



5-15-2023

Report: Evaluation of SEAL!ND: School Year 2021-2022: North Dakota Department of Health Oral Health Program's School-Based Dental Sealant Program

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Evaluation of SEAL!ND:

School Year
2021-2022



North Dakota Department of Health
Oral Health Program's
School-Based Dental Sealant Program



List of Acronyms and Abbreviations

AIAN	American Indian/Alaska Native
CDC	Centers for Disease Control and Prevention
CHC	Community Health Center
DoH	North Dakota Department of Health
DPI	North Dakota Department of Public Instruction
FQHC	Federally Qualified Health Center
FRFSL	Free and Reduced Fee School Lunch
HRSA	Health Resources and Services Administration
IRB	Institutional Review Board
MOU	Memorandum of Understanding
NDDA	North Dakota Dental Association
NDDF	North Dakota Dental Foundation
NDSCS	North Dakota State College of Science
NQ	Non-qualifying
OHC	North Dakota Oral Health Coalition
OHP	Oral Health Program
PHH	Public Health Hygienist
Q	Qualifying
RMCM	Ronald McDonald Care Mobile
SEAL!ND	Name of the North Dakota school-based dental sealant program
SNAP	Supplemental Nutrition Assistance Program
WIC	Special Supplemental Nutrition Program for Women, Infants, and Children

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Table of Contents

SEAL!ND: School-based Dental Sealant Program	4
Dental Screening	5
Executive Summary: Reach of SEAL!ND, 2021-2022	6
Evaluation Activities	7
Site Data	7
School Survey	7
Additional Activities	7
Community Reach and Impact	8
Non-Qualifying Schools: Reach	10
Qualifying Schools: Reach	11
Students Served	13
Students Served: Comparing Eight Years of SEAL!ND	14
Students Served: Racial Equity Concerns	16
Students Served by Grade Level: Kindergarten through Grade 12	17
Toothbrush Kits and Education Dissemination	21
Recommendations	21
1. Identify Opportunities to Reach Children Before Kindergarten	21
2. Continue Communication and Partnership with Providers and Schools who Stopped Services	23
3. Educate Private Dental Teams on the Need for and Benefits of School-Based Sealant Programs	24
4. Address and Promote Oral Health Equity	24
About the Oral Health Program	25
Acknowledgments	25
Citations	26
Appendix A: SEAL!ND Education Material	27
Appendix B: Invitation Letter and Consent Form	28
Appendix C: Electronic Student Dental Record	30
Appendix D: Visit Results Sheet	32

List of Figures

Figure 1. Percentage of Students in Qualifying Schools Needing Treatment and Presenting with Decay: AIAN (n = 471) and all Other Students (n = 668)*	6
Figure 2. Percentage of Schools Participating in a School-Based Sealant Program Visited by Each Provider Type, by School Year	9
Figure 3. Number of Qualifying Schools Participating in SEAL!ND, by Year	11
Figure 4. Percentage of Students in Qualifying Schools Needing Treatment and Presenting with Decay: 2020-21 School Year (n = 564) and 2021-2022 (n = 1,159)	12
Figure 5. Percentage of Students Needing Treatment, by School Year	14
Figure 6. Percentage of Students Needing Treatment, by School Year	15
Figure 7. Percentage of Students Receiving at least One Dental Sealant, by School Year	15
Figure 8. Percentage of Students in Qualifying Schools Needing Treatment and Presenting with Decay: AIAN (n = 471) and all Other Students (n = 668)	16
Figure 9. Percentage of Students Needing Treatment by Grade Level, First Visit 2021-22	17
Figure 10. Percent of Students with No Previous Dental Visit, by Grade Level and School Year	18
Figure 11. Percent of Students with Untreated Decay Present at First Visit, by Grade Level and School Year	19
Figure 12. Percent of Students with Urgent Dental Care Needs at First Visit, by Grade Level and School Year	20

List of Tables

Table 1. Number of Schools in North Dakota with a School-Based Dental Sealant Program by Provider and School Year (Qualifying and Non-Qualifying Schools)	8
Table 2. Non-Qualifying Schools Participating in SEAL!ND	10
Table 3. Number and Percentage of Students Served by Race, Gender, and Grade Level	13
Table 4. Dental Treatment Need by Grade Level and Visit, 2021-22	17
Table 5. Percentage of Students Needing Treatment at First Visit, by Grade Level and School Year	20

SEAL!ND: School-based Dental Sealant Program

The [North Dakota Department of Health \(DoH\)](#)^a [Oral Health Program \(OHP\)](#)^b has established a school-based dental sealant program, [\(SEAL!ND\)](#)^c, which has been providing dental sealants, fluoride varnish applications, oral health education and dental screenings and referrals for students throughout North Dakota dating back to 2012. All services occur in the school during school hours. School-based sealant programs are a highly effective way to deliver preventive oral health services and dental sealants to children less likely to receive private dental care.

The SEAL!ND program prioritizes providing preventive oral health care to low-income and underserved students by targeting schools with 45% or greater of their students enrolled in the free and reduced-fee school lunch (FRFSL) program. The OHP Prevention Coordinator identifies eligible schools utilizing data from the [North Dakota Department of Public Instruction \(DPI\)](#).^d

Although schools with a larger proportion of youth who are living in lower-income households are prioritized and covered under federal grant support, additional schools participate in SEAL!ND and receive care from local dental providers.

The OHP Prevention Coordinator works with the public health hygienists (PHHs) who are employed by the OHP, community dental providers that have signed Memorandums of Understanding (MOU) with the OHP, and local schools to identify opportunities to implement SEAL!ND. The OHP Prevention Coordinator is responsible for developing and sharing manuals that assist schools and dental teams with implementing and participating in SEAL!ND.

The OHP Prevention Coordinator also assists participating schools by providing:

- Educational materials on the benefits of dental sealants to administrators, staff and parents (see Appendix A).
- Videos describing the program and how sealants work.
- Invitation letter and consent form for parents (see Appendix B).

Due to the global health pandemic (COVID-19), fewer providers and schools participated in SEAL!ND during the 2020-2021 school year. As a result, the Prevention Coordinator redirected efforts and funding to provide dental hygiene bags to students throughout the state. These hygiene bags contained a toothbrush, travel-size tube of toothpaste and dental floss. Educators were also provided short, two to four-minute videos that could be shared in the classroom with students and/or with parents electronically.

Oral health services provided by the OHP, PHH and the local dental teams who partner with the DoH OHP include:

- Dental screening
- Fluoride varnish application
- Dental sealant application
- Oral health education
- Dental referral (as needed)

Dental Screening

Dental screening includes collecting information on the student's dental health. The participating dental team member looks for and identifies:

- Date (if any) of recent dental visit
- Untreated decay
- Treated decay
- Rampant decay (decay of seven or more teeth)
- Presence of any sealant(s)
- Number of filled or decayed molars
- Treatment urgency

Fluoride Varnish

Fluoride varnish is a sticky, colorless and tasteless paste that contains the appropriate levels of fluoride that helps prevent cavities. If cavities are in the early stages, the fluoride can slow or even stop the cavity process. The entire process is fast, painless and takes less than five minutes to apply.

Fluoride varnish can be applied by any dental team member, doctors, pediatricians and nursing staff. Because of this, it can be applied in numerous community and health care settings such as primary care clinics, schools, long-term care and public health centers.

Dental Sealants

A dental sealant is a coating made from an adhesive material such as resin or glass ionomer, which a dental professional applies to the back teeth. Teeth can be re-sealed if the sealant falls off, but traditionally, it lasts for years. This seals off the grooves in teeth that tend to collect food and protects them from the acid. The process is quick and easy, with the whole procedure taking roughly 10 minutes.

Sealants prevent cavities by creating a barrier between the teeth and cavity-causing bacteria. Sealants also stop cavities from growing and can prevent the need for fillings. Dental sealants prevent 80% of cavities in the back teeth, where 9 out of 10 cavities generally occur.

The OHP continues to administer SEAL!ND, utilizing dollars from both the [Centers for Disease Control and Prevention \(CDC\) State Actions to Improve Oral Health Outcomes^e](#) grant and the [Health Resources and Services Administration's \(HRSA\) Grants to States to Support Oral Health Workforce Activities^f](#).

Executive Summary: Reach of SEAL!ND, 2021-2022

The SEAL!ND program prioritizes providing preventive oral health care to underserved students by targeting schools with 45% or greater of their students enrolled in the FRFSL program (these are considered qualifying schools). Although schools with a larger proportion of youth who are from lower-income households are prioritized by federal funding, additional schools participate and receive care from local dental providers (these are referred to as non-qualifying).



50 schools participated



1,684 students screened by a dental provider



2,460 applications of fluoride varnish



3,882 teeth protected with dental sealants

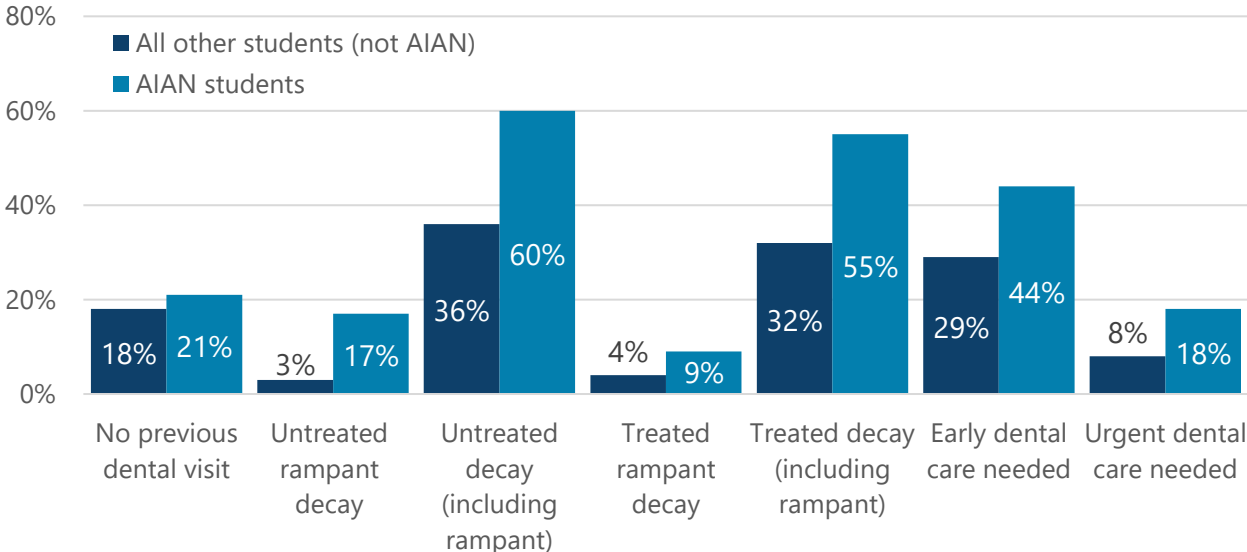


930 referred for follow-up dental care

During the 2021-2022 school year, 50 schools participated in SEAL!ND; 36 qualifying schools (Q) and 14 non-qualifying (NQ); 32 of the 50 schools had both a fall and a spring visit.

Although SEAL!ND has had a positive impact on the health of communities, current data indicate marked inequities for children who are American Indian or Alaska Native (AIAN). Three out of every five AIAN students (60%) had untreated decay compared to only 36% of their non-Indigenous peers. It is imperative that the OHP work with communities, share results of this work and allow space for communities to identify opportunities to promote oral health equity, outside of (or in addition to) SEAL!ND.

Figure 1. Percentage of Students in Qualifying Schools Needing Treatment and Presenting with Decay: AIAN (n = 471) and all Other Students (n = 668)*



* Total sample for this figure is 20 fewer than total students reached (1,159) because 20 did not identify their race

Evaluation Activities

The evaluation team at the University of North Dakota School of Medicine & Health Sciences works with the team at the OHP to collect data on the clinical reach of the SEAL!ND program, the referral practices, dental sealant cost savings and perceptions of school personnel regarding their experiences with the program.

Site Data

Site data for all students are compiled by OHP PHHs and dental providers who have signed MOUs with the OHP. The data provide performance measures to calculate and demonstrate program outcomes. The program evaluators analyze the data collected. Data collection methods employed by the OHP PHHs are consistent; however, the systems used by partnering providers and those offering school-based services on their own to NQ schools do not all collect the same patient data. Through strong partnership, these providers continue to share the data they do collect with the OHP to measure community impact. See Appendix C for an example of the patient record utilized by the OHP PHHs.

Student data included in this report are collected and provided by:

- The hygienists employed by the OHP to provide SEAL!ND in Q schools,
- Dental teams participating in SEAL!ND under MOUs signed with the OHP and serving Q schools,
- Additional dental teams participating in SEAL!ND and providing care to NQ schools (schools that do not qualify for grant-supported SEAL!ND services because less than 45% of their students are enrolled in the FRFSL program, and
- The [Ronald McDonald Care Mobile's \(RMCM's\)](#)⁹ school-based sealant program, which is separate from and different than SEAL!ND.

School Survey

During the 2018-19 and 2019-20 school years, the evaluation team sent electronic surveys to administrators and staff at every school participating in SEAL!ND. The survey was designed to explore the schools' experiences with both SEAL!ND and the dental providers, as well as to obtain data regarding challenges and barriers to participating in the program. This survey was not conducted during the 2020-21, 2021-22 school years because of competing school demands during and following the COVID-19 pandemic. Results from the survey distributed during the 2019-20 school year are available in the report, [Evaluation of SEAL!ND: School Year 2019-2020](#).^h

Additional Activities

The evaluation team also assists in the assessment of any local, state or national presentations provided about the program; and the team evaluates outreach, education and dissemination strategies, including distribution of dental hygiene kits.

Community Reach and Impact

Among the 36 Q schools that participated in SEALIND during the 2021-2022 school year, 21 were served by the OHP PHHs and the remaining 15 were served by partnering dental teams to include community health centers (CHCs) and private practice. Fourteen additional NQ schools were served by private practice dental teams. During the midst of the COVID-19 pandemic (2020-2021 school year), there were no participating CHCs and the RMCM also refrained from providing services. In the most recent school year (2021-2022), the North Dakota State College of Science (NDSCS) began to participate in SEALIND, and 10 schools were served by CHCs. See Table 1.

Qualified (Q) Schools: Schools meeting the criteria of high-risk, reporting at least 45% of their students enrolled in the free and reduced-fee school lunch program.

Non-Qualified (NQ) Schools: Any other school receiving services that had fewer than 45% of their students enrolled in the free and reduced-fee school lunch program.

Table 1. Number of Schools in North Dakota with a School-Based Dental Sealant Program by Provider and School Year (Qualifying and Non-Qualifying Schools)

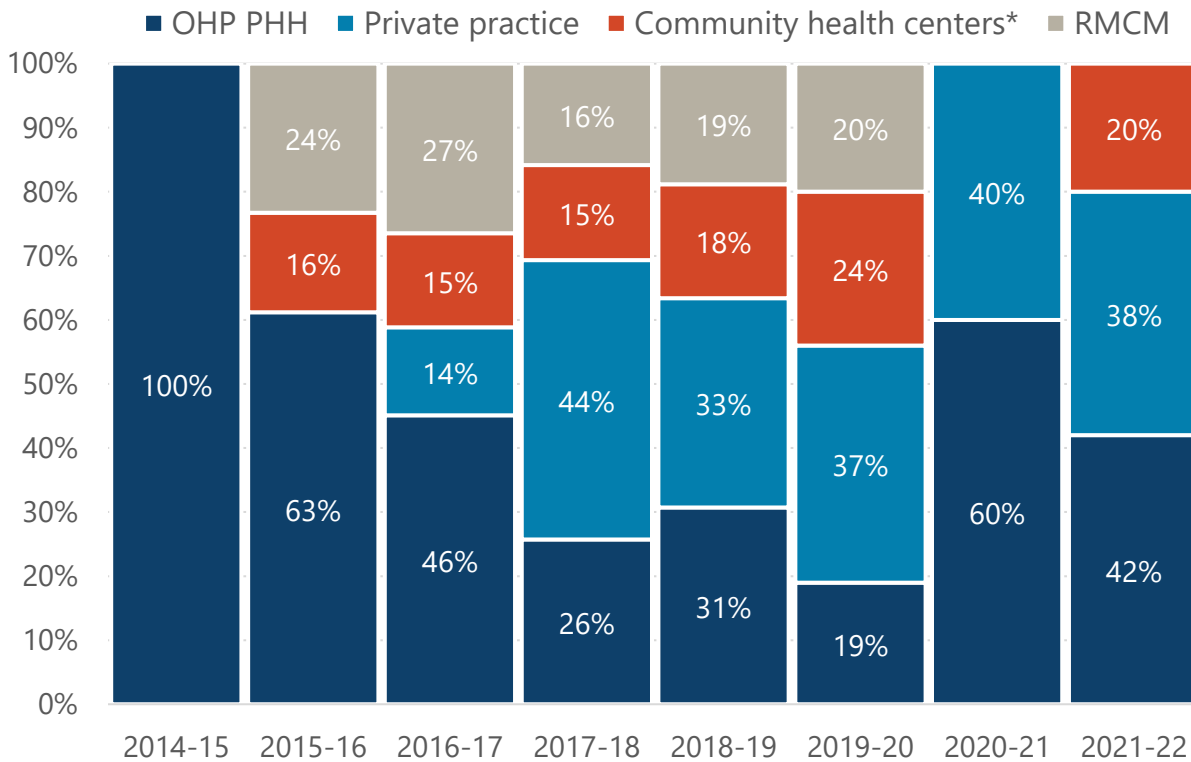
School Year:		14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
SEALIND	Private practice providers	0	0	12	49	32	37	12	19
	Community Health Centers*	0	8	13	17	17	24	0	10
	OHP PHH	18	32	41	29	30	19	18	21
Ronald McDonald Care Mobile		0	12	24	18	18	20	0	0
TOTAL Schools		18	52	90	113	97	100	30	50

* Total includes federally qualified health centers, tribal health services at Spirit Lake Health Center and the Dental Hygiene Program at the North Dakota State College of Science

The RMCM has halted all school-based dental care “indefinitely” and is now focused solely on community care; however, they have expressed interest in future opportunities for school-based offerings. RMCM’s decision is based on cost, time, increased community demand and insufficient providers/resources. The OHP will continue communicating and working with the RMCM team to explore future opportunities to return to the school setting.

During the 2019-20 school year (prior to the COVID-19 pandemic), one in five schools participating in a school-based sealant program were doing so in partnership with the RMCM through Bridging the Dental Gap. Even so, through OHP PHHs and partnering dental teams, the SEALIND program provided care for 80% of the schools. See Figure 2.

Figure 2. Percentage of Schools Participating in a School-Based Sealant Program Visited by Each Provider Type, by School Year



* This total includes FQHCs, tribal health services provided by Spirit Lake Health Center and the Dental Hygiene Program at NDSCS.

Note: Totals may equal greater than 100% because of rounding to the nearest whole percentage

Through MOUs and partnerships developed by the OHP, the percentage of schools visited by the OHP PHHs has historically decreased. In contrast, the rate of schools visited by CHCS, Federally Qualified Health Centers (FQHCs), and private practice providers has increased. For example, the percentage of schools visited by private practice increased from 0% in 2014-15 to 37% by the 2019-20 school year. See Figure 2.

This trend illustrates historical growth and potential sustainability as the work of the OHP identified and supported dental partners who were willing to serve in school settings. As part of the national shutdown due to the COVID-19 pandemic in March 2020, private practice dental offices had to close, slowly re-opening in the summer of 2020. When dental offices re-opened, mitigation activities slowed patient care and reduced the number of patients that an office could see in a single day. Due to patient backlogs and additional risk mitigation requirements, many private practice dental offices that had participated in SEAL!ND in years prior could not participate during the 2020-21 and 2021-22 school years. The OHP will continue to work with partners in the state to increase participation among CHCs, NDSCS and private practices.

Non-Qualifying Schools: Reach

One challenge of the federally funded programming is that it limits the OHP to serve only schools that qualify for services based on the FRFSL program. For example, a Q school with 150 K-5 students where 75% of the students qualify for the FRFSL program will serve fewer under-resourced children than if the OHP were to visit a school with 1,500 K-5 students where only 44% of the children were covered by the FRFSL program (not qualifying for services).



525

children screened
by a provider



974

applications of
fluoride varnish



942

teeth protected
with dental sealants



154

children referred
for dental care

Fortunately, there are dental teams in North Dakota who participate in SEAL!ND and volunteer their own time and resources to serve students in NQ schools. Partners who participate in SEAL!ND, providing oral health screenings and preventive services among NQ schools, do not report student-level data to the OHP. However, they do provide aggregate data (totals) to assist the OHP in measuring community impact. During the 2021-22 school year, dental teams in North Dakota visited 14 NQ schools and provided care for 525 children. This is a notable increase from the 2020-21 school year but not at the level of participation prior to the COVID-19 pandemic. See Table 2.

Table 2. Non-Qualifying Schools Participating in SEAL!ND

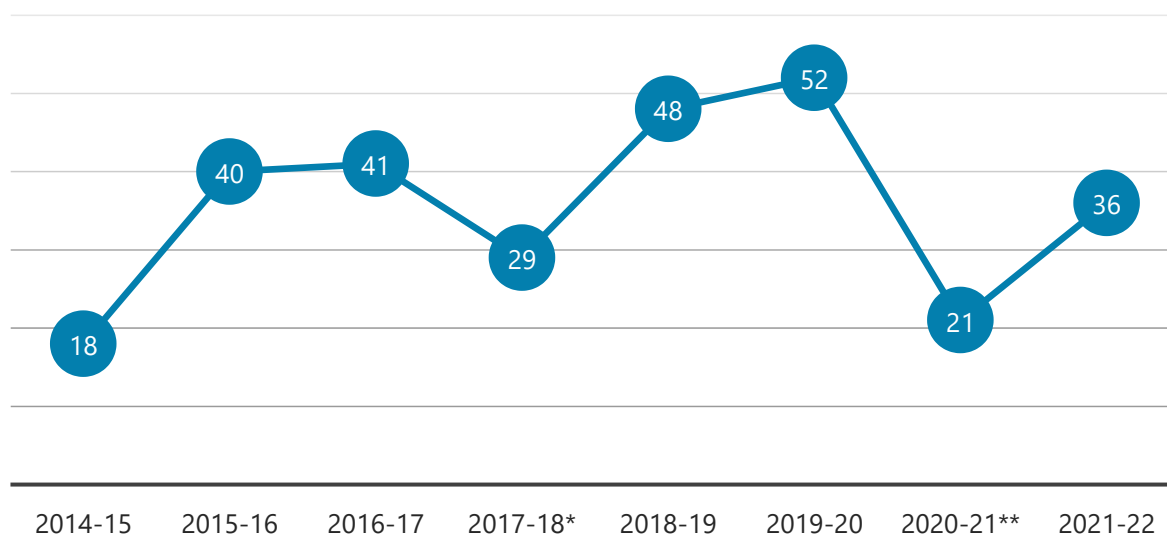
	2019-2020	2020-2021	2021-2022
Participating schools	28	9	14
Students screened (unduplicated)	1,191	326	525
Fluoride varnish applications*	1,349	449	974
Dental sealants placed*	1,864	632	942
Students referred for follow-up dental care	319	122	154

* These numbers include duplicate applications; 525 students were screened between the first and second visits. Many of these students received varnish at both visits, and several teeth were either resealed or newly erupted (a tooth that had grown in that was not present at first visit) between the first and second visits.

Qualifying Schools: Reach

The OHP Prevention Coordinator provides oversight, scheduling, materials and manuals for both Q and NQ schools and interested dental teams. Specific patient data are only provided for schools that qualify for services. During the 2019-20 school year, 80 schools participated in SEAL!ND. Only 52 of those schools met the criteria of high-risk, reporting at least 45% of their students enrolled in the FRFSL program. Before the 2020-21 school year, in which the pandemic delayed or stopped service delivery, the number of schools that qualified for and received services from the OHP had increased annually and exceeded the 5% goal. See Figure 3 and note that the drop in services reflects the COVID-19 pandemic when fewer schools consistently held in-person learning, and there were fewer participating providers.

Figure 3. Number of Qualifying Schools Participating in SEAL!ND, by Year



* Data for 2017-18 were only available for schools served by the PHH and did not include services provided to Q schools under a MOU by FQHCs or private dental teams.

** The COVID-19 pandemic led to a nationwide shutdown, temporary school closures and delayed the reopening and provision of services in dental clinics and FQHCs.

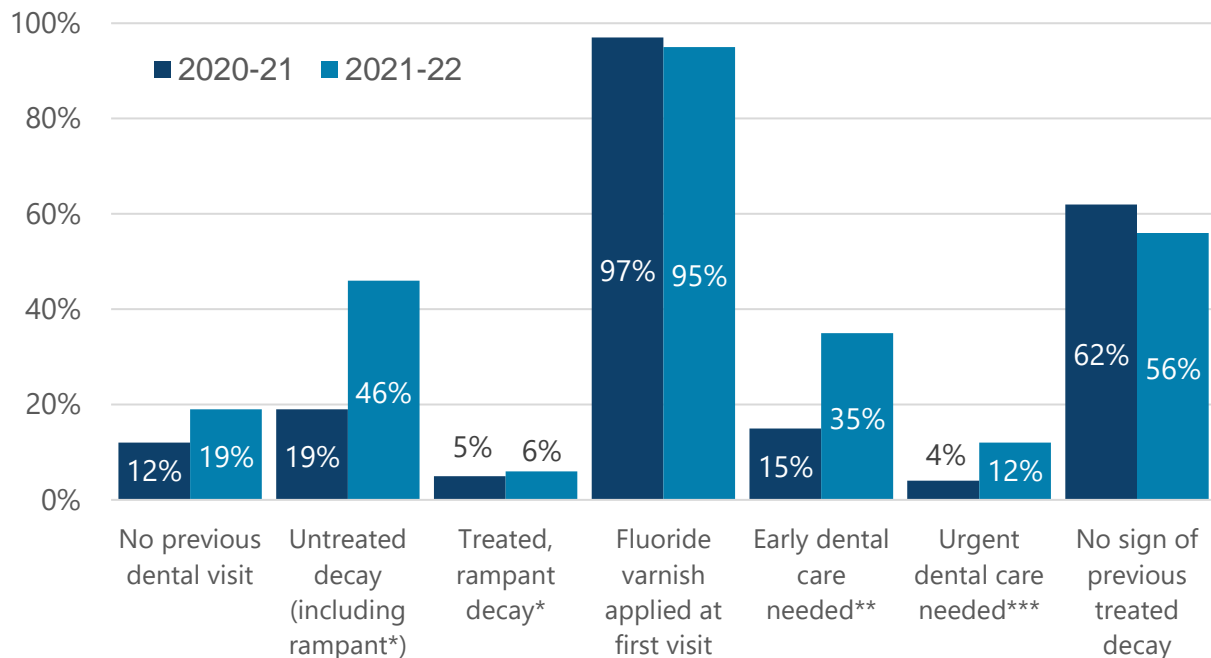
Traditionally, Q schools are visited in the fall (first visit) and again in the spring (retention check). The fall and spring visits see the same students. However, because of the tragic loss of the OHP PHH, the OHP had no PHH employed to complete fall visits. As a result, only 18 of the 36 qualifying schools had both a fall (first) visit and a retention check. For the remaining schools, the spring visit was considered the first visit, and these students did not have a retention check. Regardless of first or second visit, after seeing the dental professional, students were sent home with oral hygiene supplies and a results sheet to share with their parent/guardian. See Appendix D for a copy of the visit results sheet.

Among the 36 Q schools served by either a PHH or private practice:

- 1,159 students were screened between the fall and spring visits.
- 79% of the students screened reported a previous visit with a dental professional.
- 95% of students received fluoride varnish at the first visit.
- 2,344 teeth were sealed at the first visit. Between the fall and spring, providers sealed a total of 2,940 teeth for the 1,159 students.
- At the first visit, 47% of students needed early (35%) or urgent (12%) dental care.
- At the time of the first SEAL!ND visit, 41% of students already had a dental sealant. This is down from 51% of students the previous school year.

Following what has been reported in national data as a decline in dental prevention and treatment services during 2020 and 2021, SEAL!ND has noted a decline in oral health status among students participating in the program. It is important to note that the data are not comparing or tracking the same students over time. However, among participating schools, the percentage of students presenting with untreated decay, urgent dental care need and early dental care need is concerning. See Figure 4. Specifically, 19% of students presented with untreated decay or rampant decay at the first visit in 2020-2021. During the 2021-2022 school year, the percentage of students reporting with untreated or rampant decay had more than doubled (46%).

Figure 4. Percentage of Students in Qualifying Schools Needing Treatment and Presenting with Decay: 2020-21 School Year (n = 564) and 2021-2022 (n = 1,159)



* Rampant decay is indicated if the student has decay present on seven or more of their teeth.

** Decay present without pain or swelling. Refer to a dentist for treatment.

*** Pain, infection, large decay, abscess or draining. Immediate referral for treatment.

Students Served

One in five students attending a Q school were in grades 6-12 and only 3% were in pre-kindergarten. About half (51%) of students served were non-Hispanic White, and 41% of students served were American Indian/Alaska Native (AIAN). This is notable, given only 5.7% of the total state population includes individuals who are AIAN.ⁱ See Table 3 for the demographic breakdown of students served. The sealant program served a similar number of females and males, and there was no variation in dental treatment need or services required/provided to students based on gender. There was variability in dental services needed and provided by grade level and race.

Table 3. Number and Percentage of Students Served by Race, Gender, and Grade Level

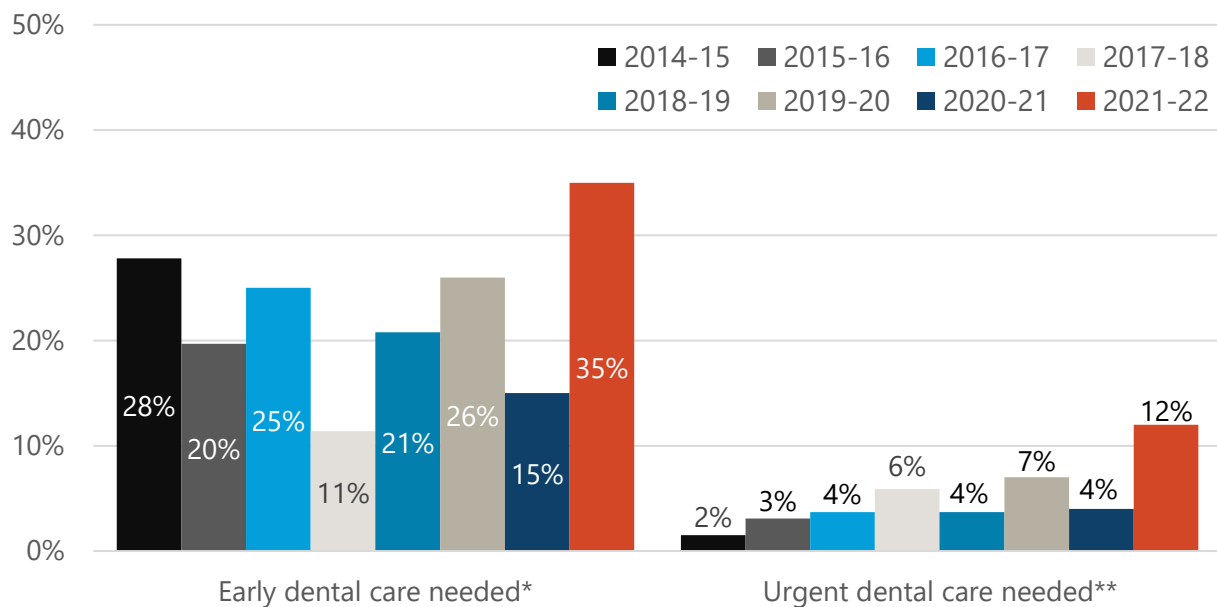
	2021-22		2020-21	2019-20
RACE	(n=1139) *	%	(n=562)	(n=2,322)
White	575	51%	65%	46%
American Indian/Alaska Native	471	41%	21%	27%
Black/African American	18	2%	4%	10%
Asian	16	1%	0%	6%
Multi-Race	23	2%	6%	7%
GENDER	(n=1158) *	%	%	%
Male	547	47%	45%	45%
Female	611	53%	55%	54%
GRADE	(n=1105) *	%	%	%
Pre-K	37	3%	1%	0%
Kindergarten	174	16%	14%	19%
First grade	166	15%	18%	17%
Second grade	174	16%	16%	17%
Third grade	166	15%	15%	14%
Fourth grade	122	11%	14%	13%
Fifth grade	100	9%	10%	10%
Grades 6-12	199	18%	12%	8%

* In total, 1,159 students were served, but not all students provided their race, gender and grade. The N reflects the total number of responses to each demographic question.

Students Served: Comparing Eight Years of SEAL!ND

The percentage of students participating in SEAL!ND who required urgent dental care increased considerably in the last year. For the first time in eight school years, more than one in three students needed early dental care, and roughly one in eight required urgent dental treatment. See Figure 5. There is concern about comparing annual data because of continual workflow and data management changes, and it is important to remember that the number of participating schools and students varies annually. However, regardless of those concerns, in the most recent school year, nearly half of the students (47%) were requiring dental referral for either early or urgent treatment need.

Figure 5. Percentage of Students Needing Treatment, by School Year

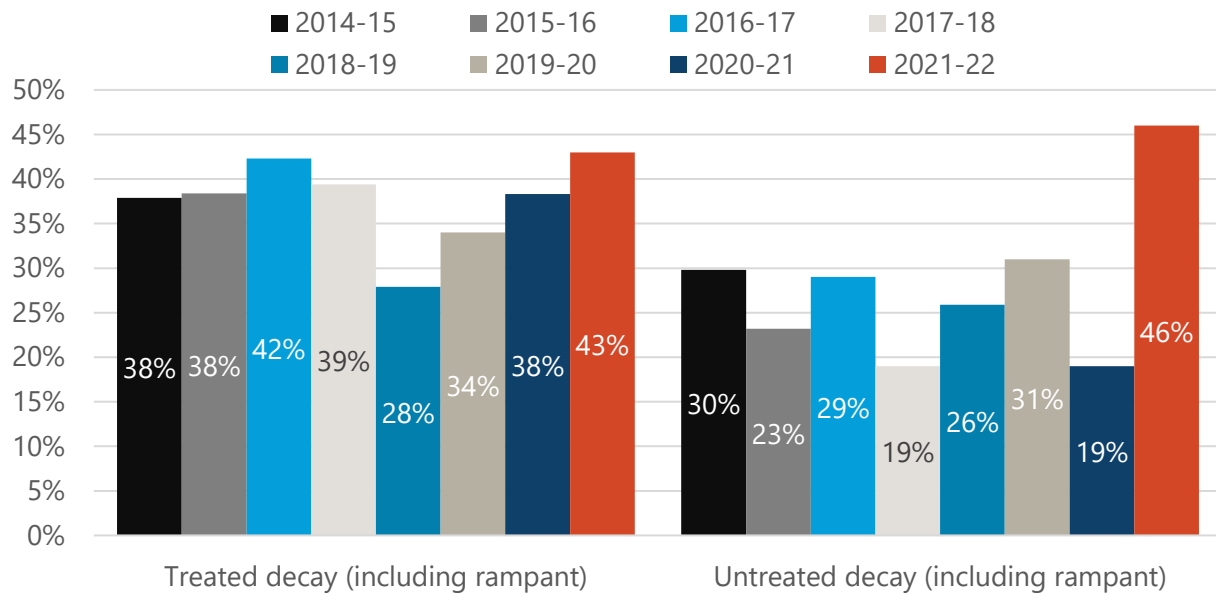


* Decay present without pain or swelling. Refer to a dentist for treatment.

** Pain, infection, large decay, abscess or draining. Immediate referral for treatment.

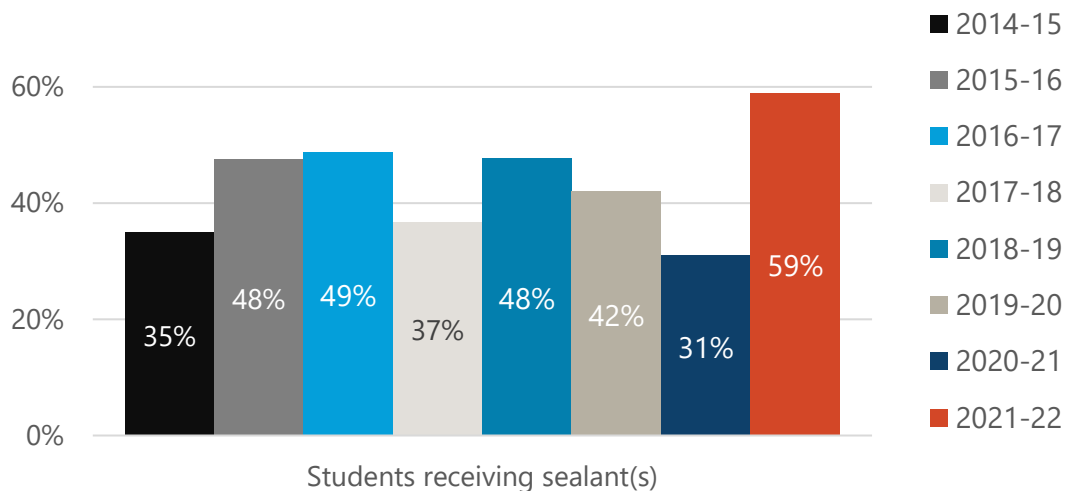
The reason a provider indicates a child requires early or urgent dental care can vary, but one of the more common reasons would be identification of untreated dental decay. The percentage of students with untreated decay increased in 2021-22 from 19% the prior year to 46%. See Figure 6. Although there is no research to currently identify the cause of this spike in North Dakota, anecdotal evidence and research outside of North Dakota would indicate this may be the result of delayed care during the period of the global shutdown. Not only were patients less inclined to visit the dentist, with some offices closed for long periods of time, but prevention programs also stopped or limited care provision. This includes the SEAL!ND program, in which private practice providers were still screening and applying fluoride varnish but were not providing any community-based sealant applications because of the risk of aerosol spread of COVID-19.

Figure 6. Percentage of Students Needing Treatment, by School Year



Of all students participating in SEAL!ND during the 2021-22 school year, 59% received a dental sealant, which was an increase from 2020-21 when only 31% of students received a dental sealant. The percentage decrease in the 2020-21 school year was not because more students presenting with sealants had already been placed in a dental clinic but because only the PHH was offering dental sealants. The private practice providers were providing care, screening and varnish application but were not providing any community-based sealant applications because of the risk of aerosol spread of COVID-19. Students who already have had a dental sealant placed will not receive a sealant through SEAL!ND. An increase in sealant placement is indicative of fewer students having already received dental sealants in a dental clinic.

Figure 7. Percentage of Students Receiving at Least One Dental Sealant, by School Year



Students Served: Racial Equity Concerns

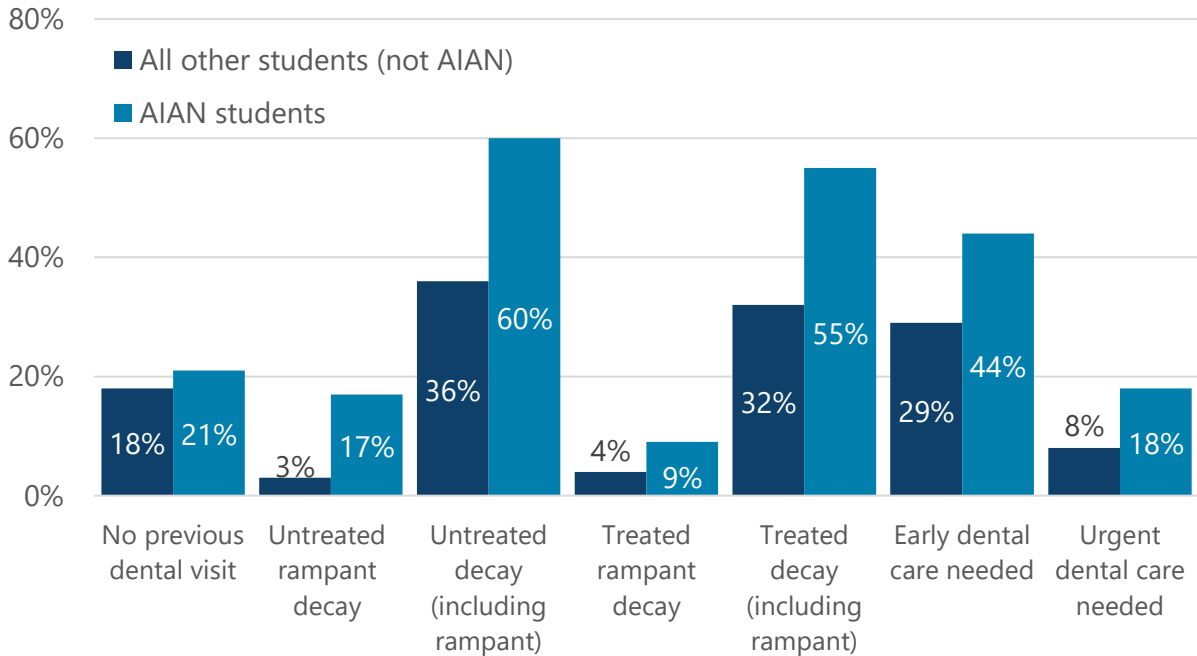
The primary purpose of SEAL!ND is to implement a sustainable school-based sealant program to provide preventive oral health services. In this regard, the ND OHP has been highly successful in reengaging schools and provider groups, undoubtedly having a positive impact on the health of children in the most under-resourced communities in North Dakota. Specifically, close to half (41%) of the students participating in SEAL!ND in the last school year were AIAN. This is notable, given only 5.7% of the total state population includes individuals who are AIAN. Although SEAL!ND has had a positive impact on the health of community, current data indicate marked inequities for AIAN children.



Three out of every five AIAN students (60%) had untreated decay (including rampant decay) compared to only 36% of their non-AIAN peers.

Greater proportions of AIAN students presented with decay and dental care need. See Figure 8. It is imperative that the OHP work with community, share results of this work and allow space for communities to identify opportunities to promote oral health equity, outside of (or in addition to) SEAL!ND.

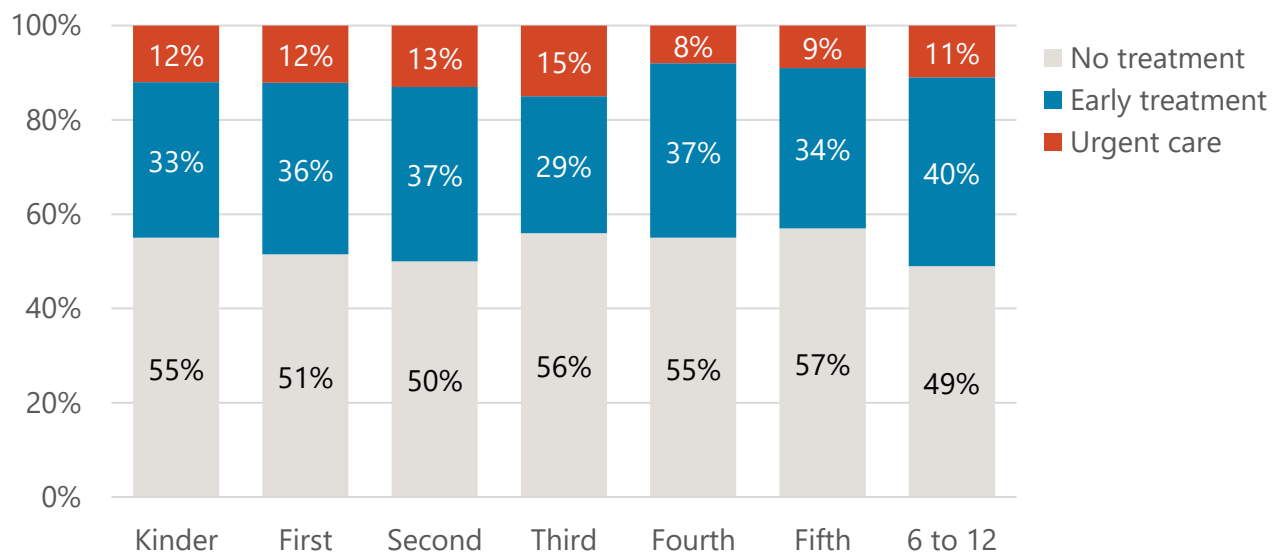
Figure 8. Percentage of Students in Qualifying Schools Needing Treatment and Presenting with Decay: AIAN (n = 471) and all Other Students (n = 668)



Students Served by Grade Level: Kindergarten through Grade 12

There was no significant variability by grade in the dental visit rates or care needs that could not be explained by age. For example, as students age, the percentage who report having had a sealant, dental visit and treated decay increases. However, regardless of grade level, nearly half of all students, at the time of the first visit, required early or urgent dental care. See Figure 9 and Table 4.

Figure 9. Percentage of Students Needing Treatment by Grade Level, First Visit 2021-22



Note: Totals may not equal 100% because of rounding to the nearest whole percentage

Table 4. Dental Treatment Need by Grade Level and Visit, 2021-22

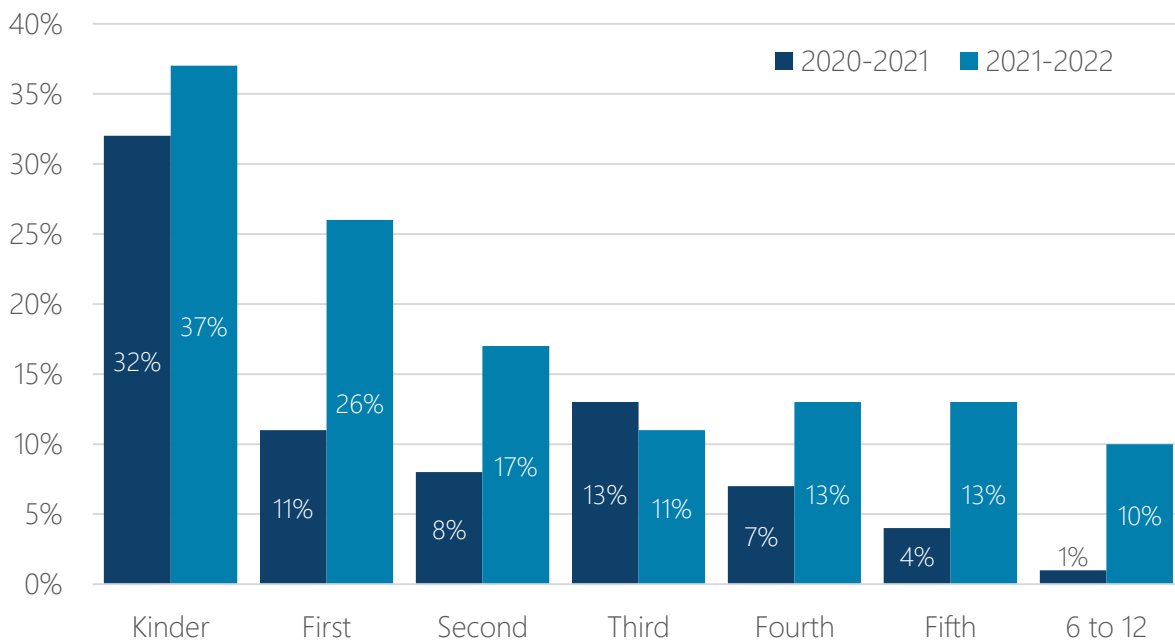
		Kindergarten	First	Second	Third	Fourth	Fifth	Grades 6-12
1 st Visit n=1098*	No treatment ^a	55%	51%	50%	56%	55%	57%	49%
	Early treatment ^b	33%	36%	37%	29%	37%	34%	40%
	Urgent care ^c	12%	12%	13%	15%	8%	9%	11%
2 nd Visit n=395*	No treatment ^a	56%	46%	33%	48%	41%	54%	27%
	Early treatment ^b	36%	49%	61%	50%	50%	43%	71%
	Urgent care ^c	8%	5%	6%	2%	9%	3%	2%

a. No obvious problem, recommend regular checkup within six months. b. Early dental care needed (decay without pain or swelling). Refer to a dentist for treatment. c. Urgent care needed (pain, infection, large decay, abscess or draining). Immediate referral for treatment.

* 1,098 students had a first visit, and 395 of those 1,098 had a second visit.

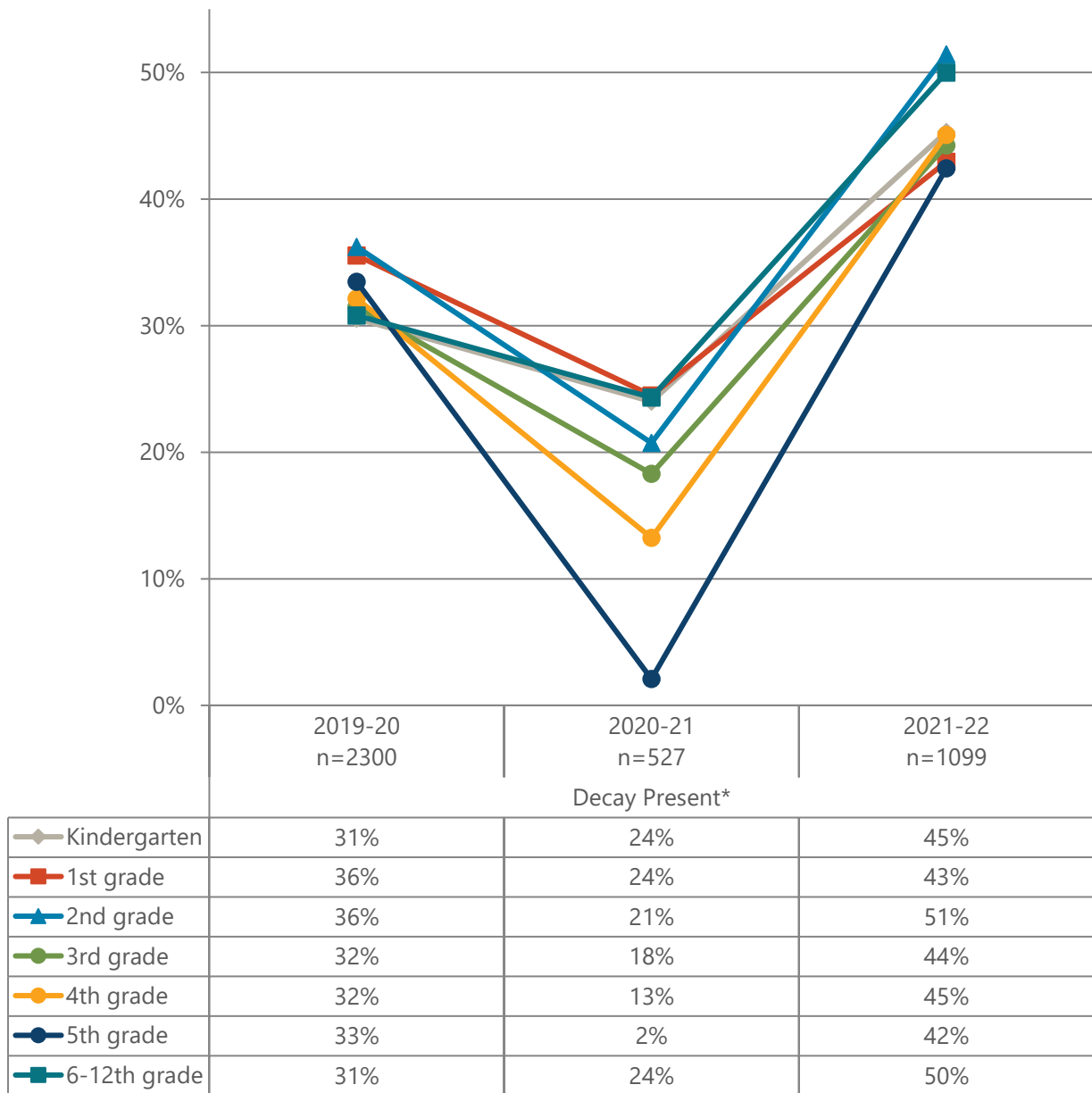
Except for students in grade three, the percentage of students with no prior dental visit increased dramatically (by as much as 15%) from the prior school year. More than one in three (37%) students in kindergarten reported no previous dental visit (see Figure 10). This rate was higher for kindergartners than any other grade level. Relatedly, kindergartners had the greatest proportion of students who presented with untreated and rampant decay (45%). See Figure 11. This represents a 20% increase from the prior school year. Having a dental visit increases the likelihood that the student will have good dental hygiene and fewer instances of decay. There is a need to begin education among parents and caregivers earlier to increase the proportion of students who enter grade school having already had a dental visit.

Figure 10. Percent of Students with No Previous Dental Visit, by Grade Level and School Year



The need for dental treatment across all ages increased dramatically compared to the prior school year, 2020-21. This increase likely reflects unmet dental needs that accrued during the COVID-19 pandemic and persisted into the 2021-22 school year. Untreated or rampant decay were widespread across all grades and were present in approximately 40% to 50% of students. In all grade categories, at least 1 in 3 students screened had untreated decay. See Figure 11.

Figure 11. Percent of Students with Untreated Decay Present at First Visit, by Grade Level and School Year



*Includes any untreated decay present and rampant decay present. Rampant decay is indicated if the student has decay present on seven or more of their teeth.

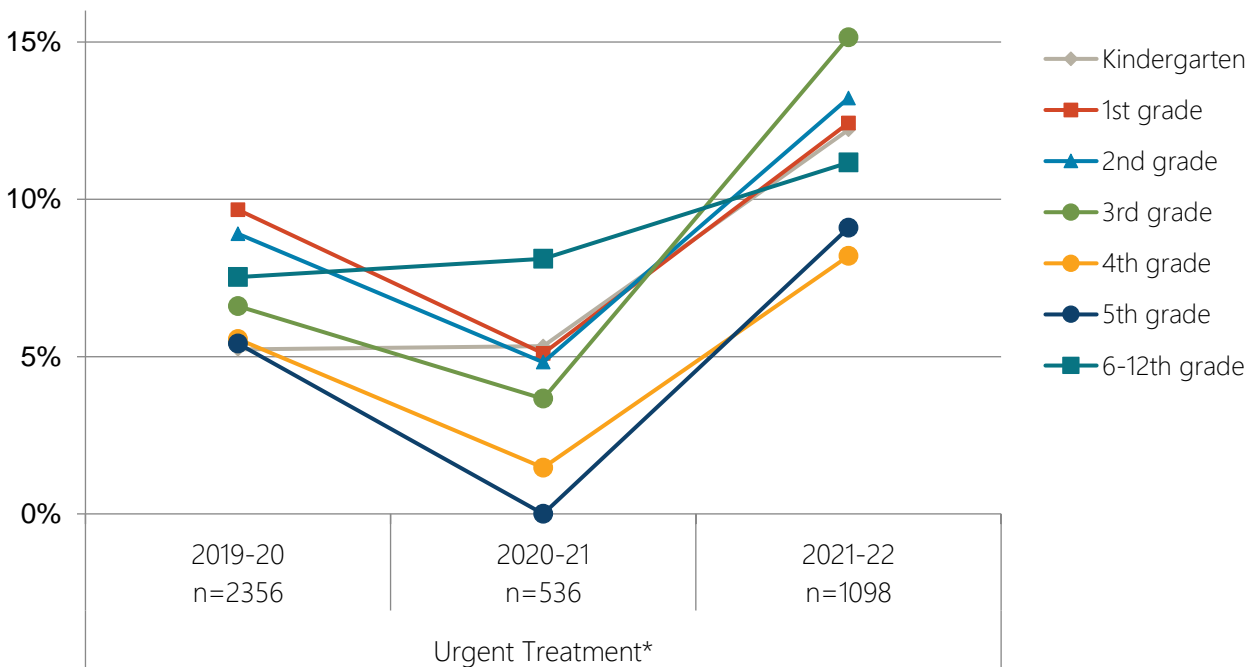
The percentage of students identified as needing urgent care at the first school screening increased substantially across all grades between the 2020-2021 school year and the most recent school year (2021-2022). Among students in fifth grade, the percentage requiring urgent dental care increased from 0% of students during the 2020-2021 school year to 9% in the most recent school year. See Table 5 and Figure 12.

Table 5. Percentage of Students Needing Treatment at First Visit, by Grade Level and School Year

		Kindergarten	First	Second	Third	Fourth	Fifth	Grades 6-12
No treatment ^a	2019-2020	69%	66%	64%	68%	68%	66%	69%
	2020-2021	77%	77%	78%	82%	85%	98%	77%
	2021-2022	55%	51%	50%	56%	55%	57%	49%
Early treatment ^b	2019-2020	24%	27%	25%	26%	28%	23%	25%
	2020-2021	17%	18%	17%	15%	13%	2%	15%
	2021-2022	33%	36%	37%	29%	37%	34%	40%
Urgent treatment ^c	2019-2020	5%	10%	9%	7%	6%	5%	8%
	2020-2021	5%	5%	5%	4%	1%	0%	8%
	2021-2022	12%	12%	13%	15%	8%	9%	11%

- a. No obvious problem, recommend regular checkup within six months.
- b. Early dental care needed (decay without pain or swelling). Refer to a dentist for treatment.
- c. Urgent care needed (pain, infection, large decay, abscess or draining). Immediate referral for treatment.

Figure 12. Percent of Students with Urgent Dental Care Needs at First Visit, by Grade Level and School Year



* Urgent care needed (pain, infection, large decay, abscess or draining). Immediate referral for treatment.

Toothbrush Kits and Education Dissemination

In response to the inability to visit schools during the 2020-2021 school year, the OHP Prevention Coordinator and other team members assembled and distributed 47,778 toothbrush kits to 188 schools in North Dakota. The hygiene bags contained a toothbrush, travel size tube of toothpaste and dental floss. Educators were provided with two short video links. The first link was to be shared with school teachers and staff as an [informational thank-you video](#).^j This video was roughly 1.5 minutes. The second link, provided by [My Kid's Dentist](#),^k led to an animated video about [why we brush our teeth](#),^l which is about 3.5 minutes long. This was intended as a resource for the students. Educators were encouraged to share this video in class while handing out the hygiene kits and were also encouraged to share with families electronically.

In the current grant cycle, the OHP provided participating SEAL!ND schools with an infographic to promote the program among parents (See Appendix A). The infographic was able to be disseminated in newsletters, on social media and at in-person events. The OHP Prevention Coordinator presented during one of the TeleECHO sessions, discussing the school-based sealant program. A new partnership was formed between the OHP and Family Voices of North Dakota. The OHP had an article featured in Family Voices Summer/Fall 2022 Newsletter providing information about SEAL!ND.

Recommendations

The SEAL!ND program had a significant impact on the health and well-being of more than 1,600 students in North Dakota during the 2021-22 academic year. The OHP has had a tremendously positive impact on the state; however, opportunities remain to ensure children in North Dakota have equitable access to good oral health. In no particular order, it is recommended that the OHP and SEAL!ND teams:

1. Identify opportunities to reach children before kindergarten.
2. Continue communication and partnership with providers and schools who stopped services.
3. Educate private dental teams on the need for and benefits of school-based sealant programs.
4. Address and promote oral health equity.

1. Identify Opportunities to Reach Children Before Kindergarten

The primary focus of SEAL!ND is to provide dental services and education in K-12 settings; however, the data indicate a need for the broader OHP to identify community partnerships and opportunities to increase the dental visit rate among children under age five. Less than 1 in 3 kindergartners had never visited a dental professional, and relatedly, roughly 1 out of every 2 presented with untreated decay or rampant decay. Good dental hygiene habits can begin in infancy, with caregivers cleaning a baby's gums after each feeding and before bed.

The OHP are encouraged to share SEAL!ND data with programs that work to provide health education to new caregivers, childcare centers and other community-based programs like Head Start, the Women Infant and Children (WIC) program, families utilizing the Supplemental Nutrition Assistance Program (SNAP), local public health units, pediatric clinics and others.

The [North Dakota Oral Health Coalition \(OHC\)](#)^m was re-established in 2022. The OHP can utilize this group to share resources, identify partners and develop strategies to increase dental visit rates among the youngest patients in North Dakota. Specifically, promotion activities should center around sharing resources and educational materials that were developed in previous years.

Resources for Education and Dissemination



[Dentistry as Primary Care TeleECHO™ Series](#): Specific training for dental providers on how to care for pediatric patients and patients covered by Medicaid and how to discuss good nutrition and fluoridated water, among other topics.ⁿ



[Oral Health in Primary Care TeleECHO™ Series](#): Specific training on how to screen and refer pediatric patients for dental care and how to apply fluoride varnish in primary care and public health settings, among other topics.^o



The free [Smiles for Life](#) curriculum consists of eight 60-minute modules covering core areas of oral health relevant to dental and other health professionals.^p



Over a dozen infographics were designed for communities on the importance of oral health and how to practice good dental hygiene. [Examples](#) related to pediatric patients include Protect Your Baby's Teeth and Gums and Protecting The Smiles of Our Indigenous Children.^q

As SEAL!ND returns to full capacity, it is also encouraged that the program explore opportunities to expand services to include pre-kindergarten programming. Specifically, the OHP should work with local Head Start organizations to, not only promote dental hygiene and offer education, but to participate in SEAL!ND. Although these efforts would increase education and prevention among younger students, it would not increase dental visit rates without local dental partnerships. The OHP should work with the North Dakota Dental Foundation (NDDF) and the North Dakota Dental Association (NDDA) to identify local providers available to care for the youngest North Dakotans, establishing good dental hygiene habits at an early age.

2. Continue Communication and Partnership with Providers and Schools who Stopped Services

The COVID-19 pandemic has significantly impacted nearly all aspects of our daily lives. In relation to the SEAL!ND program, many schools stopped or delayed participation in SEAL!ND during the 2020-2021 school year because of the risk of aerosol spread and school closures. In addition to fewer schools indicating interest in SEAL!ND, the number of providers willing or able to provide school-based services declined. Provider decline was the result of dental workforce challenges including deep patient waitlists for both preventive and treatment-based services. Additionally, the RMCM has stopped school-based sealant services indefinitely due to the growing need for community-based care.

It is recommended that the OHP and SEAL!ND team assess private dental team interest in, and perceived barriers to, participating in a school-based sealant program. Additionally, it would be important to hold a listening session or to survey nonparticipating, yet eligible, school staff and administration to identify concerns or barriers to participating in SEAL!ND. It is also important that SEAL!ND is viewed as a priority among past participating schools. There is concern among the OHP team that schools that have taken one to two academic years off from providing school-based sealant services will be hesitant to return to the program because of time commitment. The OHP should share data with the schools to illustrate the crucial role they play in pediatric health, sharing stories from schools that continue to participate in SEAL!ND.

Opportunities with the K-12 school system may include

- Presenting a poster or an oral presentation at a state-based conference or meeting for school administrators and educators.
- Hosting a listening session with eligible, qualifying schools that have stopped previous participation in SEAL!ND.
- Creating and disseminating a brief video that spotlights a school that continues to participate in SEAL!ND and sharing the impact these services have for the students and their families.
- Creating infographics for both past and future participating schools illustrating the immediate and long-term impact SEAL!ND may have for students' health and learning.

Opportunities with dental providers may include

- Hosting listening sessions with providers who have stopped services to determine barriers to participating in future programming.
- Giving presentations at dental conferences and meetings to demonstrate the impact of school-based sealant programs and reimbursement practices.
- Holding quarterly check-ins with past and current participants to assess future interest and current barriers (this includes check-ins with the RMCM).

3. Educate Private Dental Teams on the Need for and Benefits of School-Based Sealant Programs

Private practice providers once partnering with the OHP to provide school-based dental services in either Q or NQ schools have reduced or eliminated their school-based outreach in response to growing demand for in-clinic care following the shutdown and existing workforce shortages. It is recommended that the OHP continue to work and communicate with private practice providers to identify those who may be willing to reimplement or start providing care in school-based settings. An additional recommendation is that the OHP consider assessing interest, knowledge and capacity of private practice providers to participate in their own school-based sealant program. This survey could simultaneously promote school-based dental services while identifying barriers for private practice in offering these services.

The OHP recognizes that many dental practices are experiencing an increase in demand for services while simultaneously facing workforce shortages. However, the OHP can begin outreach, pull together dental providers and brainstorm local solutions to providing school-based sealant programs. As new dental professionals join practices in the state, this is also an excellent opportunity to make sure they know about this program. These efforts could be a collaborative venture with the NDDF, NDDA and OHC.

Roughly 200 dental professionals participated in Mission of Mercy in October 2021. During Mission of Mercy, these professionals provided free dental care to more than 700 individuals living in North Dakota. This event would be a great place to begin SEAL!ND outreach, as it would allow for large-scale networking with dental professionals. There would be great opportunity to discuss with these professionals how they can positively impact their local schools with the help of SEAL!ND..

4. Address and Promote Oral Health Equity

Although the OHP has had a positive impact on the overall health of community, data in the current grant cycle indicated marked inequities for children who are AIAN. The 2021-22 school year saw the largest number of AIAN children served by the SEAL!ND program, but opportunities remain to partner with HHS Tribal Health Liaisons, tribal health leaders and the [20 Tribal schools in North Dakota](#)^r with students in grades K-5.

It is imperative that the OHP work with stakeholders nationally, statewide and locally to partner with the community, share results of this work and allow space for communities to identify opportunities to promote oral health equity, outside of (or in addition to) SEAL!ND.

About the Oral Health Program

The mission of the DoH is to “improve the length and quality of life for all North Dakotans.” The DoH is committed to: excellence in providing services to the citizens of North Dakota; credibility in providing accurate information and appropriate services; respect for our employees, coworkers, stakeholders and the public; creativity in developing solutions to address our strategic initiatives; and, efficiency and effectiveness in achieving strategic outcomes.^h

The Mission of the OHP is “to improve the oral health of all North Dakotans through prevention and education.” The primary goal of the OHP is to prevent and reduce oral disease by:

- Promoting the use of innovative and cost-effective approaches for oral health promotion and disease prevention
- Fostering community and statewide partnerships to promote oral health and improve access to dental care
- Increasing awareness of the importance of preventive oral health care
- Identifying and reducing oral health disparities among specific population groups
- Facilitating the transfer of new research into practice.

Acknowledgements

The research and evaluation team would like to extend special thanks to all school personnel who assisted with participation in this program. Additionally, thank you to the following for their assistance with this evaluation to include data collection, data analysis, interviews and document review:

- Cheri Kiefer, Oral Health Program Director, North Dakota Department of Health
- Toni Hruby, Oral Health Prevention Coordinator, North Dakota Department of Health
- Vanessa Bopp, Public Health Hygienist
- Mary Strube, Public Health Hygienist
- Paige Ward, Public Health Hygienist
- Devon Duetzel, Public Health Hygienist

The OHP provided financial support for this project through grant awards with the Health Resources and Services Administration and the Centers for Disease Control and Prevention (CDC). The authors assume responsibility for any errors of omission, logic or otherwise. Any opinions, findings and conclusions expressed in this publication are those of the authors and do not necessarily reflect the view of the University of North Dakota School of Medicine & Health Sciences or study sponsors.

Any questions regarding this product or the data presented can be directed to:

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Department of Indigenous Health | UND School of Medicine & Health Sciences
Shawnda.schroeder@UND.edu | 701-777-0787

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Appendix A: SEAL!ND Education Material

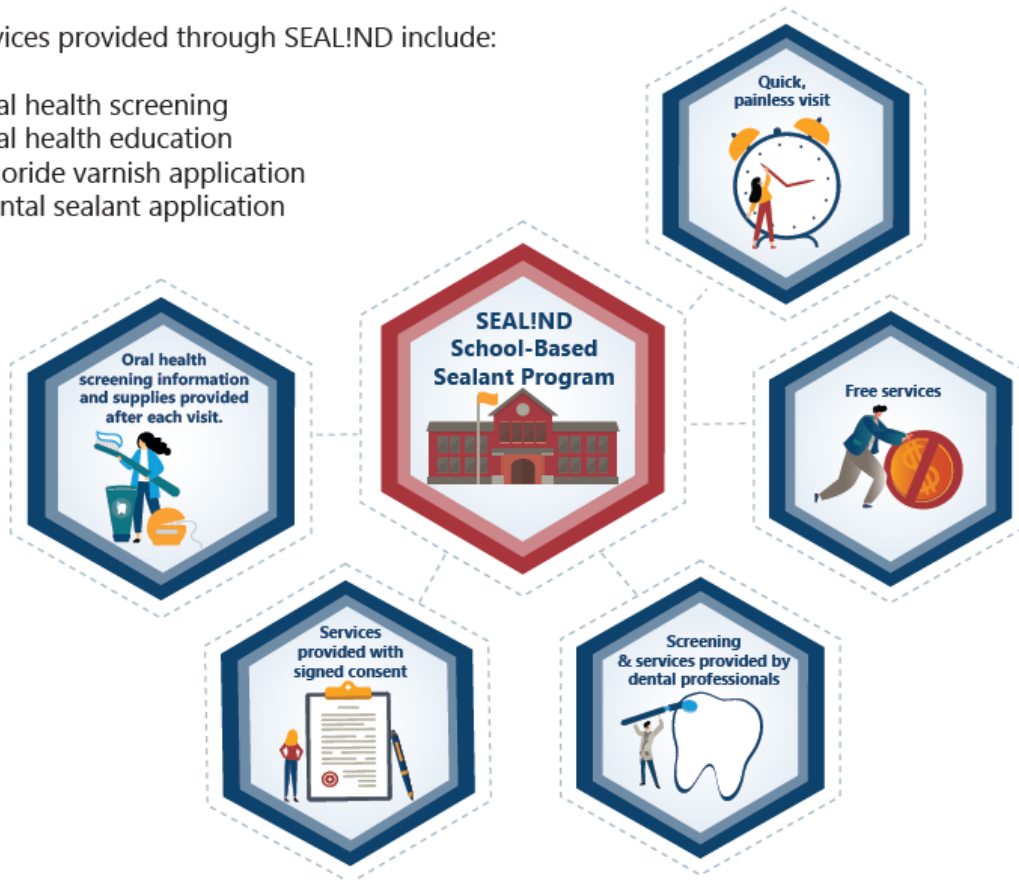
SEAL!ND: North Dakota School-Based Sealant Program

SEAL!ND brings a public health dental hygienist into the school setting two times a year in order to provide direct preventive services.

To have your child participate in the program, complete the consent form that was sent home and be sure to ensure your child is at school the day the dental professional visits.

Services provided through SEAL!ND include:

- Oral health screening
- Oral health education
- Fluoride varnish application
- Dental sealant application



Dental Sealants

Dental sealants are thin coatings painted on the surface of back molars that can last up to nine years. Once applied, sealants protect against 80% of cavities for two years and continue to protect against 50% of cavities for up to four years.

Fluoride Varnish

Fluoride varnish is a protective coating that is painted on the face of all teeth to help prevent cavities and to help slow or stop cavities that have just started. Varnish must be reapplied every six months.



Learn more about SEAL!ND using the QR code or by visiting: tinyurl.com/SEALND



Appendix B: Invitation Letter and Consent Form

WE ARE COMING TO YOUR SCHOOL! **SEAL!ND Dental Sealant & Fluoride Varnish Program**



The North Dakota Department of Health’s SEAL!ND program will be visiting your child’s school this year to help keep your children’s teeth healthy! **If your child goes to the dentist at least once a year, this program is not intended for them. Keep seeing your regular dentist!**

Services provided include:

 <p>Checking your child’s teeth for cavities</p>	 <p>Putting dental sealants on the back teeth to prevent cavities</p>	 <p>Applying fluoride varnish, a natural vitamin for teeth, to keep them strong</p>
---	--	--

We will also be teaching your child how they can prevent cavities by regularly brushing and flossing their teeth and visiting the dentist!

Both fluoride varnish and sealants are safe, easy to apply and painless! Fluoride varnish can be painted onto teeth to protect them from cavities; it can be applied up to four times per year. Because it is so easy to apply fluoride varnish and sealants, we will not need to give your child anything to relax them, any shots, medications or x-rays.

Complete all sections of the consent form and return it to your child’s homeroom teacher; we need your signed permission for your child to participate.

We encourage all children to have regular dental care. This program does NOT take the place of seeing your family dentist. A results form will be sent home with your child after we see them; we recommend your child see a dentist regarding any concerns we find with their teeth. Your child’s smile is important!

If you don’t have a current dentist or if you have any questions, please contact us at 701-328-2356.





PARENT CONSENT
 NORTH DAKOTA DEPARTMENT OF HEALTH
 ORAL HEALTH PROGRAM
 SFN 61686 (6-2022)

SEALIND: North Dakota Dental Sealant and Fluoride Varnish Program

Name of Child (First, Middle, Legal Last)		Age	
Child's Date of Birth (MM/DD/YYYY)	Gender <input type="checkbox"/> Male <input type="checkbox"/> Female	Primary Language (if not English)	
Name of Teacher		Grade	
<input type="checkbox"/> YES, I give my permission for my child to receive the following treatments: <input type="checkbox"/> Oral Screening <input type="checkbox"/> Sealants <input type="checkbox"/> Fluoride Varnish <input type="checkbox"/> NO, I do not give my permission for my child to receive treatment. Specify reason: <input type="checkbox"/> My child already has sealants and/or receives varnish. <input type="checkbox"/> My child regularly sees a dentist. <input type="checkbox"/> Other (describe): _____			
<p>* If you checked no, you do not need to complete the rest of the form. Please return to the teacher. If you checked yes, complete the rest of the form and return to the teacher.</p>			
Name of Parent/Guardian		Parent/Guardian Email Address	
Address		City	State ZIP Code
Race of Child (check one) <input type="checkbox"/> White <input type="checkbox"/> Black/African American <input type="checkbox"/> Multi-racial <input type="checkbox"/> Asian <input type="checkbox"/> American Indian/Alaskan <input type="checkbox"/> Other <input type="checkbox"/> Declined to Answer			
Ethnicity of Child (check one) <input type="checkbox"/> Hispanic/Latino <input type="checkbox"/> Not Hispanic/Latino <input type="checkbox"/> Declined to Answer			
Tribal Affiliation of Child (if applicable)			
Yes	No		
<input type="checkbox"/>	<input type="checkbox"/>	Is your child allergic to anything? If yes, what? _____	
<input type="checkbox"/>	<input type="checkbox"/>	Is your child taking any medications? If yes, what? _____	
<input type="checkbox"/>	<input type="checkbox"/>	Does your child have any medical conditions such as heart disease, asthma, hay fever, hepatitis, cancer, diabetes, etc.? Or any other medical condition? If yes, specify: _____	
<input type="checkbox"/>	<input type="checkbox"/>	Has your child ever needed dental services but was unable to receive services or denied services? If yes, explain: _____	
<input type="checkbox"/>	<input type="checkbox"/>	Does your child have a dentist? If yes, answer below:	
Name of Child's Dentist		Date of Last Visit <input type="checkbox"/> Between 6-12 months ago	
		<input type="checkbox"/> Within the last 6 months <input type="checkbox"/> More than one year ago <input type="checkbox"/> Never	
<input type="checkbox"/> My child has no dental insurance			
No family or child will receive a bill for services; however, Medicaid will be billed if your child is covered by Medicaid.			
Medicaid Number (if applicable)			
Photo Consent/Release: I consent to the use of pictures, video or audio recordings of my child for program promotion. <input type="checkbox"/> Yes <input type="checkbox"/> No			
Signature of Parent/Guardian		Date	

"This consent will be valid for the 12-month period of this program. By signing above, indicates that you have read and understand the contents of the general information and medical history form. You understand the terms of the consent agreement and that you have legal authority to give consent for this child. Your child's personal information will be kept confidential and will not be shared with any person who is not directly involved in the care of your child as part of the Health Insurance Portability and Accountability Act (HIPAA) without written authorization."

Appendix C: Electronic Student Dental Record

Demographics				
Date of birth:	Child's age in years:			
<input type="text"/>	<input type="text"/>			
Gender:	<input type="text"/>			
Race:	<input type="text"/>			
Ethnicity:	<input type="text"/>			
Street Address:	City:	State:		
<input type="text"/>	<input type="text"/>	ND		
Zip Code:	County:	Phone number:		
<input type="text"/>	<input type="text"/>	<input type="text"/>		
Screening Information				
Site code:	<input type="text"/>			
Consent:	<input checked="" type="radio"/> Parent/Guardian Consent for Both (Sealants and Fluoride Varnish) <input type="radio"/> Parent/Guardian Consent for Sealant <input type="radio"/> Parent/Guardian Consent for Fluoride Varnish			
Screening or Application Not Completed:	<input type="radio"/> Child Absent <input type="radio"/> Child Moved <input type="radio"/> Child uncooperative			
Grade level:	<input type="text"/>			
	1st Grade			
Screening				
Screening/Application date:	04/01/2021			
Previous dental visits (with or without treatment):	<input type="radio"/> No previous dental visit has occurred <input checked="" type="radio"/> Yes, a previous dental visit has occurred			
Untreated decay. Primary and/or permanent teeth. Loss of tooth structure at enamel surface, carious lesion, or sticky area.	<input type="radio"/> No untreated decay <input checked="" type="radio"/> Untreated decay present <input type="radio"/> Rampant decay - seven or more untreated areas			
Treated decay. Silver or composite fillings, restorations, crowns or missing teeth due to decay	<input type="radio"/> No sign of previous decay <input checked="" type="radio"/> Yes, filled teeth or restored teeth <input type="radio"/> Rampant decay - seven or more treated areas			
Sealants on Permanent Molars (if surface is smooth by toothpick exploration, sealant may be present):	<input checked="" type="radio"/> No sealants present <input type="radio"/> Yes, sealants previously placed by DDS			
1:	2:	3:	4:	5:
<input type="text"/>	<input type="text"/>	Prescribe Sealant	<input type="text"/>	<input type="text"/>
12:	13:	14:	15:	16:
<input type="text"/>	<input type="text"/>	Prescribe Sealant	<input type="text"/>	<input type="text"/>
32:	31:	30:	29:	28:
<input type="text"/>	<input type="text"/>	Prescribe Sealant	<input type="text"/>	<input type="text"/>
21:	20:	19:	18:	17:
<input type="text"/>	<input type="text"/>	Prescribe Sealant	<input type="text"/>	<input type="text"/>
Number of molars decayed or filled	1st molars:	2nd molars:		
	0	0		

Application				
1: <input type="text"/>	2: <input type="text"/>	3: <input type="text" value="Place Sealant"/>	4: <input type="text"/>	5: <input type="text"/>
12: <input type="text"/>	13: <input type="text"/>	14: <input type="text" value="Place Sealant"/>	15: <input type="text"/>	16: <input type="text"/>
32: <input type="text"/>	31: <input type="text"/>	30: <input type="text" value="Place Sealant"/>	29: <input type="text"/>	28: <input type="text"/>
21: <input type="text"/>	20: <input type="text"/>	19: <input type="text" value="Place Sealant"/>	18: <input type="text"/>	17: <input type="text"/>
Number of teeth sealed				
1st molars: <input type="text" value="4"/>	2nd molars: <input type="text" value="0"/>	3rd molars: <input type="text" value="0"/>		
1st premolars: <input type="text" value="0"/>	2nd premolars: <input type="text" value="0"/>			
Fluoride varnish treatment received today:				
<input type="radio"/> No, fluoride varnish was not applied today <input checked="" type="radio"/> Yes, fluoride varnish was applied today				
Treatment Urgency:				
<input type="radio"/> No obvious problem. Treatment: Next regular checkup within six months. <input checked="" type="radio"/> Early dental care (decay w/out pain or swelling). Treatment: Refer to dentist. <input type="radio"/> Urgent care (pain, infection, large decay, abscess or drainage). Treatment: Immediate referral.				
Treatment complete:				
<input type="checkbox"/> Yes				
Treatment Notes:				
baby teeth possible decay				

Appendix D: Visit Results Sheet

VISIT RESULTS

SEAL!ND Dental Sealant & Fluoride Varnish Program

To the Parent/Guardian of: _____
Date: _____

We were happy to see your child today!

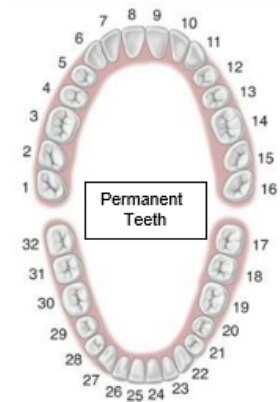
Your child received the following mouth care services today:

- Visual mouth check
- Fluoride treatment - fluoride varnish is a natural vitamin that is painted on the teeth to keep them strong (see instructions below)
- Sealants – thin plastic coating applied to the chewing surfaces of back teeth to prevent food and bacteria from getting into the grooves helping to prevent cavities

NOTES regarding your child: _____

Your child should see a dentist:

- Right away because of possible cavities and/or infection in his/her mouth
- Every six months for a cleaning and x-rays



If your child had a fluoride varnish treatment:

- Don't brush teeth until bedtime.
- They can eat and drink right away.
- For just today they should not have anything chewy like gummy bears or gum and nothing crunchy like chips.

If your child had sealants:

- They can eat and drink right away.
- The sealant is tooth colored and may not be visible.
- They may feel the sealant with their tongue but will quickly adjust to them.

All children should see their dentist every 6 months for teeth cleanings and x-rays!

If you have any questions or need help finding a dentist, please contact:

NORTH
Dakota | Health
Be Legendary.™
701-328-2356

Staff signature: _____