



HALDIMAND AND NORFOLK

Dental Health Report



Introduction

Dental health plays an important role in the overall health and well-being of children and adults.¹ Among children, poor dental health can lead to painful infections, premature loss of primary teeth, poor eating habits, speech problems, expensive dental treatment and can negatively affect growth and development.² Among adults, oral health can negatively affect general health status, wellbeing and quality of life.³ Several research studies suggest that there is a positive relationship between gum infection and morbidity.⁴ Heart disease, stroke, diabetes and respiratory disease are positively correlated with gum infections.⁴ Moreover, it was found that gum disease negatively affects birth outcomes, namely premature babies, and has a strong correlation with low-birth-weight babies.⁵

The Haldimand-Norfolk Health Unit conducts oral health dental screening in Haldimand and Norfolk elementary schools and various community sites to identify children in need of dental treatment. Various dental financial assistance programs are available to assist children, students and families. The Health Unit is also committed to improving the oral health of the community through oral health promotion initiatives targeted to individuals, parents, community partners and schools.

The Haldimand and Norfolk Dental Report 2007 is the first focused dental report to be completed for Haldimand and Norfolk and provides a brief overview of dental health in the community. In particular, dental visits, dental insurance, teeth brushing, oral cavity and pharynx cancer, deft Index (d=decayed,

e=extracted due to caries, f=filled and t=teeth) and DMFT Index scores (D=Decayed, M=Missing, F=Filled, T=Teeth) and dental screening were examined. This report is intended to provide physicians, health-care professionals, local politicians, members of the media, other Health Units and schools with useful information for the purpose of oral health promotion.

Highlights

- 38.4% ± 4.7% of Haldimand and Norfolk residents age 12 and older and 35.6% ± 14.4% age 14 to 21 usually visit their dentist more than once a year for checkups.
- 36.7% ± 5.1% of Haldimand and Norfolk residents age 12 and older do not have insurance that covers all or part of their dental expenses.
- A higher proportion of Haldimand and Norfolk residents age 12 and older have employer-sponsored plans that cover all or part of their dental insurance. However, some employer-sponsored plans provide insufficient dental coverage.
- 70.9% ± 4.7% of Haldimand and Norfolk residents age 12 and older reported brushing their teeth twice or more each day.
- The average-age-standardized rate (1986-2003) for oral and pharynx cancer was higher in Haldimand and Norfolk (11.3/100,000) than in Ontario (10.3/100,000).
- For children age seven, the mean deft score increased from 2004 to 2007 and was highest in 2006-2007.
- The mean DMFT score for children age 13 increased with each successive year (2002 to 2007) and was highest in 2006-2007.
- The proportion of children age seven and 13 who are caries-free has been successively declining each year between 2002 and 2007.
- In the past seven years, 34,272 elementary school students have been screened by dental hygienists of which 10.5% (n=3,266) were identified with urgent dental needs that required immediate treatment.
- The number of children screened at dental clinics in Haldimand and Norfolk increased with each successive year between 2002 and 2007.

Dental Visits

According to the Ontario Dental Association, it is recommended that people visit the dentist twice yearly for the detection of cavities and cleaning.⁶

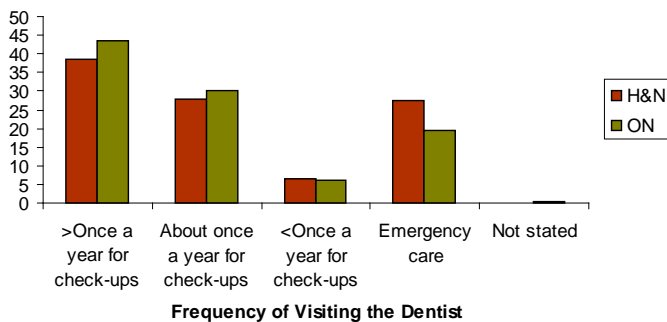
However, the frequency of dental visits may vary depending on the patient's needs.⁶

In 2005, of the porportion of persons age 12 and over who reported visiting a dentist, 38.4% ± 4.7% of Haldimand and Norfolk residents usually visited the dentist more than once a year for checkups, while 27.8% ± 3.7% reported that they visited the dentist about once a year for checkups. Furthermore, 27.3% ± 4.6% reported that they usually visited the dentist for emergency care only, while 6.5% ± 3.5% visited the dentist less than once a year for checkups (See Figure 1).



In accordance with the Ontario Dental Association's recommended screening guidelines, compared to Ontario, a lower percentage of Haldimand and Norfolk residents visit the dentist more than once a year for checkups (38.4% ± 4.7% and 43.7% ± 0.8% respectively). Particularly interesting, a significantly higher proportion of Haldimand and Norfolk residents reported that they usually visit the dentist for emergency care (27.3% ± 4.6% and 19.6% ± 0.6% respectively).

Figure 1: Frequency of usually visiting the dentist, age 12 and older, Haldimand and Norfolk, and Ontario, 2005



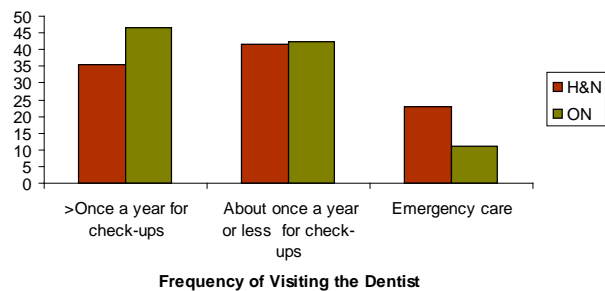
	H&N (% ± 95% CI)	ON (% ± 95% CI)
> Once a year for checkups	38.4±4.7	43.7±0.8
About once a year for checkups	27.8±3.7	30.1±0.7
<Than once a year for checkups	*6.5±3.5	6.0±0.4
Emergency care	27.3±4.6	19.6±0.6
Not Stated		0.5±0.1
Total	100	100

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC

Data Notes: * High sampling variability, interpret with caution. Not stated includes don't know, refusal and not stated.

The Health Unit provided a teen program for persons age 14 to 21, the following data will provide pertinent information for that age group. As of January 28, 2008 the program has been discontinued due to funding. Of the population age 14 to 21 who reported visiting the dentist in Haldimand and Norfolk, a higher proportion visits the dentist about once a year or less for a checkup (41.6% ± 13.5%) (see Figure 2). Overall, a lower proportion of Haldimand and Norfolk teenagers age 14 to 21 visit the dentist more than once a year for checkups compared to Ontario but not significantly (35.6% ± 14.4% and 46.5% ± 2.2% retrospectively). Moreover, more than twice as many Haldimand and Norfolk teens reported visiting the dentist for emergency care compared to Ontario but not significantly (22.8% ± 12.8% and 11.2% ± 1.6% respectively).

Figure 2: Frequency of usually visiting the dentist, age 14-21, Haldimand and Norfolk, and Ontario, 2005



TIPS

Practise good oral hygiene

- Using a soft-bristle toothbrush, brush your teeth and tongue at least twice a day with fluoride toothpaste to remove plaque and bacteria that cause cavities and periodontal disease (gum disease).
- Be sure to change your toothbrush every three months.
- Floss every day. If you don't floss, you are missing more than one-third of your tooth surface.

	H&N (% ± 95% CI)	ON (% ± 95% CI)
> Once a year for checkups	*35.6±14.4	46.5±2.2
About once a year or less for checkups	*41.6±13.5	42.3±2.1
Emergency care	*22.8±12.8	11.2±1.6
Not Stated	**	**

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC

Data Notes: * High sampling variability, interpret with caution. ** High sampling variability data is not releasable. Not stated includes don't know, refusal and not stated.

TIPS

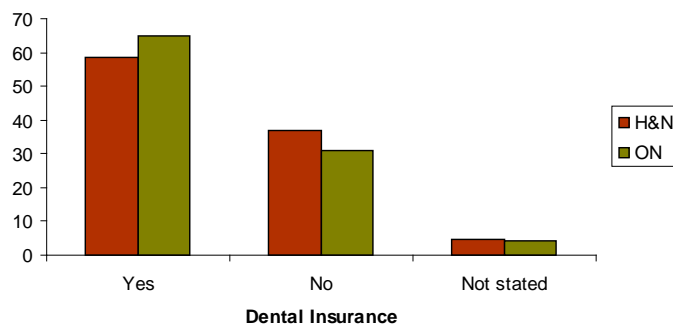
Infants and Young Children

- Young children are not able to clean their own teeth. As a parent, you must do it for them when they are very young, and do it with them as they get older.
- The Canadian Dental Association encourages the assessment of infants by a dentist within six months of the eruption of the first tooth or by the time they are one.

Dental Insurance

In 2005, more than half the population (58.5% ± 5.1%) in Haldimand and Norfolk have insurance that covers all or part of their dental expenses (see Figure 3). However, 36.7% ± 5.1% of the population does not have insurance. A higher proportion of Haldimand and Norfolk residents do not have dental insurance compared to Ontarians (36.7% ± 5.1% and 30.9% ± 0.7% respectively).

Figure 3: Proportion of persons age 12 and older who reported having insurance that covers all or part of dental expenses, Haldimand and Norfolk, and Ontario, 2005



	H&N (% ± 95% CI)	ON (% ± 95% CI)
Yes	58.5± 5.1	64.8± 0.7
No	36.7± 5.1	30.9± 0.7
Not Stated	*4.8± 2.2	4.3± 0.3
Total	100	100

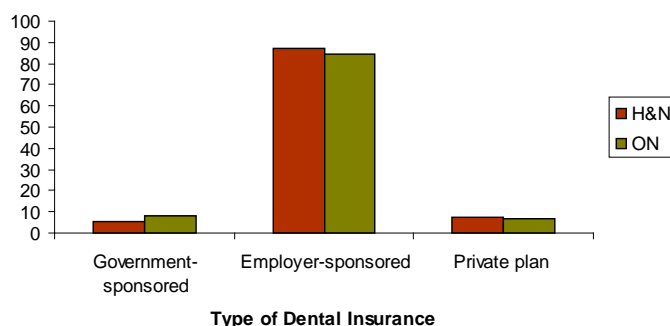
Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC

Data Notes: * High sampling variability, interpret with caution. Not stated includes don't know, refusal and not stated. Non-Applicable excluded.



Of the proportion of respondents who reported having insurance that covers all or part of their dental insurance, a higher proportion of Haldimand and Norfolk residents age 12 and older report having an employer-sponsored plan (87.0% ± 4.4%), however some employer-sponsored plans provide insufficient dental coverage (see Figure 4).

Figure 4: Type of insurance that covers all or part of dental expenses, age 12 and older, Haldimand and Norfolk, and Ontario, 2005



	H&N (% ± 95% CI)	ON (% ± 95% CI)
Government-Sponsored	*5.1± 2.6	7.8±0.5
Employer-Sponsored	87.0± 4.4	84.6 ± 0.7
Private	*7.5±3.7	6.6± 0.5

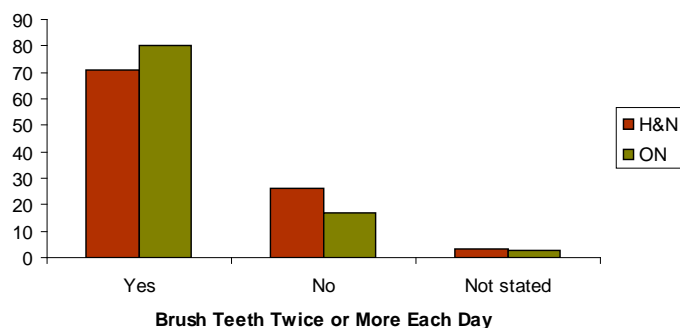
Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC

Data Notes: * High sampling variability, interpret with caution.

Teeth Brushing

The Ontario Dental Association recommends that people should gently brush between the teeth and gum line twice a day to promote good oral health.⁶ In 2005, 70.9% ± 4.7% of Haldimand and Norfolk residents age 12 and older reported brushing their teeth twice or more each day (see Figure 5). This is significantly lower than the rates for Ontario. In Ontario, 80.4% ± 0.6% reported that they had brushed their teeth twice or more each day.

Figure 5: Proportion of persons age 12 and older who brush their teeth twice or more each day, Haldimand and Norfolk, and Ontario, 2005



	H&N (% ± 95% CI)	ON (% ± 95% CI)
Yes	70.9± 4.7	80.4± 0.6
No	26.0± 4.5	16.7± 0.6
Not Stated	*3.1± 2.0	2.9± 0.3
Total	100	100

Source: Canadian Community Health Survey 2005, Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario MOHLTC

Data Notes: * High sampling variability, interpret with caution. Not stated includes don't know, refusal and not stated. Non-Applicable excluded.

Oral Cavity and Pharynx Cancer

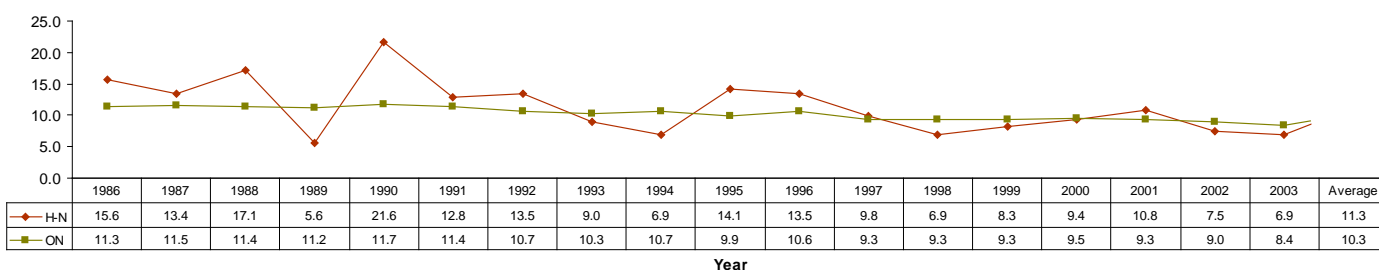
Oral cancer begins in the cells of the oral cavity.⁷ In Canada, it is estimated that oral cancer will be the 13th most diagnosed type of cancer for both sexes combined in 2007.⁸ In Ontario, cancer of the oral cavity and pharynx ranks the ninth most common cancer in men and 16th most common in women.⁹

The risk factors associated with oral cancer include age (being older than 50), being male, chewing tobacco or using snuff, smoking (particularly if combined with heavy alcohol consumption), some medical problems in the mouth tissues, excessive sun exposure to the lips and chewing betel nut (a betel nut is the seed of a betel palm and acts as a stimulant).¹⁰ According to the Canadian Cancer Society, eating five to 10 servings of

vegetables and fruits a day may decrease the risk of developing oral cancer.¹⁰

As shown in Figure 6, the average-age-standardized incidence rate for cancer of the oral cavity and pharynx was higher in Haldimand and Norfolk (11.3/100,000) than in Ontario (10.3/100,000). In Haldimand and Norfolk, from 1986 to 2003, the incidence rates for cancer of the oral cavity and pharynx were substantially inconsistent and peaked in 1990 (21.6/100,000). In Ontario, from 1986 to 2003, the age-standardized incidences rate for cancer of the oral cavity and pharynx were relatively consistent.

Figure 6: Age-standardized incidence rates for cancer of the oral cavity and pharynx per 100,000, Haldimand and Norfolk, and Ontario, 1986-2003



	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
H&N Cases	15	14	18	6	23	14	15	10	8	18	17	12	9	11	12	15	10	8
ON Cases	1048	1117	1130	1121	1202	1208	1173	1124	1202	1141	1248	1117	1129	1170	1230	1234	1219	1175

Data Source: Data Source: SEER STAT 2002 (1986-2002), SEER STAT 2003 (2003)
Oral Cavity and Pharynx: [(ICD-9: 140-149 (1986-2001), SEER Recode (2002, 2003)]

TIPS

Check your mouth regularly

- Look for warning signs of oral cancer. The three most common sites for oral cancer are the sides and bottom of your tongue and the floor of your mouth.

Dental Survey

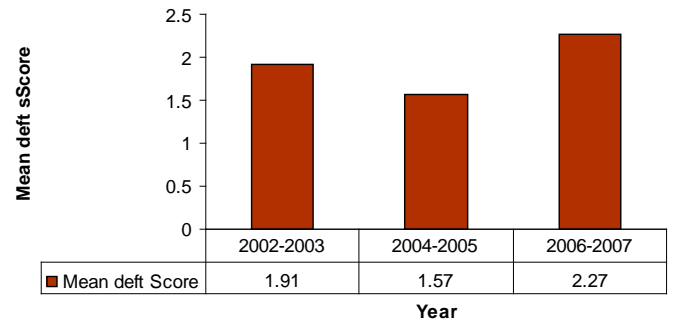
deft Index

The Haldimand-Norfolk Health Unit conducts dental surveys and screening programs in elementary schools. The dental survey is a detailed inspection of a child's dental condition. At the time of examination, each tooth in a child's mouth is examined. The hygienist determines dental caries status for primary teeth using the deft index, which is a general indicator of oral health status. The deft index determines dental caries status for primary teeth (d=decayed, e=extracted due to caries, f=filled and t=teeth). The lower the deft score, the better the child's oral health. Children age seven are examined in the following section because it is mandated by the Ministry of Health and Long-Term Care (MOHLTC) that children age seven be screened.



As shown in Figure 7, the mean deft score for children age seven from 2004 to 2007 increased and was highest in 2006-2007.

Figure 7: Mean deft score for children age seven, Grade 2, Haldimand and Norfolk, 2002-2007

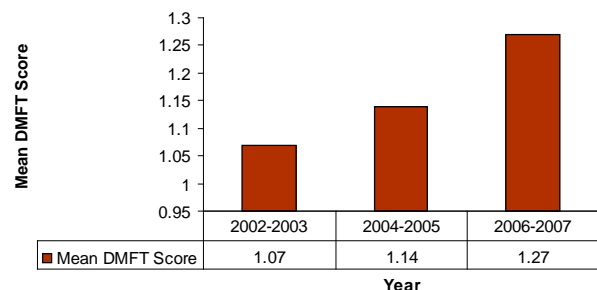


Source: Dental Indices Survey Data for Haldimand- Norfolk Health Unit, 2002-2007.

DMFT Index

For older students, the DMFT index is used for permanent teeth (D=Decayed, M=Missing, F=Filled and T=Teeth). Teenagers age 13 are examined in the following section because it is mandated by MOHLTC that teenagers age 13 be screened. As shown in Figure 8, there was an increase in the mean DMFT score, which was highest in 2006-2007.

Figure 8: Mean DMFT score for children age 13, Haldimand and Norfolk, 2002-2007



Source: Dental Indices Survey Data for Haldimand - Norfolk Health Unit, 2002-2007.

TIPS

Check your mouth regularly

- Look for warning signs of periodontal disease (gum disease). Gum disease is one of the main reasons why adults lose their teeth. The warning signs include:
 - Red, shiny, puffy, sore or sensitive gums.
 - Bleeding when you brush or floss.
 - Bad breath that won't go away.

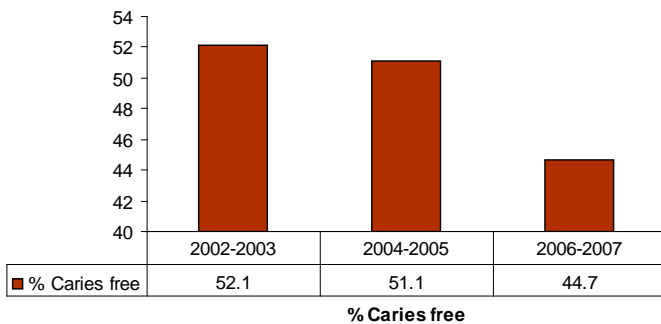
Caries (Cavities)

Dental caries (cavities) is an infectious disease that damages the structure of the teeth. If left untreated, the disease can lead to tooth loss, pain, infection or even death of the tooth. The caries-free indicator examines the proportion of children age three to six who have never had any cavities. Being caries-free is a good indicator of good oral health.



As shown in Figure 9, the proportion of children age seven who are caries-free has been successively declining for each year. In 2006-2007, the proportion of children who are caries-free was at an all-time low, with less than half of the population reporting that they were caries-free. It is important to note that this graph illustrates that over the years, more children age seven have decay.

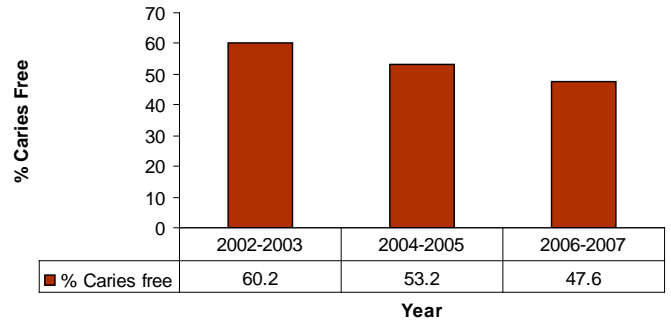
Figure 9: Caries-free, Haldimand and Norfolk, age seven, 2002-2007



Source: Dental Indices Survey Data for Haldimand- Norfolk Health Unit, 2002-2007.

As shown in Figure 10, the proportion of teenagers age 13 who are caries-free has been successively declining for each year. In 2006-2007, a lower proportion of teenagers who are caries-free were at an all time low, with less than half of the population reporting that they were caries free. It is important to note that this graph illustrates that over the years, more teenagers age 13 years have decay.

Figure 10: Caries-free, age 13, Haldimand and Norfolk, 2002-2007



TIPS

Avoid smoking or chewing tobacco

- Smoking and chewing tobacco are dangerous to your oral health and your overall health.

Dental Screening

Dental Screening in Schools

The purpose of the Haldimand and Norfolk dental screening program is to identify students who require dental care and to notify families to ensure that the children receive appropriate care. At the time of dental screening, the hygienist determines if the student requires non-urgent care, emergency care or urgent care. It is important to distinguish between emergency dental care and urgent care. For persons requiring emergency care, the person would receive treatment the same day or the next day, when an acute dental condition was identified. For students requiring urgent care, an appointment is made as soon as possible, but the appointment may not be for several weeks. Any child identified as requiring urgent care is eligible for Children in Need of Treatment (CINOT), a provincially mandated program.

In the past seven years, 34,272 elementary students have been screened by a dental hygienist, of which 10.5% (n=3,266), of these children were identified with urgent dental needs that required immediate treatment.



Dental Screening in Haldimand and Norfolk

The Haldimand-Norfolk Health Unit conducts dental screening at various locations in Haldimand and Norfolk including the Norfolk Community Help Centre, Health Unit and the Ontario Early Years Centres (OEYC's).

As shown in Figure 12, the number of children screened in Haldimand and Norfolk has increased each successive year between 2002 and 2006. From 2002 to 2006, a high proportion of children were screened at the Norfolk Community Help Centre (n=1,765) and the Health Unit (Simcoe Site) (n=1,144). It is important to note that some of the children screened at the Norfolk Community Help Centre in Haldimand and Norfolk live in surrounding areas because it serves a broader community.

Figure 12: Number of children screened in Haldimand and Norfolk, 2002-2006

Year	Norfolk Community Help Centre	Health Unit Simcoe Site	OEYC's	Health Unit Haldimand Sites	Total
2002	256	212	--	58	527
2003	310	195	5	96	619
2004	361	197	22	78	660
2005	364	266	188	85	904
2006	474	274	342	88	1216
Total	1765	1144	557	405	3926

Source: Haldimand-Norfolk Health Unit, 2000-2007
Data Notes: OEYC's=Ontario Early Year Centres

Data Sources

Canadian Community Health Survey

The Canadian Community Health Survey (2005) (CCHS) data source was used to extract data on dental visits, dental insurance and teeth brushing. The CCHS is a national population household survey conducted by Statistics Canada that provides timely, regular, cross-sectional estimates of health status, health

determinants and health system utilization across Canada.¹¹ The CCHS excludes populations on Indian Reserves, Canadian Forces Bases and some remote areas. Bootstrap weights were used to estimate precision.¹¹

Bootstrap is a method used to create a mean value for a point estimate, calculate the point estimate using 500 different weights and calculate the variance and 95% confidence interval for that estimate.¹¹ A confidence interval is an interval within the true value of the variable such as the proportion, rate, and mean are contained. In this report, this is calculated as a 95% probability. If the confidence bounds between point estimates do not overlap, then the difference between the estimates being compared are most likely statistically significant. The bootstrapping method also produces the coefficient of variation (CV), which is used to determine if the point estimate is releasable.¹¹ Data with a CV from 16.6% to 33.3% should be determined with caution.¹¹ Data with a CV greater than 33.3% are not reportable due to extreme sampling variability and are therefore suppressed.¹¹ Missing variables (not stated, refuse and don't know) were collapsed to mean "not stated." Based on the principles of proportion, non-applicable responses were removed from the dataset.

SEER STAT

Surveillance Epidemiology and End Results (SEER STAT) database was used to extract age-standardized incidence rates for oral cavity and pharynx cancer. Data from the Ontario Cancer Registry (OCR) is disseminated through SEER STAT.¹² The OCR is an electronic registry of newly diagnosed cases of cancer and cancer deaths in Ontario.¹³ SEER STAT data from 1986 to 2002 was extracted from the SEER STAT 2002 database, and for the year 2003, data was extracted from the SEER STAT 2003 database. This may be perceived as a limitation, since SEER STAT 2003 contains updated data. Due to time restrictions, it was not plausible to conduct the analysis from the SEER STAT 2003 database. It is important to note that the data was extracted by Health Unit.



Programs

Re-Think Your Drink Campaign

Re-Think Your Drink is a 2008 health promotion campaign to increase the understanding of what constitutes a healthy drink. This program also aims to decrease the number of sugar-dense beverages that children drink. The sugar in these drinks can affect teeth and contribute to tooth decay. Promotional material are distributed to sports organizations, dental offices and libraries.



2 for 2 Dental Health Campaign

This annual health promotion campaign is designed to improve the oral health of our community by addressing children's dental prevention needs. This campaign uses a health promotion message, "2 for 2 is what you do;" this message promotes brushing your teeth two times each day for two minutes each time. The program is targeted to Grade 2 students attending schools in Haldimand and Norfolk.

Brushing your teeth twice a day for two minutes is a simple and effective way to protect yourself from tooth decay and gum disease. Children who practise self-care activities, like tooth brushing, are more likely to adopt other healthy lifestyle behaviours as adults.



TIPS

Eat a well-balanced diet

- Healthy food is good for your general health and your oral health. The nutrients that come from healthy foods help you to fight cavities and gum disease.
- Avoid excess sugar. It is one of the main causes of dental problems.

Summary

Overall, this report demonstrates that there are some formidable challenges in dental health in Haldimand and Norfolk. Overall, more than half of Haldimand and Norfolk residents do not visit the dentist more than once a year for checkups as recommended by the Ontario Dental Association. Moreover, more than one-third of the population does not have dental insurance that covers all or part of dental expenses, of which a higher proportion that do have dental insurance have an employer-sponsored plan, which may in fact be inadequate. The average-age-standardized incidence rate of oral cavity and pharynx cancer was higher in Haldimand and Norfolk than in Ontario. The mean deft score for children age seven increased from 2004 to 2007, and the mean DMFT score for children age 13 increased from 2002 to 2007. The proportion of caries-free children age seven and 13 has been declining with each successive year between 2002 and 2007. In the past seven years, 34,272 elementary students have been screened by dental hygienists, of which 10.5% (n=3,266) of these children were identified with urgent dental needs that required immediate treatment.

The number of children screened at various dental screening clinics has increased with each successive year and more than doubled in 2006 compared to 2002. Furthermore, a high proportion of Haldimand and Norfolk residents report brushing their teeth twice or more each day, consistent with the Ontario Dental Association recommended guidelines. However, this proportion is still significantly lower than Ontario.

Conclusion

Improved adherence to recommended dental hygiene practices are essential to improving the overall dental health status in Haldimand and Norfolk. Haldimand and Norfolk face significant challenges in dental health. Health disparities associated with living in a rural community, including lack of access to dental care and preventive services and socio-economic factors, are key challenges that may contribute to poor dental oral health in Haldimand and Norfolk.

There are many traditional access barriers to the delivery of dental care and preventive dental services in rural communities, such as lack of transportation and lack of dental insurance, that may increase unmet dental health-care needs.¹⁴ According to the Rural Health in *Rural Hands Report: Strategic Directions for Rural, Remote, Northern, and Aboriginal Communities (2002)*, people living in rural areas have higher unemployment rates, lower personal incomes and fewer years of formal education compared to their urban counterparts.¹⁵ As discussed, more than one-third of the population does not have dental insurance that covers all or part of their dental expenses, less than half do not visit the dentist more than once a year for a checkup and the increase in the number of children screened at the various dental clinics may be attributed to the higher unemployment rate associated with living in a rural community, although that is not conclusive in this report and warrants further investigation. Moreover, people with low socio-economic status also have higher incidence of oral disease.² From a primary care perspective, since people living in rural communities have lower education, lower literacy levels may contribute to lack of access and understanding of prevention communication strategies. This may be an important issue that should be considered in future health promotion program planning and implementation. Despite these formidable challenges that compromise the lack of access to affordable dental care, the following recommendations can be made to overcome such barriers.

Recommendations

1. To adopt improved health promotion strategies to improve dental health status in Haldimand and Norfolk that focus on primary prevention and not primary care.
2. To support initiatives that advocate on behalf of child poverty, as child poverty negatively affects dental health status.
3. To create awareness of oral health disparities in Haldimand and Norfolk associated with living in a rural community and adopt appropriate strategies to address these disparities.
4. To increase awareness of oral health-care services among service providers that may facilitate a seamless infrastructure of service delivery to improve the quality of oral health care among Haldimand and Norfolk residents.

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