Northwestern Health Unit
Dental Health Surveillance Report
2016

Northwestern Health Unit

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Table of Contents

Abstract

This report outlines oral health trends in the Northwestern Health Unit (NWHU) catchment area. It focuses on results from routine dental screening of students in Junior Kindergarten (JK), Senior Kindergarten (SK) and Grade 2, as well as trends in emergency room visits for oral health-related problems. Some key findings of the report include:

- In 2014/2015 the average DMFT score (decayed, missing or filled teeth) of JK students was 2.21, a 9.1% decrease since 2011/2012. DMFT scores for SK and Grade 2 students (2.82 and 3.88 respectively) had both decreased by about 3% since 2011/2012. DMFT scores for JK, SK and Grade 2 students are all higher than province-wide scores.

- 62% of JK students, 50% of SK students and 37% of Grade 2 students were caries-free in 2014/15. Results were similar for the past few school years. All three of these figures are lower than provincial figures for caries-free children.

- Just over a third (34.8%) of schools in the region were classified as high-risk in 2014-2015 based on the proportion of students with dental caries.

- 7.75% of JK students, 8.81% of SK students and 8.30% of Grade 2 students were in need of urgent care (and eligible for CINOT) in 2014/15.

- In 2015, incidence of emergency room visits for diseases of the oral cavity, salivary glands and jaws was three times as high in the NWHU area than in Ontario as a whole. Rates were highest by far in the 0-4 age group.

JK, SK and Grade 2 students have been showing steady improvements in DMFT scores over the past few years, but the NWHU's high rates of oral health-related ER visits indicates the need for more preventive services in the area.

The NWHU will continue to monitor oral health trends in order to help us plan and prioritize our dental health services.

Introduction

This report outlines recent trends in oral health amongst children in Junior Kindergarten, Senior Kindergarten and Grade 2 throughout the Northwestern Health Unit (NWHU) catchment area. It also includes some regional statistics on emergency room visit for oral-health related emergencies. The report covers the following health indicators:

- DMFT index
- Caries-free children
- Risk categories of schools
- Children in need of urgent care
- Emergency room visits due to diseases of the oral cavity, salivary glands and jaws

The NWHU routinely monitors these indicators in order to assess the oral health status of our population, and to identify emerging trends. These statistics help the NWHU to plan dental health programs and to identify priority areas to focus staff time and resources.

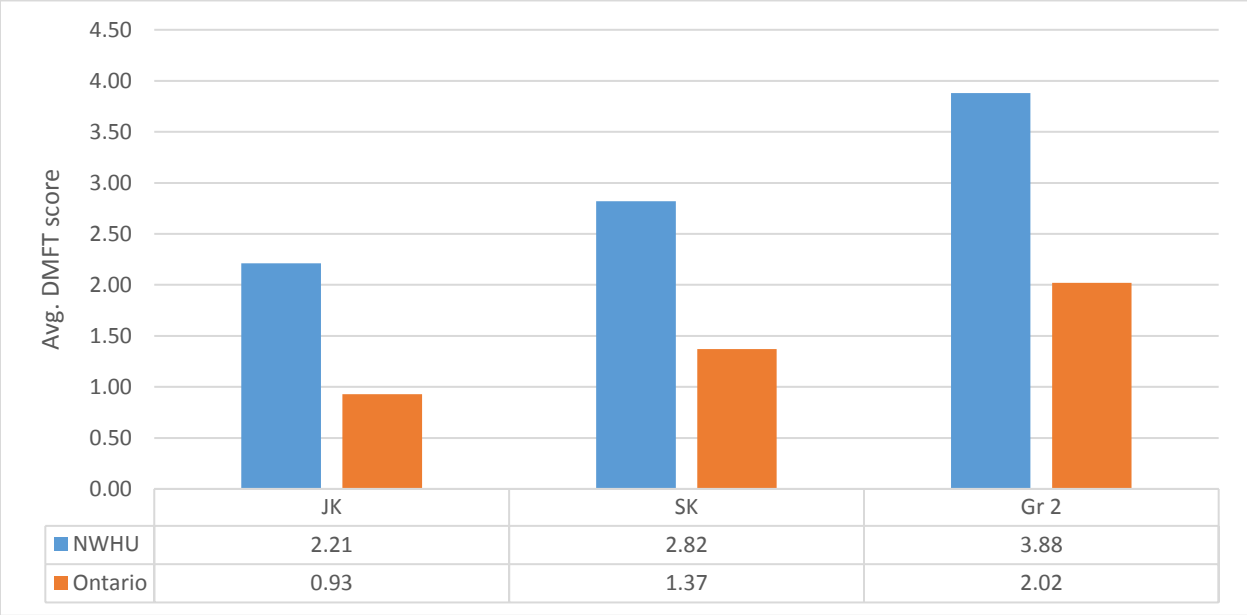
DMFT Index

The DMFT Index refers to the average number of decayed, missing/extracted or filled teeth per children surveyed. The NWHU examines the teeth of Junior Kindergarten (JK), Senior Kindergarten (SK) and Grade 2 students in the area every school year in order to monitor trends in oral health outcomes.

During the 2014/15 school year, a total of 633 JK students, 688 SK students and 698 Grade 2 students were surveyed in elementary schools within the NWHU catchment area. JK students had an average DMFT score of 2.21, which had decreased 9.1% since 2011/12 (and a 15.6% decrease going back to 2007/08). The score for SK students was 2.82, a 3.1% decrease since 2011/12 (and an 8.1% decrease since 2007/08). Grade 2 students had an average score of 3.88, which had decreased 3.0% since 2012/13.

DMFT scores in the NWHU area have been higher than provincial scores in recent years. In the 2014-2015 school year, the average score provincially for JK students was 0.93. For SK students the score was 1.37, and for Grade 2 students the score was 2.02

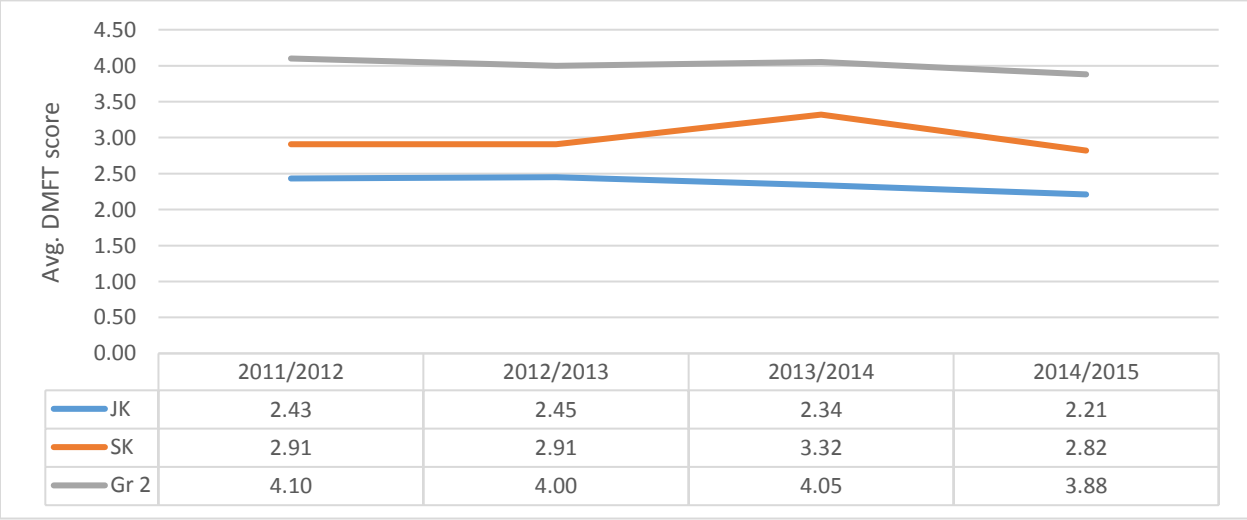
Figure 1: Average DMFT scores, NWHU and Ontario, 2014-2015 school year



	JK	SK	Gr 2
NWHU	2.21	2.82	3.88
Ontario	0.93	1.37	2.02

Sources: Northwestern Health Unit Dental Screening Data, 2011-2015; Summary of 2009-2015 Oral Health Screening: Results from Participating Ontario Health Units. Ontario Association of Public Health Dentistry. 2015.

Figure 2: Average DMFT score for students in the NWHU area, 2011/12-2014/15



	2011/2012	2012/2013	2013/2014	2014/2015
JK	2.43	2.45	2.34	2.21
SK	2.91	2.91	3.32	2.82
Gr 2	4.10	4.00	4.05	3.88

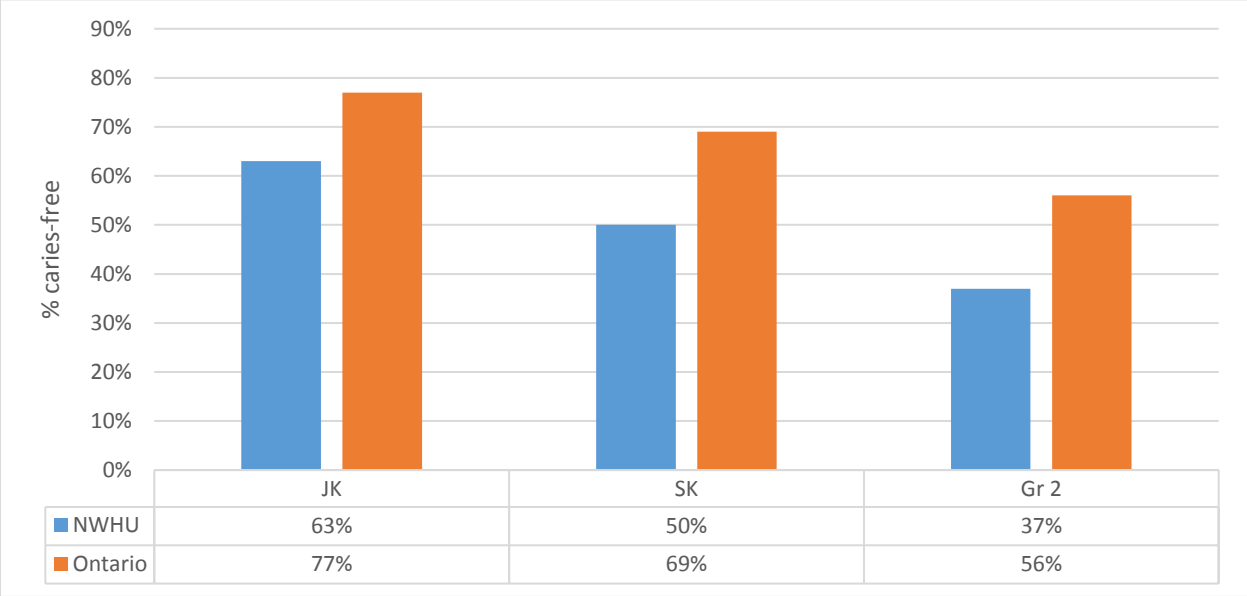
Source: Northwestern Health Unit Dental Screening Data, 2011-2015

Caries-free children

Caries-free children refers to the proportion of children who have no decayed, missing/extracted or filled teeth at the time they are surveyed. The indicator is calculated using the DMFT data described in the previous section.

In the 2014/15 school year, 62% of JK students were caries-free, and the figure was 50% for SK students and 37% for Grade 2 students. Results have been similar for the past three school years. Provincial caries-free rates are higher than in the NWHU area; For JK students in 2014-2015 the provincial rate was 77%, for SK students it was 69% and for Grade 2 students it was 56%.

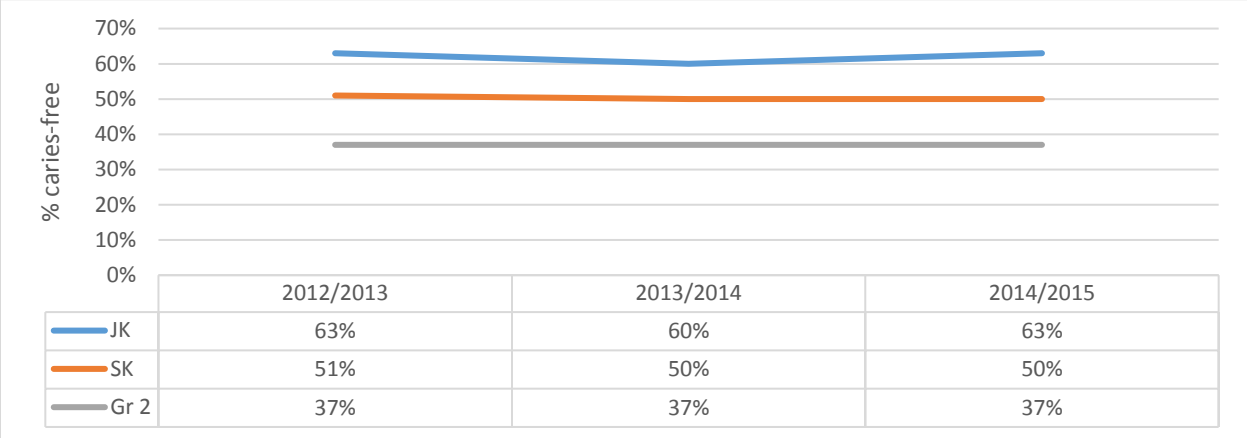
Figure 3: Proportion of students who are caries-free, NWHU and Ontario, 2014-2015 school year



	JK	SK	Gr 2
NWHU	63%	50%	37%
Ontario	77%	69%	56%

Sources: Northwestern Health Unit Dental Screening Data, 2011-2015; Summary of 2009-2015 Oral Health Screening: Results from Participating Ontario Health Units. Ontario Association of Public Health Dentistry. 2015.

Figure 4: Proportion of JK, SK and Grade 2 students who are caries-free in the NWHU area, 2012/13-2014/15



	2012/2013	2013/2014	2014/2015
JK	63%	60%	63%
SK	51%	50%	50%
Gr 2	37%	37%	37%

Source: Northwestern Health Unit Dental Screening Data, 2011-2015

Risk categories of schools in the NWHU

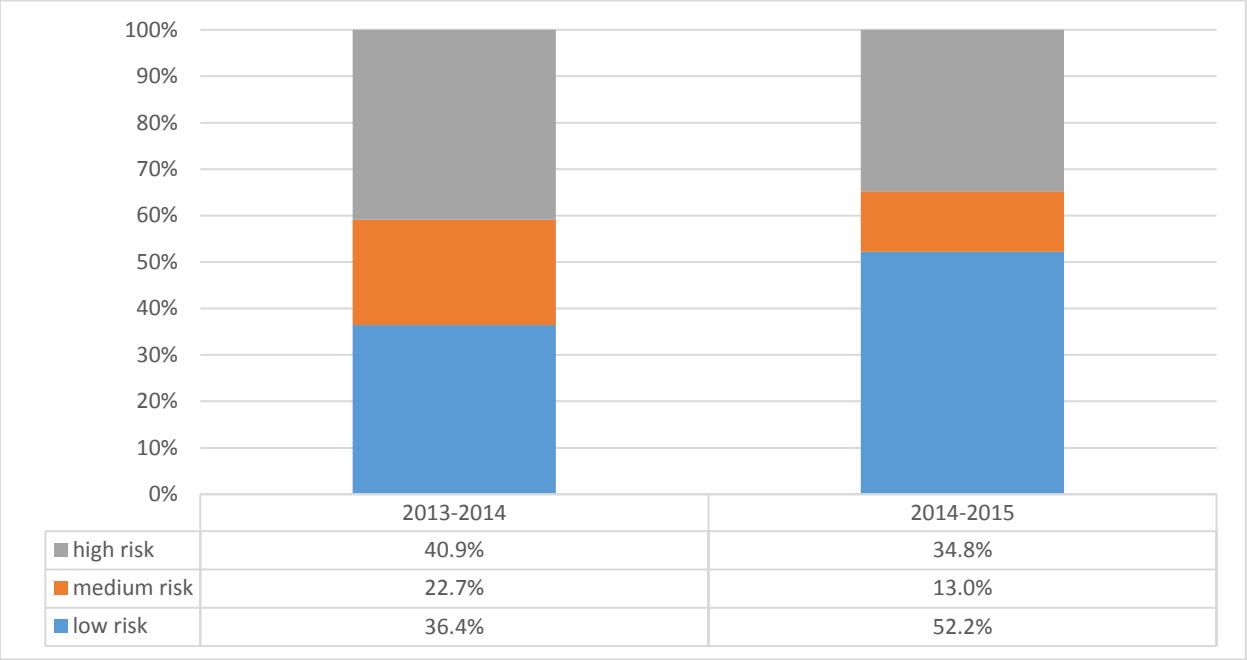
Risk categories are an indicator of which schools have a high proportion of children with multiple dental caries. The risk of each school is defined by the proportion of Grade 2 students who have two or more dental caries. The risk categories are listed below.

Table 1: School risk categories

Proportion of Grade 2 children with 2+ caries	Risk level
< 9.5%	Low Risk
9.5%-13.99%	Medium risk
≥ 14%	High Risk

In the 2014-2015 school year, screenings were done in 36 schools across the catchment area. After removing small schools in which fewer than 10 students were screened (resulting in a sample of 23 schools), over half (52.2%) were considered as low risk, just over a quarter (34.8%) were high risk and 13.0% were medium risk.

Figure 5: Proportion of NWHU schools* classified as low, medium and high risk



	2013-2014	2014-2015
high risk	40.9%	34.8%
medium risk	22.7%	13.0%
low risk	36.4%	52.2%

*schools with less than 10 students screened were excluded
Source: OHISS, date extracted: August 11, 2016

Children in need of urgent care

Children in need of urgent care (CUC) applies to children who are deemed eligible for CINOT based on their age and dental health status at the time of being screened. In the 2014/15 school year, 7.75% of children screened in JK were eligible for CINOT, as well as 8.81% in SK and 8.30% in Grade 2.

Source: OHISS, date extracted: June 16, 2016

Emergency room visits due to diseases of the oral cavity, salivary glands and jaws

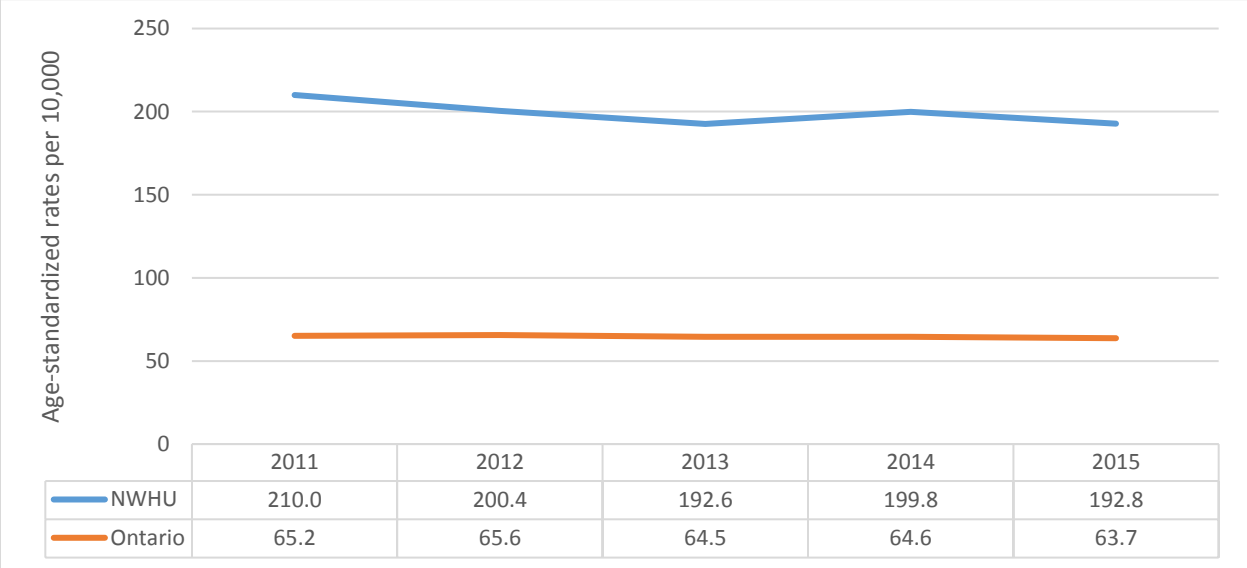
This indicator refers to people who visit the ER due to dental-health related reasons. ER visits are recorded by using codes from the International Classification of Disease version 10 (ICD-10), and the ICD-10 block K00-K14 refers to diseases of the oral cavity, salivary glands and

jaws. It includes conditions such as dental caries, disorders of tooth development, gingivitis, diseases of jaws, diseases of salivary glands, and other conditions.

In 2015 there were 1,426 visits to the ER in the NWHU area for reasons classified as diseases of the oral cavity, salivary glands and jaws. This equals an age-standardized incidence rate of 192.8 per 10,000 people, which is three times as high as the provincial rate of 63.7 per 10,000, with the difference being statistically significant (Figure 3). Similar trends are seen for the last five years, with rates in the NWHU being about three times as high as provincial rates.

Incidence rates of ER visits are highest by far in those aged 0-4 years old. Looking at the last 2 years of data (2014 and 2015), the incidence rate in this age group is 712.0 per 10,000 per year, which is twice as high as the age group with the next highest , the 5-9 age group. At 350.8 per 10,000 per year, the 5-9 age group also has a statistically higher incidence rate than all of the older age groups (Figure 4).

Figure 6: ER visits due to diseases of the oral cavity, salivary glands and jaws, incidence rates per 10,000, 2011-2015

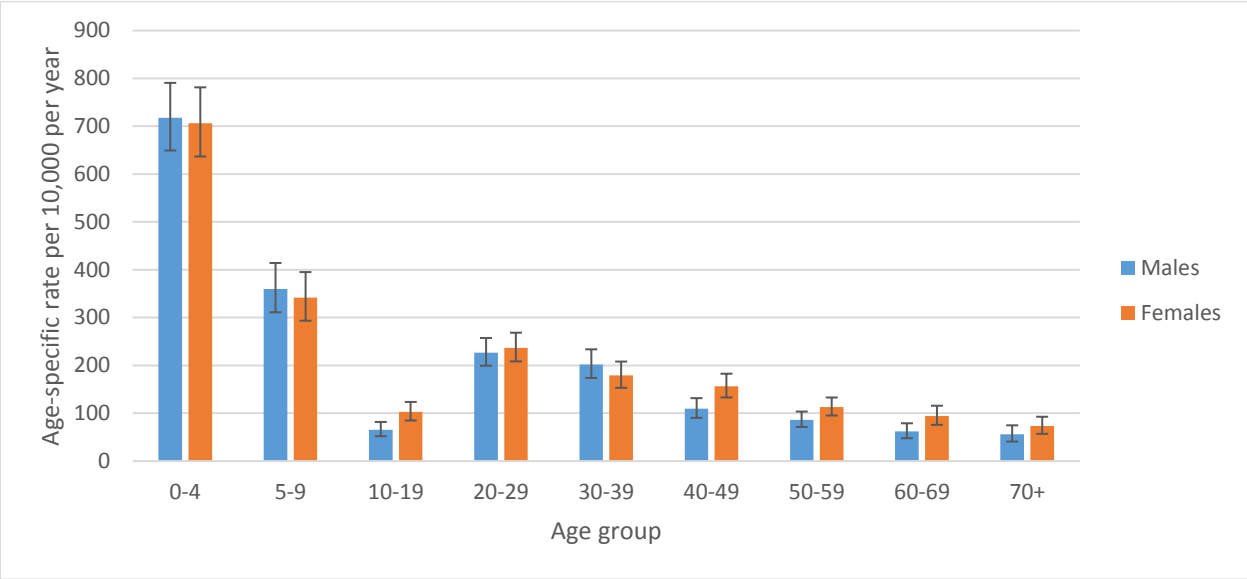


	2011	2012	2013	2014	2015
NWHU	210.0	200.4	192.6	199.8	192.8
Ontario	65.2	65.6	64.5	64.6	63.7

Source: Ambulatory Emergency 2011-2015, Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, Date Extracted: June 16, 2016

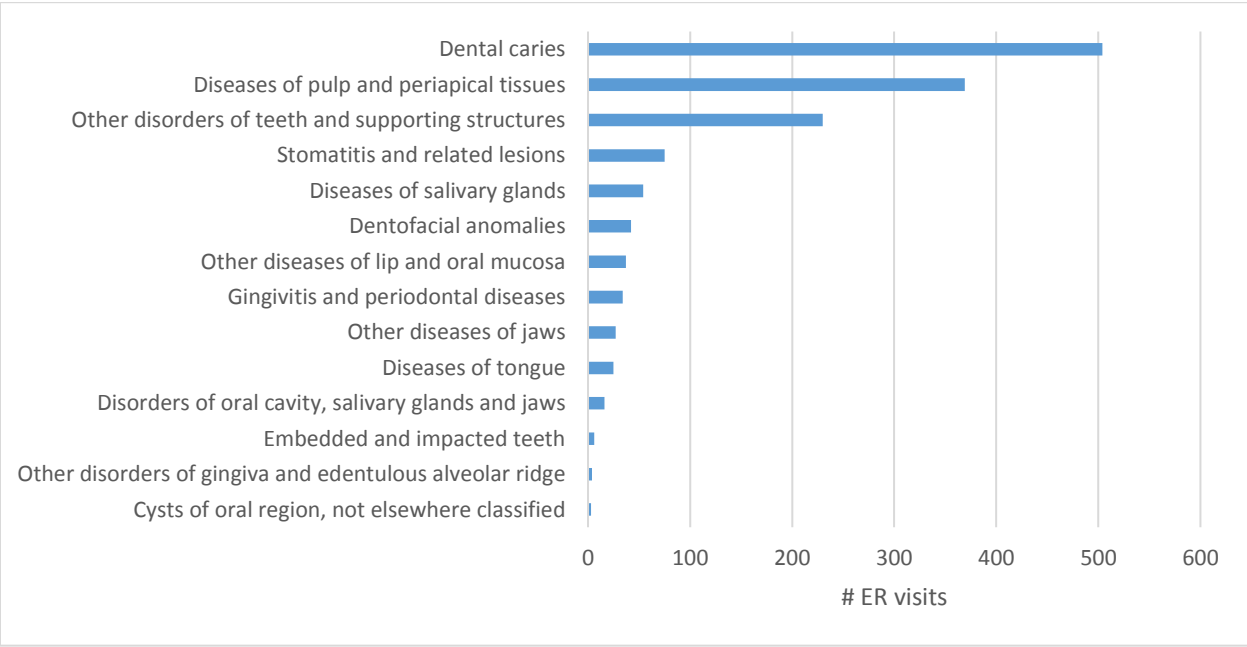
Of the 1,426 ER visits in 2015 in the NWHU area, dental caries accounted for 504, which is over a third of the total visits. Dental caries was the most common reason for an ER visit, followed by diseases of pulp and periapical tissues (which are usually due to infection progressing from untreated decay) (369 visits) and other disorders of teeth and supporting structures (230 visits).

Figure 7: Age- and sex-specific incidence of ER visits due to diseases of the oral cavity, salivary glands and jaws, NWHU, rates per 10,000 per year, 2014-2015 combined



Source: Ambulatory Emergency 2011-2015, Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, Date Extracted: June 16, 2016

Figure 8: Causes of ER visits from diseases of the oral cavity, salivary glands and jaws, NWHU, 2015



Source: Ambulatory Emergency 2011-2015, Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, Date Extracted: June 16, 2016

Discussion and Limitations

Looking at the DMFT results over the past few years there are some positive signs. Average scores for JK, SK and Grade 2 students have all been slowly but steadily decreasing with time, indicating a positive trend of improving oral health in students in these grades. On the other hand, incidence rates of emergency room visits from oral health-related reasons is very high in the NWHU area, consistently being about three times as high as provincial rates in recent years. One possible explanation of these adverse statistics is that our population is in need of more options in terms of access to preventive dental services.

One limitation of the dental screening data that should be noted is to do with the Grade 2 student data. Grade 2 students are in a mixed dentition stage, meaning that they are in the process of losing baby teeth and having adult teeth coming in. This can influence the DMFT score assigned to a student; for example, if a student has a few cavities on baby teeth but lose the teeth in Grade 2, their DMFT score will be zero, which may be misleading. For this reason, DMFT trends for Grade 2 students should be interpreted with a certain degree of caution.

Another limitation is that the surveillance data is only taken from provincial/municipal schools and not from schools on First Nations reserves. Thus, the results from the surveillance are not completely representative of the entire population of children in Grades SK, JK and Grade 2 in the NWHU catchment area, only of those attending off-reserve schools.

The indicators outlined in this report allow the NWHU to assess the oral health status of our population, and to provide evidence-based dental programs and services to try to improve the status. The NWHU will continue to monitor these indicators over time to track our progress and to determine how to tailor our programs to make further progress.