publicly-funded programs play an important role in providing oral health services to children in need. As indicated by WDG HSO and CINOT program data, more emphasis needs to be placed on increasing the accessibility of these programs to vulnerable children.

Conclusion

This report provides an overview of oral health status in WDG and details WDG Public Health's programs that aim to improve residents' oral health and access to dental care.

Health professionals and organizations state that oral health is a fundamental component of overall health (MOHLTC, 2012; WHO, 2012), however findings from this report highlight the concerning levels of oral disease among WDG residents and Ontarians. Tooth decay and gum disease are two largely preventable oral health diseases, yet approximately 50% of Ontario children have experienced tooth decay by Grade 2 (Ido, 2012). Practicing routine oral hygiene and receiving professional dental care are essential components to maintaining good oral health (CDA, 2015d), yet nearly one fifth of WDG residents do not brush their teeth twice per day as recommended and only 64.3% have dental insurance (CCHS, 2013). Vulnerable populations have the most difficulty accessing oral care and experience the highest level of oral health problems (CAHS, 2014).

WDG Public Health's oral health programs provide oral health education and care to priority populations. These services have contributed to the early identification and prevention of oral diseases, including the identification and reduction of urgent oral health needs among children. Despite these efforts, children and vulnerable groups, including: seniors, and low-income individuals and families, continue to experience barriers to accessing oral care and are at an increased risk of developing oral diseases. More work is required to achieve equitable access to oral health care if we are to considerably reduce the risk of preventable oral diseases among Ontarians.

The following recommendations propose opportunities for action that support improved access to oral health care and prevention.

Recommendations

The following seven recommendations are proposed to improve oral health status and access to dental care among residents in WDG and Ontario. WDG Public Health will engage with our partners, where applicable, to pursue these recommendations.

Recommendation 1

Support advocacy strategies to improve access to oral health care for those facing barriers including seniors, low-income individuals and families, and those from priority populations.

Recommendation 2

Support education initiatives that encourage evidence-based behaviours that prevent oral disease.

Recommendation 3

Support the expansion of oral health outreach programs to make oral care and education more accessible to vulnerable families. Rural portable oral health clinics are one example of an outreach initiative that provides oral care to children with limited access to oral health programs.

Recommendation 4

Continue to provide preventive services through public health clinics to children for whom access to oral health care is difficult, including those from low-income families and other priority populations.

Recommendation 5

Expand the provision of the Fluoride Varnish Initiative in schools, based upon identified need.

Recommendation 6

Advocate for improved provincial and national data regarding the oral health status of the population to support evidence-based planning and programming at local levels.

Recommendation 7

Investigate opportunities to include adult pregnant women who do not have dental benefits into a publicly-funded model in order to promote optimal prenatal oral health and improved oral health for newborns and young children.

References

Association for Public Health Epidemiologists in Ontario. (APHEO) [Internet] (c2011). *Core indicators for public health in Ontario: deft/DMFT Index; Caries-free Children; Children with Dental Treatment Needs; Early Childhood Tooth Decay*; 2004 Nov 10. Toronto: APHEO [cited February 20, 2015]. Retrieved from: http://www.apheo.ca/index.php?pid=55

Canadian Academy of Health Sciences. (2014). *Improving Access to Oral Health Care: For Vulnerable People Living in Canada*. Retrieved from: http://www.cahs-acss.ca/improving-access-to-oral-health-care-for-vulnerable-people-living-in-canada-2/

Canadian Dental Association. (2010). *Position Paper on Access to Oral Health Care for Canadians*. Retrieved from: http://www.cda-adc.ca/_files/position_statements/accessToCarePaper.pdf

Canadian Dental Association. (2015c). *Flossing & Brushing*. Retrieved from: http://www.cda-adc.ca/en/oral_health/cfyt/dental_care/flossing_brushing.asp

Canadian Dental Association. (2015d). *Gum Disease FAQs*. Retrieved from: http://www.cda-adc.ca/en/oral_health/faqs/gum_diseases_faqs.asp

Canadian Dental Association. (2015b). *Oral Diseases*. Retrieved from: http://www.cda-adc.ca/en/oral_health/talk/complications/diseases/

Canadian Dental Association. (2015a). *Your Oral Health*. Retrieved from: http://www.cda-adc.ca/en/oral_health/index.asp

Canadian Institute for Health Information. (2013). *Treatment of Preventable Dental Cavities in Preschoolers: A Focus on Day Surgery Under General Anesthesia*. Ottawa, ON: CIHI.

Guelph and Wellington Task Force for Poverty Elimination (PTF). (2014). *Oral Health Survey* [data file for 2014].

Health Canada. (2010). *Summary Report on The Findings of the Oral Health Component of the Canadian Health Measures Survey 2007-2009*. Retrieved from: http://www.fptdwg.ca/assets/PDF/CHMS/CHMS-E-summ.pdf

Ito, D. (2012). *Summary of 2009-10 and 2010-11 Oral Health Screening: Results from Participating Ontario Health Units*. Ontario Association of Public Health Dentistry.

Lin, D.L., Harrison, R., & Aleksejuniene, J. (2011). Can a Prenatal Dental Public Health Program Make a Difference? *Journal of the Canadian Dental Association*, 77(b32), 1-7.

Marinho, V.C., Worthington, H.V., Walsh, T., & Clarkson, J.E. (2013). Fluoride varnishes for preventing dental caries in children and adolescents. *Cochrane Database of Systematic Reviews*, 7, CD002279.

Mikkonen, J., & Raphael, D. (2010). *Social Determinants of Health: The Canadian Facts*. Toronto, ON: York University School of Health Policy and Management.

Miglani, S., Aggarwal, V., & Ahuja, B. (2010). Dentin hypersensitivity: Recent trends in management. *Journal of Conservative Dentistry*, 13(4), 218-224.

Ontario Association of Public Health Dentistry. (2015). *Mean deft+DMFT and % Caries Free JK, SK and Grade 2 Children from Participating Ontario Health Units 2003 to 2014*. Ontario Association of Public Health Dentistry.

Ontario Ministry of Health and Long-Term Care. (2008a). *Healthy Smiles Ontario*. Retrieved from: http://www.health.gov.on.ca/en/public/programs/dental/default.aspx

Ontario Ministry of Health and Long-Term Care. (2008b). *Oral Health Assessment and Surveillance Protocol*. Retrieved from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/oral_health_assess.pdf

Ontario Ministry of Health and Long-Term Care. (2008c). *Preventive Oral Health Services Protocol*. Retrieved from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/preventive_oral_health.pdf

Ontario Ministry of Health and Long-Term Care. (2011). *Dental Health (CINOT)*. Retrieved from: http://www.mhp.gov.on.ca/en/healthy-communities/dental/default.asp

Ontario Ministry of Health and Long-Term Care. (2012). *Oral Health – More Than Just Cavities. A Report by Ontario's Chief Medical Officer of Health*. Retrieved from: http://www.health.gov.on.ca/en/common/ministry/publications/reports/oral_health/oral_health.pdf

Ontario Ministry of Health and Long-Term Care. (2014). *Ontario Public Health Standards*. Retrieved from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/ophs_2008.pdf

Ontario Ministry of Health and Long-Term Care. (2013). *InteliHEALTH Ontario* [data file for 2012].

Ontario Ministry of Health Promotion. (2009). *Children In Need Of Treatment (CINOT) Schedule of Dental Services and Fees (Dentist Providers)*. Retrieved from: http://www.mhp.gov.on.ca/en/healthy-communities/dental/CINOT-DentistFeeSchedule-April2009.pdf

Riley, J.L., Gilbert, G.H., & Heft, M.W. (2006). Dental attitudes: proximal basis for oral health disparities in adults. *Community Dentistry and Oral Epidemiology*, 34, 289–98.

Rowan-Legg, A. (2013). Oral health care for children – a call for action. *Paediatric Child Health*, 18(1), 37-43.

Sinton, J., & McIntosh, E. (2006). "2 for 2 is what you do": A Study in Community Mobilization. In: *Canadian Journal of Dental Hygiene*, 40(1), 8-16.

Statistics Canada. (2013a). Canadian *Community Health Survey* [data file for 2007 to 2011].

Statistics Canada. (2013b). *Canadian Community Health Survey (CCHS) Annual component: 2012 and 2011-2012 Microdata File User Guide.* Statistics Canada.

Wellesley Institute. (2015). *Low Wages, No Benefits: Expanding Access To Health Benefits For Low Income Ontarians*. Toronto, ON: Wellesley Institute.

Wellington-Dufferin-Guelph Public Health. (2011). *Moving Ahead: Wellington-Dufferin-Guelph Public Health Strategic Plan 2011-2016*. Retrieved from: https://www.wdgpublichealth.ca/sites/default/files/wdgphfiles/strategic_plan_web.pdf

Wellington-Dufferin-Guelph Public Health. (2014). *Interim Report On Pilot Project: Oral Health Education and Preventive Services for Pregnant and Postpartum Women*. Board of Health Report - BH.01.SEP0314.R18.

World Health Organization. (2012). *Oral Health Fact sheet*. Retrieved from: http://www.who.int/mediacentre/factsheets/fs318/en/

Appendices

Appendix 1

Ontario Public Health Standards

Under the Ontario Public Health Standards (MOHLTC, 2014) all Ontario public health units are mandated by the Ministry of Health and Long-Term Care to provide public health programs and services that contribute to the physical, mental, and emotional health and well-being of all Ontarians. According to the Program Standards for Child Health, health units have a goal to enable all children to attain and sustain optimal health and developmental potential, which includes oral health.

The following requirements under Child Health are regarding Oral Health:

- "The board of health shall conduct surveillance of children in schools and refer individuals who may be at risk of poor oral health outcomes in accordance with the *Oral Health Assessment and Surveillance Protocol, 2008* (or as current), and the *Population Health Assessment and Surveillance Protocol, 2008* (or as current)."
- "The board of health shall report oral health data elements in accordance with the *Oral Health Assessment and Surveillance Protocol, 2008* (or as current)."
- "The board of health shall conduct oral screening in accordance with the *Oral Health Assessment and Surveillance Protocol, 2008* (or as current)."
- "The board of health shall provide the Children in Need of Treatment (CINOT) Program in accordance with the *Children in Need of Treatment (CINOT) Program Protocol, 2008* (or as current). For CINOT-eligible children, the board of health shall provide referrals to oral health care providers and monitor the action taken."
- "The board of health shall provide or ensure the provision of the essential clinical preventive oral health services at least annually in accordance with the Preventive *Oral Health Services Protocol, 2008* (or as current)."

In addition, the *Preventive Oral Health Services Protocol* and *Oral Health Assessment and Surveillance Protocol* specify the type and frequency of data collection and the services and programs to be provided by Public Health (MOHLTC, 2008b; MOHLTC, 2008c). The *Oral Health Assessment and Surveillance Protocol* requires health units to categorize schools into high, medium and low screening intensity based on Grade 2 screening results. For high screening intensity schools, oral health screening is required to be conducted in Junior Kindergarten (JK), Senior Kindergarten (SK), and in Grades 4, 6 and 8. Similarly, students in medium screening intensity schools are screened in JK, SK and Grade 8; whereas students in low screening intensity schools are screened in JK and SK (MOHLTC, 2008b).

Appendix 2

Financial Assistance Programs

WDG Public Health administers two publicly-funded oral health programs: Healthy Smiles Ontario (HSO) and Children in Need of Treatment (CINOT), which allow eligible children and youth aged 17 and under who do not have any form of dental insurance to access care at private dental offices.

HSO	CINOT

• This program provides routine dental care for eligible children who do not have access to any form of dental insurance.
• Preventive and early treatment services are provided, including: check-ups, cleanings, fillings, x-rays, scaling and other treatments.
• Orthodontics (i.e. braces), cosmetic dentistry (i.e. teeth whitening) and emergency/urgent services are not covered.
• Children 17 years and under may be eligible if:
  • They are residents of Ontario;
  • They do not have access to any form of dental insurance (including other government-funded programs such as Ontario Works);
  • They are members of a household that meets the income eligibility requirements.
• To apply, clients must contact WDG Public Health and submit an application form along with required documentation (MOHLTC, 2008a).
	• This program provides urgent dental care for eligible children who require immediate attention for the following essential and/or emergency oral health needs:
	  • tooth or mouth pain
	  • acute infection
	  • hemorrhage
	  • trauma
	  • acute pathology
	• CINOT services include: oral exams, x-rays, topical fluoride, cleaning, fillings, root canals, extractions, and out-of-hospital anesthetic coverage.
	• Children 17 years and under may be eligible if:
	  • They are residents of Ontario;
	  • They have an urgent dental condition identified during screening by one of the public health unit's dental team;
	  • They do not have access to any form of dental insurance (including other government-funded programs, such as Ontario Works); and;
	  • The parent/legal guardian signs a declaration that their family does not have any dental insurance for the necessary dental treatment and that the costs of dental treatment for this treatment will create a financial hardship. The parent/legal guardian also signs to say that they understand they may be required to provide financial documentation to substantiate the declaration of financial hardship (MOHLTC, 2011; Ontario Ministry of Health Promotion [MHP], 2009).

Fergus Office
474 Wellington Road #18, Suite 100

Guelph Office
160 Chancellors Way

Mount Forest Office
311 Foster St.

Orangeville Office
71 Broadway

Shelburne Office (Mel Lloyd Centre)
167 Centre St.

For more information or to apply, parents/legal guardians should call the Wellington-Dufferin-Guelph Pubic Health Dental Intake Line.

1-800-265-7293 ext 2661

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