

Center for Rural Health


## North Dakota Oral Health Report: Needs and Proposed Models, 2014

*Testimony for the Legislative Health Services Committee*  
October 9, 2014

**Shawnda Schroeder, PhD**  
Research Specialist  
Center for Rural Health

**Brad Gibbens, MPA**  
Deputy Director  
Center for Rural Health



Center for  
Rural Health  
The University of North Dakota  
School of Medicine & Health Sciences

Good morning, Chair Lee and Members of the Health Services Committee.

We are here today as a representatives of the North Dakota Center for Rural Health and will be speaking to our assessment of the oral health needs in the state, as well as proposed interventions to reduce need.

There is a complete Oral Health Report and an Executive Summary of our findings. We have brought copies of each today, but both may also be found online through the Center for Rural Health. Upon the legislative session in January, both reports will be revised to include more recent workforce data, to include surveys complete by dentists and dental hygienists in the state. We will do a release and notification when these reports have been revised.

## Center *for* Rural Health

- Established in 1980, at The University of North Dakota (UND) School of Medicine and Health Sciences in Grand Forks, ND
- One of the country's most experienced state rural health offices
- UND Center of Excellence in Research, Scholarship, and Creative Activity
- Home to seven national programs
- Recipient of the UND Award for Departmental Excellence in Research

### **Focus on**

- Educating and Informing
- Policy
- Research and Evaluation
- Working with Communities
- American Indians
- Health Workforce
- Hospitals and Facilities

[ruralhealth.und.edu](http://ruralhealth.und.edu)

2

This slide provides information on the Center for Rural Health, our history and our primary topics of focus.

## Background of Study

- In Response to the Health Services Committee
- Funded under Pew Charitable Trusts – Independent from the work of the CRH
- Purpose: Identify oral health needs, research possible oral health models, develop and implement a process to engage statewide stakeholders



3

In early spring, we were contacted by Pew Charitable Trusts and given an opportunity to complete an impartial assessment of the oral health needs in the state while also working to identify the proposed interventions developed and supported by various oral health stakeholders. Our efforts were funded in response to the request of a study to be complete on oral health needs by the Health Services Interim Committee. While our efforts were funded by Pew Charitable Trusts, we worked independently from the foundation, developed our own methodology and wrote the findings and conclusions without influence of the funder. I now turn presentation of the process and results over to Shawnda Schroeder.

## North Dakota Oral Health Stakeholders

Blue Cross Blue Shield of North Dakota (Private Insurer)  
Chamber of Commerce/Statewide Vision and Strategy Committee  
Community Healthcare Association of the Dakotas  
Developmental Homes  
Family HealthCare  
Family Voices of North Dakota  
Fargo Public Schools  
Long Term Care Association of North Dakota  
North Dakota American Association of Retired Persons  
North Dakota Association of Community Providers  
North Dakota Department of Health, Oral Health Program  
North Dakota Disabilities Advocacy Consortium  
North Dakota Head Start Association  
North Dakota Indian Affairs Commission  
Sanford Bismarck Emergency and Trauma Center  
Third Street Clinic

4

Thank you and thank you Chair Lee and Members of the Health Services Committee.

The North Dakota Oral Health Stakeholder Working group met on five occasions to discuss and identify need, and to learn about various oral health models while also working to identify priority model interventions. Stakeholders represented organizations in the state that work with populations who readily seek access to oral health care.

## North Dakota Oral Health Input Group

\* Indicates group presented at an Oral Health Stakeholder Working Group meeting

American Academy of Pediatrics, North Dakota Chapter	North Dakota Department of Health, Health Equity Office
American College of Emergency Physicians, North Dakota Chapter	North Dakota Department of Health
Blue Cross Blue Shield of North Dakota	North Dakota Department of Human Services
Bridging the Dental Gap*	North Dakota Department of Public Instruction
Cankdeska Cikana Community College (Tribal College)	North Dakota Health Information Network
Consensus Council	North Dakota Hospital Association
Grand Forks Public Health Department*	North Dakota Oral Health Coalition*
North Dakota Academy of General Dentistry	North Dakota Public Health Association*
North Dakota Association of Counties	North Dakota Board of Dental Examiners
North Dakota Dental Assistants Association	North Dakota State College of Science
North Dakota Dental Association**	North Dakota State Council on Developmental Disabilities
North Dakota Dental Hygienists' Association*	North Dakota Women and Infants and Children Valley Community Health Center*

5

The North Dakota Oral Health Input Group consisted of entities in North Dakota that worked in or with oral health, to include provider organizations. Input group members were asked to share their knowledge regarding oral health access, workforce, and current North Dakota and potential ameliorative models. Specific groups were also asked to present at stakeholder meetings – those entities that presented at Stakeholder meetings are noted above with an asterisk. Complete meeting agendas and minutes may be found on our website at ruralhealth.und.edu. (<http://ruralhealth.und.edu/projects/nd-oral-health-assessment>).

In addition to state presenters, four national content experts spoke at the stakeholder working group meetings on models and best practices that have worked in their respective states.

## North Dakota Oral Needs

- Based on Data, Input Member Responses, and Stakeholder Meetings
  - Need for Prevention Programs
  - Need for Dental Insurance Revision and/or Care Access
  - Need for Greater Workforce and Improved Access to Care

6

The reviewed data, North Dakota Oral Health Stakeholder perspectives and state oral health input group responses all pointed to three primary oral health needs for the state to include (in no order):

- Need for Prevention Programs
- Need for Dental Insurance Revision and/or Care Access
- Need for Greater Workforce and Improved Access to Care

## North Dakota Oral Needs: Prevention Programs

Need for greater oral health literacy and prevention across the state, with greatest need among special populations (to include children, the aging population, Medicaid patients, low-income, homeless, new Americans, American Indians, rural, and those with physical/mental disabilities)

7

**Prevention Programs:** Need for greater oral health literacy and prevention across the state, with greatest need among special populations (to include children, the aging population, Medicaid patients, low-income, homeless, new Americans, American Indians, rural, and those with physical/mental disabilities)

## North Dakota Oral Needs: Dental Insurance

Need for Medicare and Medicaid expansion; specifically, increase Medicaid reimbursement to incentivize dentists to accept more Medicaid patients, and restructure services provided among long term care residents to fit current Medicare reimbursement – need for coverage and services for Medicare enrollees

8

**Dental Insurance:** Need for Medicare and Medicaid expansion; specifically, increase Medicaid reimbursement to incentivize dentists to accept more Medicaid patients, and restructure services provided among long term care residents to fit current Medicare reimbursement – need for coverage and services for Medicare enrollees



## North Dakota Oral Needs: Workforce and Access to Care

Need to improve access to care and need to adjust the uneven distribution of the current workforce in order to meet the needs of North Dakota Citizens, especially special populations

*The discussion regarding access to care and creation of a larger workforce was not a general concern for more dentists. Instead, much of what was discussed related to disparities in access among populations with greatest need*

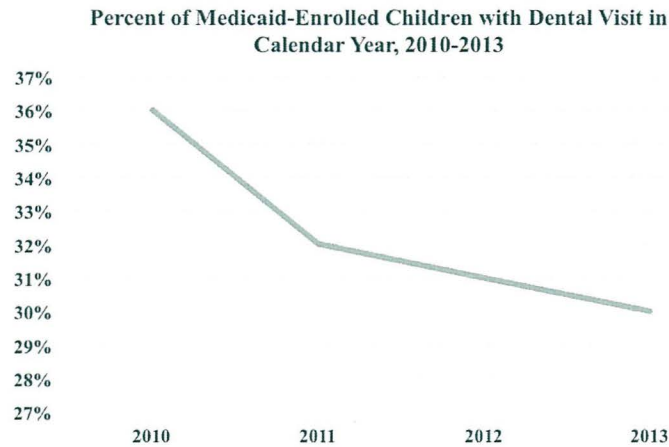
9

**Workforce and Access to Care:** Need to improve access to care and need to adjust the uneven distribution of the current workforce in order to meet the needs of North Dakota Citizens, especially special populations. The discussion regarding access to care and creation of a larger workforce was not a general concern for more dentists. Instead, much of what was discussed related to disparities in access among populations with greatest need, to include:

- Need to increase the number of dentists in rural and tribal communities.
- Need to increase the number of dentists accepting Medicaid patients.
- Need to increase the number of oral health providers available to meet the needs of the aforementioned special populations. This may or may not be a need for dentists.
- Need for more dental assistants in the state, especially in the Western half of the state where the patient population and needed dental care have changed and increased as the result of the recent oil boom.
- Need to use dental hygienists at their full scope of work, allowing more dental hygienists to work under general supervision of a dentist, providing preventive care and education in communities with high need.
- Need for oral surgeons, specifically, those who will accept Medicaid patients – in both rural and urban communities.

## North Dakota Oral Health Need: Data

Medicaid reimbursement increased by 3% in both 2011 and 2012, and an additional 4% in 2013



The oral health needs have been corroborated by recent data. Please read the complete report, or the executive summary for more data and analysis regarding the current oral health environment in North Dakota. The data to be presented today highlight areas of need while the report also stipulates areas where North Dakota is doing very well with regard to oral health care.

Medicaid reimbursement increased by 3% in both 2011 and 2012, and an additional 4% in 2013 yet the percentage of Medicaid-enrolled children who had had a dental visit in the last year had declined over that same period

## North Dakota Oral Health Need: Data

- Adolescents had high rate of annual dental exams (75%) in 2012
  - Only 30% of Medicaid-enrolled children had a dental visit in the last calendar year
- In 2013, 73% of Medicaid enrolled children went without a preventive dental visit in the last calendar year
  - fewer than 5% received a sealant on a permanent molar tooth

11

Adolescents had high rate of annual dental exams (75%) in 2012 while Only 30% of Medicaid-enrolled children had a dental visit in the last calendar year.

In 2013, 73% of Medicaid enrolled children went without a preventive dental visit in the last calendar year while fewer than 5% received a sealant on a permanent molar tooth.

## North Dakota Oral Health Need: Data

8% of dental practices billing Medicaid in 2013 provided care to 52% of Medicaid enrollees accessing care; a majority of Medicaid patients were seen by only 21 of the 249 dental practices that billed Medicaid

Number and Percent of Patients Served by Dental Practices Billing Medicaid, 2013\*

Number of Medicaid Recipients Seen in Calendar Year	Number of Dental Practices	Cumulative Percent of Medicaid Patients that Saw a Dentist*
900+	6	30%
301-525	15	52%
101-300	44	79%
51-100	39	90%
2-10	94	100%
11-50	34	100%
1	17	100%

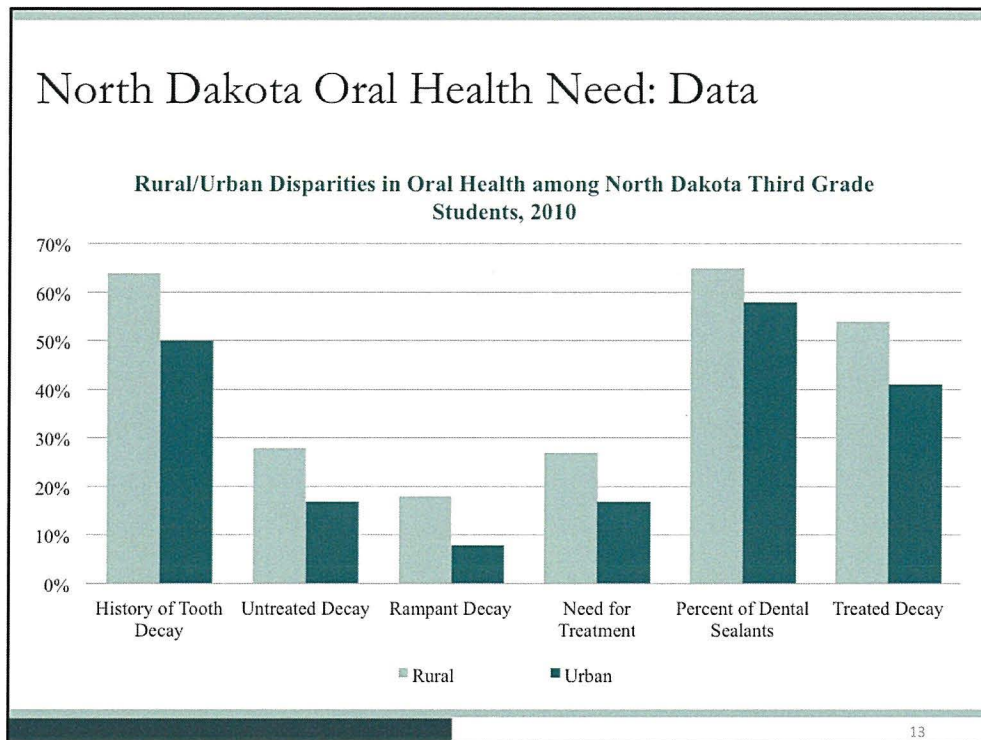
\*Percent is based on the total number of Dental Practices that had billed Medicaid, not total dental practices

12

8% of dental practices billing Medicaid in 2013 provided care to 52% of Medicaid enrollees accessing care; a majority of Medicaid patients were seen by only 21 of the 249 dental practices that billed Medicaid.

This table also illustrates that nearly 80% of the Medicaid patients seen by a dental provider were seen by only 65 of the 249 dental practices that billed Medicaid in 2013. This would mean 26% of those that bill Medicaid see nearly 80% of all patients. The true percent of dentists or even dental practices that see a majority of Medicaid patients may actually be much lower as we do not know the total number of dental practices – the 249 listed does not account for those who accept NO Medicaid patients.

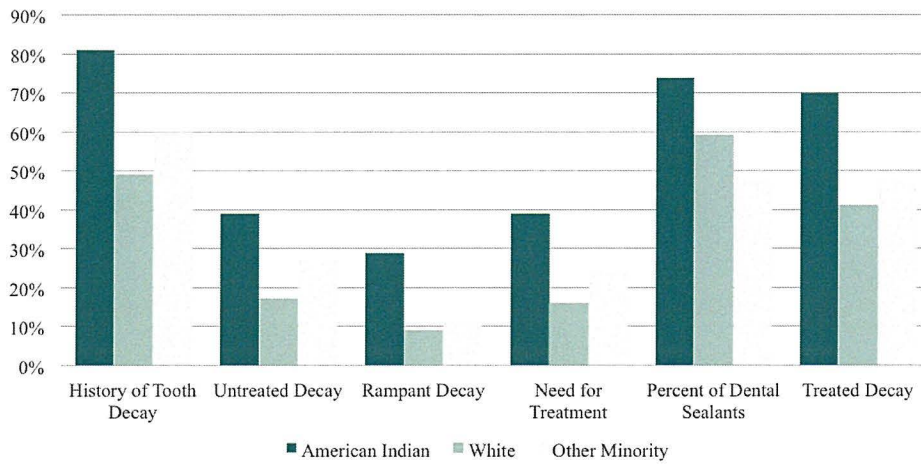
## North Dakota Oral Health Need: Data



Data illustrate that Rural third grade students reported worse oral health when compared to their urban peers in 2010.

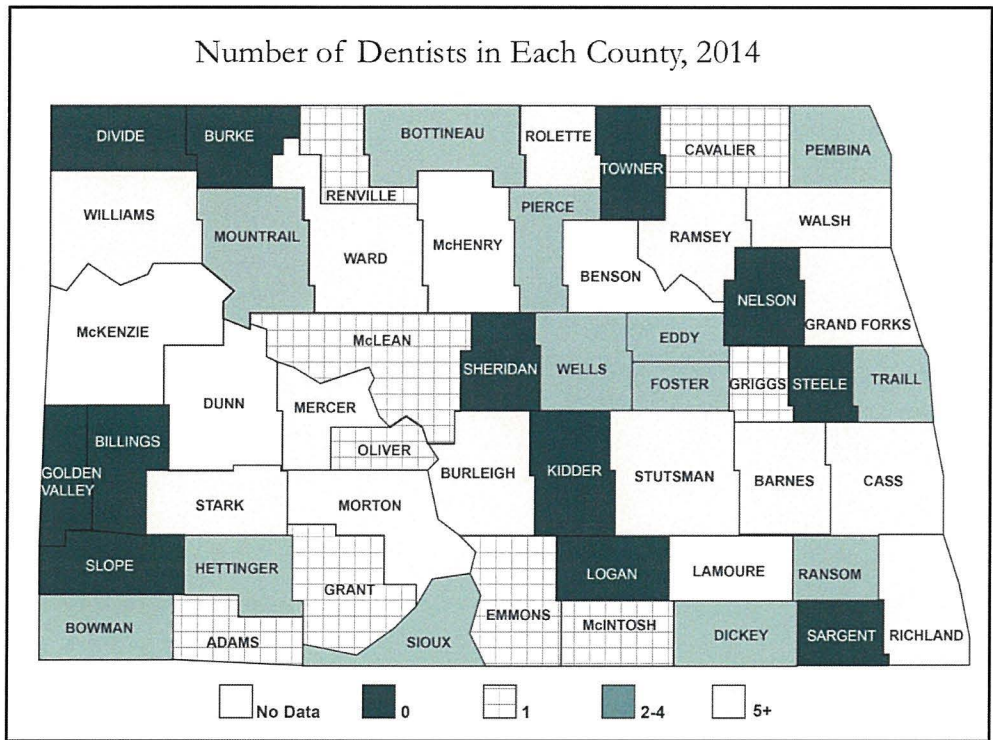
## North Dakota Oral Health Need: Data

Racial Disparities in Oral Health among North Dakota Third Grade Students, 2010



14

- Among third-grade students in 2013, American Indian's reported higher rates of tooth decay, untreated decay, rampant decay, and need for treatment among other oral health markers.



In 2014, 12 counties had no dentist, 9 had 1, 13 counties had 2-4 dentists, and five counties had no data

## North Dakota Oral Health Need: Data

- In 2013, 67% of all the licensed North Dakota dentists worked in the four largest counties: Burleigh, Cass, Grand Forks, and Ward
- The number of active licensed dentists in North Dakota has increased from 2007 (327 dentists) to 2013 (380 dentists); however, 36% of those practicing plan to retire in 13 years
- The dentist to population ratio is approximately 61 per 100,000 in North Dakota which is below the national trend of 76 per 100,000

See complete report for more information and description of need:

*[ruralhealth.und.edu/projects/nd-oral-health-assessment](http://ruralhealth.und.edu/projects/nd-oral-health-assessment)*

16



## North Dakota Oral Health Models

- 24 Proposed Models
- 5 North Dakota Oral Health Stakeholder Priority Recommendations



17

Throughout the process of identifying recommendations for the state, oral health stakeholders and input group members developed and discussed 24 possible models for the state.

However, the North Dakota Stakeholder Working Group was charged with making the final recommendations regarding action priorities.

1. Purchase of Mobile Equipment: Provider "Check-Out" Across State
2. New Fluoride Water Systems in the West
3. Increased Reach of Sealant Programs in Eligible Schools (see Model 22)
4. North Dakota AHEC Dental Outreach: Dental Students in ND schools (Model 24)
5. Dental Therapy/Mid-level Provider
6. Dental School In North Dakota
7. Expand the Scope of Practice and Allow Dental Professionals to Practice to the Full Extent of their Training
8. Safety-Net Clinic(s) in Western North Dakota (see Model 23)
9. Expand Safety-Net Clinics – State Funding (see Model 23)
10. Expand Children's Dental Efforts (see Model 23)
11. Establish Dental Assisting Schools in Western North Dakota
12. Expand Bridging The Dental Gap: Funding for Non-Profit (see Model 23)
13. Medicare Expansion To Cover Dental
14. NDDA Case Management Program (see Model 22)
15. Apple Tree Dental (see Model 23)
16. Increase Medicaid Reimbursement
17. Eliminate Long Term Care Per-Resident Fee: Make Allowable Cost
18. Expand Loan Repayments/Programs (see Model 24)
19. Integration of Oral Health and Primary Care
20. Collaborate with Border Dental Schools for Student Spots: Require Students to Return to ND (see Model 24)
21. Use of Existing Free Travel to Transport Rural or other Geographically Challenged Individuals to Current Dental Practices
22. Increase reach of Sealant Program through state funds, utilization of dental hygienists current scope of practice, and work to incorporate the Case Management Model by training the DHs to complete case assessments and dental home recommendations. Also requires developing case management as an allowable cost and working to ensure reimbursement for sealants to make it a sustainable program.
23. Expand Safety-Net Clinics - use models/ideas/support from non-profits like Apple Tree and/or Children's Dental to strengthen hub-and-spoke model of safety-net care in the state
24. Create a system to promote dentistry profession in ND: Increase dental loans, consolidate the loan programs, and work with out of state dental schools to reserve spots/in-state tuition and develop externships/rotations in North Dakota

18

This slide illustrates the original 24 models discussed throughout this process. In the executive summary, you can read a brief explanation of each. In the complete report, each model is discussed in greater detail, along with discussion of the needs it would address, and examples of other states or groups that have adopted similar interventions and the results they have experienced. This is a list of ideas developed by both state stakeholder and input members and ranges from smaller interventions – consolidating and expanding existing student loan repayment programs, to much larger scale solutions like the development and build of a Dental School or the implementation of a midlevel dental provider.

## Top Five Stakeholder Priority Models

1. Increased funding and reach of safety-net clinics to include services provided in western North Dakota; uses models/idea/support from nonprofit oral health programs similar to Apple Tree Dental and Children's Dental to promote hub-and-spoke models of care.
2. Increased funding and reach of the Seal! North Dakota Program – to include using dental hygienists to provide care and incorporating case management and identification of a dental home as proposed under the North Dakota Dental Association's case management model. Includes Medicaid reimbursement for services rendered.
3. Expand scope of dental hygienists (DHs) and utilize DHs at the top of their current scope of work to provide community based preventive and restorative services and education among populations of high need.
4. Create a system to promote dentistry professions among state residents and encourage practice in North Dakota through a consolidated loan repayment program and partnership/student spots at schools of dentistry.
5. Increased Medicaid reimbursement.

19

Following is the list of the top five priority recommendations of the Oral Health Stakeholder working group. We do want to reiterate that these are not recommendations of the Center for Rural Health. Our role was to assist the group and facilitate a process to arrive at these recommendations.

Of the above priority models, no one model received more than 33% of the stakeholder vote in the final survey. The final survey required each stakeholder to identify the three most important interventions from the complete list. Earlier data from an initial stakeholder survey and qualitative data from the Stakeholder Working Group Final Consensus Meeting corroborate these findings. The five priorities listed had the greatest support of the group and ranked in the upper tier for anticipated *impact, likelihood*, or both in the initial assessment. You can see the complete surveys and the results in the full report.

**1.** In order, the first recommendation is to increase funding and reach of safety-net clinics to include services provided in western North Dakota; this included looking into the use of models and ideas from nonprofit oral health programs similar to Apple Tree Dental and Children's Dental Services (which employ various provider types and rely on satellite services). Ideally, this model proposed looking to fund and expand current safety-net providers to increase the reach of oral health safety nets services; especially in rural, tribal and western communities. Satellite locations could provide



## Contact us for more information!

**Shawnda Schroeder, PhD**

Center for Rural Health  
501 North Columbia Road, Stop 9037  
Grand Forks, North Dakota 58202-9037

701.777.0787  
Shawnda.schroeder@med.und.edu

[ruralhealth.und.edu](http://ruralhealth.und.edu)

20



Center *for*  
Rural Health  
The University of North Dakota  
School of Medicine & Health Sciences

We want to thank you again for the opportunity to present. The complete report includes a detailed discussion of all 24 models and provides a much more comprehensive discussion of need. Both the complete report and executive summary may be found online, or you may contact me for a copy. We will also note that a new version will be distributed and available at the beginning of the legislative session as new data becomes available. Thank you again and we welcome any questions.



Center *for* Rural Health

# North Dakota Oral Health Report: Needs and Proposed Models, 2014

## EXECUTIVE SUMMARY

August 2014

### Project Completed by

Shawnda Schroeder, PhD  
Project Director

Yvonne Jonk, PhD  
Kristin Schuller, PhD  
Ken Hall, JD  
Gary Hart, PhD  
Brad Gibbens, MPA

### Funded by

The Pew Charitable Trusts

## Background

In spring of 2014 the North Dakota Center for Rural Health was tasked with completing an objective assessment of oral health need and policy recommendations for North Dakota. This study was undertaken in response to the Health Services Interim Committee which, under HB 1454, was responsible for a Legislative Management study on oral health. Work was complete under funding from the Pew Charitable Trusts. The project included assessing the existing oral health workforce and service capacity, assessing the potential unmet need for oral health care, and producing a written report of needs, outcomes, findings and stakeholder recommendations to be compiled and presented to the Health Services Interim Committee in an impartial fashion.

## North Dakota Oral Health Need

The reviewed data, North Dakota Oral Health Stakeholder perspectives and state oral health input group responses all pointed to three primary oral health needs for the state to include (in no order):

- 1. Prevention Programs:** Need for greater oral health literacy and prevention across the state, with greatest need among special populations (to include children, the aging population, Medicaid patients, low-income, homeless, new Americans, American Indians, rural, and those with physical/mental disabilities)
- 2. Dental Insurance:** Need for Medicare and Medicaid expansion; specifically, increase Medicaid reimbursement to incentivize dentists to accept more Medicaid patients, and restructure services provided among long term care residents to fit current Medicare reimbursement – need for coverage and services for Medicare enrollees
- 3. Workforce and Access to Care:** Need to improve access to care and need to adjust the uneven distribution of the current workforce in order to meet the needs of North Dakota Citizens, especially special populations

The discussion regarding access to care and creation of a larger workforce was not a general concern for more dentists. Instead, much of what was discussed related to disparities in access among populations with greatest need, to include:

- Need to increase the number of dentists in rural and tribal communities.
- Need to increase the number of dentists accepting Medicaid patients.
- Need to increase the number of oral health providers available to meet the needs of the aforementioned special populations. This may or may not be a need for dentists.
- Need for more dental assistants in the state, especially in the Western half of the state where the patient population and needed dental care have changed and increased as the result of the recent oil boom.
- Need to use dental hygienists at their full scope of work, allowing more dental hygienists to work under general supervision of a dentist, providing preventive care and education in communities with high need.
- Need for oral surgeons, specifically, those who will accept Medicaid patients – in both rural and urban communities.

Data, stakeholder discussion, and input responses all indicate a need to provide oral health services to populations in need. There is inadequate prevention, low oral health literacy and poor access and utilization for both preventive and restorative care among Medicaid patients, the uninsured and

underinsured. Following is a presentation of the current oral health needs in the state as evident from current data reports and evidenced-based research. See the complete report *North Dakota Oral Health Report: Needs and Proposed Models, 2014* for more data and discussion of the needs in the state.

### State Data: Oral Health Need

- Rural third grade students reported significantly worse oral health when compared to their urban peers.<sup>i</sup> See Appendix A, Figure 1
- There are disparities in oral health status between American Indian third grade students and their white and other minority peers; American Indian's reported higher rates of tooth decay, untreated decay, rampant decay, and need for treatment.<sup>ii</sup> See Appendix A, Figure 2
- The overall reimbursement rate, as defined by the amount of Medicaid dollars paid to providers, divided by the amount of Medicaid dollars billed over a five year period in North Dakota was roughly 62% in 2013. This rate leads the nation with North Dakota having one of the highest dental reimbursement rates.
- Medicaid reimbursement rates increased by 3% in both 2011 and 2012, and an additional 4% in 2013 yet the percentage of Medicaid-enrolled children who had had a dental visit in the last year had declined over that same period.<sup>iii</sup> See Appendix A, Figure 3
- A majority of dental practices that had billed Medicaid in 2013 (52%) saw 50 or fewer Medicaid patients; 65 of the 249 saw more than 100 Medicaid patients. See Appendix A, Figure 4
- Only 8% of the dental practices billing Medicaid in 2013 provided care to a majority (52%) of the Medicaid enrollees accessing dental services. See Appendix A, Table 1
- Nearly 80% of all Medicaid patients that saw a dentist in 2013 were seen at only 26% (65) of the dental practices there were billing Medicaid (249 total billing Medicaid); this does not account for those practices that saw no Medicaid patients. See Appendix A, Table 1
- In 2009 only 20% of dentists accepted *new* Medicaid patients. This number is much lower than the 49% of practicing dentists who accepted new Medicaid patients in 1992.<sup>iv</sup>
- In 2013, 73% of Medicaid enrolled children went without a preventive dental visit in the last calendar year with fewer than 5% receiving a sealant on a permanent molar tooth.<sup>v</sup>
- Adolescents had high rate of annual dental exams (75%) in 2012; only 30% of Medicaid-enrolled children had a dental visit in the last calendar year.<sup>vi</sup>
- 67% of North Dakotan adults, 18 and older, reported having been to the dentist in the past year.<sup>vii</sup>
- Rate of adults over 65 missing all teeth has been on the decline; however, those 65 and older are far more likely than any other age group to report having an oral health problem (32%).<sup>viii</sup>
- In 2014, 12 counties had no dentist, 9 had 1, 9 counties had 2 dentists, and five counties had not reported. See Appendix A, Figure 5
- In 2013, 67% of all the licensed North Dakota dentists worked in the four largest counties: Burleigh, Cass, Grand Forks, and Ward.<sup>ix</sup>
- The dentist to population ratio is approximately 61 per 100,000 in North Dakota which is below the national trend of 76 per 100,000.<sup>x</sup>
- The number of active licensed dentists in North Dakota has slowly increased from 2007 (327 dentists) to 2013 (380 dentists); however, 36% of those currently practicing plan to retire in the next 13 years.<sup>xi</sup>
- There has been a decline in the number of Head Start children needing treatment who received the needed treatment; 95% in 2010 declining annually to 75% in 2013.<sup>xii</sup> See Appendix A, Figure 6
- There has been an increase in rate of dental sealants though the percent of 3rd grade students with caries has not changed (55% in 2010) and percent of 3rd grade students with untreated tooth decay has more than doubled from 17% in 2005 to 46% in 2010<sup>xiii</sup>

## North Dakota Oral Health Stakeholder Working Group Recommendations

Throughout the process of identifying recommendations for North Dakota, oral health stakeholders and input group members developed and discussed 24 possible models for the state, all of which will be highlighted in this report. However, the North Dakota Stakeholder Working Group was charged with making the final recommendations regarding action priorities. The summary of the final recommendations proposed by the Oral Health Stakeholder Working Group was sent for review and approved by the participating members. See Appendix B for the list of participating stakeholders and input members. The oral health priority recommendations for the state include the following:

### Highest Ranked Oral Health Recommendations by Oral Health Stakeholder Group

1. Increased funding and reach of safety-net clinics to include services provided in western North Dakota; uses models/idea/support from nonprofit oral health programs similar to Apple Tree Dental and Children's Dental Services to promote hub-and-spoke models of care.
2. Increased funding and reach of the Seal! North Dakota Program to include using dental hygienists to provide care, and incorporating case management and identification of a dental home as proposed under the North Dakota Dental Association's case management model. Includes Medicaid reimbursement for services rendered.
3. Expand scope of dental hygienists (DHs) and utilize DHs at the top of their current scope of work to provide community based preventive and restorative services, and education among populations of high need.
4. Create a system to promote dentistry professions among state residents, and encourage practice in North Dakota through a consolidated loan repayment program and partnership/student spots at schools of dentistry.
5. Increased Medicaid reimbursement.

Of the above priority models, none received more than 33% of the stakeholder vote in the final survey. Earlier data from an initial stakeholder survey and qualitative data from the Stakeholder Working Group Final Consensus Meeting corroborate these findings. The five priorities listed had the greatest support of the group and also ranked in the upper tier for anticipated *impact*, *likelihood*, or both in the initial assessment (See Appendix D for final survey results).

- How great of an *impact* would each proposed model have on its intended population/focus?
- How *likely* is it, given the current oral health environment (political, economic, social, demand)?

Read chapter IV. *Proposed Models to Improve North Dakota Oral Health Status* in the complete report *North Dakota Oral Health Report: Needs and Proposed Models, 2014* for more survey detail, presentation of the results, and analysis of the working group discussions.

### Process for Identifying Oral Needs and Priorities in North Dakota

Though funded by the Pew Charitable Trusts, the Center for Rural Health were contracted to work independently from the organization, identifying their own process and methodology for developing a report on oral health needs and recommendations for the state. The Center for Rural Health identified two



North Dakota groups: (1) a primary Oral Health Stakeholder Working Group; and (2) an Oral Health Input Group. See Appendix B for the list of participants.

The Oral Health Stakeholder Working Group was comprised of individuals in the state who were identified as active in, and knowledgeable about, North Dakota’s oral health environment. Specifically, their represented organizations served populations that either accessed or struggled to gain access to oral health services. The stakeholders participated in three video conference calls and two face-to-face meetings, identifying oral health-related needs and models. They were also responsible for reviewing all reports provided by the Center for Rural Health, and most importantly, making the final oral health recommendations for North Dakota.

The North Dakota Oral Health Input Group consisted of entities in North Dakota that worked in or with oral health, to include provider organizations. Input group members were asked to share their knowledge regarding oral health access, workforce, and current North Dakota and potential ameliorative models; specifically, they were sent three questions to respond to for inclusion in the report of needs. Various input members were invited to present at stakeholder meetings. Input members were also sent drafts of each report developed by the Center for Rural Health and invited to provide feedback, edits, or additional information.

The Stakeholder Working Group met regularly to identify and develop oral health best practices and models for North Dakota. During these meetings, four national experts were invited to speak about models that have worked in their respective states (Appendix B). Figure 1 illustrates the process and information that were utilized by the CRH to identify and detail the final priority recommendations of the Oral Health Stakeholder Working Group.

Figure 1. Identification of North Dakota Stakeholder Group’s Oral Health Priorities

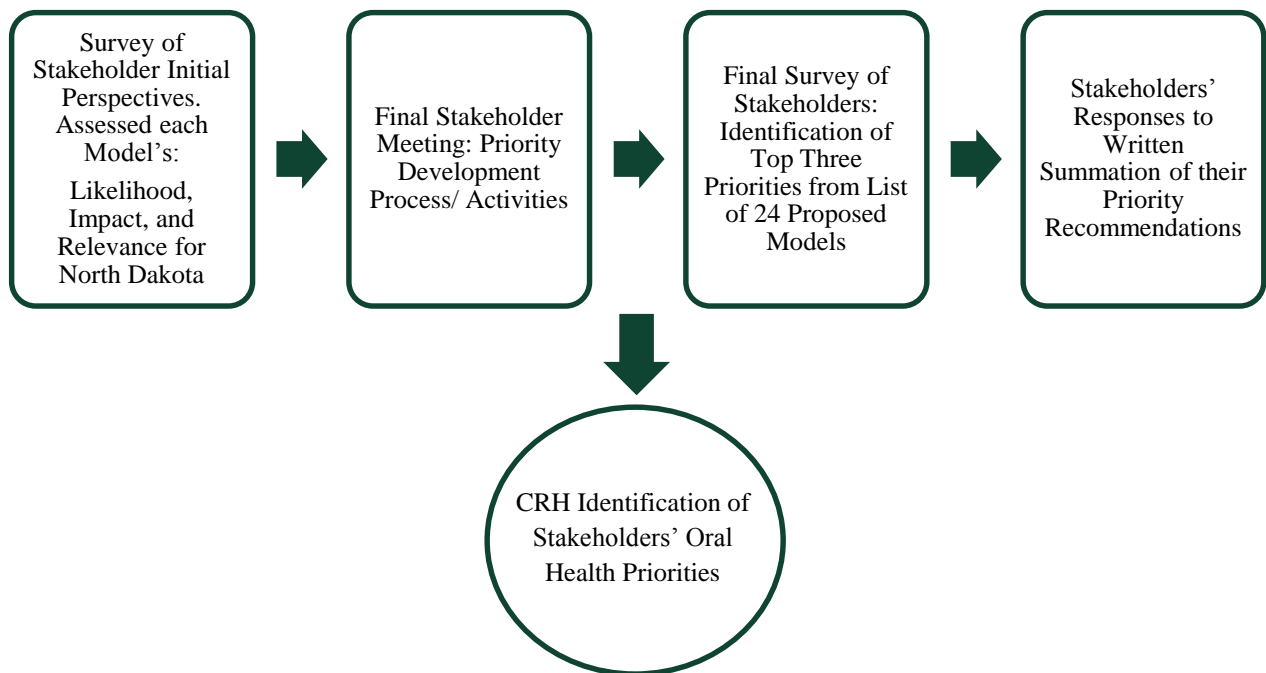
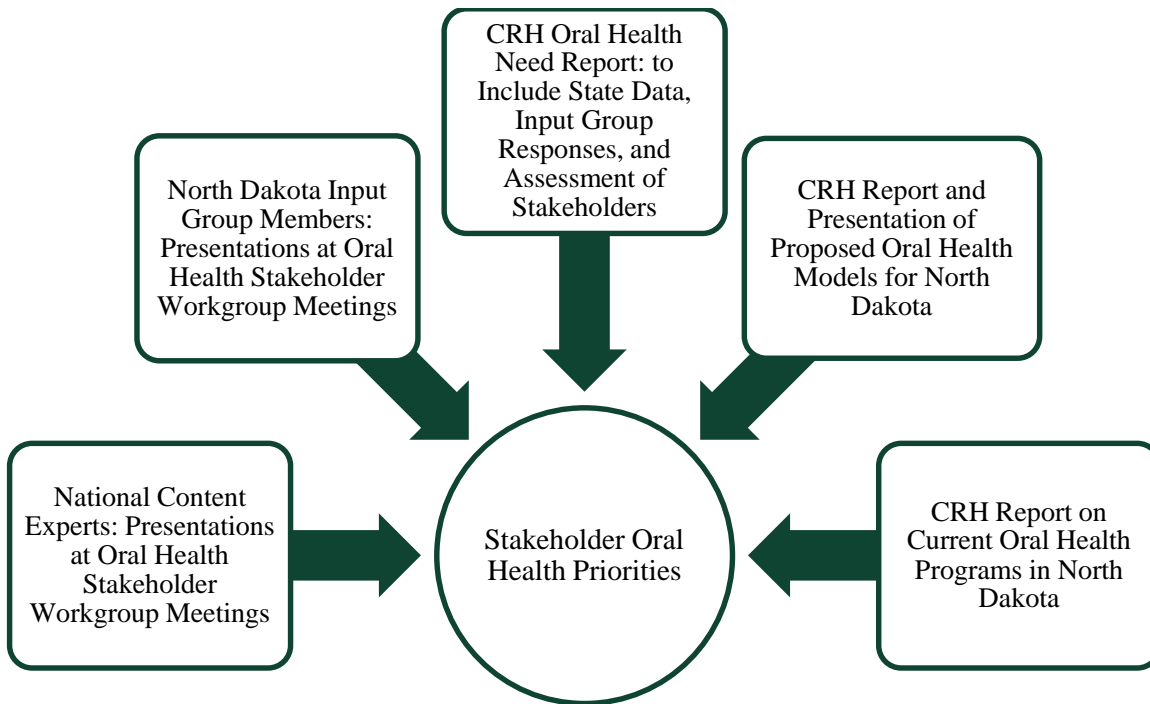


Figure 2 presents the flow and sources of information utilized by the Oral Health Stakeholder Working Group, as a result of their participation in the CRH’s process, in making final recommendations for the state.

Figure 2. Sources of Information Provided by the CRH to the Oral Health Stakeholder Working Group



### Model Interventions to Improve the Oral Health Status of North Dakota

While the stakeholder group identified the aforementioned priorities for North Dakota, other model interventions were discussed over the duration of this project. Following is a presentation of the 24 models. All models identified were included per request of a stakeholder, an input member, or both. While the stakeholder group identified priorities for the state, all of the following models were suggested at some point during the process. The following table also states which of the three identified oral health needs the proposed models would address. In both Table 1 and Table 2, the shaded interventions are those that were identified as the first and necessary steps in a larger effort to improve oral health services in the state. The stakeholder priorities are highlighted within Table 1. Table 2 provides a brief description of each proposed intervention model. For greater detail regarding any of the listed recommendations, read the complete preliminary report, *North Dakota Oral Health Report, Need and Proposed Models, 2014* at [ruralhealth.und.edu/projects/nd-oral-health-assessment](http://ruralhealth.und.edu/projects/nd-oral-health-assessment).

Table 1. Oral Health Models for North Dakota and their Category of Need

\*Stakeholder priority recommendations are shaded below

MODEL		NEED
1	Purchase of mobile equipment: Provider “check-out” across state	Access to Care
2	New fluoride water systems in the west	Prevention
3	Increased reach of sealant programs in eligible schools (see model 22)	Prevention
4	North Dakota AHEC dental outreach: Dental students in ND schools (model 24)	Workforce
5	Dental therapy/mid-level provider	Workforce
6	Dental school in North Dakota	Workforce
7	Expand the scope of practice and allow dental professionals to practice to the full extent of their training	Workforce
8	Safety-net clinic(s) in western North Dakota (see model 23)	Access to Care
9	Expand safety-net clinics – state funding (see model 23)	Access to Care
10	Expand Children’s Dental efforts (see model 23)	Access to Care
11	Establish dental assisting schools in western North Dakota	Workforce
12	Expand Bridging the Dental Gap: Funding for non-profit (see model 23)	Access to Care
13	Medicare expansion to cover dental	Dental Insurance
14	NDDA case management program (see model 22)	Prevention
15	Apple Tree Dental (see model 23)	Access to Care
16	Increase Medicaid reimbursement	Dental Insurance
17	Eliminate long term care per-resident fee: Make allowable cost	Dental Insurance
18	Expand loan repayments/programs (see model 24)	Workforce
19	integration of oral health and primary care	Prevention
20	Collaborate with border dental schools for student spots: Require students to return to ND (see model 24)	Workforce
21	Use of existing free travel to transport rural or other geographically challenged individuals to current dental practices	Access to Care
22	Increase reach of Sealant Program through state funds, utilization of dental hygienists current scope of practice, and work to incorporate the case management model by training the dental hygienists to complete case assessments and dental home recommendations. Also requires developing case management as an allowable cost and working to ensure reimbursement for sealants to make it a sustainable program.	Prevention
23	Expand safety-net clinics - use models/ideas/support from non-profits like Apple Tree and/or Children's Dental to strengthen hub-and-spoke model of safety-net care in the state	Access to Care
24	Create a system to promote dentistry profession in ND: Increase dental loans, consolidate the loan programs, and work with out of state dental schools to reserve spots/in-state tuition and develop externships/rotations in North Dakota	Workforce

Table 2. Proposed Oral Health Models and Descriptions: North Dakota, 2014

\*Stakeholder priority recommendations are shaded below

PROPOSED MODEL	BRIEF DESCRIPTION
<p>1. Purchase of Mobile Equipment: Provider “Check-Out” Across State</p> <p><b>[Access to Care]</b></p>	<p>Bridging the Dental Gap, in partnership with the North Dakota Oral Health Coalition is working to establish mobile dental equipment across the state to be utilized by either public health or private dental practice professionals. This equipment would be housed in long term care (LTC) facilities; space is available, and residents are one of the many populations in need of oral health care in North Dakota. While the initiative could be led by an existing oral health program, initial funding would be required to purchase the equipment. Early estimates have identified eight LTC sites across the state, each looking to house one mobile unit at \$25,000 per unit. The total to fund equipment needed to employ the initiative is \$200,000. These resources could be utilized by both private practice dentists and their dental teams, and public health dental teams. Care could then be provided in Head Start schools, at tribal locations, public schools, LTC facilities, and other community programs with populations in high need. A report on similar programs in North Carolina and Connecticut that were implemented through existing federally qualified health centers (FQHCs) noted that, after purchase of the equipment, “because fixed dental facilities or mobile dental vans are not necessary, the capital needed to implement this program is modest. Likewise, FQHC current reimbursement rates are usually adequate to cover program costs” (Bailit &amp; D’Adamo, 2012). In North Carolina, the start-up capital expense for equipment was \$30,000 per mobile unit.</p>
<p>2. Water Fluoridation in Western North Dakota</p> <p><b>[Prevention]</b></p>	<p>Ensure newer communities in western North Dakota are receiving fluoridated water. While all participating members agreed that fluoridated water is imperative for prevention of oral health caries, it was also noted that North Dakota does especially well with regard to fluoride exposure. Again, in North Dakota, the percent of the population served by fluoridated public water systems has remained relatively constant over time, ranging from 96% in 1992, 96% in 2006, and 97% in 2012 (Fluoride Action Network, 2012). In 2012, North Dakota ranked fifth in the United States for percentage of the population with fluoridated water; only Kentucky, Maryland, Illinois, and Minnesota ranked higher (CDC, 2012). For comparison, the percentage of the entire U.S. population with fluoridated water from a community water system was 74.6% (CDC, 2012).</p>
<p>3. Increased Reach of Sealant Programs in Eligible Schools</p> <p><b>[Prevention]</b></p>	<p>With funding from the state, the program as it currently stands could expand reach to all schools in the state and provide sealants to all eligible students. The Seal! North Dakota school-based dental sealant program has provided preventive services to 52 elementary schools over the last two years, covering 13% of the total number of elementary schools in North Dakota (394 total schools). Other sealant programs have received state funding. In addition, to be sustainable, many other state sealant programs work with Medicaid, CHIP and other third party insurers to cover the sealants and reimburse for care provided. North Dakota currently does <i>not</i> cover sealants (Children’s Dental Health Project, 2014).</p>

PROPOSED MODEL	BRIEF DESCRIPTION
<p>4. North Dakota Area Health Education Center (AHEC) Dental Outreach Model</p> <p><b>[Workforce]</b></p>	<p>Without a dental school, North Dakota relies on dentists trained elsewhere to sustain the dental workforce; specifically, students from the regional schools of dentistry (University of Minnesota, Creighton University, University of Nebraska, University of Iowa and other institutions). In North Dakota, the per capita supply of oral health professionals varies widely. Oral health professional shortages are located in rural, underserved and Native American communities. The lack of dental clinical rotation experiences challenges the opportunity to recruit the dental workforce. The AHEC Dental Outreach Model would establish clinical sites in areas of high need in North Dakota to host dental students during their clinical rotations. Sites under consideration include: North Dakota State College of Science; Northland Community Health Center; Quentin Burdick Health Center; and other federally qualified health centers (FQHCs). Under this model, the AHEC would need to identify and contract with adjunct faculty and obtain financial support for the students that would participate in the four week dental clinical rotation. As it stands, the model proposes to accept two dental students a year over a four year pilot project. To build and sustain the program following the pilot, it would require legislative approval and funding as a state program. The pilot is proposed to be funded primarily through state grant and federal dollars.</p>
<p>5. New Oral Health Professional: Midlevel Dental Professions</p> <p><b>[Workforce]</b></p>	<p>Midlevel dental professions requires a new classification of provider in North Dakota, new reimbursement models, and a new educational program. In Minnesota, midlevel providers may be dental therapists (DT), advanced DTs, or a licensed oral health care professional (OHCP). In Alaska, the midlevel is a dental health aide therapist (DHAT). Midlevel providers who practice on a dental care team educate patients and provide clinical and therapeutic patient services. Advanced/dental therapists and DHATs are midlevel providers with distinct educational, examination, and practice requirements above that of a dental hygienist (Minnesota Board of Dentistry, 2014). The practice of DTs/OHCPs is under general dentist supervision and is limited to mostly oral health prevention and education primarily in areas with larger populations of low-income, uninsured, and underserved people or dental health professional shortage areas (University of Minnesota, 2014). Minnesota offers a program for dental therapy (requiring a four year degree) and a program for advanced DT (Master’s Degree, two years in addition to DT). Alaska’s midlevel program is a two year program and only requires a GED for admission. North Dakota has reported increased need for oral health prevention and care among special populations. The role of a dental therapist in other programs is specifically that – to meet the needs of the currently underserved through restorative and preventive care, and education. Dental therapists could work in various community health centers, specifically targeting special populations and providing preventive services. Dental therapists would also function well in mobile units, as has been seen in Minnesota’s Children’s Dental Services, and Apple Tree Dental. With a dental therapist providing more preventive care traditionally completed by a dentist, the dentist has greater availability to accept and provide restorative care for more complex cases. It has been stated that, in North Dakota, there is a need to improve access to care among the Medicaid population and other special populations. This model would not only provide access to special and rural populations, but would also generate available workforce to address restorative care, oral health prevention, and oral health literacy in the community.</p>

PROPOSED MODEL	BRIEF DESCRIPTION
<p>6. A Professional School of Dentistry in North Dakota</p> <p><b>[Workforce]</b></p>	<p>While not considered a necessary effort for North Dakota by the stakeholder and input members, a school of dentistry would address professional dental workforce concerns. North Dakota has no school of dentistry, no relationship with border dental schools to provide in-state tuition, and no existing sustainable program to promote local dental rotations by students at border universities. In 2012, the University of Utah trustees approved a school of dentistry and a related four-year doctoral program. The school was funded through \$37 million in private pledges. While the state of Utah had a dental school prior to this program, it was necessary to have an additional professional school to maintain an appropriate dentist to patient ratio; Utah needs 75-85 new dentists/year to meet patient demand. The overall goal of the school was to improve access to dental care for Utah’s rural and underserved areas and recruit students into the program from these communities (Maffly, 2012).</p>
<p>7. Expanding the Role of Dental Hygienists (DHs)</p> <p><b>[Workforce]</b></p>	<p>Begin to utilize the large volume of dental hygienists and employ them to practice at the top of their current scope of work. Also, look to expand the current scope of practice when a majority of dental hygienists are practicing at the top of the current limit of practice. There was stakeholder support for utilizing hygienists more readily at their current scope of practice with potential expansion, but little support for increasing the current scope of practice for dental assistants. Most importantly, it is necessary to use DHs under a standing order of a dentist and with general supervision facilitating the provision of preventive and restorative care and improving levels of oral health literacy in community settings without the dentist present. North Dakota has a dental hygienist program and could expand the curriculum to also supplement training of dental hygienists to a broader scope of practice.</p>
<p>8. Safety-Net Clinics in Western North Dakota</p> <p><b>[Access to Care]</b></p>	<p>In 2013 there were five safety-net clinics providing oral health services in North Dakota. No safety-net dental clinics are located west of Bismarck leaving high demand for oral health care in the western part of the state, specifically among disadvantage populations. The population to dentist ratios in some Western North Dakota counties are as low as 758:0, 1,095:1, and 9,495:1 (RWJ Foundation, 2014). One or more safety-net clinics or community health centers providing dental services, located in western North Dakota, could serve the special populations that currently lack access to oral health care services. Federal grant dollars and donations could be used to fund such clinics, similar to other safety-net dental clinics in North Dakota. However, development, funding, and staffing of a new clinic may be time consuming and expensive; expansion of services and reach of existing facilities was then proposed (see Model 9).</p>

PROPOSED MODEL	BRIEF DESCRIPTION
<p>9. Expand Reach and Services of Safety-Net Clinics through State Funding</p> <p><b>[Access to Care]</b></p>	<p>Expansion of current safety-net clinics through state funding could include developing oral health services in safety-net clinics that currently do not provide oral health care, and/or providing funding to support satellites and a larger workforce at existing oral health safety-net clinics. Currently, there are no state appropriated dollars for North Dakota safety-net clinics. Other states do provide support. In 2014, three safety-net health clinics in Florida received funding in the current year’s state budget; one of which was a dental clinic. In all, the Florida clinics are set to receive \$750,000 from the state in the 2014-2015 budget year to increase services provided to low-income rural residents (Staff Report, 2014). Free clinics (not including federally qualified health centers) are allowed to receive federal, state or local dollars to support operating costs, however, nationally only 31% were currently receiving government revenue (Darnell, 2010). Additional funds may support hiring of a permanent dentist, a full-time hygienist, and/or an oral surgeon. A 2005 report stated that safety-net dental clinics generally operate with limited staffing and low budgets, relying on referral relationships with local dentists. However, those clinics with “full-time dentists or any dental hygienists had higher annual numbers of dental visits” meeting a greater patient demand (Byck, Cooksey &amp; Russinof, 2005).</p>
<p>10. Expand Children’s Dental Efforts</p> <p><b>[Access to Care]</b></p>	<p>Children’s Dental Services (CDS) in Minnesota provides in-clinic care while also utilizing portable dental equipment to reach the underserved. CDS is a large independent nonprofit agency that works to provide accessible oral health services to all children from birth through age 21, while also serving pregnant women. In Minnesota, CDS utilizes dental and advanced dental therapists to provide services on and off site. While CDS serves some North Dakota residents at their Moorhead, Minnesota location, they have also recently signed a contract with a North Dakota school district to provide oral health services. If successful, North Dakota could look to provide funding to the Children’s Dental Services in Minnesota to expand their services and reach in North Dakota communities.</p>
<p>11. Establish Dental Assistant Schools in Western North Dakota</p> <p><b>[Workforce]</b></p>	<p>There is one entry-level dental program in North Dakota at the North Dakota State College of Sciences in Wahpeton, North Dakota. The program is limited to admitting only 26 dental hygiene students and 20 dental assistant students annually. Bordering states have 13 (Minnesota), 1 (South Dakota) and 2 (Montana) CODA-Accredited Dental Assisting Programs (Dental Assisting Nation Board, Inc., 2014). While there is a dental assisting school in North Dakota, it is not located in the West where the need for dental assistants is the greatest. Conversations have focused on not only adding new programs for certified DAs in the state, but offering the education online as well. This effort would require support from various entities, including those institutions already providing these programs, as well as funding to develop new programs, hire personnel, and support the initial cost of developing the programs.</p>

PROPOSED MODEL	BRIEF DESCRIPTION
<p>12. Expand Bridging the Dental Gap: Funding for Oral Health Nonprofits</p> <p><b>[Access to Care]</b></p>	<p>Bridging the Dental Gap is a nonprofit that provides oral health services to low-income, uninsured, and Medicaid patients in the Bismarck-Mandan area. Funded in part by Medicaid payment, the services also rely heavily on grant dollars and donations. State funding could support many of the organization’s efforts. One time funding for the nonprofit could aid in the purchase and maintenance of new and current mobile equipment being utilized in the Elderly Care Direct Services program, providing oral health care to long term care (LTC) residents in LTC facilities. State funding could expand the reach of the nonprofit as it currently only serves patients within a 75 mile radius of Bismarck-Mandan. A similar program in Turtle Lake, Wisconsin provides oral health services to low-income families (below 185 percent of federal poverty level), individuals with disabilities, and those living in supervised-care facilities. The program originated through Federal grant dollars and relies on Medicaid reimbursement. However, like the North Dakota nonprofit, the program is only 50% self-sustained through Medicaid reimbursement. In 1999-2001 continued funding for the Wisconsin program was facilitated by the region’s U.S. Congressman; in 2002-2003, funding was established as a state budget line item (Fos &amp; Hutchison, 2010).</p>
<p>13. Medicare Expansion to Cover Dental</p> <p><b>[Dental Insurance]</b></p>	<p>Medicare does not cover routine or restorative dental care services, dentures, or tooth extractions except in emergent cases that are deemed medically necessary and are part of an otherwise covered inpatient procedure or hospitalization. Medigap policies do not cover dental benefits. Dental uninsurance remains a significant problem for Medicare beneficiaries with many uninsured and unaware of their lack of coverage.</p>
<p>14. Case Management Model: The North Dakota Dental Association</p> <p><b>[Prevention]</b></p>	<p>Enable registered dental assistants and hygienists, employed by a collaborative dental office, to provide oral health assessments, fluoride varnish applications and case management for high-risk dental patients in community settings. These dental professionals would identify high-risk patients and link them with a dental home. Case management has shown to be an effective way to reduce barrier to care for Medicaid recipients. It is the practice of educating families and patients, motivating them to seek care and following them for referral for definitive treatment in a dental home (Silverman, Douglass &amp; Graham, 2013). Connection to a dental home ensures that children and high-risk adults will have access to comprehensive care as well as maximum exposure to preventive services. The proposed model would depend on reimbursement to the collaborative dental offices for outreach services with the hope, over time, to demonstrate lower caries rates, linkage to dental homes, and lower costs to Medicaid and other third parties for this population. The pilot is set to take place in a rural dental office with a relatively higher Medicaid population, a community health center, a federally qualified health center, and/or pediatric dental practice. If the model proves successful in meeting its goals, Medicaid programs and other third-party reimbursement sources will be better able to make evidenced-based decisions regarding reimbursement for these services; specifically, case management. The North Dakota Dental Association reports that the model may be implemented in late 2014 or early 2015.</p>



PROPOSED MODEL	BRIEF DESCRIPTION
15. Apple Tree Dental  <b>[Access to Care]</b>	<p>Apple Tree's nonprofit status and mobile delivery programs work to bring care directly to people who need it most through support from individual donors, foundation grants, and corporate sponsors. Supported financially under the Mayo Clinic model, Apple Tree Dental employs a hub and spoke system to provide care in locations of need. Apple Tree uses new and existing provider types and telehealth technology to provide oral health care. Apple Tree Dental relies on the use of advanced/dental therapists to provide affordable care in community settings. In 1997, Apple Tree Dental opened a dental clinic in Hawley, Minnesota through foundation dollars. For 17 years, that center has been self-sustaining serving 24,740 patients and providing 198,355 dental visits at a dental care value of \$32,299,832. The Hawley clinic has also billed \$438,000 to North Dakota Medicaid. Apple Tree could work with the private dental community and its professional organizations, community health centers, and legislators and government stakeholders to expand private, public, and nonprofit capacity for community based collaborative practice.</p>
16. Increased Medicaid reimbursement  <b>[Dental Insurance]</b>	<p>Federal law requires state Medicaid programs to provide dental benefits for children, but not adults. North Dakota's Medicaid program covers adult dental care for the categorically and/or medically needy. Health care providers may refuse to provide care for Medicaid patients if the rates are lower than private insurance patients, creating access to care issues. The overall reimbursement rate, as defined by the amount paid divided by the amount billed over a five year period in North Dakota is roughly 62%; nationally, North Dakota has one of the highest dental reimbursement rates; however, it is still below the cost of care for dental providers. Research has shown that states with higher Medicaid reimbursement rates have an increased number of dental providers who accept Medicaid patients. North Dakota Medicaid data has not always shown the same results.</p>
17. Eliminate Long Term Care Per-Resident Fee: Make Allowable Cost  <b>[Dental Insurance]</b>	<p>Many long term care (LTC) facilities rely on dental services provided by outside/nonprofit organizations who provide services in the LTC facilities. However some, like Apple Tree Dental out of Minnesota, require an extra facility fee outside of billing insurance. An alternative would be to work with federal Medicare/Medicaid to identify an allowable cost for dental services provided to residents of LTC facilities and/or allocate state funding to LTC facilities to cover the per-resident/per-facility fee that currently limits utilization of an otherwise very successful and beneficial oral health service for the aging population.</p>

PROPOSED MODEL	BRIEF DESCRIPTION
<p>18. Expand Loan Repayment Programs</p> <p><b>[Workforce]</b></p>	<p>Between 2008 and 2014, 34 students applied for the various state loan repayment programs and did not receive awards because of limited dollars. If the state were to consolidate the loan repayment options, creating consistent and clear guidelines and payment between the various programs, along with increased dollars from the state to allow for more awards, North Dakota could bring more new graduates back into the state, specifically rural communities, to practice dentistry. Under this model, state entities would work together to develop a comprehensive student loan repayment program in which the various programs discussed in the complete report would be managed by one entity, allowing for clarity in what is currently a very confusing system. In addition, the largest repayment program covers only \$80,000 of a student's debt while the average debt of a dental student is \$241,000 – a rate that may be much higher for those without an in-state option (American Student Dental Association (Dental Student Debt), 2014). While additional dollars could increase the repayment each awarded student receives, adding additional dollars to award more loan repayments would bring more dentists to North Dakota.</p>
<p>19. Integration of Oral Health and Primary Care</p> <p><b>[Prevention]</b></p>	<p>The goal is to facilitate change in the clinical practice of primary care practitioners in safety-net and other settings by expanding the oral health clinical competency of primary care clinicians and improve access to early detection and preventive intervention. For example, most children are exposed to medical care but not dental care at an early age. Primary care medical providers have the opportunity to play an important role in helping children and their families gain access to preventive services and helped to receive access to dental care. Oral health has been successfully integrated into primary care in several community health centers throughout the U.S., including Neighborcare Health in Seattle Washington and the Marshfield Clinic in Wisconsin. Community health centers are in a better position to overcome the problems associated with the historical separation of medical and dental care because they are engaged in the delivery of both types of services. CMS is also working to ensure that oral health is included in Medicaid's medical home initiative and the Accountable Care Organization demonstration as required by the Affordable Care Act. Among the challenges faced in implementing these new models are identifying successful models and establishing reimbursement mechanisms to support integrated oral health and primary care.</p>

PROPOSED MODEL	BRIEF DESCRIPTION
<p>20. Collaborate with Border Dental Schools for North Dakota Student “Spots” and In-State Rotations</p> <p><b>[Workforce]</b></p>	<p>Work with bordering dental schools to identify opportunities for student rotations in North Dakota and to encourage student enrollment in said programs through financial assistance/reserved spots. An opportunity may be the University of Minnesota’s (UMN) Early Decision Rural Dentistry Track Program. Dean Leon Assael and Chief Administrative Officer Jeff Ogden have each expressed their willingness to work and partner with North Dakota offices and expand their rural track program to include North Dakota rural communities. The program recruits dental students early on in college and sets them up with a faculty mentor who is practicing in a rural community. The UMN School of Dentistry just submitted a formal request to the Minnesota legislature for appropriated funds to support the program, including funds to support capital and operating costs. The requested funds will also bridge the gap created by the greater mix of the rural population covered through public programs. This specifically addressed the difference between the cost of services provided and public program coverage for specific procedures and care. Jeff Ogden, CAO at Minnesota’s School of Dentistry expressed interest in allowing North Dakota students to obtain reduced tuition rates in return for North Dakota’s assistance in funding training sites for dental students participating in the rural track. As mentioned, this model would require North Dakota to provide funding to support dental rotations and staffing for rural dental clinics (existing and/or non).</p>
<p>21. Free Transportation to Transport Rural or other Geographically Challenged Individuals to Current Dental Practices</p> <p><b>[Access to Care]</b></p>	<p>Work with existing programs to transport populations in need to their dental appointments. Most models that exist work with aging populations, but this option could be explored for all populations of need, including tribal populations. Examples of programs currently in place include the following: The North Dakota Senior Service Providers; The National Center on Senior Transportation; Disability Resource-LINK page; and The Non-Emergency Medical Transportation (NEMT). State dollars could be allocated to existing service providers to expand their scope of transportation to include additional population groups and/or transportation to dental care providers.</p>

PROPOSED MODEL	BRIEF DESCRIPTION
<p>22. Increased Funding and Reach of The Seal! North Dakota Program to Include Use of Expanded Dental Hygienists Scope of Work, Case Management, and Medicaid Reimbursement</p> <p><b>[Prevention]</b></p>	<p>Expand services of Seal! North Dakota to reach all schools in North Dakota. This model would rely on dental hygienists completing the oral health screens, sealants, and education in the school systems, utilizing their most recent expansion to their scope of practice. These hygienists would be under standing orders of a private practice dentist, and not solely public health hygienists. To guarantee that the students would continue to utilize oral health services, and not rely solely on the applied sealants, the hygienists would be trained in case management as proposed under the North Dakota Dental Association’s Case Management Model. Dental hygienists would then refer the students to the nearest and most appropriate dental home. To make this a sustainable model, Medicaid would have to expand to cover services provided off-site by dental hygienists under the standing order of a practicing dentist. Additionally, it would need to cover case management/referral which it currently does not. If these services were reimbursed through Medicaid and other third party insurers, Seal! North Dakota services could be provided by private practices and other safety-net clinics. The program would be made sustainable through billing Medicaid and other insurers as appropriate for sealants, case management, and other preventive services.</p>
<p>23. Expand Safety-Net Clinics – Use Models/Ideas/Support from Nonprofits</p> <p><b>[Access to Care]</b></p>	<p>Stakeholders identified a model that would blend some of those already discussed to include general expansion, expansion in the West, and funding of nonprofits to provide oral health services. While the group did not feel strongly about solely seeking support for Apple Tree Dental or Children’s Dental Services, they liked the idea of working with the state to allocate dollars to support hub-and-spoke services and nonprofits in North Dakota. This would include working with possible out-of-state nonprofits to reach populations in need. This would also include growth of the safety-net clinics in North Dakota and financial support for other nonprofit oral health providers. This proposed model suggested creating a program and financial support to encourage teledentistry and hub-and-spoke services as outlined above.</p>
<p>24. Create a System to Promote Dentistry as a Profession in North Dakota</p> <p><b>[Workforce]</b></p>	<p>Create a comprehensive system of promoting dental education among North Dakota residents, and encourage dental practice in the state. While consolidation of the loan repayment programs, and increased dollars and awards would bring more dental school graduates back to North Dakota to practice dentistry, this alone does not address the low number of North Dakota residents that pursue a degree in dentistry. Because of this, stakeholders discussed a more comprehensive model in which the state supports dental students upon admission, and follow through by bringing dental graduates back into the state through dental rotations and expansion of the loan repayments. The stakeholders proposed working with dental schools to identify those willing to hold spots for North Dakota residents – this would require North Dakota dollars. Again, while stakeholders were not concerned about which dental schools were to partner with the state, the University of Minnesota School of Dentistry Rural Track Program serves as an example. Read more in Chapter IV of the complete report. There is a need to work with interested schools of dentistry to have students complete their dental rotations in North Dakota. The dollar amount to host a dental student from an out-of-state university while completing their rotation is not yet known and would vary by university and location, but it would require North Dakota allocation of funds.</p>

## **Limitations**

The Center for Rural Health acknowledges that the policy process is complex and that many come to it with previous experience, relationships, and knowledge. While the CRH stakeholder process was inclusive, objective, and transparent, we cannot guarantee that the final stakeholder recommendations were based exclusively on the information shared and the discussions held during stakeholder meetings. In fact, the stakeholders were selected because of their involvement in providing oral health care to the North Dakota population. Thus, while various groups with their points of view may have lobbied stakeholder group members, we are confident that the stakeholders had extensive experience with North Dakota's oral health issues frequently dealing with all involved groups. We appreciate stakeholder and input group member involvement in this project and respect their integrity.

Another limitation is the timeline in which this report was completed. Funded in early June 2014, the report was to be developed along with stakeholder recommendations by the end of August with the intent to inform the Health Services Interim Committee. In that period of time, the CRH worked to identify stakeholder and input members, completed research on the needs and proposed models, and facilitated five stakeholder meetings to develop the priorities for the state. While the stakeholders were well versed in oral health initiatives and various proposed models, a more generous timeline would have allowed for a more thorough review, understanding, and description of each proposed model. As a result, the CRH will continue to explore the proposed models, along with state oral health data, in an effort to continue to inform the oral health efforts of the state. Specifically, the CRH staff members are currently reviewing dentist and dental hygienist workforce survey data and CMS utilization reports. An amended version of the full report and this executive summary will be issued just before the next North Dakota Legislative session in January 2014.

Much more information on North Dakota's oral health and care is available in the report that this executive summary depicts. This information is available at the following web address: [ruralhealth.und.edu/projects/nd-oral-health-assessment](http://ruralhealth.und.edu/projects/nd-oral-health-assessment). The complete report also offers a thorough discussion of all current oral health programs and initiatives in North Dakota, listed in Appendix C.

## APPENDIX A

### Figures and Tables to Support List of Oral Health Needs in the State

Figure 1. Rural/Urban Disparities in Oral Health among North Dakota Third Grade Students, 2010

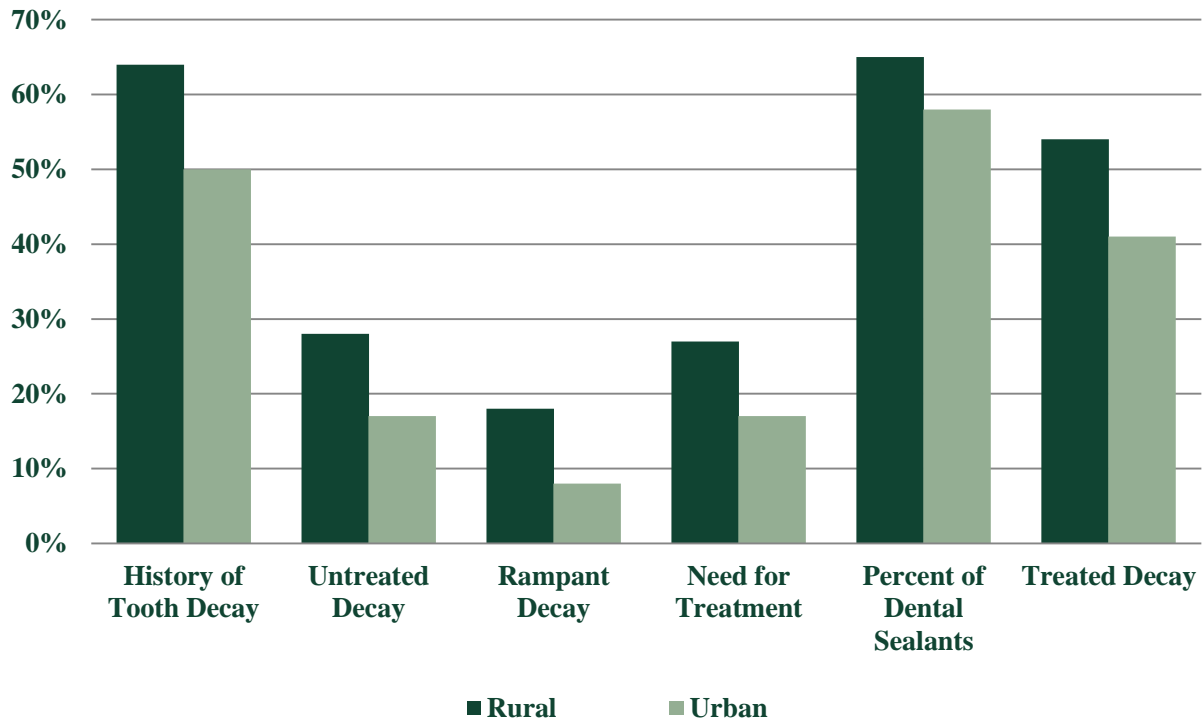


Figure 2. Racial Disparities in Oral Health among North Dakota Third Grade Students, 2010

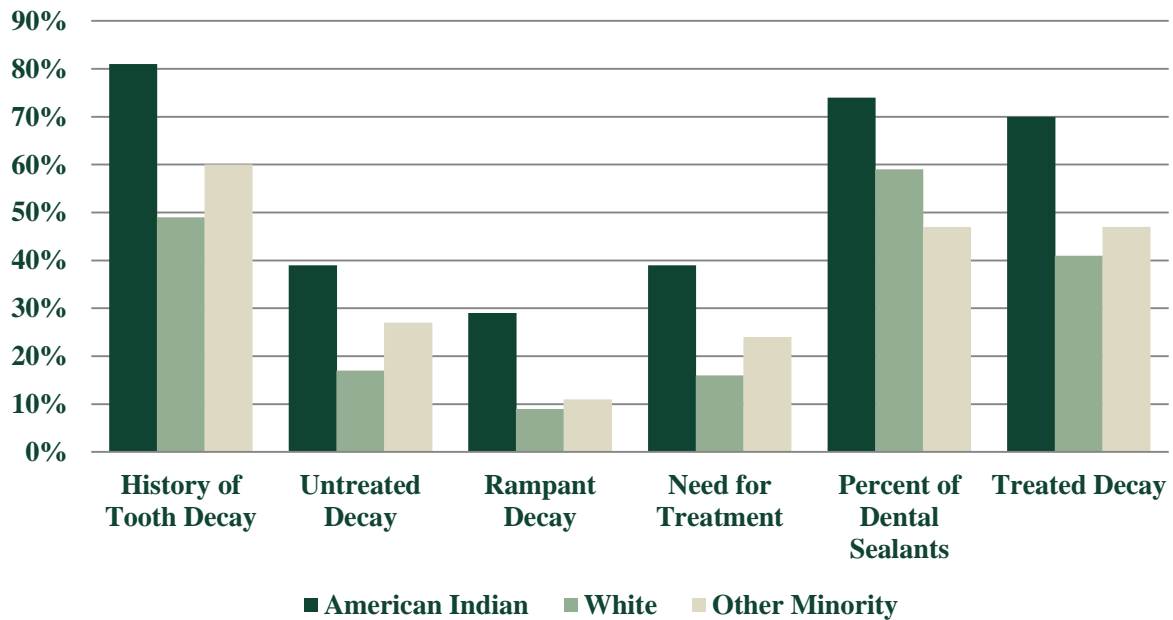


Figure 3. Percent of Medicaid-Enrolled Children with a Dental Visit in Last Calendar Year, 2010-2013

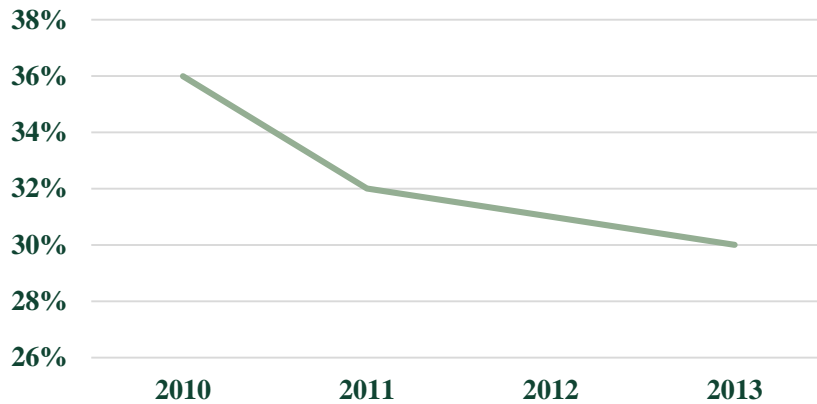


Figure 4. Number of Medicaid Recipients Seen by North Dakota Dental Practices Billing Medicaid, 2013

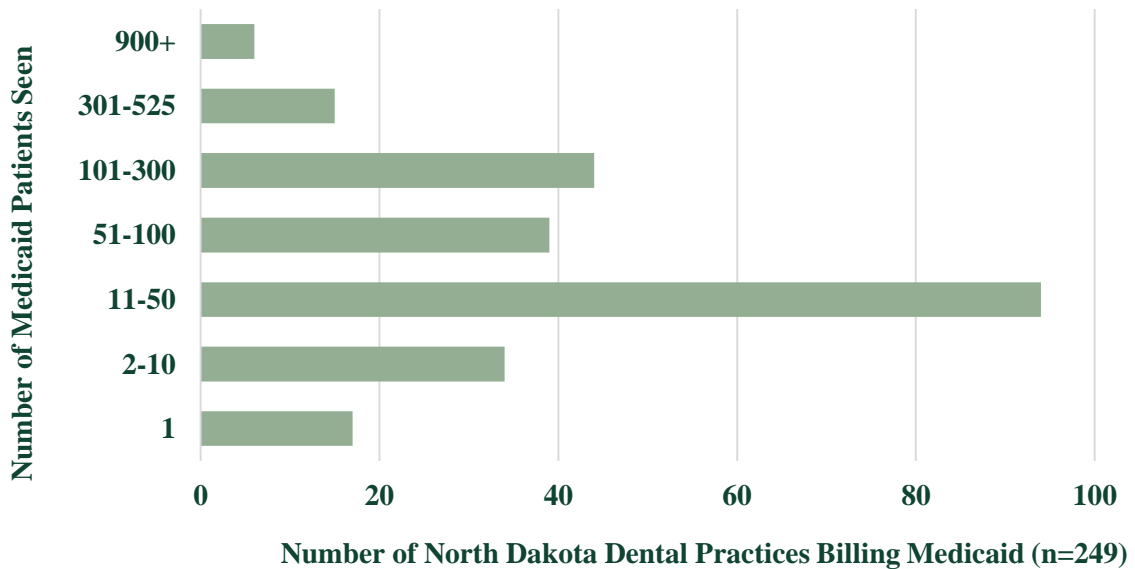


Table 1. Number and Percent of Patients Served by Dental Practices Billing Medicaid, 2013\*

Number of Medicaid Recipients Seen in Calendar Year	Number of Dental Practices	Cumulative Percent of Medicaid Patients that Saw a Dentist*
900+	6	30%
301-525	15	52%
101-300	44	79%
51-100	39	90%
2-10	94	100% **
11-50	34	100% **
1	17	100% **

\*Percent is based on the total number of dental practices *that had billed Medicaid*, not total dental practices

\*\*Less than 1%

Figure 5. Number of Dentists in North Dakota Counties, 2014

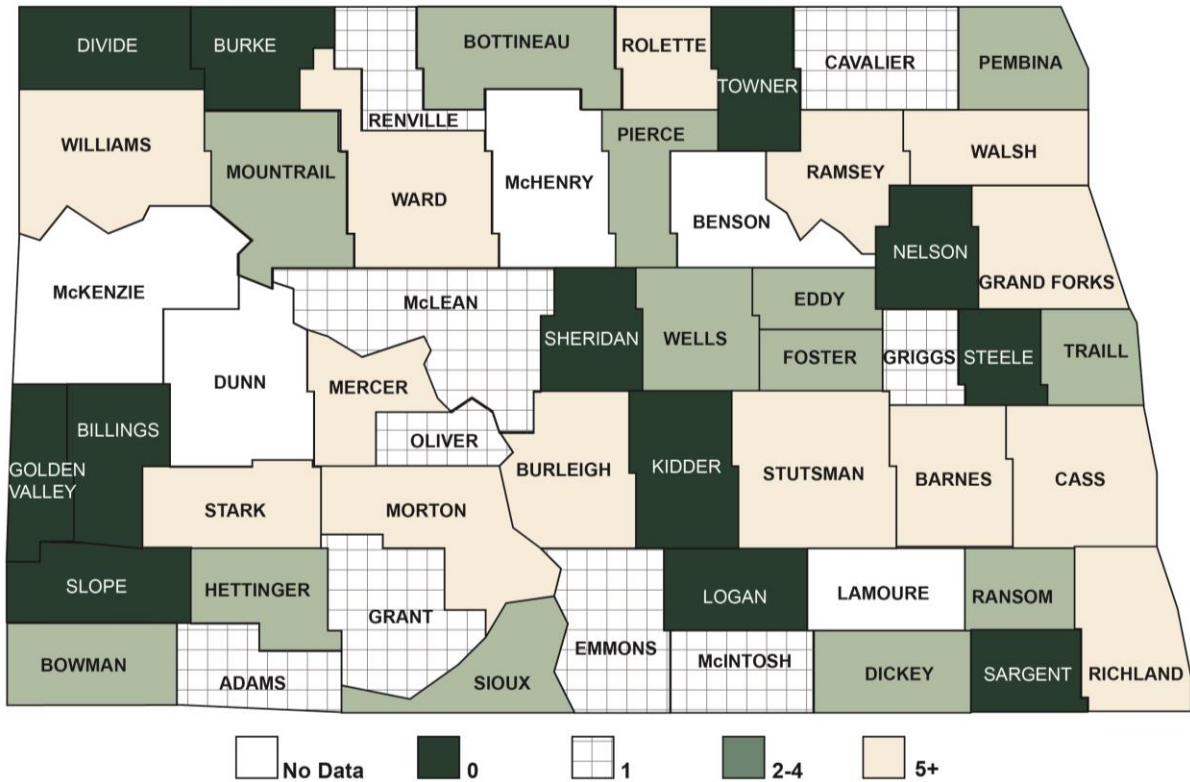
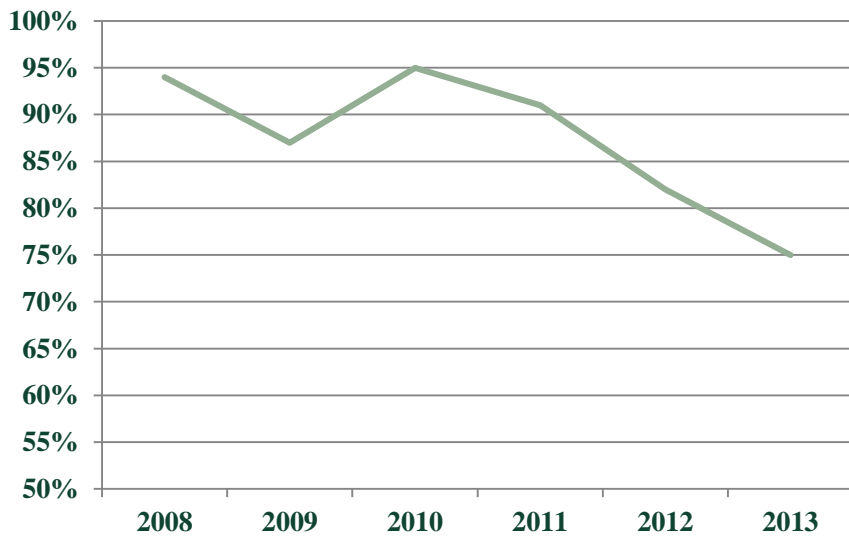


Figure 6. Percent of North Dakota Head Start Children Needing Treatment who Received Treatment





## APPENDIX B

### North Dakota Oral Health Stakeholder Working Group

- Blue Cross Blue Shield of North Dakota (Private Insurer)
- Chamber of Commerce/Statewide Vision and Strategy Committee
- Community Healthcare Association of the Dakotas
- Developmental Homes
- Family HealthCare
- Family Voices of North Dakota
- Fargo Public Schools
- Long Term Care Association of North Dakota
- North Dakota American Association of Retired Persons
- North Dakota Association of Community Providers
- North Dakota Department of Health, Oral Health Program
- North Dakota Disabilities Advocacy Consortium
- North Dakota Head Start Association
- North Dakota Indian Affairs Commission
- Sanford Bismarck Emergency and Trauma Center
- Third Street Clinic

### North Dakota Oral Health Input Group (\* Spoke at a Stakeholder Meeting)

- American Academy of Pediatrics, North Dakota Chapter
- American College of Emergency Physicians, North Dakota Chapter
- Blue Cross Blue Shield of North Dakota
- Bridging the Dental Gap\*
- Cankdeska Cikana Community College (Tribal College)
- Consensus Council
- Grand Forks Public Health Department\*
- Kalix
- North Dakota Academy of General Dentistry
- North Dakota Association of Counties
- North Dakota Dental Assistants Association
- North Dakota Dental Association\*\*
- North Dakota Dental Hygienists' Association\*
- North Dakota Department of Health, Health Equity Office
- North Dakota Department of Health
- North Dakota Department of Human Services
- North Dakota Department of Public Instruction
- North Dakota Health Information Network
- North Dakota Hospital Association
- North Dakota Oral Health Coalition\*
- North Dakota Public Health Association\*
- North Dakota Board of Dental Examiners
- North Dakota State College of Science
- North Dakota State Council on Developmental Disabilities
- North Dakota Women and Infants and Children (WIC)
- Valley Community Health Center\*

### National Content Experts

- Children's Dental Services; Sarah Wovcha, Executive Director
- University of Minnesota School of Dentistry; Dr. Leon Assael, Dean
- Dental Health Aide Therapist Educational Program, Alaska; Dr. Mary Williard, Director
- Apple Tree Dental; Dr. Michael Helgeson, CEO

**APPENDIX C**  
**CURRENT NORTH DAKOTA ORAL HEALTH PROGRAMS, 2014**

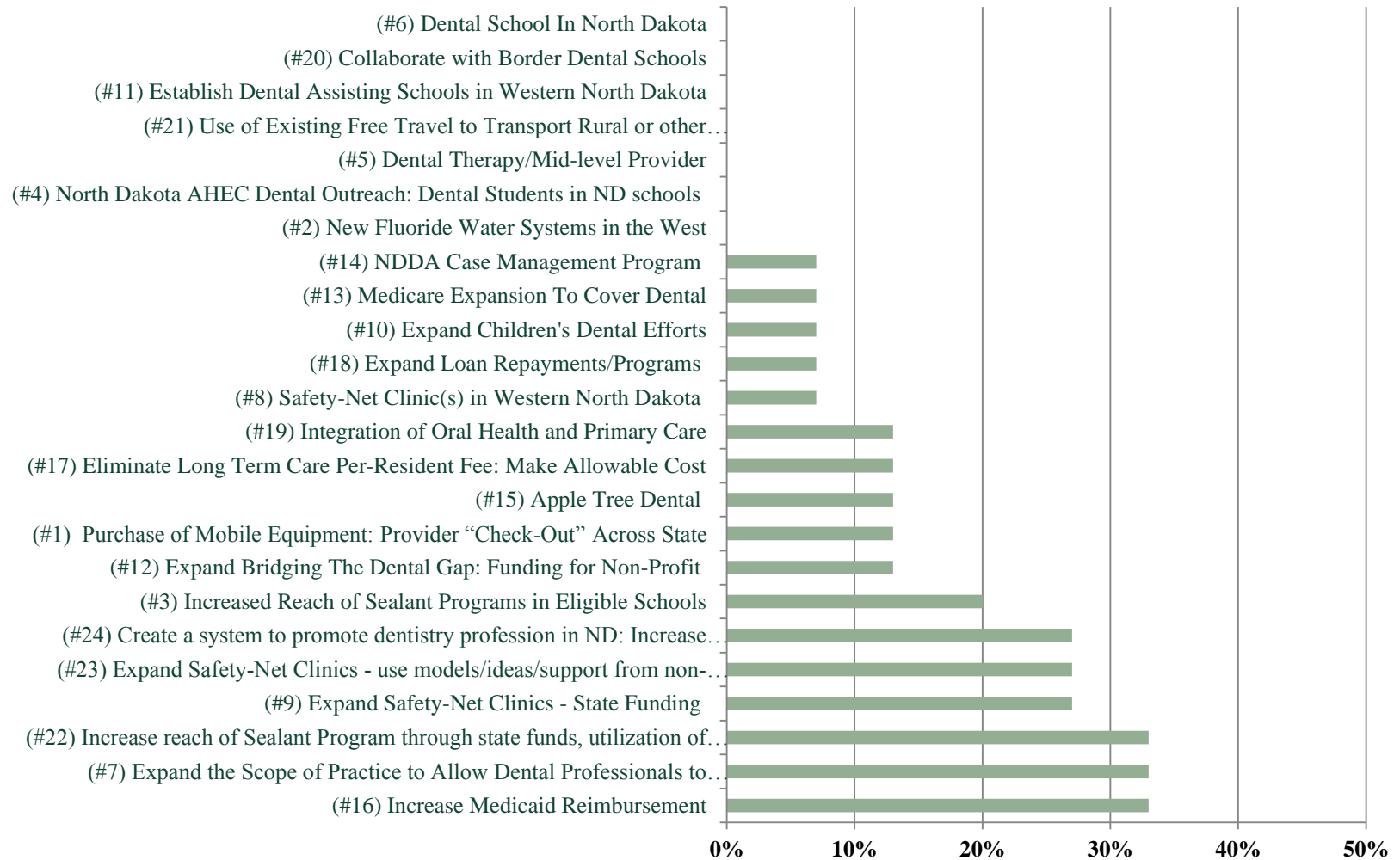
Prior to identifying solutions to meet the identified oral health needs in North Dakota, the Center for Rural Health, with assistance from the stakeholder and input members, identified and described current state oral health programs and initiatives.

**Current Oral Health Programs in North Dakota, 2014:**

Bridging the Dental Gap	North Dakota Health Tracks
Children’s Dental Services	North Dakota Oral Health Coalition
Children’s Special Health Services	North Dakota State College of Science Cleaning Program
Dental Loan Repayments/Grants	Public Health Oral Health Care Resolution
Donated Dental Services Program	Red River Region Community Dental Access Committee
Drinking Water Program (Fluoride)	Red River Valley Dental Access Project
Elderly Care Direct Services Program	Ronald McDonald Care Mobile
Federally Qualified Health Centers	Seal! North Dakota
Head Start Dental Home Initiative	Third Street Clinic
Healthy Steps (CHIP)	Tribal Pediatric Dental Days
ND DoH Oral Health Program	Varnish North Dakota!

**APPENDIX D**

**PERCENT OF STAKEHOLDERS INDICATING EACH MODEL AS ONE OF THEIR TOP THREE PRIORITIES, 2014**



## REFERENCES

- American Student Dental Association. (Dental Student Debt). (2014). Retrieved from: <http://www.asdanet.org/debt.aspx>.
- Bailit, H. & D'Adamo. (2012). State case studies: Improving access to dental care for the underserved. *Journal of Public Health Dentistry*, 72(3). Retrieved from: <http://onlinelibrary.wiley.com/doi/10.1111/j.1752-7325.2012.00346.x/pdf>.
- Byck, G., Cooksey, J. & Russinof, H. (2005). Safety-net dental clinics. *Journal of the American dental association*.136(7), 1013-21.
- Centers for Disease Control and Prevention (CDC). (2012). 2010 water fluoridation statistics. Retrieved from: <http://www.cdc.gov/fluoridation/statistics/2010stats.htm>.
- Children's Dental Services. (2004). Retrieved from: <http://www.childrensdentalservices.org/>.
- Darnell, J.S. (2010). Free clinics in the United States: A nationwide survey. *Archives of Internal Medicine*, 170(11), 946-953.
- Dental Assisting Nation Board, Inc. (2014). CODA-Accredited dental assisting programs. Retrieved from: <http://www.danb.org/The-Dental-Community/Dental-Assistants/Dental-Assisting-Programs/CODA-Accredited-Dental-Assisting-Programs.aspx>.
- Fluoride Action Network. (2012). State fluoride database: North Dakota. Retrieved from: <http://fluoridealert.org/researchers/states/north-dakota/>.
- Fos, P. & Hutchison, L. (2010). The state of rural oral health. *Rural Healthy People*. Retrieved from: <http://sph.tamhsc.edu/centers/rhp2010/10Volume1oralhealth.pdf>.
- Maffly, B. (2012). University of Utah trustees approve dental school. *Salt Lake Tribune*. April 11. Retrieved from: <http://www.sltrib.com/sltrib/news/53886792-78/dental-program-utah-students.html.csp>.
- Minnesota Board of Dentistry. (2009). Dental therapist scope of practice. Retrieved from: <http://www.dentalboard.state.mn.us/Portals/3/Licensing/Dental%20Therapist/DTSOPE.pdf>.
- Robert Wood Johnson Foundation. (2014). County Health Rankings & Roadmaps: North Dakota Dentists. Retrieved from: <http://www.countyhealthrankings.org/app/north-dakota/2013/measure/factors/88/data?sort=sort-0>.
- Silverman, J., Douglass, J. & Graham, L. (2013).The use of case management to improve dental health in high risk populations. *Pediatric Oral Health Research & Policy Center, American Academy of Pediatric Dentistry*, June. Retrieved from: <http://www.aapd.org/assets/1/7/POHRPC-TR3-2013-Final.1.pdf>.
- Staff Report. (2014). Area safety net clinics receive state funding. *The Gainesville Sun*. Retrieved from: <http://www.gainesville.com/article/20140609/ARTICLES/140609634/1002/news01?Title=Area-safety-net-clinics-receive-state-funding>.
- University of Minnesota. (2014). School of Dentistry: Dental Therapy. Retrieved from: <http://www.dentistry.umn.edu/programs-admissions/dental-therapy/index.htm>.

- 
- <sup>i</sup> Basic Screening Survey (BSS) for Children Attending Third-Grade. (2014). Data provided by the North Dakota Department of Health, Oral Health Program.
- <sup>ii</sup> Basic Screening Survey (BSS) for Children Attending Third-Grade. (2014). Data provided by the North Dakota Department of Health, Oral Health Program.
- <sup>iii</sup> US DHHS CMS. (2014). Medicaid Claims data: North Dakota oral health indicators. Provided by the North Dakota Department of Health and Human Services.
- <sup>iv</sup> North Dakota Board of Dental Examiners. (2013). Licensure Workforce Survey Results.
- <sup>v</sup> US DHHS CMS. (2014). Medicaid Claims data: North Dakota oral health indicators. Provided by the North Dakota Department of Health and Human Services.
- <sup>vi</sup> United States Department of Health and Human Services (US DHHS) Centers for Medicare & Medicaid Services (CMS). (2014). Medicaid Claims data: North Dakota oral health indicators. Provided by the North Dakota Department of Health and Human Services.
- <sup>vii</sup> Behavioral Risk Factor Surveillance System (BRFSS). (2013). Center for Disease Control and Prevention. <http://www.cdc.gov/brfss/>.
- <sup>viii</sup> Basic Screening Survey (BSS) for Older Adults. (2014). Data provided by the North Dakota Department of Health, Oral Health Program.
- <sup>ix</sup> North Dakota Board of Dental Examiners. (2014). Licensure Data.
- <sup>x</sup> Robert Wood Johnson Foundation. (2014). County Health Rankings & Roadmaps: North Dakota Dentists. Retrieved from: <http://www.countyhealthrankings.org/app/north-dakota/2013/measure/factors/88/data?sort=sort-0>.
- <sup>xi</sup> North Dakota Board of Dental Examiners. (2013). Licensure Workforce Survey Results.
- <sup>xii</sup> Head Start Program Information Report (PIR). (2011). Data Provided by North Dakota Department of Health, Oral Health Program. State Epidemiologist.
- <sup>xiii</sup> Basic Screening Survey (BSS) for Children Attending Third-Grade. (2014). Data provided by the North Dakota Department of Health, Oral Health Program.



Center *for* Rural Health

# North Dakota Oral Health Report: Needs and Proposed Models, 2014

**PRELIMINARY**

**August 2014**

**Project Completed by**

Shawnda Schroeder, PhD  
Project Director

Yvonne Jonk, PhD  
Kristin Schuller, PhD  
Ken Hall, JD  
Gary Hart, PhD  
Brad Gibbens, MPA

**Funded by**

The Pew Charitable Trusts

## TABLE OF CONTENTS

<b>I. INTRODUCTION</b> .....	7
BACKGROUND .....	8
NORTH DAKOTA ORAL HEALTH NEED.....	8
NORTH DAKOTA ORAL HEALTH STAKEHOLDER WORKING GROUP RECOMMENDATIONS .....	10
METHODOLOGY .....	11
North Dakota Oral Health Stakeholder Working Group .....	11
Oral Health Input Group .....	12
National Content Experts .....	13
Identification of Need .....	13
Current Oral Health Programs/Initiatives in the State .....	14
Oral Health Recommendations for North Dakota.....	14
POLICY CLIMATE IN NORTH DAKOTA.....	15
CENTER FOR RURAL HEALTH: BACKGROUND.....	16
<b>II. ORAL HEALTH NEED IN NORTH DAKOTA</b> .....	18
NORTH DAKOTA ORAL HEALTH ENVIRONMENT .....	19
Oral Health Status .....	19
Dental Insurance .....	24
Oral Health Workforce .....	28
Oral Health Provider Schools .....	31
ORAL HEALTH NEED: PERSPECTIVES OF NORTH DAKOTA ORAL HEALTH STAKEHOLDER WORKING GROUP AND INPUT GROUP .....	32
North Dakota Oral Health Stakeholder Working Group .....	32
North Dakota Oral Health Input Group .....	35
Trends in Oral Health Perceptions of Need in North Dakota: 2012 and 2014 .....	38
NORTH DAKOTA ORAL HEALTH REGULATIONS .....	40
Licensing, Credentialing, and Allowable Scopes of Practice of North Dakota Dental Providers and Professionals .....	40
Dentists .....	40
Dental Hygienists.....	42
Dental Assistants.....	44
North Dakota in Comparison to Other States .....	46

NEED SUMMARY .....	46
<b>III. CURRENT NORTH DAKOTA ORAL HEALTH PROGRAMS, 2014 .....</b>	<b>48</b>
INTRODUCTION .....	49
BRIDGING THE DENTAL GAP .....	49
CHILDREN’S DENTAL SERVICES .....	51
CHILDREN’S SPECIAL HEALTH SERVICES .....	52
DENTAL LOAN REPAYMENTS/GRANTS .....	52
State Dental Loan Repayment Program .....	53
Federal Student Loan Repayment Program (SLRP) Administered by the State .....	54
Public Health and Nonprofit Dental Loan Repayment Program .....	55
Non-Profit Clinic Dental Access Project, North Dakota Department of Human Services .....	55
Western Interstate Commission for Higher Education (WICHE) Program .....	56
Dental Grants .....	58
DONATED DENTAL SERVICES PROGRAM .....	58
DRINKING WATER PROGRAM (FLUORIDE) .....	59
ELDERLY CARE DIRECT SERVICES PROGRAM .....	60
FEDERALLY QUALIFIED HEALTH CENTERS .....	61
Northland Community Health Center .....	61
Valley Community Health Center .....	62
Family HealthCare .....	62
Red River Valley Dental Access Project .....	62
HEAD START DENTAL HOME INITIATIVE .....	62
HEALTHY STEPS (CHIP) .....	63
ND DoH ORAL HEALTH PROGRAM .....	65
NORTH DAKOTA HEALTH TRACKS .....	65
NORTH DAKOTA ORAL HEALTH COALITION .....	66
NORTH DAKOTA STATE COLLEGE OF SCIENCE CLEANING PROGRAM .....	67
PUBLIC HEALTH ORAL HEALTH CARE RESOLUTION .....	68
RED RIVER REGION COMMUNITY DENTAL ACCESS COMMITTEE AND RED RIVER VALLEY DENTAL ACCESS PROJECT .....	69
RONALD MCDONALD CARE MOBILE .....	70
SEAL! NORTH DAKOTA .....	71
THIRD STREET CLINIC .....	72



TRIBAL PEDIATRIC DENTAL DAYS.....	73
Spirit Lake Pediatric Dental Day – 2011 .....	73
Standing Rock Pediatric Dental Days – 2013.....	74
VARNISH! NORTH DAKOTA- IT’S ALL CONNECTED .....	75
<b>IV. PROPOSED MODELS TO IMPROVE NORTH DAKOTA ORAL HEALTH STATUS .....</b>	<b>77</b>
INTRODUCTION .....	78
NEED .....	78
RECOMMENDATIONS .....	78
Process for Identification of Recommendations .....	79
PRIORITY ONE: INCREASED FUNDING AND REACH OF EXISTING SAFETY-NET CLINICS .....	84
1A. Expand Reach and Services of Safety-Net Clinics through State Funding.....	85
1B. Expand Safety-Net Clinics – Use Models/Ideas/Support from Nonprofits like Apple Tree and/or Children’s Dental to Strengthen Hub-and-Spoke Model of Safety-Net Care in the State.....	90
1C. Safety-Net Clinics in Western North Dakota .....	90
1D. Expand Bridging the Dental Gap: Funding for Nonprofit .....	91
PRIORITY TWO: INCREASED FUNDING AND REACH OF THE SEAL! NORTH DAKOTA PROGRAM TO INCLUDE USE OF EXPANDED DENTAL HYGIENISTS SCOPE OF WORK, CASE MANAGEMENT, AND MEDICAID REIMBURSEMENT .....	92
2A. Increased Funding And Reach of The Seal! North Dakota Program To Include Use of Expanded Dental Hygienists Scope of Work, Case Management, and Medicaid Reimbursement .....	92
2B. Increased Reach of Sealant Programs in Eligible Schools.....	93
PRIORITY THREE: EXPANDING THE ROLE OF DENTAL ASSISTANTS AND DENTAL HYGIENISTS .....	94
Dental Hygienists.....	94
Dental Assistants.....	96
PRIORITY FOUR: CREATE A SYSTEM TO PROMOTE DENTISTRY AS A PROFESSION IN NORTH DAKOTA.....	97
4A. Create a System to Promote Dentistry as a Profession in North Dakota .....	97
4B. Expand Loan Repayments/Programs .....	98
PRIORITY FIVE: INCREASE MEDICAID REIMBURSEMENT.....	98
<b>V. OTHER ORAL HEALTH MODELS FOR NORTH DAKOTA.....</b>	<b>100</b>
A. DENTAL INSURANCE COVERAGE.....	101

A1. Medicare Expansion to Cover Dental .....	101
A2. Eliminate Long Term Care Per-Resident Fee: Make Allowable Cost .....	101
B. ACCESS TO ORAL HEALTH SERVICES .....	102
B1. Expand Children’s Dental Efforts .....	102
B2. Apple Tree Dental .....	102
B3. Purchase of Mobile Equipment: Provider “Check-Out” Across State .....	103
B4. Free Transportation to Transport Rural or other Geographically Challenged Individuals to Current Dental Practices .....	104
C. ORAL HEALTH WORKFORCE .....	105
C1. A Professional School of Dentistry in North Dakota .....	105
C2. New Oral Health Professional: Midlevel Dentistry.....	107
C3. North Dakota Area Health Education Center (AHEC) Dental Outreach Model.....	121
C4. Establish Dental Assisting Schools in Western North Dakota .....	122
C5. Collaborate with Border Dental Schools for North Dakota Student “Spots” and In-State Rotations .....	122
D. ORAL HEALTH PREVENTION PROGRAMS.....	124
D1. Water Fluoridation in Western North Dakota.....	124
D2. Case Management Model: The North Dakota Dental Association.....	125
D3. Integration of Oral Health and Primary Care.....	126
<b>VI. REPORT LIMITATIONS.....</b>	<b>128</b>
LIMITATIONS OF NEED REPORT and PROPOSED MODELS .....	129
<b>APPENDICES.....</b>	<b>130</b>
APPENDIX A. NORTH DAKOTA CENTER FOR RURAL HEALTH ORAL HEALTH REPORT DEVELOPMENT.....	131
APPENDIX B. NORTH DAKOTA RULES FOR DENTAL HYGIENE .....	133
APPENDIX C. NORTH DAKOTA RULES FOR DENTAL ASSISTING.....	135
APPENDIX D. SUPERVISION RULES .....	137
APPENDIX E. PERMITTED FUNCTIONS AND SUPERVISIONS LEVELS BY STATE.....	138

APPENDIX F. ENTITIES PARTICIPATING IN THE DEVELOPMENT OF THE REPORT ..... 142

APPENDIX G. NORTH DAKOTA PUBLIC HEALTH ASSOCIATION: ORAL HEALTH RESOLUTION ..... 144

APPENDIX H. NORTH DAKOTA ORAL HEALTH COLAITION MEMBERSHIP LIST ..... 146

APPENDIX I. LIKELIHOOD AND IMPACT OF THE 21 PROPOSED ORAL HEALTH MODELS: NORTH DAKOTA ORAL HEALTH STAKEHOLDER PERSPECTIVES, 2014 ..... 147

APPENDIX J: NUMBER OF STAKEHOLDERS INDICATING EACH MODEL AS ONE OF THEIR TOP THREE PRIORITIES, 2014 RESULTS ..... 149

**REFERENCES**..... 151

## **I. INTRODUCTION**

## BACKGROUND

In spring of 2014 the North Dakota Center for Rural Health was tasked with completing an objective assessment of oral health need and policy recommendations for North Dakota. This study was undertaken in response to the Health Services Interim Committee which, under HB 1454, was responsible for a Legislative Management study on oral health. Work was complete under funding from the Pew Charitable Trusts. The project included assessing the existing oral health workforce and service capacity, assessing the potential unmet need for oral health care, and producing a written report of needs, outcomes, findings and stakeholder recommendations to be compiled and presented to the Health Services Interim Committee in an impartial fashion.

## NORTH DAKOTA ORAL HEALTH NEED

The reviewed data, North Dakota Oral Health Stakeholder perspectives and state input group responses pointed to three primary oral health needs for the state to include (in no order):

**Prevention Programs:** Need for greater oral health literacy and prevention across the state, with greatest need among special populations (to include children, the aging population, Medicaid patients, low-income, homeless, new Americans, American Indians, rural, and those with physical/mental disabilities)

**Dental Insurance:** Need for Medicare and Medicaid expansion; specifically, increase Medicaid reimbursement to incentivize dentists to accept more Medicaid patients, and restructure services provided among long term care residents to fit current Medicare reimbursement – need for coverage and services for Medicare enrollees

**Workforce and Access to Care:** Need to improve access to care and need to adjust the uneven distribution of the current workforce in order to meet the needs of North Dakota Citizens, especially special populations

The discussion regarding access to care and a larger workforce was not a concern for more dentists; discussion related to disparities in access, to include:

- Need to increase the number of dentists in rural and tribal communities.
- Need to increase the number of dentists accepting Medicaid patients.
- Need to increase the number of oral health providers available to meet the needs of the aforementioned special populations. This may or may not be a need for dentists.
- Need for more dental assistants in the state, especially in the Western half of the state where the patient population and needed dental care have changed and increased as the result of the recent oil boom.
- Need to use dental hygienists at their full scope of work, allowing more dental hygienists to work under general supervision of a dentist, providing preventive care and education in communities with high need.
- Need for oral surgeons, specifically, those who will accept Medicaid patients – in both rural and urban communities.

Following is a brief summary of some of the oral health needs in the state as evident from current data reports and evidenced-based research. See chapter II for more discussion of the need.

- Rural third grade students reported significantly worse oral health when compared to their urban peers.<sup>i</sup>
- There are disparities in oral health status between American Indian third grade students and their white and other minority peers; American Indian's reported higher rates of tooth decay, untreated decay, rampant decay, and need for treatment.<sup>ii</sup>
- The overall reimbursement rate, as defined by the amount of Medicaid dollars paid to providers, divided by the amount of Medicaid dollars billed over a five year period in North Dakota was roughly 62% in 2013. This rate leads the nation with North Dakota having one of the highest dental reimbursement rates.
- Medicaid reimbursement rates increased by 3% in both 2011 and 2012, and an additional 4% in 2013 yet the percentage of Medicaid-enrolled children who had had a dental visit in the last year had declined over that same period.<sup>iii</sup>
- A majority of dental practices that had billed Medicaid in 2013 (52%) saw 50 or fewer Medicaid patients; 65 of the 249 saw more than 100 Medicaid patients.
- Only 8% of the dental practices billing Medicaid in 2013 provided care to a majority (52%) of the Medicaid enrollees accessing dental services.
- Nearly 80% of all Medicaid patients that saw a dentist in 2013 were seen at only 26% (65) of the dental practices there were billing Medicaid (249 total billing Medicaid); this does not account for those practices that saw no Medicaid patients.
- In 2009 only 20% of dentists accepted *new* Medicaid patients. This number is much lower than the 49% of practicing dentists who accepted new Medicaid patients in 1992.<sup>iv</sup>
- In 2013, 73% of Medicaid enrolled children went without a preventive dental visit in the last calendar year with fewer than 5% receiving a sealant on a permanent molar tooth.<sup>v</sup>
- Adolescents had high rate of annual dental exams (75%) in 2012; only 30% of Medicaid-enrolled children had a dental visit in the last calendar year.<sup>vi</sup>
- 67% of North Dakotan adults reported having been to the dentist in the past year.<sup>vii</sup>
- Rate of adults over 65 missing all teeth has been on the decline; however, those 65 and older are far more likely than any other age group to report having an oral health problem (32%).<sup>viii</sup>
- In 2014, 12 counties had no dentist, 9 had 1, 9 counties had 2 dentists, and five counties had not reported.
- In 2013, 67% of all the licensed North Dakota dentists worked in the four largest counties: Burleigh, Cass, Grand Forks, and Ward.<sup>ix</sup>
- The dentist to population ratio is 61 per 100,000; the national trend is 76 per 100,000.<sup>x</sup>
- The number of active licensed dentists in North Dakota has slowly increased from 2007 (327 dentists) to 2013 (380 dentists); however, 36% of those currently practicing plan to retire in the next 13 years.<sup>xi</sup>
- There has been a decline in the number of Head Start children needing treatment who received the needed treatment; 95% in 2010 declining annually to 75% in 2013.<sup>xii</sup>
- There has been an increase in rate of dental sealants though the percent of 3rd grade students with caries has not changed (55% in 2010) and percent of 3rd grade students with untreated tooth decay has more than doubled from 17% in 2005 to 46% in 2010<sup>xiii</sup>

## **NORTH DAKOTA ORAL HEALTH STAKEHOLDER WORKING GROUP RECOMMENDATIONS**

Throughout the process of identifying recommendations for North Dakota, oral health stakeholders and input group members developed and discussed 24 possible models for the state, all of which will be highlighted in this report. However, the North Dakota Stakeholder Working Group was charged with making the final recommendations regarding action priorities. The summary of the final recommendations proposed by the Oral Health Stakeholder Working Group was sent for review and approved by the participating members. See Appendix B for the list of participating stakeholders and input members. The oral health priority recommendations for the state include the following:

1. Increased funding and reach of safety-net clinics to include services provided in western North Dakota; uses models/idea/support from nonprofit oral health programs similar to Apple Tree Dental and Children’s Dental Services to promote hub-and-spoke models of care.
2. Increased funding and reach of the Seal! North Dakota Program to include using dental hygienists to provide care, and incorporating case management and identification of a dental home as proposed under the North Dakota Dental Association’s case management model. Includes Medicaid reimbursement for services rendered.
3. Expand scope of dental hygienists (DHs) and utilize DHs at the top of their current scope of work to provide community based preventive and restorative services, and education among populations of high need.
4. Create a system to promote dentistry professions among state residents, and encourage practice in North Dakota through a consolidated loan repayment program and partnership/student spots at schools of dentistry.
5. Increased Medicaid reimbursement.

Of the above priority models, none of the proposed had a majority of the vote. This is likely because there were several (24) possibilities and, as the stakeholders noted, there is not one solution to meeting the oral health needs of the state. While the above are the highest ranked priorities, none of the priorities received more than 33% of the stakeholder vote in the final survey. It is important to also note that all of the stakeholders support the five indicated priorities though they may not have identified them as one of their top three.

Earlier data from an initial stakeholder survey and qualitative data from the Stakeholder Working Group Final Consensus Meeting do corroborate these findings. The five priorities listed had the greatest support of the group in the initial survey, with all stakeholders indicating they should be discussed as potential models. The five listed also ranked in the upper tier for anticipated impact, likelihood, or both in the initial assessment (See Appendix C for final survey results).

- How great of an *impact* would each proposed model have on its intended population/focus?
- How *likely* is it, given the current oral health environment (political, economic, social, demand)?

Finally, the five priorities were listed at the final stakeholder meeting, and received the greatest percentage of votes. Read the *Process for Identification of Recommendations* under *Recommendations* in chapter IV. *Proposed Models to Improve North Dakota Oral Health Status* for more survey detail, presentation of the results, and analysis of the working group discussions.

## **METHODOLOGY**

The intent of this study was to provide an objective discussion of the oral health needs as presented through data, stakeholder perspectives and insight from various input groups throughout North Dakota while also working with state stakeholders, input members, and national content experts to identify possible solutions and recommendations for meeting the oral health needs of the state. Upon contract, and as outlined, the Center for Rural Health identified two groups in the state: (1) a primary Oral Health Stakeholder Working Group; and (2) an Oral Health Input Group. The purpose, tasks, involvement and membership of each group are outlined below.

### **North Dakota Oral Health Stakeholder Working Group**

The North Dakota Center for Rural Health invited individuals in the state who were identified as active in, and knowledgeable about, North Dakota’s oral health environment to participate in an Oral Health Stakeholder Working Group. The participating stakeholders were identified with input from various state partners. These individuals represented organizations and entities that could offer experience and expertise in oral health status, access, financing, and potential models for care. The participating organizations served populations that either access or struggle to gain access to oral health services.

The missions/purposes of the organizations included working with low income families, assisting the uninsured, providing health to the underserved, assisting families with children that have special health needs, working with the aging population, meeting the needs of the homeless population, working with state agencies to obtain access to assistance and services for American Indians, working to provide close-to-home services for those in need, and assisting those with various physical and or mental disabilities. The participating entities included:

- Community Healthcare Association of the Dakotas (CHAD)
- Department of Human Services, State Medicaid
- Family HealthCare
- Family Voices of North Dakota
- Fargo Public Schools



- Long Term Care Association of North Dakota
- North Dakota American Association of Retired Persons (AARP)
- North Dakota Department of Health, Oral Health Program
- North Dakota Disabilities Advocacy Consortium (Developmental Homes)
- North Dakota Head Start Association
- North Dakota Indian Affairs Commission
- Sanford Bismarck Emergency and Trauma Center
- The Chamber of Commerce, Statewide Vision and Strategy Committee
- Third Street Clinic

The participating organizations were to attend five meetings, hosted by the Center for Rural Health, between June and July 2014. At these meetings, stakeholders worked to identify oral health needs in the state and listened to state and national presenters address possible models to improve the oral health status of North Dakota. The stakeholder group was also responsible for identifying the potential models for the state, making the final recommendations for the Health Services Interim Committee and for reviewing the reports to be distributed.

### **Oral Health Input Group**

The North Dakota Oral Health Input Group consisted of entities in North Dakota that worked in or with oral health, to include provider organizations. Twenty-five entities and/or organizations were asked to provide input. Input group members were asked to share their knowledge regarding oral health access, workforce, and models; specifically, they were sent three questions to respond to for inclusion in the report of needs. Various input members were invited to present at stakeholder meetings. Input members were also sent drafts of each report developed by the Center for Rural Health on oral health and invited to provide feedback, edits, or additional information. Those invited to participate in the input group included:

- American Academy of Pediatrics, North Dakota Chapter
- American College of Emergency Physicians, North Dakota Chapter
- Blue Cross Blue Shield of North Dakota
- Bridging the Dental Gap
- Cankdeska Cikana Community College (Tribal College)
- Consensus Council
- Grand Forks Public Health Department
- Kalix
- North Dakota Academy of General Dentistry
- North Dakota Association of Counties
- North Dakota Dental Assistants Association
- North Dakota Dental Association
- North Dakota Dental Hygienists' Association

- North Dakota Department of Health, Health Equity Office
- North Dakota Department of Health
- North Dakota Department of Human Services
- North Dakota Department of Public Instruction
- North Dakota Health Information Network
- North Dakota Hospital Association
- North Dakota Oral Health Coalition
- North Dakota Public Health Association
- North Dakota Board of Dental Examiners
- North Dakota State College of Science
- North Dakota State Council on Developmental Disabilities
- North Dakota Women, Infants, and Children (WIC)

### **National Content Experts**

During the Stakeholder Working Group identification and development of oral health best practices and models for North Dakota, four national experts were invited to speak to models that have worked in their respective states. Following is the list of content experts that addressed potential oral health models at one of the five stakeholder working group meetings:

- Children’s Dental Services; Sarah Wovcha, Executive Director
- University of Minnesota School of Dentistry; Dr. Leon Assael, Dean
- Dental Health Aide Therapist Educational Program, Alaska; Dr. Mary Williard, Director
- Apple Tree Dental; Dr. Michael Helgeson, CEO

### **Identification of Need**

Oral health needs in the state were identified through data review, and work with the Stakeholder Working Group and state input members. The data were taken from previous reports completed by the Center for Health Workforce Studies and the North Dakota Department of Health between 2010 and 2012. The Center for Rural Health also worked with the North Dakota Department of Health, the North Dakota Board of Dental Examiners, North Dakota State Medicaid (Department of Human Services), and other state entities to acquire more recent data (2013-2014).

Additionally, a survey of oral health workforce has been complete and is being analyzed by the Center for Rural Health. Oral health workforce data will be included as it is available.

At the first in-person/video conference meeting for the Oral Health Stakeholder Working Group, members were encouraged to share their perception of the current oral health environment in North Dakota. The agenda included the following discussion points:

- From your perspective, what are the oral health access issues in North Dakota, if any?
- What are some of your concerns around oral health in North Dakota, if any?

- Based on earlier discussions of oral health concerns, what are the policy issues in North Dakota around oral health?
- What are some proposed solutions or models for oral health?
- Are you working on or aware of any oral health initiatives in North Dakota?

While a limited number of individuals were invited to participate in the Oral Health Stakeholder Working Group, 25 entities and/or organizations were asked to provide input. Input group members were asked to share their knowledge regarding oral health need, access, workforce, and models. Specifically, in first contact, the input group members were invited to respond electronically to the three following questions:

1. What are the unmet oral health needs in North Dakota, if any?
2. If there are unmet needs, what solutions would you or your organization propose or support?
3. Is your organization currently working on any projects/initiatives to meet North Dakota oral health needs? If so, what is being done?

The summary of both stakeholder and input members perceptions of need, as included in this report, were sent to all members of both groups for review. Any additional information shared with the Center for Rural Health was added and necessary corrections were made. In this review, stakeholder and input members were also sent a draft of the complete need report, to include the data analysis, inviting additional insight, data or comment.

### **Current Oral Health Programs/Initiatives in the State**

To identify oral health programs active in North Dakota, the CRH turned again to the participating input and stakeholder groups. Upon completion of the program descriptions, all participating entities were sent a draft of the report to provide feedback.

### **Oral Health Recommendations for North Dakota**

The Oral Health Stakeholder working group was tasked with objectively identifying priorities for the state. The CRH team members were responsible for organizing, informing, facilitating, and summarizing the group's meetings while also researching potential models to inform stakeholders as requested. To arrive at recommendations for the state, the following steps were taken. For a more comprehensive outline of the process, see Appendix A.

- The CRH hosted five Oral Health Stakeholder Working Group Meetings
- The CRH wrote and disseminated the need report for stakeholders
- The CRH identified and invited both state and national content experts to present possible models/initiatives to the stakeholder group
- The CRH completed meeting minutes and distributed to stakeholder members, along with any resources shared by state and national content experts

- Prior to the final meeting, the CRH distributed a survey to identify recommendations of the group
- The CRH facilitated an in-person working group meeting to identify stakeholders' final recommendations for the state
- The CRH distributed a final electronic assessment to the group to identify priority ranking of the group's recommendations
- The stakeholder oral health recommendations, as outlined later in the report, were sent to the stakeholder group for review and approval

Read section IV of the report, *Proposed Models to Improve North Dakota Oral Health Status, Process for Identification of Recommendations* for a complete discussion on survey questions, responses, and the process of developing state priority recommendations.

## **POLICY CLIMATE IN NORTH DAKOTA**

The subject of oral health, while very important to various advocacy groups, associations, and some state agencies, has not been a primary health policy issue in North Dakota. Health workforce, health facility viability, and access to care and health services development have tended to have more policy focus. However, the 2013 legislature passed HB 1454 that established a Legislative Management study on oral health. The study scope included how to improve access to dental services and ways to address dental service provider shortages, including the feasibility of utilizing midlevel providers, whether the use of incentives for dental services providers to locate in underserved areas in the state could improve access, and whether the state's medical assistance reimbursement rates impact access to dental services. The Legislative Council approved taking up the study, and the Interim Health Services Committee assumed formal jurisdiction over the matter.

To assist the Interim Committee, and under funding through the Pew Charitable Trusts, the CRH was tasked with completing an objective assessment of oral health need and policy recommendations for the state. The development of an objective process to facilitate the identification and review of oral health policy options was critical. The process needed to assure transparency and inclusiveness to assure a high level of neutrality to meet the needs of the Interim Committee. Both a stakeholder and input group were thus designed.

In a standard policy process, different policy ideas are discussed and interest groups sometimes align and sometimes oppose each other. This is both normal and accepted within the policy arena. An important part of policy development is the political nature of organizations and interest groups which includes their interactions with each other and the interactions with policy makers. However, during this pre-policy formulation stage (sometimes called the agenda setting stage) it was necessary to assure the integrity of the process by hosting formal meetings where the exchange of ideas and viewpoints could occur in an open and accessible manner.

It is recognized that while the formal process was transparent, and the CRH could facilitate and manage the flow of information and the interactions of stakeholder and input group alike, it could not guarantee what contact occurred outside of the formal process between various groups, nor could the CRH control the level of contact and the quality of the exchange. The CRH can only report on the formal functions it was involved with for the project.

Most of the organizations involved – either as stakeholder or input- had a high degree of expertise or at least a higher level of understanding of oral health issues. Naturally, these organizations possessed a point-of-view based on longstanding experience with the subject. It would be natural - particularly in a relatively small state where interest groups tend to know each other well, and have a natural familiarity with each other – if interest groups shared perspectives outside of the formal process. This, too, is a part of policy making.

When the Center for Rural Health had been tasked with completing an objective assessment of oral health need and recommendations for the state, the topic of oral health had already begun to be discussed by the Health Services Interim Committee and among many of the identified oral health input and stakeholder group members. While the CRH staff worked to complete an objective assessment of need and facilitate a stakeholder lead process for identifying recommendations for the state, various entities already held strong convictions regarding the oral health needs and solutions for North Dakota. That being said, the process followed to identify state recommendations was objective, transparent, and inclusive.

## **CENTER FOR RURAL HEALTH: BACKGROUND**

The Center for Rural Health (CRH), located at the University of North Dakota (UND) School of Medicine and Health Sciences (SMHS), holds a unique position in its ability to understand the nature of rural communities, the strengths and challenges found in rural health delivery systems, and the role and impact of public policy. The CRH has facilitated rural community capacity-building for over three decades, and is North Dakota's designated State Office of Rural Health (SORH). The CRH runs the state's Federal Rural Hospital Flexibility program, Area Health Education Center program office, and the Small Hospital Improvement Program (among other initiatives). The CRH is also home to six national programs. The CRH understands the environmental and contextual factors that influence and are embedded in North Dakota's communities, the complexity of different health systems and provider arrangements, and the policy implications associated with restructuring and retooling complex health delivery systems.

The mission of the CRH is to “connect resources and knowledge to strengthen the health of people in rural communities.” The CRH has a 30-year history of investigating, developing, integrating, and implementing solutions to address rural health issues at national, regional, state, and community levels. The seven primary areas of focus for the CRH are health status; workforce; research; policy; education, training, and dissemination; community development; and American Indian health issues. The CRH is a UND Center of Research Excellence. More

than 50 full-time employees at the CRH represent expertise in a wide range of topics including communications/dissemination; workforce development; education, training, and research; library science; public health; nursing; psychology/counseling; finance/economics; social work; sociology; public administration; management; dietetics/nutrition; research; policy; community diagnostics; medicine; medical geography; and other specialized topics and skills.

## **II. ORAL HEALTH NEED IN NORTH DAKOTA**

## NORTH DAKOTA ORAL HEALTH ENVIRONMENT

Following is a discussion of the current oral health needs in the state as evident from current data reports, evidenced-based research, and responses from the North Dakota Oral Health Stakeholder Working Group and the North Dakota Oral Health Input Group.

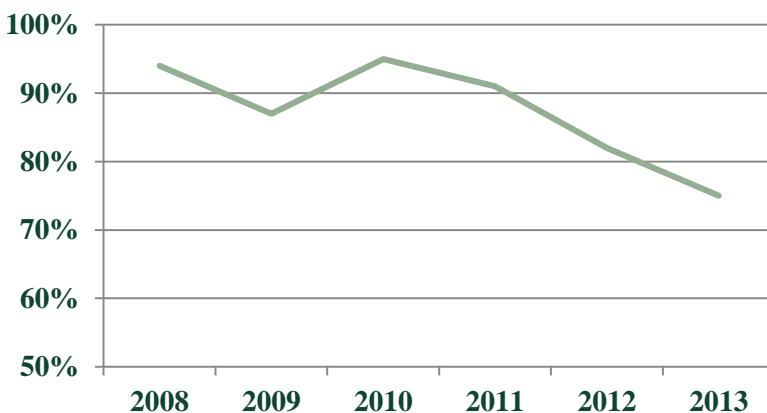
### Oral Health Status

#### *Pediatric Population (18 and under)*

North Dakota has 21 Head Start programs which are aimed toward pregnant women and the pediatric population who are in need of services. In 2012, roughly 3,930 children ages four and under were enrolled in Head Start or Early Head Start programs. The North Dakota Head Start Program reports a higher than national average rate of Head Start children who have had a dental examination in the past year; 93% in 2013; in 2010, the national average was 56% (Head Start Program Information Report (PIR), 2011). The high rate of dental exams likely contributes to the declining rate of dental caries among this same population; the prevalence of untreated dental caries in 2000 and 2010 were 34% and 17% respectively (Head Start PIR, 2011).

Of those Head Start children who had had an oral health exam in the last year, 18% required dental treatment, and 75% of those needing care were able to receive treatment. While the rate of children requiring dental treatment has been consistent over the last six years, the percent of children needing care that received it has been on the decline. See Figure 1. Head Start children are consistently receiving preventive dental care; 86% of students report preventive services. However, the reported decline in treatment is a concern among the youngest patient population (Head Start PIR, 2011). It is important to note that the data presented is aggregate and include both White (73%) and American Indian/Alaskan Native (26%) Head Start children collectively.

Figure 1. Percent of North Dakota Head Start Children Needing Treatment who Received Treatment





The annual dental visit prevalence for third grade students has remained at 95% between 2005 and 2010; well above the 2010 national target of 42% (Basic Screening Survey (BSS) for Children Attending Third-Grade, 2014). Between 2005 and 2010, there has also been no change in the percent of third graders in need of urgent oral health care (less than two percent).

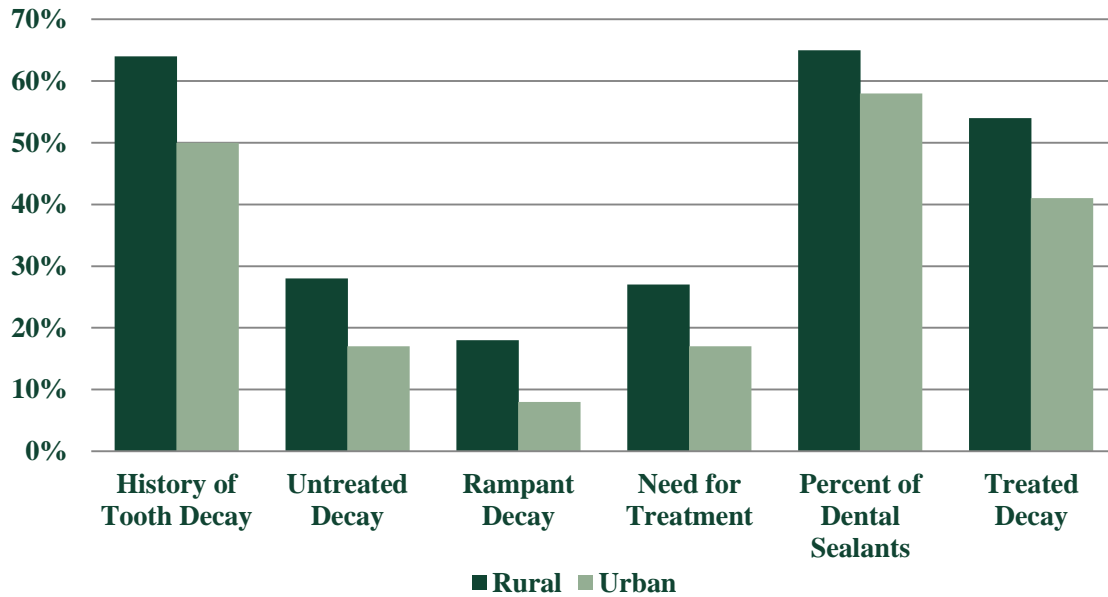
In 2007, North Dakota began developing a plan for school-based sealant programs to reach high-risk children (Seal!ND). The program provides sealants for high-need students in pre-kindergarten through sixth grade. Since the program's inception, there has been a gradual increase in the number of third-grade children with dental sealants. In 2005, prior to the program, 53% of third grade students had a dental sealant on at least one permanent molar. In 2010, three years after the program began, 60% of third-grade students had dental sealants; higher than the national target of 50% (BSS for Children Attending Third-Grade, 2014). It is important to note that North Dakota was above the national target even before the program was implemented. Additionally, while Seal!ND had been reaching 50 schools in North Dakota, as a result of lost funding, the program was only active in two schools in the 2013-2014 school year.

The purpose of a sealant is to protect a child's tooth from dental caries and decay. While there has been a gradual increase in the rate of dental sealants among this population, the percent of third grade students with caries has not changed (55% in 2010) and the percent of third grade students with untreated tooth decay has more than doubled from 17% in 2005 to 46% in 2010. However, it is unknown how many of those third grade students with reported caries had had a sealant prior to the tooth decay.

Regardless, North Dakota has served as a national example with the rate of dental sealants among high risk populations. In a 2013 report completed by Pew Center on the States, Pew gave North Dakota an "A" for their sealant program. This rating was determined by the state having no restrictions for dental hygienists to complete sealants, implementing the program in 50- 74% of high-need schools, and meeting the Healthy People 2010 sealant goal (Pew Center on the States, 2013a).

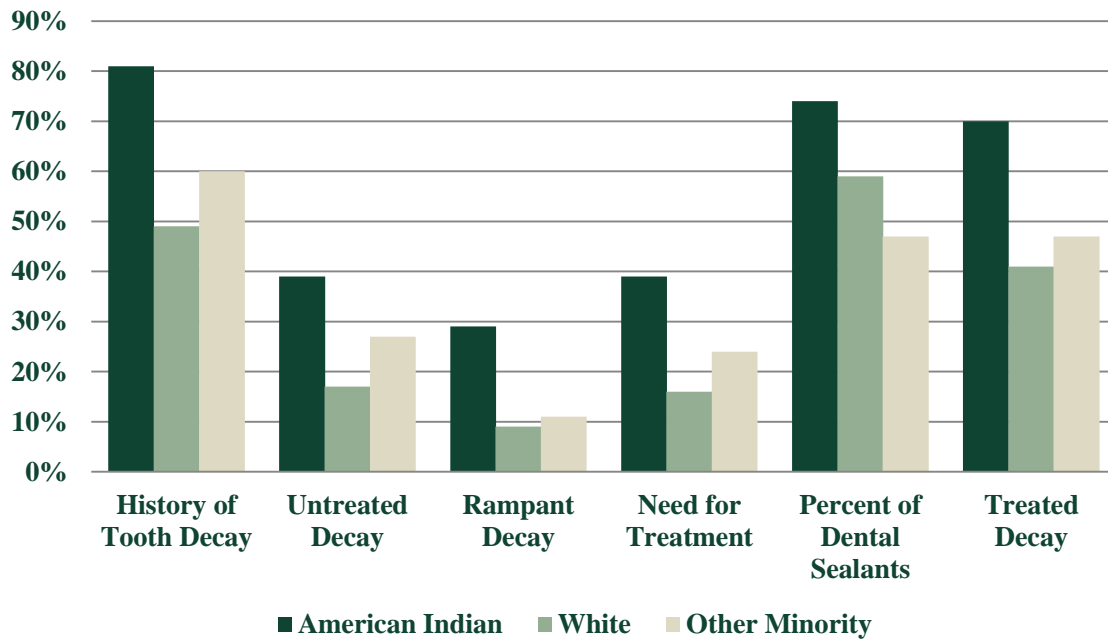
Outside of sealants, rural third grade students have reported significantly worse oral health when compared to their urban peers; see Figure 2 (BSS for Children Attending Third-Grade, 2014).

Figure 2. Rural/Urban Disparities in Oral Health among North Dakota Third Grade Students, 2010



There are also disparities in oral health status between American Indian third grade students and their white and other minority counterparts (BSS for Children Attending Third-Grade, 2014).

Figure 3. Racial Disparities in Oral Health among North Dakota Third Grade Students, 2010



The percent of individuals that have visited a dentist in the last year appears to decline with age. As stated above, in 2013 roughly 93% of Head Start children and 95% of third grade students

had seen a dentist in the last calendar year. However, in 2013 the Youth Risk Behavior Survey reported that 75% of middle school students had visited a dentist in the last year; a slight decline from 80% of middle school students in 2005. Roughly 74% and 76% of high school students reported visiting the dentist in the last calendar year in 2012 and 2013 respectively. While the percent of individuals that have seen a dentist has not varied within each age cohort (Head Start is generally at 95%; third grade, no change; 18 and older consistently within four percentage points) there has been a steady decline in the percent of individuals that visit the dentist at least once a year as the population ages; see Table 1.

Table 1. Percent of North Dakotans that had Visited a Dentist in the Last Year by Age, 2005-2013

	Head Start	Third Grade	High School	Middle School	18 or Older
2005		95%	77%	80%	
2006					71%
2007			77%	70%	
2008	97%				73%
2009	93%		76%	72%	
2010	96%	95%			71%
2011	96%		76%	75%	
2012	93%				67%
2013	93%		74%	75%	

In 2011, 42% of middle school students reported one or more dental caries. The percentage of North Dakota high school students reporting one or more dental caries has remained relatively constant over time with rates varying between 55% and 57% between 2005 and 2011; more recently in 2013, high school students had their lowest rate of reported caries at 50%.

As will be discussed further under dental insurance, the Medicaid population (ages 21 and under) is a disparate group in North Dakota. In 2013, 70% of Medicaid enrolled children did *not* see a dentist in the last calendar year; 73% went without a preventive dental visit in the last calendar year with fewer than 5% receiving a sealant on a permanent molar tooth (United States Department of Health and Human Services (USDHHS) Centers for Medicare & Medicaid Services (CMS), 2014).

Contrary to what is found among the adult population, among children, those with a special health care need were just as likely as those with no special need to have had a preventive dental visit (Dalrymple, Dwelle, Gallup-Millner, Muccatira & Reed, 2013).

Tobacco use has been shown to have a negative impact on oral health. Smoking and chewing tobacco leads to superficial problems like bad breath, tooth discoloration and gland inflammation, but can also cause more severe oral health problems, including increased risk of

bone loss in the jaw, leukoplakia, gum disease, tooth loss, and oral cancer (Delta Dental, 2014; WebMD, 2014). Studies have found that oral cancer risk is highest among smokers (Petersen, 2009) with approximately 81-87% of the oral cancer in men and 42-47% in females attributable to smoking (Warnakulasuriya, Dietrich, Bornstein, Peidro, Preshaw, Walter, Wennstrom & Bergstrom, 2010).

Chewing tobacco rates among high school students has remained relatively consistent over the past decade. In 2013, 14% reported using chewing tobacco at least once in the past 30 days. Conversely, the percentage of high school students reporting the use of smoked tobacco products has declined from 35% in 2001 to 19% in 2011. Chew tobacco use was also prevalent among middle school students with 4% admitting to using at least once in the last 30 days. With regard to tobacco use among adults, 53% of North Dakotans who reported tooth loss or decay also reported being a current smoker (Behavioral Risk Factor Surveillance Survey, 2013).

### *Adults*

According to the 2013 Behavioral Risk Factor Surveillance System (BRFSS), 67% of North Dakotan adults (age 18 and older) reported having been to the dentist in the past year. Among that group, only 60% of adults with a disability reported going to the dentist compared to 76% of non-disabled adults (BRFSS, 2013). Additionally, in 2013 only 39% of eligible Medicaid enrollees visited a dentist; approximately 32% of adult Medicaid enrollees accessed care through private dental practices while roughly 6% of adult enrollees received dental care at an FQHC or Bridging the Dental Gap.

Further analysis yields a correlation between income, gender, and dental visit within the last 12 months. Females and patients with higher incomes were more likely to have visited the dentist. Another study found that adults with annual incomes less than \$15,000 were more likely to lose their teeth. Approximately 16% of adults below this income threshold experienced permanent tooth loss as a result of tooth decay or gum disease in 2010 (BRFSS, 2013). This concern is heightened in rural communities in North Dakota as those who live in rural communities tend to have lower income with higher reported levels of poverty.

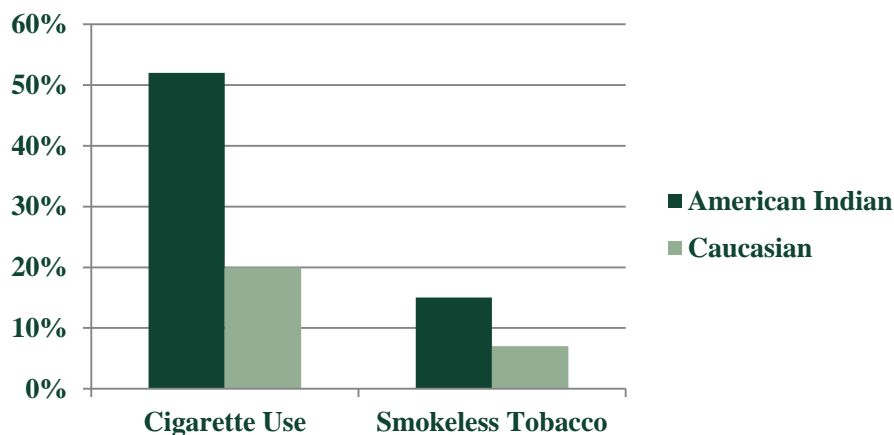
Edentulism (missing all of one's permanent teeth) is a measure of oral health status. Among those 65 years of age and older in North Dakota, 17% reported missing all of their permanent teeth in 2013. This rate has been consistently declining since 2004 (25%). In 2010, females (22%) were more likely than their male peers (15%) to have all of their permanent teeth missing. While the rate of edentulous adults over 65 has been on the decline, those 65 and older are far more likely than any other age group to report having an oral health problem (32%). Again, poor oral hygiene is a heightened concern in rural communities as this population is also older than the population in urban areas (Basic Screening Survey (BSS) for Older Adults, 2014).

North Dakota has a lower than national average rate of oral cancer. In 2007, the rate in North Dakota was 7.58 per 100,000 and the national rate was 10.69 per 100,000. In 2013, the North

Dakota Vital Records reported 16 oral and pharyngeal cancer deaths. While the incidence of oral health cancer was lower in North Dakota, North Dakota had a higher oral cancer mortality rate in 2007; 2.9 per 100,000 while the national average read 2.5 per 100,000. In 2013, this rate had improved slightly to 2.1 per 100,000 in North Dakota. Furthermore, in North Dakota in 2007, the American Indian population experienced a higher oral cancer mortality rate per 100,000 compared to the white population (2.1 and 1.46 respectively).

In 2011, roughly 22% of adults reported smoking tobacco. Across all states North Dakota ranked thirtieth; prevalence among adults ranged from 12% to 29%. North Dakota did report slightly higher than average rates of smoking tobacco, but only one state had a higher rate of smokeless tobacco use than North Dakota. In North Dakota, 8% of adults reported using smokeless tobacco in 2011, ranking North Dakota forty-ninth among all states. As mentioned above, tobacco use is correlated with increased risk of various oral health diseases and poor overall oral hygiene. In North Dakota, smoking and smokeless tobacco use was also more prevalent among those living in rural (20%) than metro (14%) communities in 2010. Prevalence was also higher among American Indians than Caucasians (BRFSS, 2013). See Figure 4.

Figure 4. Cigarette and Smokeless Tobacco Use Racial Disparities in North Dakota, 2011



### Dental Insurance

Insurance status can be correlated with overall oral health status. In 2007, North Dakotan children with no insurance had lower oral health status in terms of the overall condition of their teeth compared to children with public insurance and children with private insurance (National Survey of Children’s Health, 2014). Around 78% of children with private insurance had teeth in excellent or very good condition compared to publically insured children with around 64% having teeth in excellent or very good condition.

There is also an inverse relationship between poverty level and dental visits – those with a greater level of poverty are less likely to have been to a dentist. In 2007, the National Survey of Children’s Health found that children in families with incomes between 100-199% of the federal

poverty level had the highest percentage (30%) of preventive dental visits in the past 12 months. Conversely, only 20% of children in homes with incomes between 200-399% of the federal poverty level had one or more preventive dental visits in the last year. North Dakota was no different than the national trends with regard to the condition of children's teeth (National Survey of Children's Health, 2014).

### *Medicare*

Medicare does not cover routine or restorative dental care services, dentures, or tooth extractions except in emergent cases that are deemed medically necessary and are part of an otherwise covered inpatient procedure or hospitalization. Some Medicare beneficiaries have access to dental coverage through other sources such as employer-sponsored retiree health plans, Medicare Advantage plans, Medicaid dual eligibles, or individually purchased dental plans such as through AARP. Medigap policies do not cover dental benefits. Dental uninsurance remains a significant problem for Medicare beneficiaries.

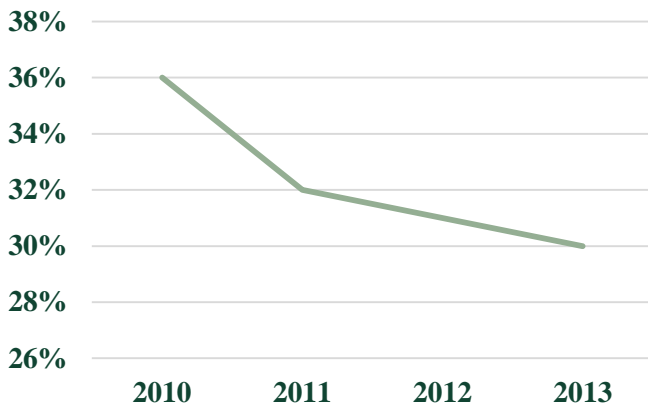
### *Medicaid*

North Dakota's Medicaid program provides coverage to low-income individuals from birth, children in foster care or subsidized adoption, former foster care children up to age 26 under certain circumstances, children with disabilities (birth to 19), pregnant women, women with breast or cervical cancer, workers with disabilities, other blind and disabled individuals, and low-income Medicare beneficiaries. Some of the services covered under Medicaid include dental exams, x-rays, cleanings, fillings, dental surgery, extractions, crowns, root canals, dentures, and anesthesia.

From 2007-2009, Medicaid North Dakota spent \$1.8 billion in total health care expenditures. Approximately 3.5% (\$14.5 million) of that \$1.8 billion was spent on dental services. In 2007, a 4% inflationary increase in Medicaid reimbursement was passed by the state legislature with an increase to 5% in 2008. From 2000 to 2008, increases in the level of state Medicaid payments for dental services were associated with an increased use of dental care by children and adolescents covered by Medicaid. A 10% increase in the Medicaid fee paid for prophylactic dental services resulted in a 4% increase in the probability that a Medicaid insured child or adolescent would receive a dental service (Center for Health Workforce Studies, 2012b).

However, the dental fee schedule for Medicaid again increased by 3% in both 2011 and 2012, and an additional 4% in 2013 yet the percentage of Medicaid-enrolled children who had had a dental visit in the last year had declined over that same period (US DHHS CMS, 2014).

Figure 5. Percent of Medicaid-Enrolled Children with Dental Visit in Calendar Year, 2010-2013



In that same period of time, between 2009 and 2012, 57% and 53% of dentists accepted at least one Medicaid patient respectively. Though only a slight decline in provided care, this is notable as it followed the legislative sessions in which Medicaid reimbursement had increased (North Dakota Board of Dental Examiners, 2013).

In 2013, 249 dental practices billed for at least one Medicaid patient in the calendar year; only 65 of these practices saw more than 100 Medicaid patients. A majority of dental practices that had billed Medicaid in the last calendar year (52%) saw 50 or fewer Medicaid patients (Figure 6). These dental practices accounted for only 11% of Medicaid patients that visited a dentist in 2013. More than 50% of Medicaid patients that saw a dentist in 2013 received care from one of only 21 North Dakota dental practices; this means that 8% of the dental practices billing Medicaid in 2013 provided care to 52% of the Medicaid enrollees accessing dental services. See Table 2.

Figure 6. Number of Medicaid Recipients Seen by North Dakota Dental Practices Billing Medicaid, 2013

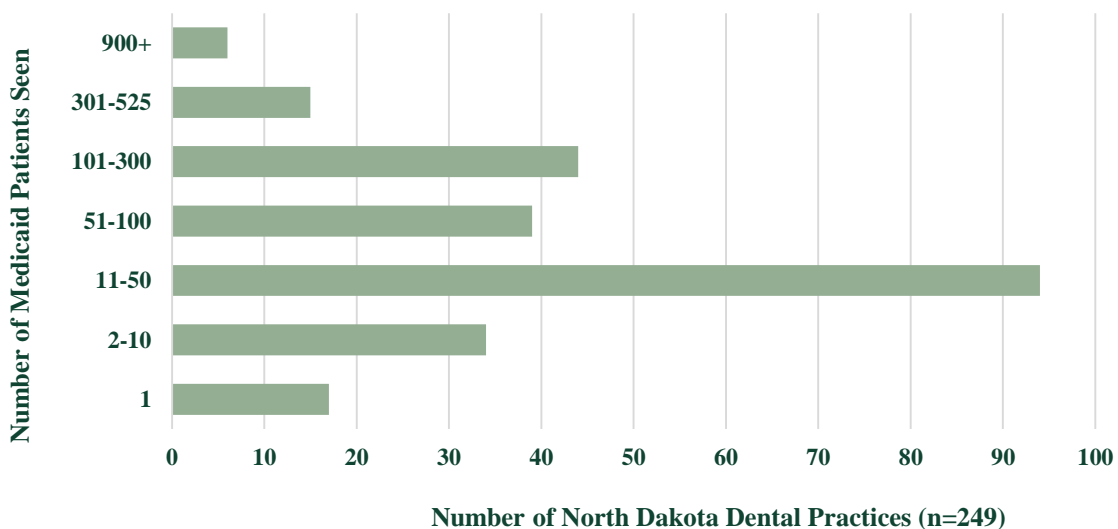


Table 2. Number and Percent of Patients Served by Dental Practices Billing Medicaid, 2013\*

Number of Medicaid Recipients Seen in Calendar Year	Number of Dental Practices	Cumulative Percent of Medicaid Patients that Saw a Dentist
900+	6	30%
301-525	15	52%
101-300	44	79%
51-100	39	90%
2-10	94	100%**
11-50	34	100%**
1	17	100%**

\*Percent is based on the total number of dental practices *that had billed Medicaid*, not total dental practices

\*\*Less than 1%

The overall reimbursement rate, as defined by the amount of Medicaid dollars paid to providers, divided by the amount of Medicaid dollars billed over a five year period in North Dakota was roughly 62% in 2013. This rate leads the nation with North Dakota having one of the highest dental reimbursement rates. However, dentists in the state still highlight that it is below their cost of care.

Nationally, one in four dentists treat at least 100 Medicaid patients annually. The chief complaint among dentists regarding Medicaid patients is the low reimbursement rates and administrative requirements for Medicaid. In North Dakota, There has been a slight increase in the percentage of practicing dentists who accept any and all Medicaid patients (with no limit); increase from 18% in 2009 to 23% in 2011 (North Dakota Board of Dental Examiners, 2013). However, in 2009 only 20% of dentists accepted *new* Medicaid patients. This number is much lower than the 49% of practicing dentists who accepted new Medicaid patients in 1992. Additionally, it was reported in 2009 that 20% of dentists in the state provided a majority of the dental services for Medicaid eligible patients.

There is a clear disparity in care among North Dakota children. Adolescents had a high rate of annual dental exams (75%) in 2012 while only 30% of Medicaid-enrolled children had a dental visit in the last calendar year (US DHHS CMS, 2014). Similarly, 75% of all North Dakota adolescents reported receiving at least one preventive care visit in the last year while only 27% of Medicaid-enrolled children had had a preventive dental visit (US DHHS CMS, 2014).

Approximately 12% of North Dakotans are eligible for public dental benefits through Medicaid. For those North Dakotans with private health insurance, only 28% were enrolled in a private dental plan in 2011. Low utilization of private dental insurance is not surprising in North Dakota given that 51% of the population live in rural areas. A majority of rural areas lack large employers that offer dental benefits. Approximately 45% of businesses with 6-24 employees actually offer dental benefits (Center for Health Workforce Studies, 2012b).



There is a need to increase oral health utilization and access among Medicaid patients. A study conducted by the National Academy for State Health Policy reported that dentists cite three primary reasons for low participation in state Medicaid programs: “low reimbursement rates, burdensome administrative requirements, and problematic patient behaviors” (Borchgrevnik, Snyder & Gehshan, 2008). While it is clear that not all North Dakota providers are seeing Medicaid patients and anecdotal reports state that few are accepting new patients, it is also evident that Medicaid patients have lower oral health literacy, have higher “no-show” rates, and struggle with making their initial appointments.

## Oral Health Workforce

### *Shortage of Oral Health Providers*

In order for a geographic area to receive the designation of a federal dental professional shortage area, it must be:

- 1) A rational area for the delivery of dental services
- 2) Have a ratio of at least 5,000:1, population to full-time-equivalent dentists
- 3) Have a ratio of less than 5,000:1 and greater than 4,000:1 with an unusually high need for dental services or insufficient capacity of providers, and dental providers in contiguous areas are over-utilized, distantly located, or inaccessible to patients

It is important to note that patient demand is not a variable included in HPSA designations. North Dakota has 35 dental health professional shortage areas (DHPSAs). In addition, there are 17 whole county dental health professional shortage areas and include: Benson, Billings, Dunn, Golden Valley, Grant, Griggs, Hettinger, Kidder, McKenzie, Mountrail, Nelson, Pierce, Rolette, Sioux, Slope, Steele, Towner (Center for Rural Health, 2014; Health Resources and Services Administration (HRSA), 2014). According to data provided by the Kaiser Foundation in Table 3, North Dakota is only meeting roughly 53% of the oral health need in the designated HPSAs. However, in the same report, Kaiser states that the addition of seven dental professionals could ameliorate the HPSA designations in North Dakota.

Table 3. Dental Care Health Professional Shortage Areas (HPSAs), 2014

Location	Percent of Need Met	Total Dental Care HPSA Designations
Nebraska	0.8421	74
Vermont	0.8409	26
Alaska	0.6877	57
Puerto Rico	0.6667	22
Oklahoma	0.6611	96
Kentucky	0.649	87
West Virginia	0.6402	94
Texas	0.6372	240

Location	Percent of Need Met	Total Dental Care HPSA Designations
Louisiana	0.62	102
New Hampshire	0.6196	22
Wyoming	0.6159	22
South Carolina	0.5783	79
Mississippi	0.5585	108
Massachusetts	0.5498	64
Maryland	0.5489	39
Utah	0.5339	48
Iowa	0.532	117
<b>North Dakota</b>	<b>0.528</b>	<b>35</b>
Idaho	0.5228	70
Indiana	0.5167	47
New York	0.5077	129
Minnesota	0.4778	124
Arkansas	0.4745	82
Delaware	0.4711	6
Virginia	0.4676	83
North Carolina	0.438	129
Wisconsin	0.4333	95
Nevada	0.4274	48
Michigan	0.4179	212
Colorado	0.4174	82
California	0.4125	341
United States	0.4079	4878
Hawaii	0.4074	19
Kansas	0.4033	134
Pennsylvania	0.4026	160
Oregon	0.3911	91
Ohio	0.3903	126
Maine	0.3807	76
Montana	0.3458	75
New Mexico	0.334	78
Rhode Island	0.3306	14
Arizona	0.3165	170
Illinois	0.3083	161
New Jersey	0.3062	35
Washington	0.282	107
Georgia	0.2705	148
Alabama	0.2701	62
South Dakota	0.2611	56



to retire in the next 13 years. This number is based off of a survey complete two years ago where North Dakota dentists identified their plans to retire in the next 15 years (North Dakota Board of Dental Examiners, 2013; North Dakota Board of Dental Examiners; 2014). The dentist to population ratio is approximately 61 per 100,000 in North Dakota which is below the national trend of 76 per 100,000. The range of dentists to population ratios across North Dakota is as low as 156:1 and as high as 3,846:1, with an average of 1,866:1 (Robert Wood Johnson Foundation, 2014).

In 2012, there were 5.4 dentists per 100,000 population in North Dakota. Of those practicing dentists, 82% were male and 97% were non-Hispanic white. A study complete in 2005 found that 51% of North Dakota dentists were born in North Dakota and 22% were born in Minnesota (Center for Rural Health, 2005). This same study reported 55% percent of North Dakota dentists received their degrees from the University of Minnesota as of 2005. Nationally, there were approximately 146,800 dentists employed in 2012 with expected growth to 170,200 employed by 2022 (Bureau of Labor Statistics, 2014). This 16% growth means that more dentists are entering into the profession and may be available to help the rural, underserved areas, to include North Dakota (Bureau of Labor Statistics, 2014).

The number of licensed dental hygienists in North Dakota (with a practice address) rose from 468 in 2007 to 517 in 2013.

In North Dakota, there are two types of dental assistants, a registered dental assistant and a qualified dental assistant. A registered DA (RDA) has formal training and/or certification and a qualified DA (QDA) is trained chair-side. RDAs have greater scope of practice. In 2012, there were 472 RDAs with an address in North Dakota and 107 RDAs without an address. Furthermore, 89% reported working the right amount of hours, while 7% reported working fewer hours than desired. There is currently only one DA program in North Dakota that graduates 15 students per year. Conversely, Minnesota has 13 programs that graduate a total of 420 students annually.

Among both dental assistants and dental hygienists, there is a much higher rate of individuals licensed in the state than practicing (747 licensed dental hygienists in North Dakota, 517 with a practicing address in 2013). It is important to begin to explore this trend to determine if there is a surplus in workforce as providers and associations anecdotally report an inability to find and hire assistants.

### **Oral Health Provider Schools**

There is not a dental school in North Dakota or the neighboring states of South Dakota, Montana, Wyoming, or Idaho. Minnesota has one dental school, the University of Minnesota, School of Dentistry which admits 98 dental students annually. As of 2014, 47% of dentists practicing in North Dakota received their education at the University of Minnesota (North Dakota Dental Database, 2014). Iowa also has one dental school, the University of Iowa, College of Dentistry.

Nebraska has two dental schools, Creighton University, School of Dentistry and the University of Nebraska Medical Center, College of Dentistry (American Dental Education Association (ADEA), 2014). Roughly 17% of practicing dentists in North Dakota graduated from a dental school in Nebraska. Four percent of North Dakota dentists graduated from Marquette University, out of Wisconsin (North Dakota Dental Database, 2014).

There is one entry-level dental program in North Dakota at the North Dakota State College of Sciences in Wahpeton, North Dakota. The program offers an Associate in Science degree for Dental Hygiene and a Dental Assisting Certificate; however, the program is limited to admitting only 26 dental hygiene students and 20 dental assisting students annually. Conversely, Minnesota has 11 dental hygiene programs (Minnesota Dental Hygienists' Association, 2013), South Dakota has one program, and Wyoming has two (American Dental Hygienists' Association, 2013c).

Since 2000, four accredited dental schools have opened at Nova Southeastern, University of Nevada-Las Vegas, Arizona School of Dentistry and Oral Health, and Midwestern University in Arizona. Several others are seeking accreditation or are under consideration. However, even with these new schools opening, the supply of dentists does not meet the demand for services. Dental school class size reductions have had and will continue to have long-term effects on the number of dentists entering into the workforce (ADEA, 2014).

## **ORAL HEALTH NEED: PERSPECTIVES OF NORTH DAKOTA ORAL HEALTH STAKEHOLDER WORKING GROUP AND INPUT GROUP**

### **North Dakota Oral Health Stakeholder Working Group**

At the first in-person meeting for the Oral Health Stakeholder Working Group, members were encouraged to share their perception of the current oral health environment in North Dakota. The agenda included the following discussion points:

- From your perspective, what are the oral health access issues in North Dakota, if any?
- What are some of your concerns around oral health in North Dakota, if any?
- Based on earlier discussions of oral health concerns, what are the policy issues in North Dakota around oral health?
- What are some proposed solutions or models for oral health?
- Are you working on, or aware of any oral health initiatives in North Dakota?

No stakeholder perceived the current oral health environment to be adequately meeting the needs of North Dakota residents. Instead, the stakeholders identified issues with access among tribal, rural, uninsured, adolescent, and homeless populations. While some briefly mentioned heightened issues of access in rural communities, those serving urban centers also voiced concern with access and availability of dentists. Following is a discussion of the oral health concerns and needs as perceived by the Oral Health Stakeholder Working Group.

The three primary concerns, in order, among the stakeholders were: (1) Medicaid reimbursement, access and coverage; (2) inadequate education and preventive services across the state, heightened among special populations; and (3) access and workforce issues with regard to urban, rural, and special populations to include American Indians.

### *Medicaid*

With regard to Medicaid, stakeholders shared that there is concern that Medicaid expansion does not include oral health services beyond the age of 21. Additionally, any adolescent under the age of 18 that presents with an oral health concern must have a parent's consent before they can receive care. This is a challenge among the homeless, new American, and low-income populations when a student presents a need for immediate oral health care.

While there is need to expand Medicaid coverage, there is also unease with the number of providers accepting Medicaid patients. Even if Medicaid began to cover dental services for all in need, there is no incentive for dentists to accept new Medicaid patients. Dentists are reluctant to do so because they do not feel that they are adequately reimbursed for the services they provide. It was mentioned that increasing Medicaid reimbursement for providers could incentivize dentists to accept new Medicaid patients.

One stakeholder reiterated the need for more providers accepting Medicaid patients, sharing that some clients seek preventive or emergent oral health care but cannot find a dentist willing to take their insurance. This was viewed as an issue of inadequate access or workforce with some noting that there is a need for more providers, even in urban centers, and especially new providers willing to accept new Medicaid patients.

### *Inadequate Education and Preventive Services*

Stakeholders representing low-income, tribal, homeless, new American, special needs and rural populations all noted that these populations primarily seek reactive oral health services. There is a need to increase access to and utilization of preventive oral health care. Barriers to preventive care among these individuals include inadequate access to dental providers, the cost of care, inadequate coverage for preventive dental services among these populations, and lack of education regarding the importance of preventive services in oral health.

One stakeholder mentioned that oral health in North Dakota is an isolated practice. Oral health needs to be perceived as an all-health component and included in total patient care. This would mean building prevention models into school health programs, including dental checks alongside vision and hearing, and making oral screening part of primary care practices.

### *Access/Workforce*

It was noted that access to oral health care is a challenge in even the more urban centers of the state, especially for the aforementioned underserved populations. The issue of access was viewed

as heightened in rural and tribal communities. There is a need to recruit and retain dental providers, especially dentists willing to accept Medicaid, uninsured, homeless, tribal, and special needs patients. While both rural and tribal communities face challenges with recruitment and retention, tribal communities have heightened turnover of dentists. Additionally, it was shared that it is very difficult to be certified in North Dakota which serves as a barrier to bringing new dentists to the various tribes. Indian Health Services (IHS) funding is at 50% of the need across the nation. Because of this, and the aforementioned barriers, there are very few dentists in the IHS system. Some patients may wait six months to see a dentist and over a year for orthodontic care.

### *Other Oral Health Concerns and Areas of Need*

Other concerns, but less prevalent in the group discussion, included the following. A low number of dentists are willing to see patients with little or no insurance. For those patients who do not have insurance, or even those who do, they may face the barrier of a steep up-front required payment for dental services.

Additionally, there was concern that there is not an adequate system or process for dealing with emergent oral health issues. Dental offices offer limited daily access; meaning, if an individual experiences a dental emergency after five in the evening, or between Friday and Monday, it is very difficult to find an open office to even inquire into the appropriate course of care. This results in an increased number of patients that present in the emergency department (ED) with oral health concerns. Emergency department providers cannot treat much beyond an antibiotic and/or prescribing pain medication. There is no existing relationship between hospitals and dental offices, or a list of oral health providers that can be accessed in the case of an oral health emergency. Patients do not know where to go, or who to contact, in such a situation.

Stakeholders voiced concern over the limited number of dentists and oral surgeons who are willing to work with patients who have special needs. The reason may be the payment source and/or the time commitment required to work with special need clients. Many who seek care (even cleanings or other preventive services) require sedation to receive the care. Currently, only one dentist has been identified in the state willing to provide this service. Gaining access to this provider requires a significant wait time (as long as six months) and requires the client to travel upwards of four to five hours by car. Travel may be cost prohibitive and is also straining for a patient with special needs. There is a need for a larger workforce willing to meet the needs of this population. While listed as an additional need in the state, this issue is related to inadequate workforce as well.

Because of the barriers to receiving oral health care among those with special needs, much of the care provided is reactive. In many cases, these patients see a dentist when there is trauma and a majority of those who provide care to this population deem the only appropriate course of action as pulling a tooth. There is little preventive or restorative care. While the general population is

encouraged to see a dentist two times a year, this population is often encouraged to visit once every three years.

As mentioned, representatives of tribal, homeless, low income and special needs populations all shared that their clients frequently receive reactive oral health care, and have high rates of tooth extraction and edentulism. While the need for prevention has already been mentioned, this topic also presents the issue of dental phobia. Clients fear oral health care because of the knowledge their tooth will likely be extracted instead of treated.

Finally, long term care providers are required to provide oral health services. However, contracting with outside entities to provide oral health screenings and care can be cost prohibitive as private and public insurers do not currently cover the per-resident fee set by the contracted entities. The per-resident charge set by the nonprofit organizations that seek to provide care to this underserved population are not deemed an allowable expense for the long term care facilities. There are programs available to meet the oral health needs of these individuals in the state, but the current payment structure does not allow long term care facilities to utilize said services.

### **North Dakota Oral Health Input Group**

While a limited number of individuals were invited to participate in the Oral Health Stakeholder Working Group, 25 entities and/or organizations were asked to provide input. Input group members were asked to share their knowledge regarding oral health access, workforce, and models. Specifically, in first contact, the input group members were asked to respond electronically to the three following questions:

1. What are the unmet oral health needs in North Dakota, if any?
2. If there are unmet needs, what solutions would you or your organization propose or support?
3. Is your organization currently working on any projects/initiatives to meet North Dakota oral health needs? If so, what is being done?

While the interests of the stakeholder and input group members varied, both groups of individuals identified similar oral health concerns for North Dakota. The input group reiterated the top three oral health needs. In order, they were: (1) preventive services and education; (2) Medicaid coverage, access and other oral health costs; (3) workforce and/or access.

#### ***Inadequate Education and Preventive Services***

While the stakeholders spoke to the need for prevention among all populations in North Dakota, the input members had a stronger focus on the pediatric and adolescent population than any other. It was noted that children should be visiting the dentist from an earlier age. This is generally not the practice because of the expense of the visit, the low number of dentists (urban



and rural) willing to accept Medicaid patients, and the limited availability of dentists willing to see patients three years of age or younger.

Others voiced concern that immigrant/refugee families and low-income households are not well educated on proper oral health practices. There are many that have coverage for dental exams, but are not aware of the importance of preventive services. Instead, many elect to wait and visit a dentist only when there is an emergent need. The lack of prevention in the state leads to increased presentation of emergent oral health issues. Emergent care is more expensive, is not generally a favorable outcome for the patient (tooth extraction in a majority of cases), and places strain on the current issue of access to care.

Identified was a need to create a culture of oral health prevention, to include involving families and encouraging dental exams every year from a young age. However, it was suggested that the current price of an annual exam, the lack of pediatric dentists in the state, and the limited dental access among rural and tribal populations currently make it difficult to achieve regular exams for all state residents.

Finally, there was a need to involve public health, the school systems, and primary care to begin oral health screens and encourage positive oral hygiene. “Prevention efforts need funding such as school based fluoride varnish, sealant programs, and education provided by dental hygienists.” Dental assistants have the capacity to provide sealants, but must take a separate course to certify and this course is not offered regularly in North Dakota. This makes it difficult to train dental assistants to provide the preventive services that the recent expansion in their scope of work allotted for. There is simply a “lack of understanding of the importance of good oral health and its impact on overall health.”

### *Medicaid*

Similar to the sentiment of the Stakeholder Working Group, the input members believed that there is a lack of access to dental care, primarily among the uninsured and Medicaid patients. Medicaid is the primary source of health care for the elderly, disabled, and low-income families. “However, with the current shortage of dental providers and the productive schedules, there must be additional incentive to accept Medicaid patients. North Dakota ranks in the lowest quartile for the percentage of children receiving preventive dental services in the Medicaid program” (US DHHS CMS, 2012).

One entity did share that “dental Medicaid reimbursement is below the cost of providing care, but dentist in the state continue to increase the amount of Medicaid services they provide.” All organizations agreed that current Medicaid reimbursement is not sufficient and the level of care being provided to and/or utilized by Medicaid patients is inadequate. Instead, this was an area of need for all remaining members of the input group, and all participating in the Stakeholder Working Group.

Not only is it a problem that dentists are not accepting Medicaid patients at the rate that this population requires care, but “Medicaid expansion health plan should cover dental. This should be a priority of our state!” It was also noted that even with Medicaid expansion and access to care this population still reports low utilization of dental services and has a high rate of no-show visits.

### *Access/Workforce*

Entities that discussed a workforce or access issue identified specific populations in need of care. These populations included rural, tribal, disabled, aging, pediatric, low-income and new American. While one did share that the access issue is primarily an issue of distribution of providers throughout the state, and not an issue of an inadequate number of providers, several in urban centers disagreed.

A majority of respondents noted a long wait to see a provider, a limited number of providers willing to see patients with little or no insurance, few providers accepting new Medicaid patients, and a need for an increase in pediatric dentists. While also illustrating need for greater prevention, one input member stated that “unmet oral health needs in North Dakota include linkage to a dental home in populations that are at a higher risk for dental caries” and that this would require a larger workforce or better utilization of the existing dental hygienists and/or assistants. Additionally, there was strong consensus that the oral health provider group in greatest need was certified dental assistants, with even greater need in Western North Dakota.

Addressing the issues of rural and pediatric access to care, one input member shared her own secondary research highlighting much of what was addressed earlier:

The state is characterized by a chronic shortage of health professionals in rural areas; 42 of the 53 North Dakota counties have six or fewer practicing dentists (79%). The data also indicates that 17 North Dakota counties (32%), equating to more than 50,000 people, were lacking a dental provider residing in that county (North Dakota Board of Dental Examiners (NBDE), 2013).

North Dakota has 380 licensed dentists residing in the state and only six (2%) were reported as specialized in pediatric dentistry (NDBDE, 2013). Over one-half of the dentists reported accepting Medicaid patients (53%), although a strong majority (77%) have existing criteria for the Medicaid patients they will accept (NDBDE, 2013).

### *Other Oral Health Concerns and Areas of Need*

Other concerns that were listed by various members of the input group included:

- Need to expand the current loan repayment programs
- Need more dental opportunities in rural areas and on reservations
- No emergent care for oral health
- Need to create a role for a dental hygienist to provide education in community settings
- Need to integrate oral health and primary care
- There is no dental coverage for those in long term care or it is a difficult reimbursement system
- Too many “roadblocks” in the system providing care on reservations
- Too many tooth extractions when other restorative options (though more expensive for the patient and provider) may be more appropriate
- Need dental programs to train dental assistants in the Western half of the state
- Need to bring in new dentists by accessing surrounding dental programs – offer externships
- North Dakota does not have a dental school. The North Dakota State College of Science is the only college within the state to provide allied dental education resulting in an Associate in Applied Science in Dental Hygiene, Associate in Applied Science in Dental Assisting or a Dental Assisting certification program – this leads to little opportunity to recruit our own
- North Dakota currently only has five oral health safety-net providers, including three Federally Qualified Health Centers, one private nonprofit safety-net clinic and one dental care mobile that provide dental care. There are no stationary safety-net clinics in the western part of the state. The dental care mobile travels to communities to bring the care to children in the western half of the state.

### **Trends in Oral Health Perceptions of Need in North Dakota: 2012 and 2014**

In the summer of 2012, “the Center for Health Workforce Studies with support from the Otto Bremer Foundation and the Pew Center on the States’ Children’s Dental Campaign completed a study describing the oral health status of the people of North Dakota and identifying barriers to access to oral health services in that state. The research study included . . . interviews of stakeholders in oral health in the state” (Center for Health Workforce Studies, 2012a).

Much like those providing information for this report, those interviewed in the 2012 study included: “licensed dentists, registered dental hygienists, registered dental assistants, physicians, social workers, nutritionists, oral health consultants, researchers, education program directors, oral health program managers, directors of community clinics and other safety-net programs, educators, representatives of professional associations, government officials, and policymakers” (Center for Health Workforce Studies, 2012a).

The current perceived areas of need and concern in 2014 were also discussed in 2012. In the 2012 report stakeholders addressed access for rural and frontier residents, access issues for special populations in urban areas, young children with inadequate preventive services, and the need for more education, especially among low-income families and those with children. Education needed to focus on “the importance of consistent oral hygiene behaviors, the systematic impacts of poor oral hygiene, and the contribution of good nutrition to oral health outcomes” (Center for Health Workforce Studies, 2012a). Additionally, very few public health and school-based oral health programs were identified to be employing dental hygienists in community settings; an issue specifically addressed again in 2014.

Much like current discussion, stakeholders in 2012 were also concerned with the number of providers accepting Medicaid patients and shared that there was a:

widespread belief among dental professionals that increasing Medicaid reimbursement rates would result in greater participation by dentists in the Medicaid program. While the North Dakota legislature has authorized incremental increases in Medicaid reimbursement over the last several legislative sessions, the current fee schedule is still viewed by some as less than needed to induce dentists to participate more fully with the program. Even dentists willing to treat Medicaid insured children in North Dakota express reluctance to treat adults on Medicaid. The limited coverage and the low reimbursement rates negatively affect access for Medicaid insured adults to private dental practices. Interviewed stakeholders frequently commented on the lack of coverage for final restorative services (i.e., crowns) and that the high cost of crowns encouraged patients to choose extraction over restoration of diseased teeth. While extraction of a tooth solves the acute problem of pain and infection, the long term impacts of extractions on nutrition and on the integrity of other teeth in the mouth are substantial.

High rates of tooth extraction, as opposed to restorative care, were cited as an issue among several special populations in the 2014 assessment as well.

One topic not readily addressed in 2014, but discussed in the past report, relates to access of care in the oil impact regions. In 2012, stakeholders stated that dentists were a limited resource and in high demand in most oil rich communities. Dentists in those regions were experiencing high demand for urgent and emergent dental services and serving a largely transient population. Because of the transient nature of the service area, dentists were requiring upfront cash payments which are difficult for indigenous residents of these communities. Long-term residents were also competing for access to care. While it is not likely that these issues have changed, it is clear that the current group of stakeholders and input members have different priorities of need with regard to oral health.

## **NORTH DAKOTA ORAL HEALTH REGULATIONS**

### **Licensing, Credentialing, and Allowable Scopes of Practice of North Dakota Dental Providers and Professionals**

North Dakota laws and regulations set forth the requirements for licensing and credentialing of a range of dental professionals, from dentists to assistants. While the allowable scope of practice for dentists is formulated broadly, state regulations define in detail the allowable duties for other professionals, from hygienists to three recognized tiers of dental assistants. Allowable services of hygienists and dental assistants are classified largely based on the required level of supervision of a dentist, from direct supervision to indirect supervision to general supervision. These levels of supervision generally are defined as follows:

Direct supervision: The dentist is in the dental office of treatment facility, personally diagnoses the condition to be treated, personally authorizes the procedures, remains in the office or facility while the procedures are being performed, and personally evaluates the procedures before the patient is dismissed.

Indirect supervision: The dentist is in the dental office or treatment facility, has personally diagnosed the condition to be treated, authorizes the procedures, and remains in the office or treatment facility while the procedures are being performed.

General supervision: The dentist has authorized the procedures and they are carried out in accordance to the dentist's diagnosis, if necessary, and treatment plan. The dentist is not required to be in the treatment facility (N.D. Admin. Code 20-01-02-01).

In other words, with direct and indirect supervision, the dentist personally diagnoses the condition, authorizes the procedure, and remains in the facility during the procedure. Direct supervision requires the dentist to examine the patient following the procedure, while indirect supervision does not. Under general supervision, while the dentist has authorized the procedure to be carried out based on the dentist's diagnoses and treatment plan, the dentist is not required to be in the facility during the procedure.

### **Dentists**

#### *Licensing of Dentists*

Generally speaking, with a few exceptions, no one may practice dentistry in North Dakota unless that person is licensed in the state and registered on a biennial basis (N.D. Cent. Code §§ 43-28-01, 43-28-10). A license may be granted either through an examination process or a credential review process.

To qualify for a license through the examination process, an applicant must:

1. Hold a doctorate of dental surgery or a doctorate of dental medicine degree from an accredited dental school;
2. Have passed within five years of application the examination administered by the Joint Commission on National Dentist Examinations or Canada's National Dental Examining Board;
3. Have passed within five years of application a clinical competency examination administered by an approved regional dental testing service;
4. Have passed in the preceding year a written examination on the laws and rules governing the practice of dentistry in North Dakota; and
5. Not be subject to any grounds for denial, which are set forth in a list of 29 circumstances and include items such as dishonorable and unprofessional conduct, substance abuse issues, gross negligence, and fraudulent conduct (N.D. Cent. Code §§ 43-28-10.1, 43-28-18; N.D. Admin. Code § 20-02-01-03.1).

To be licensed through the credential review process, an applicant must:

1. Have been, for the previous five years, licensed in good standing and actively practicing dentistry in another jurisdiction with substantially equivalent licensing requirements as North Dakota's (and provide documentary proof a license in good standing in all states in which the applicant is licensed);
2. Have passed a written examination on the laws and rules governing the practice of dentistry in North Dakota;
3. Have completed, within two years of application, 32 hours of continuing education; and
4. Not be subject to any grounds for denial, which are set forth in a list of 29 circumstances and include items such as dishonorable and unprofessional conduct, substance abuse issues, gross negligence, and fraudulent conduct (N.D. Cent. Code §§ 43-28-15; N.D. Admin. Code § 20-02-01-03.2).

Applicants also may be required to provide other documentary proof or sit for an interview by the North Dakota Board of Dental Examiners (N.D. Admin. Code § 20-02-01-03.3).

Whether through the examination or credential review process, applicants also must complete a CPR course within two years of application and have the physical health and visual acuity to enable minimum standards of professional competence. The board also may investigate an applicant's (or a current dentist's) fitness to practice, which may include a criminal history check and a check of the national practitioners data bank, other data repositories, and other states' licensing and disciplinary authorities (N.D. Admin. Code §§ 20-02-01-03.1, 20-02-01-03.2; N.D. Cent. Code § 43-28-11.2).

Dentist licenses are renewed every two years based on completion of continuing education requirements and payment of renewal fees (N.D. Cent. Code § 43-28-16.2). Other rules exist for volunteer licenses and temporary licenses. *See* N.D. Admin. Code §§ 20-02-01-04, 20-02-01-04.2.

### ***Dentist: Scope of Practice***

The practice of dentistry in North Dakota is defined broadly to include:

examination, diagnosis, treatment, repair, administration of local or general anesthetics, prescriptions, or surgery of or for any disease, disorder, deficiency, deformity, discoloration, condition, lesion, injury, or pain of the human oral cavity, teeth, gingivae, and soft tissues, and the diagnosis, surgical, and adjunctive treatment of the diseases, injuries, and defects of the upper and lower human jaw and associated structures (N.D. Cent. Code § 43-28-01).

## **Dental Hygienists**

### ***Licensing of Hygienists***

Like dentists, hygienists must be licensed to practice dental hygiene. As with dentists, hygienists can pursue licensure either through an examination process or through a credential review. To qualify for a dental hygienist license through examination, an applicant must:

1. Be a graduate of a dental hygiene school accredited by the American Dental Association's Commission on Dental Accreditation;
2. Have passed within two years of application an examination administered by the Joint Commission on National Dental Examinations or Canada's Dental Hygiene Certification Board;
3. Have passed within two years of application a clinical competency examination administered by an approved regional dental testing service or a licensing jurisdiction;
4. Have passed within one year of application a written examination on the laws and rules governing the practice of dentistry in North Dakota; and
5. Not be subject to any grounds for denial, which are set forth in a list of 18 circumstances and include items such as unprofessional conduct, substance abuse issues, gross incompetency, practicing outside the established scope of practice, and fraudulent conduct (N.D. Cent. Code §§ 43-20-01.2, 43-20-05; N.D. Admin. Code § 20-04-01-04).

To be licensed through credential review, an applicant must:

1. Have been, for the previous three years, licensed in good standing and actively practicing dental hygiene in another jurisdiction with substantially equivalent

- licensing requirements as North Dakota's (and provide documentary proof a license in good standing in all states in which the applicant is licensed);
2. Have passed a written examination on the laws and rules governing the practice of dentistry in North Dakota;
  3. Have completed within two years of application 16 hours of continuing education; and
  4. Not be subject to any grounds for denial, which are set forth in a list of 18 circumstances and include items such as unprofessional conduct, substance abuse issues, gross incompetency, practicing outside the established scope of practice, and fraudulent conduct (N.D. Cent. Code §§ 43-20-01.3, 43-20-05; N.D. Admin. Code § 20-04-01-05).

As with dentists, applicants by either examination or credential review also must complete a CPR course within two years of application and have the physical health and visual acuity to enable minimum standards of professional competence (N.D. Admin. Code §§ 20-04-01-04, 20-04-01-05). Dental hygienist licenses are renewed every two years based on completion of continuing education requirements and payment of renewal fees.

### *Hygienist: Scope of Practice*

Under North Dakota law, the scope of practice for a dental hygienist is articulated as “the removal of accumulated matter from the natural and restored surfaces of teeth and from restorations in the human mouth, the polishing of such surfaces, and the topical application of drugs to the surface tissues of the mouth and to the surface of teeth if such acts are performed under the direct, indirect, or general supervision of a licensed dentist.” With the exception of procedures which by rule may only be performed under direct supervision, general supervision may be used if the procedures are authorized in advance by the supervising dentist (N.D. Cent. Code § 43-20-03).

A dentist may delegate to a competent hygienist “those procedures over which the dentist exercises full responsibility, except those procedures that require professional judgment and skill such as diagnosis and treatment planning, the cutting of hard or soft tissue, or any intraoral procedure which would lead to the fabrication of any appliance that, when worn by the patient, would come in direct contact with hard or soft tissue and which could result in tissue irritation or injury” (N.D. Cent. Code § 43-20-12).

To augment the statutory scheme governing hygienists' scope of practice, the state board of dental examiners has promulgated rules that set forth in detail the acceptable services and duties that hygienists may undertake. Under the rules, a dental hygienist may perform 32 services under the general (or indirect or direct) supervision of a dentist. See Appendix B for the complete list.



A dental hygienist also may apply for a permit to administer local anesthesia to a patient who is at least 18 years old, under the direct supervision of a dentist. To qualify for a permit, additional documented training is required.

In addition to laying out the specific services that a licensed dental hygienist may perform, the rules also itemize services that a hygienist is *prohibited* from performing:

1. Diagnosis and treatment planning.
2. Surgery on hard or soft tissue.
3. Administer or titrate anesthetics, except topical and local anesthetic, as expressly permitted under the rules.
4. Any irreversible dental procedure or procedures which require the professional judgment and skill of a dentist.
5. Placing a final restoration.
6. Contouring a final restoration, excluding a crown which has not been cemented by a dentist.
7. Activating any type of orthodontic appliance.
8. Cementing or bonding orthodontic bands or brackets that have not been previously placed by a dentist.
9. Placing bases or cavity liners (N.D. Admin. Code § 20-04-01-02).

## **Dental Assistants**

### ***Dental Assistants: Requirements***

North Dakota recognizes three tiers of dental assistants: registered dental assistants, qualified dental assistants, and dental assistants. The rules contain specific requirements for registered and qualified dental assistants.

Individuals seeking registration as a registered or qualified dental assistant must apply to the state board of dental examiners and meet certain requirements. Registered dental assistants require more formalized training, while qualified dental assistants can be eligible for the designation based on on-the-job training.

A *registered* dental assistant must meet one of the following four requirements:

1. Have completed within one year of application a dental assisting program accredited by the Commission on Dental Accreditation or approved by the board;
2. Have been certified by the Dental Assisting National Board within one year of application;
3. Have completed (at any time) a dental assisting program accredited by the Commission on Dental Accreditation or approved by the board and have completed, within two years of application, 16 hours of continuing education; or

4. Have been certified by the Dental Assisting National Board (at any time) and have completed, within two years of application, 16 hours of continuing education (N.D. Admin. Code § 20-03-01-05).

A *qualified* dental assistant must have completed 650 hours of dental assistance instruction, including on-the-job training and meet one of the following two requirements:

1. Have passed the infection control and radiation parts of the DANB examination within one year of application; or
2. Have passed the infection control and radiation parts of the DANB examination (at any time) and completed, within two years of application, 16 hours of continuing education (N.D. Admin. Code § 20-03-01-05).

In addition, applicants for either designation (registered or qualified) must meet three additional requirements. Applicants must:

1. Have passed, within one year of application, a written examination on the laws and rules governing the practice of dentistry in North Dakota.
2. Not be subject to any grounds for denial, which are set forth in the same list of 18 circumstances that apply to dental hygienist applicants.
3. Complete a CPR course within two years of application (N.D. Admin. Code § 20-03-01-05; N.D. Cent. Code §§ 43-20-05; N.D. Admin. Code § 20-03-01-05).

### ***Dental Assistants: Scope of Practice***

Registered dental assistants have a wider scope of practice than qualified dental assistants and dental assistants, and are permitted to perform a broader range of services and do not require as much dentist supervision. With the exception of two specified duties that registered dental assistants may perform under general supervision of a dentist, all other allowed duties of dental assistants must be performed under direct or indirect supervision. In particular, qualified dental assistants may perform services only under direct supervision. The rules include a list of 33 specific duties, five with specified limitations. See Appendix C for the complete list.

As with the rules governing dental hygienists, the rules also include a list of prohibited services that dental assistants may not perform. These include the same nine services that hygienists may not perform, plus scaling, root planning, or gingival curettage, and measuring the gingival sulcus with a periodontal probe (N.D. Admin. Code § 20-03-01-02).

The North Dakota Board of Dental Examiners has compiled a table that summarizes the practice of scope rules for both dental hygienists and dental assistants. See Appendix D.

## **North Dakota in Comparison to Other States**

States vary in their approaches to the scopes of practice of non-dentist professionals, with some being more permissive in what hygienists and dental assistants are allowed to do. To understand how North Dakota regulates its dental professionals as compared to surrounding states, it is instructive to examine the scope of practice rules for dental hygienists. The American Dental Hygienists' Association has compiled a list of 18 enumerated functions and whether those services may be performed (and under which level of supervision) by hygienists in each state. See Appendix E.

A comparison of these allowed functions indicates that, as compared to the three states surrounding it, North Dakota's rules are not as permissive as Minnesota's and Montana's, but are slightly more permissive than South Dakota's. For example, in North Dakota, the rules permit hygienists to perform 13 of the 18 functions: one under direct supervision (local anesthesia) and the remaining 12 under general supervision (with some qualifications) where the dentist must pre-authorize the services, but need not be present when they are performed. Minnesota and Montana allow a similar number of hygienist-performed services, but many of those may be performed as the hygienist deems appropriate without specific authorization of the dentist. Specifically, in Minnesota hygienists may perform five services without pre-authorization and in Montana hygienists may perform seven functions without prior authorization. In contrast, South Dakota is more restrictive: only 9 of the 18 services may be performed by hygienists. Like North Dakota, none may be performed without specific pre-authorization of the dentist.

Three states – Alaska, Minnesota, and Maine – have approved a scope of practice for midlevel dental practitioners. In Minnesota, these practitioners are called dental therapists. They provide services primarily to underserved populations and have a broad scope of restorative practice that includes evaluation of oral health status, application of topical fluoride and sealants, drilling and filling teeth, extracting certain teeth, and providing palliative care. Dental therapists take the same clinical examination as dentists and must meet the same standard of care and are scored no differently than the dentist candidates. Specific education programs for dental therapists in Minnesota are offered at two schools in the state. Minnesota also has a designation for advanced dental therapists, who must meet additional educational and training requirements and also may make diagnoses, formulate treatment plans, and perform routine, non-surgical extractions of certain diseased teeth.

## **NEED SUMMARY**

The data, stakeholder perspectives and input responses all indicate three primary needs for North Dakota, to include: (a) greater oral health literacy and prevention across the state, with greater need among special populations (to include children, the aging population, Medicaid patients, low-income, homeless, new Americans, American Indians, rural, and those with physical/mental disabilities); (b) Medicare and Medicaid expansion, specifically increase in Medicaid

reimbursement to incentivize dentists to accept more Medicaid patients and expand Medicare to cover general oral health services of Medicare enrollees; and (c) improved access to care, primarily among special populations – to include preventive services and surgery.

The discussion for workforce was not a general demand for more dentists. Instead, some of the areas of need proposed by input and stakeholder members, and evident in the data included:

- Need to increase the number of dentists in rural and tribal communities
- Need to increase the number of dentists accepting Medicaid patients
- Need to increase the number of oral health providers available to meet the needs of the aforementioned special populations. This may or may not be a need for dentists.
- Need for more dental assistants in the state, especially in the West. Also a need to education dental assistants in the Western half of the state to grow the workforce.
- Need to use dental hygienists at their full scope of work, allowing more dental hygienists to work under indirect supervision of a dentist, providing preventive care and education in communities with high need.
- Need for oral surgeons, specifically, those who will accept Medicaid patients – in both rural and urban communities.

### **III. CURRENT NORTH DAKOTA ORAL HEALTH PROGRAMS, 2014**

## **INTRODUCTION**

As discussed, the aforementioned needs were identified through: (a) work with an Oral Health Stakeholder Working Group which met on five occasions; (b) insight provided by a large group of input members that served various oral health associations and organizations in the state; and (c) analysis of data provided by both national and state level data repositories. For a complete list of the participating stakeholders, invited input members, and national content experts see Appendix F.

It was imperative to identify the current oral health status of North Dakota in order to determine if there were any inadequacies; for example, workforce shortages, disparities in access, or poor oral health outcomes. In response to the identified need, the Center for Rural Health was tasked with completing an impartial proposal of potential models and/or programs that could improve the oral health status of the state's residents. To determine which models were most appropriate for North Dakota, and which met an identified need, it was necessary to first determine what had already been done in North Dakota and what oral health programs were currently active and meeting oral needs in the state. Below is a list of current programs that were identified through work with the stakeholders, input members, state oral health programs, and staff working with the Pew Charitable Trusts. While this list may not identify programs that have been employed in the past, it does record all known active programs. Following is a comprehensive discussion of each.

### **Current North Dakota Programs:**

Bridging the Dental Gap	North Dakota Health Tracks
Children's Dental Services	North Dakota Oral Health Coalition
Children's Special Health Services	North Dakota State College of Science Cleaning Program
Dental Loan Repayments/Grants	Public Health Oral Health Care Resolution
Donated Dental Services Program	Red River Region Community Dental Access Committee
Drinking Water Program (Fluoride)	Red River Valley Dental Access Project
Elderly Care Direct Services Program	Ronald McDonald Care Mobile
Federally Qualified Health Centers	Seal! North Dakota
Head Start Dental Home Initiative	Third Street Clinic
Healthy Steps (CHIP)	Tribal Pediatric Dental Days
ND DoH Oral Health Program	Varnish North Dakota!

## **BRIDGING THE DENTAL GAP**

Bridging the Dental Gap (BDG) is a stand-alone community dental clinic in Bismarck. Its primary purpose is to provide dental services on a sliding fee scale based on ability to pay. It serves the area's homeless, refugees, uninsured, incarcerated youth and adults, and others who are at or below the 200% poverty level. BDG defines its mission as "providing access to dental care for underserved populations in North Dakota."

To qualify for services from BDG, an individual must:

- Reside within a 75-mile radius of Bismarck or Mandan
- Be (1) a low-income or uninsured child accompanied by a parent or guardian, or (2) a low-income or uninsured adult with emergency dental needs
- Supply proof of total household income and family size

Sixty-eight percent of the clinic's patients are Medicaid patients. Patients not on Medicaid are required to make some form of payment at time of service to cover at least part of the costs. Some patients may choose to pay the full fee and are placed on a payment plan. BDG is a nonprofit organization and is funded by patient payments, Medicaid, insurance payments, grants, and donations. It is a member of the United Way agencies.

BDG provides the following services:

- Exams
- X-rays
- Cleanings (prophies)
- Fillings (composite and amalgam)
- Extractions
- Root planing and scaling for deep cleaning gums due to infection
- Sealants and fluoride
- Root canals (primarily on front teeth)
- Stainless steel crowns

The clinic provides more than 600 patient appointments for dental care each month. The clinic reports that "all patient care is handled through appointments, although patients experiencing tooth pain are given appointments as soon as possible, with some seen the same day for at least a screening and emergency care" (Bridging the Dental Gap (Home)). The clinic is open Monday through Friday with varying office hours.

BDG also provides outreach services to long term care facility residents. Dentists, hygienists, and dental assistants provide services in long term care facilities in the Bismarck-Mandan area. This outreach was made possible through a three-year grant from the U.S. Health Resources and Services Administration (HRSA) (ND DoH, Oral Health, Oral Health Program, 2010). For more information, read *Elderly Care Direct Services Program* under chapter III.

BDG helped to establish the Ronald McDonald Care Mobile Program and is the clinical service provider and oversees the dental staff on the mobile clinic. It currently is exploring the possibility of multiple mobile dental units that could be "checked out" (like a library item) for dentists to take to various locations that need dental care, such as rural schools (Bridging the Dental Gap (Home); ND DoH, 2013). This is described further under model B3. *Purchase of Mobile Equipment: Provider "Check-Out" Across State*, section B. *Access to Oral Health Service* in chapter IV.

## **CHILDREN’S DENTAL SERVICES**

Children's Dental Services (CDS) is a Minnesota-based independent nonprofit agency that is dedicated to improving the oral health of children from families with low incomes by providing accessible treatment and education. CDS provides a full range of dental services to children from birth until age 21 as well as to pregnant women. CDS serves 30,000 patients per year in more than 300 locations across Minnesota and North Dakota.

Headquartered in Minneapolis, CDS provides dental care for children at clinics in several schools and other satellite locations in Minnesota. CDS has a multilingual, culturally diverse staff that, together, speak more than 17 languages, including Spanish, Somali, Hmong, Amharic, French, Russian, Ukrainian, Urdu, Tibeto/Burman, Farsi, Hindi, Vietnamese, Swahili, Arabic, Cambodian, and Persian. CDS provides care in more than 300 clinical locations throughout the Minneapolis-St. Paul metropolitan area, in addition to mobile sites in greater Minnesota as well as in North Dakota through the Fargo public schools. The agency began serving Moorhead, Minnesota located across the river from Fargo, North Dakota in 2011. The Moorhead location serves North Dakota residents as well.

The agency’s services include a portable care program that uses equipment that folds up for easy transport and set-up. The portable equipment is small enough to fit in almost any room and allows for care in schools, community centers and Head Start centers. CDS providers include dentists, dental therapists, dental hygienists, dental assistants, community health workers, and clinical interns.

CDS provides dental care to patients with any kind of dental insurance, including Medicaid patients. CDS also provides targeted assistance in multiple languages to help with applications for public insurance programs. It also offers a zero-based sliding fee scale program for income-eligible families who do not qualify for Medicaid.

CDS is the only community dental services agency in Minnesota dedicated exclusively to providing oral health outreach, education, preventive (cleanings, fluoride, and sealants) and restorative (fillings, extractions, pulpotomies, stainless steel crowns, and root canals) treatment to children. CDS also provides hospital care to those with special needs and/or extensive treatment plans.

CDS grew out of a Minneapolis charitable women’s organization whose mission was to provide dental care to destitute Minneapolis orphans at a time when health safety-nets were non-existent. The agency has quadrupled in size since 2000. It is the largest oral health provider of on-site dental care in Minnesota schools and Head Start centers (Children’s Dental Services, 2014, 2004; Wovcha, 2014).



## **CHILDREN'S SPECIAL HEALTH SERVICES**

North Dakota's Children's Special Health Services (CSHS) is a division in the Community Health Section of the North Dakota Department of Health and is a Title V Children with Special Health Care Needs (CSHCN) program for the Maternal and Child Health (MCH) Block Grant. It helps families pay for healthcare services for eligible children. To be eligible, children must be under age 21, a North Dakota resident, and must have a chronic condition that requires services that goes beyond what is needed by most children (NDDoH, 2005a). Some of the services covered include care coordination, dental services (including cleft palate or lip, ), equipment, formula, genetic testing, hearing aids, home health, inpatient hospitalization, lab tests, x-rays, medications, nutrition services, occupational therapy, outpatient hospital services, physical therapy, provider services, prosthetics, speech therapy, supplies, and vision services (NDDoH 2005a).

For dental services, the child must have a cleft lip and/or palate, handicapping malocclusion, congenital dental disorder, or ectodermal dysplasia. Financial eligibility is determined if the child is at or below 185% of the federal poverty level. If the income is over 185%, the income is divided by 12 to arrive at a monthly cost share. Once the family's cost share amount is met for the month, CSHS can cover the eligible dental condition.

Dental specialists providing oral health services must be enrolled in the CSHS program. Dental diagnostic services help identify potentially eligible dental condition or help to develop a treatment plan. These services do not require financial eligibility. Dental treatment services may include preventive dental care (oral exams, teeth cleanings, sealants, fluoride, and x-rays), restorative care (fillings and crowns), surgical care (tooth extractions and endodontics), emergency care (pulp treatments and treatment of abscesses), dental implants, orthodontic services, and oral prosthetics. All of these services require financial eligibility. The cleft lip and palate clinics are available, free of charge in Bismarck, Fargo, Grand Forks, and Minot. CSHS office hours are 8:00AM to 5:00PM (NDDoH, 2013). While this program meets the needs of those children with a special physical need, it only provides care in the four urban centers, requiring all other geographically dispersed populations to travel a significant distance to access care.

## **DENTAL LOAN REPAYMENT PROGRAMS and OTHER DENTAL PRACTICE GRANTS**

North Dakota dentists and dental students interested in practicing in North Dakota have a variety of loan repayment and community grant programs, of which they may apply. It is known that the average dental student debt is more than \$241,000 – a rate that may be much higher for those without an in-state option (American Student Dental Association (Dental Student Debt), 2014). For North Dakota residents interested in dentistry, this rate may be higher in-part because there is no available professional school of dentistry in the state, and North Dakota has no existing in-

state tuition agreement with any dental school. The available loan repayment programs for North Dakota residents and/or dentists interested in practicing in North Dakota are presented below:

- State Loan Repayment Program
- Public Health and Nonprofit Dental Loan Repayment Program administered by the state
- Federal Student Loan Repayment Program (SLRP) administered by the state
- Nonprofit Clinic Dental Access Project, North Dakota Department of Human Services
- Western Interstate Commission for Higher Education(WICHE) Grant
- New Practices Grants (currently unavailable)

### **State Dental Loan Repayment Program**

The state dental loan repayment program is administered and financed by the North Dakota Department of Health. The program began in 2002 and aims to encourage dental graduates to practice in North Dakota by allocating up to \$80,000 for the dentists' school loans. The student cannot receive more money than his or her student loans (University of North Dakota School of Medicine & Health Sciences, 2014). Twenty-six dentists have been funded under the state and SLRP dental loan repayment programs between 2008 and 2014; only five of which were funded in the last four years. To apply for the loan repayment program, dental students must:

- Be enrolled in or have graduated from an accredited graduate specialty training program in the year preceding application or within a year after the date of application
- Must be willing to accept Medicare and Medicaid patients
- Must not have practiced dentistry full time during the three years preceding application

A dental license is not required at the time of application.

As part of receiving these funds, the dentists must practice full-time in a selected community or communities for four years; they work under a non-renewable contract with the North Dakota Department of Health.

Dentists are encouraged to practice in areas that have the greatest oral health needs. Community need is measured in terms of size, number of dentists in the community and surrounding communities, access by residents, mix of dental specialties in the community, degree to which the community residents support the addition of a dentist, and demonstrated need (Moulton, Johnson & Lang, 2010). In terms of community size, communities with a population of less than 2,500 have the greatest priority. Populations with 2,500-10,000 people are next, followed by populations greater than 10,000 (ND DoH Oral Health Program, 2013). Preference is given to dentists planning to serve rural, underserved areas (North Dakota Dental Association (North Dakota Dental Loan Repayment Program)).

If a breach of contract occurs, the dentist is liable to repay the amount of the loan repayment already received. Conversely, a dentist may be released from his or her contract without penalty if he or she has completed his or her service requirements; the dentist is unable to complete the

service requirements due to a permanent physical disability; the dentist demonstrates extreme hardship or good cause to justify the release of contract; or if the dentist dies (North Dakota Legislative Branch, 2014a).

### Public Health and Nonprofit Dental Loan Repayment Program

A similar loan repayment program for dentists practicing in North Dakota is the Public Health and Nonprofit Dental Loan Repayment program, again administered and financed by the state Department of Health. This program aims to repay dentists' educational loans for those who practice or plan to practice in a public health setting or a nonprofit dental clinic. Up to three recipients, every two years, may be selected. Awardees receive up to \$60,000 paid over a two-year period with a contract period for service of three years in a public health or nonprofit dental clinic setting (ND DoH Oral Health Program, 2013).

Similar to the above repayment program, if a breach of contract occurs, the dentist is required to pay back the disbursed loan repayment funds. However, this program has fewer restrictions and is open to any dentist willing to practice in a public health or nonprofit dental clinic setting. A sliding fee schedule must be used to bill patients (ND DoH Oral Health Program, 2013). In combination with SLRP funding, four dentists have been awarded repayment under the Public Health and Nonprofit Dental Loan Repayment Program.

Both loan repayment programs incentivize new and current dentists to practice in underserved communities in North Dakota for a series of three to four years. The loan repayment programs work to bring new dentists into the state in an effort to permanently recruit and increase the current oral health workforce. Unfortunately, both programs are limited by the number of applicants that may be awarded loan repayment. See Table 4.

Table 4. Number of North Dakota Applicants/Recipients of Dental Loan Repayment Programs\*

Year	Applicants	Funded	Location
2008	7	2	Wishek, Grand Forks
2009	4	3	Fargo, Jamestown, Bismarck
2010	14	3	Larimore, Valley City, Williston
2011	8	2	Langdon, Bismarck
2012	7	2	Hazen, Bowman
2013	13	10	Watford City (2), Grand Forks (2), Fargo (2), Carrington, Williston, Cavalier, New Rockford
2014	7	4	Watford City, Minot, Bismarck, Fargo

\*To include the State program, the Public Health and Nonprofit program, and the Federal SLRP

## **Federal Student Loan Repayment Program (SLRP) Administered by the State**

The Federal Student Loan Repayment Program (SLRP) is provided through the U.S. Department of Health and Human Services. To be eligible, the SLRP dollars must be managed by the state agency and the state must also obtain matching funds. SLRP dollars are intended to provide a match in loan repayments provided by the state to health professionals practicing in federally-designated health professional shortage areas (HPSAs). The loan recipient must also, by Federal standards, practice in one of the following settings in a HPSA:

- Federally-Qualified Health Centers (FQHCs)
- FQHC Look-Alikes
- Rural Health Clinics
- Critical Access Hospitals
- State and County Mental Health Hospitals
- Long Term Care Facilities
- Community Outpatient Facility
- Community Mental Health Facility
- State and County Health Department Clinic
- Free Clinic
- Mobile Units
- School-based Health Clinic
- Indian Health Service Clinic
- Tribal Health Clinic
- Urban Indian Health Clinic
- Immigration and Customs Enforcement (ICE) Health Clinic
- State or Federal Correctional Facilities
- Solo or Group Private Practices

Much like the aforementioned state programs, the SLRP awardees must commit to serving in a selected community for a set number of years. However, unlike the above with set time commitments, the Federal program allows each state agency to develop the specifications. The federal program only requires that grantees provide a minimum of two years of full-time service or four years of half-time service in a HPSA and state agencies may then set a longer minimum service requirement (US DHHS National Health Service Corps.).

In North Dakota, SLRP dollars are used to supplement both the State Loan Repayment Program, and the Public Health and Nonprofit Program.

## **Nonprofit Clinic Dental Access Project, North Dakota Department of Human Services**

In 2012, the Department of Human Services, Medical Services Division developed a Nonprofit Clinic Dental Access Project. The focus of the project was to increase access to dental services for Medicaid and CHIP recipients by supporting the recruitment of additional dentists to serve in

nonprofit dental clinics. Nonprofit dental clinics interested in serving additional Medicaid and CHIP clients are encouraged to apply.

In the 2014 grant period, the North Dakota Department of Human Services intended to do one of the following:

- Award up to two eligible full-time dentists; or
  - Each full-time dentist would receive up to \$20,000 per year, for a maximum of \$60,000 over 3 years
- Grant a partial award to 2 facilities
  - Each facility would be eligible for funding for a part-time dentist. Each dentist would receive up to \$10,000 per year, for a maximum of \$30,000 dollars for 3 years

To be eligible, a nonprofit clinic must:

- Apply to the Department of Human Services Medical Services Division for the Nonprofit Clinic Dental Access Project
- Increase the service capacity for Medicaid/CHIP recipients from its current practice; these funds can be used to financially support current positions or staff
- Provide claims data, showing the percentage of Medicaid and non-Medicaid recipients, to the Department annually using dates of service to be negotiated with the Department after a dentist is hired by the Nonprofit Clinic

A dentist must:

- Not currently be practicing in a nonprofit clinic in North Dakota
- Be licensed to practice in North Dakota
- Serve a minimum of twelve months to a maximum of thirty six months in a North Dakota nonprofit clinic
- Provide services to Medicaid and CHIP recipients, as described in the application

### **Western Interstate Commission for Higher Education (WICHE) Program**

North Dakota has been a member of WICHE (along with 15 other states) since 1984. The WICHE program was developed to increase access to higher education for students in the West. WICHE provides four opportunities for North Dakota Students, to include the (new) State Authorization Reciprocity Agreement (SARA), the Western Undergraduate Exchange (WUE), the Professional Student Exchange Program (PSEP), and the Western Regional Graduate Program (WRGP).

Of these opportunities, one relates to dentistry – the Professional Student Exchange Program. PSEP has sent nearly 400 North Dakota students to professional programs with students studying in dentistry, optometry or veterinary medicine. Between 2007 and 2014 WICHE reports that North Dakota has received \$10,947,468.52 for the PSEP (Western Interstate Commission for Higher Education (WICHE), 2013). Of that, 26% (or \$2,822.250) has gone specifically to dentistry. See

Figure 8 for the dollars awarded to dental students under the WICHE PSEP program between 2007 and 2014, along with a three year projection; Figure 9 presents the number of recipients. Between 21% and 64% of the North Dakota PSEP applicants are awarded dollars on an annual basis.

Figure 8. North Dakota's Savings through WICHE PSE Program 2007 through 2017 (estimate)

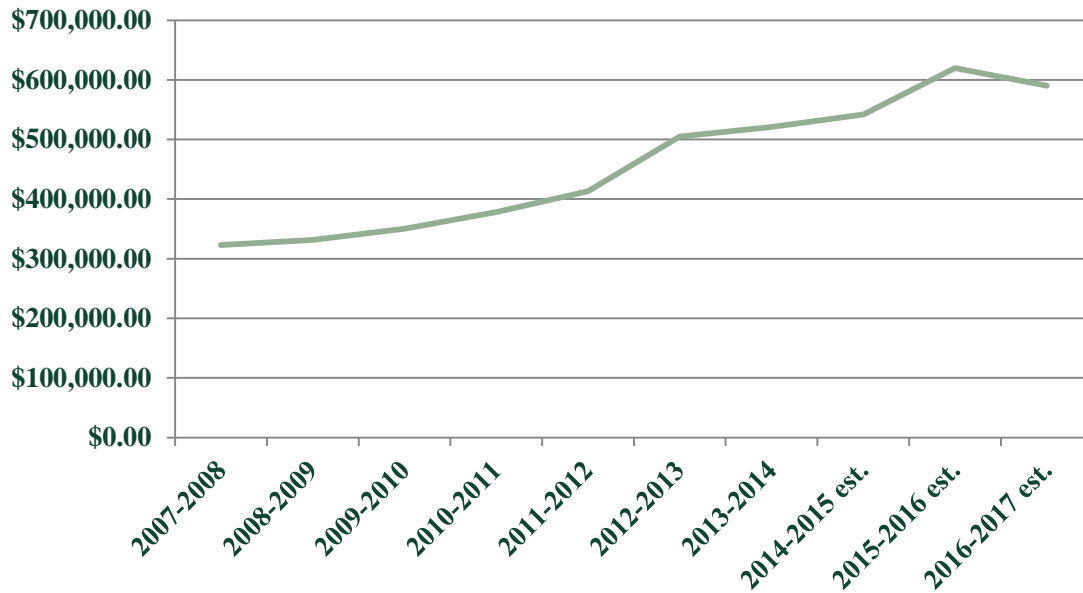


Figure 9. Number of North Dakota PSEP Awards 2007 through 2017 (estimate)



## **Dental Grants**

Similarly, there were grants available to dentists who established a dental practice in a rural area. Annually, two grants were given and provide up to \$50,000 in funding. To be applicable to apply, dentists must have graduated from an accredited dental school within the last five years and be licensed to practice in North Dakota. The community where the dental practice was to be located was required to pay half of the award and the dentist had to commit to practice in that community for a least five years. The funds from the grant could be used to purchase buildings, equipment, or help with operating expenses (ND DoH Oral Health Program, 2010). This is no longer an active program in North Dakota.

## **DONATED DENTAL SERVICES PROGRAM**

Dental Lifeline Network, formerly known as the National Foundation of Dentistry for the Handicapped, provides a Donated Dental Services program in North Dakota. This program provides one-time comprehensive oral health treatment for those who cannot afford the needed care and/or have no other way of accessing said care. To be eligible, applicants must lack adequate income to pay for dental care and have a permanent disability or qualify as medically fragile or are elderly (aged 65 or older). Eligible patients are matched with a volunteer dentist in their surrounding area provided there are volunteers available. All participating dental providers donate their time and services for this program (NDDA (Donated Dental Services in North Dakota)).

The North Dakota Donated Dental Services program is funded/sponsored by the North Dakota Dental Association, the North Dakota Department of Health and the Dental Lifeline Network. This program is a flagship program of the Dental Lifeline Network. According to their program page, the Dental Lifeline Network is:

a national nonprofit organization, founded in 1974, that provides access to dental care and education for people who cannot afford it and: have a permanent disability or who are elderly: age 65 or older or who are medically fragile . . . Dental Lifeline Network (DLN) is a national charitable organization whose mission is to improve the oral health of people with disabilities or who are elderly or medically fragile and have no other way to get help. DLN accomplishes its mission by developing and coordinating collaborative relationships that provide essential resources for direct-service programs, especially charitable care. ” (Dental Lifeline Network (About Us), 2014)

In North Dakota, the volunteers do not provide emergency oral health care and there is a waiting list in most areas. Patients are responsible for securing their own transportation to appointments. Both dentists and dental labs volunteer their services. According to the 2012 North Dakota Annual Report, “in Fiscal Year 2011-2012, volunteers donated nearly \$268,000 in dental care to

77 people in desperate need. Since 2000, 687 deserving North Dakota residents have received more than \$1.7 million in donated dental therapies” (Dental Lifeline Network: North Dakota, 2013).

## **DRINKING WATER PROGRAM: FLUORIDATED WATER EXPOSURE**

In North Dakota, approximately 86% of residents get their drinking water from public water systems. In order to be classified as a public water system, it must have at least 15 service connections or serve at least 25 people on a regular basis. Public water systems may be classified as “community” water systems or “non-community” water systems. Community water systems can be cities, mobile home parks, or rural water systems. Non-community water systems may provide water to either a transient population (such as restaurants, campgrounds or truck stops) or a non-transient population (such as schools, manufacturing, or power plants) (ND DoH).

North Dakota’s Drinking Water Program includes all of the 515 public water systems in North Dakota to ensure that they provide safe drinking water. To accomplish this task, contaminants are monitored, operator certification and training is provided, water and wastewater facility inspections are performed, plans and specifications are reviewed, and technical assistance is provided when necessary (ND DoH). The Drinking Water Program implements and regulates the standards for drinking water quality set by the United States Environmental Protection Agency (US EPA) under the Safe Drinking Water Act (SDWA), which establishes health-based standards for drinking water. These standards are used to protect against both naturally-occurring and man-made contaminants that may be found in drinking water. The Drinking Water Program promotes compliance with the SDWA for public water systems through training sessions, on-site visits, the collection of water samples, and assistance with the development of water sampling schedules and sample site selection (ND DoH).

As part of the Drinking Water Program, fluoridation is monitored to ensure that optimum fluoride levels are provided for dental benefits. According to the Environmental Protection Agency (EPA), the maximum contaminant level goals (MCLG) for fluoride is 4.0 mg/L or 4.0 parts per million (ppm). This level was set based on the best available science to prevent potential health problems. The maximum containment levels are then set as close to the health goal as possible, but also considering the costs, benefits, and ability of water systems to detect and remove containments. There are also secondary standards (SMCL) for fluoride, which is set at 2.0 mg/L or 2 ppm. Secondary standards are a guideline for areas that have high levels of naturally occurring fluoride (United States Environmental Protection Agency, 2013). In North Dakota, fluoride is added to community drinking water at a concentration of 1.0 to 1.2 ppm (ND DoH).



In North Dakota, the percent of the population served by fluoridated public water systems has remained relatively constant over time, ranging from 96% in 1992, 96% in 2006, and 97% in 2012 (Fluoride Action Network, 2012). In 2012, North Dakota ranked fifth in the United States for percentage of the population with fluoridated water; only Kentucky, Maryland, Illinois, and Minnesota ranked higher (Centers for Disease Control and Prevention (CDC), 2012). For comparison, the percentage of the entire U.S. population with fluoridated water from a community water system (CWS) was 74.6% (CDC, 2012).

Approximately 530,000 people receive the benefits of fluoridated water. When it comes to public education on drinking water quality, press releases, town meetings, and Consumer Confidence Reports are used.

### **ELDERLY CARE DIRECT SERVICES PROGRAM**

Through a U.S. Health Resources and Services Administration Grant (HRSA) and Dentaquest dollars, the Oral Health Coalition, Bridging the Dental Gap, and other partners were able to secure funding for a three year pilot project to expand oral health care to elderly in North Dakota. The grant ran from September 2011 – August 2014 and covered the expense of the mobile equipment and personnel time to develop and implement the program (ND DOH Oral Health Program, 2010).

The program provides mobile oral health equipment that is delivered to long term care facilities around the Bismarck-Mandan region. Dental hygienists then perform oral health care in the location of the underserved population. Some of the equipment includes a dental chair, necessary dental tools, dental lights, x-ray equipment and software, and sterilization. While the HRSA funding assisted with development of the program, Dentaquest funds assisted in growing the program, purchasing additional mobile equipment that is easier to transport, and creating program sustainability.

Between September 2011 and May 2014, the Elderly Care Direct Services Program had 1,535 encounters, serving approximately 470 patients. Of those patients: 35% were edentulous or partially edentulous; 50% had dentures, requiring relines, repairs and/or new dentures; and the remaining patient load required fillings, extractions and/or cleanings.

The program intends to grow and would like to expand reach to additional long term care facilities, especially those in rural locations. Current barriers include the cost of new equipment and repairs to existing; difficult and costly transport of equipment; need for greater outreach by other providers; staffing; and cost of care verse reimbursement, primarily with regard to dentures. This model may also be employed among other underserved populations, to include low-income and pediatric/school-agers by providing care on-location and in the communities, specifically, rural. Bridging the Dental Gap may consider future legislation to fund such services (Olson, M., 2014).

## **FEDERALLY QUALIFIED HEALTH CENTERS: SAFETY-NET DENTAL CLINICS**

A safety-net provider organizes and delivers a significant amount of health care services to the uninsured, Medicaid, and other “vulnerable” patient populations. Under these criteria, several different providers can be classified as safety-net providers, including “federally qualified health centers (FQHCs), local health departments, private not-for-profit agencies, rural health centers, Indian Health Services, institutions, schools, public hospitals, community health centers, free clinics, special service providers, and sometimes physician networks and school-based clinics” (Jones & Sajid, 2009).

Federally Qualified Health Centers (FQHCs) are grant funded organizations that receive funding under Section 330 of the Public Health Services Act. FQHCs are “safety-net” providers and as such, must serve an underserved population, offer a sliding fee scale, provide comprehensive services, have a quality assurance program, and a governing board of directors. Medicare-covered services include: services and supplies of physicians; services and supplies provided by a nurse practitioner; services provided by a physician assistant, certified nurse-midwife, clinical psychologist, clinical social worker or visiting nurse in areas of Home Health Agency shortages; drugs provided by the FQHC providers; and outpatient diabetes self-management training and nutrition therapy. FQHCs also provide preventive primary health care services including health education, immunizations, family planning, visual acuity screening, and so forth. They also provide women’s health care services including prenatal and post-partum care, prenatal services, clinical breast examinations, referral for mammography, and thyroid function tests (US DHHS CMS, 2013).

Currently (2014) there are three community health centers providing dental services: (1) Northland Community Health Center; (2) Valley Community Health Center; and (3) Family Health Care. Coal Country Community Health Center (a fourth CHC) does not provide dental services. In addition, two other nonprofit clinics provide oral health services and include Bridging the Dental Gap and Red River Valley Dental Access Project which is based in Minnesota but serves North Dakota residents.

### **Northland Community Health Center**

Northland Community Health Center is a dental clinic located in Turtle Lake, North Dakota. It is part of a Federally Qualified Health Center (FQHC) that serves low-income populations (both insured and uninsured) of all ages. Satellite sites are located in Rolla, Rolette, McCluskey, and Bowbells with dental services provided only at the clinic in Turtle Lake. Patients must present their insurance card at the time services are rendered, supply proof of total income and family size in order to qualify for the sliding fee discount, pay a \$20 copayment, be on time, and if under age 18, have a parent or guardian present. The services offered at this clinic include oral hygiene exams, cleanings, sealants, fluoride applications, x-rays, fillings, and extractions. The clinic is open Monday-Thursday 8:30AM – 4:30 PM (ND DoH Oral Health Program, 2013).

## **Valley Community Health Center**

Valley Community Health Center is an FQHC that serves the low-income population of all ages in the Northern Red River Valley. The FQHC is based out of Northwood with satellite sites in both Larimore and Grand Forks. Only the Grand Forks location provides oral health services. The clinic sees all patients regardless of their ability to pay for services and accepts all forms of insurance. The clinic offers the Healthy Neighbor Plan for individuals that are income-eligible and receive a sliding fee discount based on their family income. In order to qualify for the plan, the applicant must have proof of income and family size, patients must pay a \$30 fee each visit, must be on time, and be accompanied by a parent or guardian if a child under age 18. The Valley Community Health Center Dental Clinic offers exams, cleanings, sealants, fluoride applications, fillings, and extractions. The office hours of the clinic are Monday-Friday 7:30AM to 5:30PM (ND DoH Oral Health Program, 2013).

## **Family HealthCare**

Family Healthcare is an FQHC in Fargo, North Dakota. Their mission is to provide accessible care to those who need it regardless of insurance. They work with uninsured and underinsured patients by setting up an affordable payment plan using a sliding fee scale. Family Healthcare accepts patients with Medicaid, Healthy Steps, Children's Health Insurance Program, and Minnesota Care Plan. For dental services, Family Healthcare employs four dentists who provide dental exams and cleanings, fluoride treatments and sealants, x-rays, cavity fillings, replacements, and crowns, and emergency dental care in their main clinic.

Dental appointments are required to receive care at Family Healthcare; however, in emergency dental situations, walk-ins are welcome. As part of their partnership with the Red River Valley Dental Access Project, they share their Moorhead clinic space with local volunteer dentists who provide emergency dental care (Family Healthcare).

## **Red River Valley Dental Access Project**

The Red River Valley Dental Access Project is an urgent care and walk-in dental clinic located in Minnesota that sees North Dakota patients. The clinic is a humanitarian project that serves low-income, uninsured or Medicaid-eligible individuals with urgent dental pain who lack access to a dentist. For more information read *Red River Region Community Dental Access Committee and The Red River Valley Dental Access Project* later in this section of the report.

## **HEAD START DENTAL HOME INITIATIVE**

In December, 2008, the North Dakota Department of Health, North Dakota Department of Human Services and American Academy of Pediatric Dentistry (AAPD) announced their partnership to address tooth decay among pediatric populations. This partnership strives to establish a dental home for North Dakota children enrolled in the Head Start program.

In the year of its inception, the program reported more than 3,600 children enrolled in North Dakota's Head Start and Early Head Start programs. The initiative trains Head Start staff to make partnerships and connections with local dentists to identify dental homes for all of their students. Pediatric dentists have also been trained on how to develop these collaborative relationships (ND DOH, 2008).

According to a report published by the American Academy of Pediatric Dentistry,

Early Head Start (EHS) and Head Start (HS), along with Migrant and Seasonal Head Start are comprehensive child development programs which serve low income children from birth to three and three to five, respectively, and their families. These programs promote school readiness by enhancing the social and cognitive development of children through the provision of educational, health, nutritional, social and other services to enrolled children and families. The Office of Head Start (OHS) provides grants to local public and private nonprofit and for-profit agencies to provide these services to economically disadvantaged children and families. Services for parents and caregivers enable them to provide safe and nurturing environments for their children which support the child's physical, social-emotional and intellectual development. Case management services can assist parents in obtaining medical and dental care for their enrolled children.

Under this national initiative, the AAPD states that the intent is to develop a network of dentists in the community willing to provide a dental home for these children, train said dentists to meet the needs of the young children enrolled in (Early) Head Start programs, and enhance the knowledge of current oral health Head Start staff and parent education programs (American Academy of Pediatric Dentistry).

### **HEALTHY STEPS: CHILDREN'S HEALTH INSURANCE PROGRAM (CHIP)**

CHIP was created in 1997 and provides health coverage to 7 million children nationwide (up to age 19) (National Academy for State Health Policy, 2012). CHIP targets children in families with incomes higher than the state Medicaid limit, but who do not make enough to purchase insurance in the private market (NASHP, 2012). CHIP is a state-based program; each state designs their own CHIP plans including eligibility, benefits, premiums, cost-sharing, and application/renewal procedures. All states cover regular check-ups, immunizations, hospital care, dental care, lab services, and x-ray services. Preventive services are free for children, but other services may require premiums or other forms of cost-sharing.

In 2012, there were 7,792 children enrolled in North Dakota's CHIP, which is an increase from 2005 when only 5,725 children were enrolled. In 2009, 75% of eligible North Dakota children were enrolled in Medicaid or CHIP - Healthy Steps; the national average was 85% (Kaiser Family Foundation, 2014b).

North Dakota's CHIP Program is called Healthy Steps and operates as a combination CHIP Program (NASHP, 2012). Healthy Steps covers children without health insurance, under age 19, who do not qualify for North Dakota's Medicaid Program, and their families have qualifying incomes. Healthy Steps covers clinic services, inpatient and outpatient hospitalizations, prescriptions, mental health services, preventive well-child exams, immunizations, dental services, and vision services. For participating families, there are no monthly premium costs. The specific dental services covered include cleanings (up to 4 a year), fluoride treatments (up to 2 a year, including fluoride varnishes), sealants (lifetime maximum of two sealants per tooth), space maintainers, x-rays (2 per year) including bitewing (one a year), full mouth x-rays (one every three years), and panoramic (one every three years). Several other services are covered as well (InsureKidsNow.gov, 2014).

Oral surgeries that are not covered include cleft palate treatment and cancer treatment. Other treatments that are not covered include the treatment of jaw joint problems (TMJ), emergency room services provided by a dentist, and inpatient hospital services. Only general anesthesia and analgesia (nitrous oxide) are covered by CHIP, but general anesthesia must be provided by an anesthesiologist, nurse anesthetist, or oral surgeon and not in conjunction with routine dental care. Intravenous conscious sedation and non-intravenous conscious sedation are not covered (InsureKidsNow.gov, 2014).

There are several out-of-pocket co-payments including \$2 for each generic prescription, \$5 for preferred-brand prescriptions, \$10 for a non-preferred-brand prescription, \$5 for each emergency room visit, and \$50 for each hospital admission. However, American Indians have no co-payment as a result of the relationship between the Federal government and Tribal governments. No child is excluded from Healthy Steps due to the presence of a pre-existing condition.

CHIP's income eligibility in North Dakota is broken into three age-based categories. Children under age one and children ages one to five qualify with a family income between 134% and 160% of the federal poverty level. Children ages six to 18 qualify for CHIP with a family income from 101% to 160% of the federal poverty level (NASHP, 2012). Compared to neighboring states, North Dakota's CHIP is more restrictive on the federal poverty level. Minnesota allows children with a family income of up to 275% of the federal poverty level to enroll in their state CHIP Program. Iowa is even less restrictive with an income limit of up to 300% of the federal poverty level (North Dakota KIDS COUNT, 2011). Furthermore, North Dakota has a six month waiting period before the child can be enrolled in CHIP, which means the child must be uninsured for six months before they can enroll (NASHP, 2012).

CHIP has dramatically decreased the number of uninsured children in North Dakota. While it has made an improvement for the state, which reported 14,000 uninsured children in 2008, North Dakota's CHIP remains one of the strictest eligibility levels for children public insurance coverage in the country.

## **ND DoH ORAL HEALTH PROGRAM**

The North Dakota Department of Health funds the Oral Health Program for the state. The ND DoH Oral Health Program strives to “improve the oral health of North Dakotans through prevention and education” (ND DoH Oral Health Program, 2005). The goals of the program include:

- Promoting the use of innovative and cost-effective approaches to 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 (ND DoH Oral Health Program, 2005).

The North Dakota Oral Health Program partners with many of the aforementioned groups and associations to provide and support a variety of oral health activities throughout the state. Two programs that the department leads include the Varnish ND program, and Seal!ND.

The Oral Health Program also provides a publication on the burden of oral health in North Dakota, according to the reports forward:

The North Dakota Oral Health Program collaborates with the U.S. Centers for Disease Control and Prevention to maintain an active surveillance system to monitor the health and safety of all North Dakotans. The main objective of this publication is to educate public representatives, private and public health organizations, communities and the general public to implement sustainable activities that will reduce the burden of oral disease and improve oral health over the next five years. (Dalrymple, Dwelle, Mertz, Yineman & Reed, 2012)

## **NORTH DAKOTA HEALTH TRACKS**

In 1967, Congress created the Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) Program as part of the Medicaid Program. North Dakota’s EPSDT program is called Health Tracks (ND DoH Oral Health Program, 2013). North Dakota Health Tracks is a child health screening program offered through the North Dakota Department of Human Services. Health Tracks differs from Medicaid in that each state’s Medicaid plan must provide to any EPSDT recipient (Health Tracks recipient in North Dakota) any medically necessary health care service, even if the service is not covered by the State’s Medicaid plan to the rest of the State’s Medicaid population. However, Health Tracks does not cover all services. Some exclusions include experimental treatments, services not generally accepted as effective, and services for caregiver’s convenience.

North Dakota Health Tracks is a free preventive health program for Medicaid eligible children 0-21 years of age. The program emphasizes prevention and primary care. The goal of Health Tracks is to prevent childhood illnesses or disabilities by identifying problems before they become severe or disabling. The program pays for screenings, diagnosis and treatment services, orthodontics, glasses, hearing aids, vaccinations, counseling, dental, and other “medically necessary” follow-up diagnostic and treatment services (ND DoH, 2013). Health Tracks helps patients schedule appointments and helps patients find transportation to services, if necessary (ND DoH, 2013). The schedule of screenings includes newborn, 2 to 5 days old, 1 month, 2 months, 4 months, 6 months, 9 months, 1 year, 15 months, 18 months, 2 years, and then every year until age 20.

Health Tracks is eligibility based with three groups of individuals who meet the eligibility standards. First, children and adolescents under age 21 who are Medicaid eligible. Second, Children who qualify for Temporary Assistance for Needy Families (TANF) due to low-income. Third, foster children are eligible for Health Tracks (State of ND, nd). For more information on eligibility, covered services, and so forth, individuals can contact the Medical Services Division of the North Dakota Department of Human Services or a County Social Services Office (Family Voices of North Dakota).

## **NORTH DAKOTA ORAL HEALTH COALITION**

The North Dakota Oral Health Coalition was formed in 2005 and initiated by the State Department of Health. As of 2012, the coalition is a 501(c)3 nonprofit organization. The coalition is charged with creating ideas and implementing initiatives to carry out the state plan, *Oral Health in North Dakota: Plan for the Future*. Members of the coalition include both public and private agencies and organizations and individuals focused on improving oral health in North Dakota. See Appendix H for a complete list of coalition members as of July 2014. According to the coalition, they have adopted the following mission and vision:

Vision: Oral health is an integral part of overall health.

Mission: Develop and promote innovative strategies to achieve optimal oral health for all North Dakotans (North Dakota Oral Health Coalition, 2014).

In the last five years, the coalition has partnered with various entities and provided support for several of the programs identified in this report. Some of the activities have included:

- Implementation of the Smiles for Life Program
- Implementation of the Elderly Care Direct Services Program
- Implementation of *Seal! North Dakota* events
- Scheduled events for the Ronald McDonald House Charities Care Mobile
- Assisted in 2011 Spirit Lake reservation pediatric dental day
- Worked to change the dental hygiene supervision law in 2009

- Advocated for loan repayment program for safety-net dental clinics in 2009 (North Dakota Oral Health Coalition (Key Accomplishments), 2013).

Beyond continued support of existing programs the coalition continues to be active and is looking to the following activities in the coming year(s):

- Garner equipment grants for mobile units in long term care
- Expand Seal! North Dakota to all North Dakota schools – identify a funding source
- Legislative advocacy for inclusion of student loan repayment program in the ND General budget
- Help set-up safety-net clinics in Western North Dakota
- Look for ways to use mobile units to meet oral health needs of the underserved
- Promote oral health education
- Establish collaboration with IHS
- Work with the North Dakota Dental Association to establish Community Case Management

## **NORTH DAKOTA STATE COLLEGE OF SCIENCE CLEANING PROGRAM**

The North Dakota State College of Science offers a variety of oral health services. NDSCS in Wahpeton is the only entry-level dental program in North Dakota and it offers an Associate in Science degree for Dental Hygiene and a Dental Assisting Certificate. The program is limited to admitting only 26 dental hygiene students and 20 dental assisting students annually.

The dental hygiene program is two years while the dental assistant program runs one year. The college also employs a full time dentist. At any time, the college may have roughly 56 dental hygiene students and 18 dental assistants. Each year, students at the school provide services to 4,500 patients from the Wahpeton-Breckenridge area. According to the Red River Valley Dental Access Project, the State College of Science will

take private pay, MA and private insurance recipients. They serve 200 Indian students at the Circle of Nations School in Wahpeton, and serve the Head Start children in Breckenridge. They also see over 150 migrant children each summer. Students get most of their practical experience on campus, but students also go to the Fargo VA hospital and the St. Frances nursing home daily. All students do affiliations at these centers or with private dental offices. Many local dentists, who are too busy to do hygienist services, make referrals to the school. (Red River Valley Dental Access Project (History), 2010).

The college also participates in the “Give Kids a Smile,” program, among many others. This program began in 2003 with support from the American Dental Association. The program targets individuals age 3-20 and provides free dental services. It allows dentists to team up with other



providers and community leaders to provide dental services to underserved children. In the beginning, the program was a one-day event in February, but due to popular demand, it has grown to be year-round with local and national events. Dentists and other providers volunteer time and services to provide screenings, treatments (including restorative procedures and simple extractions), and education to approximately 450,000 children annually across the nation (North Dakota Dental Association (Give Kids a Smile); North Dakota State College of Science, 2013).

North Dakota State College of Science (NDSCS) allied dental students also get involved and perform cleanings, radiographs, sealants, fluoride applications, and education. In 2013, over \$11,000 worth of donated services were provided to local children. A few restrictions include: (a) all patients must make an appointment in advance; and (b) a parent or legal guardian must accompany minors. The last event occurred in Wahpeton at the Mayme Green Allied Health Center.

## **PUBLIC HEALTH ORAL HEALTH CARE RESOLUTION**

The North Dakota Public Health Association (NDPHA) is comprised of individuals in the state that have an interest in public health; specifically, a desire to want to identify and understand problems facing public health and collaborate to find possible solutions. According to the organization, the “NDPHA aids in the promotion of state and local legislation in the interest of public health with particular focus on the interrelationship between health and quality of life” (North Dakota Public Health Association (NDPHA) (Welcome), 2011). The mission of the organization is “to improve, promote, and protect health for the residents of North Dakota through leadership in policy, partnerships, and best practices” (NDPHA (Welcome), 2011).

The NDPHA held their annual meeting on June 18, 2014 in conjunction with the Dakota Conference on Rural and Public Health, held in Grand Forks, North Dakota. At that meeting, the organization voted on, and approved, a resolution on oral health. A resolution is a brief statement regarding the association’s position on a specific public health issue. The resolution identifies a need and endorses a particular course of action. According to the NDPHA, a resolution “may inform, exhort, show support or lack of support for programs or legislation, or describe a course of action. It represents a new statement on the part of the Association, or a substantial modification or extension of existing policy of the Association” (NDPHA, 2011).

The resolution passed by the North Dakota Public Health Association may be found under Appendix G. The resolution states that the Association supports policy aimed to:

- Build an effective health infrastructure that meets the oral health needs of all North Dakotans and integrates oral health effectively into overall health
- Remove known barriers between people and oral health services
- Promote medical dental collaboration to improve oral health

- Expand the scope of practice and allow dental professionals to practice to the full extent of their education and training
- Develop and implement new innovative workforce models and effective programs to expand access to oral health services that can reduce disparities
- Adequately fund public programs to allow equitable access to services

## **RED RIVER REGION COMMUNITY DENTAL ACCESS COMMITTEE and the RED RIVER VALLEY DENTAL ACCESS PROJECT**

The Red River Region Community Dental Access Committee has been convening since formation in 1997. The committee's goal is to "improve access to basic and urgent dental care for families and children in the Red River valley who are living below 200% of the poverty level, the uninsured, the homeless population, Native Americans, seasonal farm workers and recent refugees" (Red River Valley Dental Access Project (History), 2010). Providers and agencies from both North Dakota and Minnesota sit on the committee.

The Red River Valley Dental Access Project opened an urgent care walk-in dental clinic in 2002. The mission of the program is to "provide immediate relief of pain for low-income dental patients" primarily those located in the Fargo-Moorhead area. Located in Moorhead, Minnesota, the 501(c)3 nonprofit clinic is funded through donations and patient payments, providing care every Tuesday evening; clients sign-up for care beginning at 4:00 pm. Clients are encouraged to come earlier than 4:00 to wait for the sign-up as there is high demand. The clinic attempts to place those who are unable to receive care any given night at the top of the list for the coming week.

The clinic receives support from the United Way of Cass-Clay, the Dakota Medical Foundation, Family HealthCare, MEDICA Foundation, Delta Dental, Alex Stern Family Foundation, and the Otto Bremer Foundation (Red River Valley Dental Access Project).

The service area includes the more urban centers of North Dakota and the more rural communities of Minnesota to include a 14 county area in North Dakota within the Fargo-Moorhead region. According to the History page, the committee states that "of the state Medicaid population, 38 percent (24,000) of North Dakota's eligibles reside in the catchment area" (Red River Valley Dental Access Project (History), 2010). Patients are eligible for care if they do not have a dentist and are low income (may have MA or CHIP). There are no residency requirements (Red River Valley Dental Access Project).

Patients are required to pay \$20 at the time of the visit and the clinic does not charge or bill insurance and/or third parties. Services are reactive, not preventive, and primarily focus on relief of pain. Common care includes: extractions, palliative treatment, denture traumas and treatment of oral infections (Impact Foundation, 2014).

The clinic is staffed by 13 part-time employees and 45 volunteers.

## **RONALD MCDONALD CARE MOBILE**

The Ronald McDonald Care Mobile is an 8 x 40 foot fully equipped dental clinic on wheels. Owned and operated by Ronald McDonald House Charities of Bismarck, its mission is “to provide access to oral health care to underserved children aged 0 through 21 in their own neighborhoods” (cite). The Care Mobile is staffed by a dentist, dental hygienist, dental assistant, and a driver/coordinator. Bridging the Dental Gap, Inc. is the clinical service provider and oversees the dental staff and manages the delivery of dental services on the Ronald McDonald Care Mobile.

The mobile clinic works with local site partners and sponsors in communities in the western half of North Dakota. These local site partners financially support a community visit by the Care Mobile and help identify and recruit patients who otherwise would have difficulty accessing dental care. Partners are asked to identify at least 50 children in the community or in neighboring communities who are eligible for care. Examples of site partners include schools, Head Start agencies, United Way, local service clubs (such as Lions, Rotary, Kiwanis), community health centers, hospitals, churches, local social service agencies, local public health agencies, Boys and Girls Clubs, community action programs, local businesses, chambers of commerce, banks, and parent-teacher organizations.

The Care Mobile usually spends one week at each community site. The current fee to bring the program to a community is \$2,500 per week per visit and payment must be made one week prior to the visit unless special arrangements have been made.

In scheduling visits and appointments, priority for services is given to:

- Schools with greater than 50 percent of their children enrolled in the free/reduced fee school lunch program
- Head Start programs
- Community and rural health centers without dental clinics
- American Indian reservation areas

In terms of eligibility, the Ronald McDonald Care Mobile will treat children and young adults aged 0 through 21 who do not have a dental home (those who have not seen a dentist for regular care within the past two years). Children who are currently seeing a dentist in their local area generally are not eligible, although if a child has a dental emergency and is unable to get an appointment with their regular dentist, the Care Mobile will see the child for relief of pain and infection and refer them back to their dentist to complete the treatment. Medicaid/CHIP eligibility is not required for treatment; the Care Mobile will bill Medicaid and/or private dental insurers where applicable and will treat patients without dental insurance. No child is turned away for inability to pay.

In 2013, the Care Mobile served 880 children with 2,074 patient appointments, providing 8,881 dental services for a total value of \$470,000. The average number of visits per child was 2.36, and the average number of dental services per child was 10. More than two-thirds of the children served were in pre-school and elementary school, and most of the sites visited were elementary schools. The majority of children (69%) served were uninsured, more than one fourth (27%) received Medicaid, and 4% had private insurance. The mobile clinic operated 37 weeks during the year and traveled to 43 sites in 22 communities. Sixty-three percent of the children served by the Care Mobile were American Indian. The Care Mobile delivered services on the Fort Berthold, Standing Rock, and Turtle Mountain reservations.

The average weekly cost to operate the Ronald McDonald Care Mobile is approximately \$16,500. In 2013, the largest source of funding was foundation grants (\$182,618), followed by service revenue (Medicaid and insurance) (\$147,467), Ronald McDonald House Charities of Bismarck (\$100,907), federal grants (\$59,884), community site partner fees (\$25,300), McDonald's owners and operators (\$20,000), North Dakota legislative appropriation (\$19,695), and private donations (\$19,032) (Ronald McDonald Care Mobile of North Dakota (RMCMD), 2014; Ronald McDonald House Charities Bismarck (Care Mobile), 2014; RMCMD).

## **SEAL! NORTH DAKOTA**

Seal! North Dakota is a project of the North Dakota Department of Health's Oral Health Program that provides dental sealants on elementary-aged children's primary and permanent molars to help prevent dental decay. Students in elementary schools with a 50% or greater free and reduced-fee meal rate are offered the services for free.

Through the program each child in the qualified schools, from pre-kindergarten through sixth grade, receives a packet consisting of: (a) an information sheet from the state with the Oral Health Program's contact information; (b) a consent form for the parent/guardian to fill out; and (c) a fluoride varnish and dental sealant fact sheet. The service is then provided to children whose parent/guardian has given consent. After the sealant is placed and fluoride varnish is applied, a form consisting of a dental referral for follow up care, treatment completed, and a strong recommendation to have a dental home is given to each child to take home. Oral hygiene instructions also are given to the child and written on the treatment plan so that parents/guardians better understand the services provided. The most common comment written on the treatment plan has been, "help your child brush his/her teeth." If there were any suspected areas in the mouth that needed prompt attention, the parent/guardian was notified about the urgency of needing to see a dentist. School principals also were notified about children who had suspected tooth decay so that the principal could follow up with the parents about the importance of seeing a dentist and knew about the issue in case the Ronald McDonald Care Mobile was scheduled to visit the school.

The program is a result of legislation passed in 2009 that permits general supervision of licensed dental hygienists for procedures authorized in advance by a dentist. In 2011, four temporary public health hygienists employed by the Department of Health and supported through a Health Resources and Services Administration (HRSA) Workforce grant began applying fluoride varnish and dental sealants to children pre-kindergarten through sixth grade. Each of the public health hygienists had portable equipment that they brought to the schools.

Since 2011, approximately 2,000 students received services through the Seal!ND program. During the 2012-2013 school year, 50 schools participated in the program. The program was receiving about \$260,000 per year in funding from the HRSA Workforce grant. The program reported in 2013 that it did not receive continued funding from the HRSA grant, so the four temporary public health hygienist positions were eliminated.

Due to the loss of funding, during the 2013-2014 school year the Seal!ND program was in jeopardy. It was decided to provide services to only two schools with the highest need while the oral health program continued to look for additional funding.

In 2013-2014, the oral health prevention coordinator provided the services to both schools. The same criteria and process were used to provide services. The program was difficult to sustain because the oral health program could not bill Medicaid. (Mertz, 2013; ND DoH Oral Health Program, 2011; Yineman, 2014).

### **THIRD STREET CLINIC**

Third Street Clinic is located in Grand Forks, North Dakota and offers access to a variety of health services for the under-insured and uninsured. These services include primary care, vision, limited prescription assistance and emergency dental care. The mission of the clinic is to “provide timely access to health care services for the residents of the Greater Grand Forks community” (Third Street Clinic (About, Mission Statement), 2012).

With regard to dental services, Third Street Clinic connects clients with needed providers and services. Clients with dental emergencies contact the clinic. Those who meet the eligibility requirements and who have been accepted into the program are then referred to a participating dentist.

Clients are eligible for dental services if they meet the following:

- Resident of Grand Forks or Polk County for at least 30 days
- Household income within 150% of the Federal Poverty Level
- Uninsured and not eligible for medical assistance programs (e.g., Medicaid, Medicare, Children’s Health Insurance, Veterans’s Benefits, MinnesotaCare, etc.)
- In need of emergent oral health care at the time of application (Third Street Clinic (Eligibility Requirements)).

More than 30 dentists throughout Greater Grand Forks donate their time to Third Street Clinic on a rotating basis. These dentists provide oral examinations and/or extractions in-kind. Some refer clients to an oral surgeon. Third Street Clinic has also created partnerships with oral surgeons in the community who then donate their time and services to provide the necessary care. Through the clinic, clients experiencing dental emergencies are typically able to see a dentist within one to two weeks.

In 2013, Third Street Clinic made 1,896 client contacts with countless referrals. The clinic reports roughly 100 dental referrals a year.

While Third Street Clinic is meeting the oral health needs of the adult uninsured/under-insured population of Grand Forks, it primarily serves to provide reactive care. It does not provide a dental home for clients, nor does it provide preventive services. An additional concern for Third Street Clinic clients is the expense of large scale services and items; bridges and dentures as an example. Finally, while the clinic continues to provide care and accepting donations, it is not a model that could be adopted to meet the oral health needs of the entire uninsured, under-insured population of North Dakota as it relies heavily on the donated time and services of current oral health providers.

## **TRIBAL PEDIATRIC DENTAL DAYS**

North Dakota dentists and dental professionals have volunteered their time to provide services to children in tribal areas as part of Pediatric Dental Days. Events were held at the Spirit Lake Tribe Indian Reservation in 2011 and at the Standing Rock Indian Reservation in 2013.

The genesis of this initiative was a 2010 Dental Home Initiative site visit to the Spirit Lake Head Start Program, where a meeting involving Head Start staff and Indian Health Service confirmed the large unmet dental needs of tribal children. The group discussed the barriers involved in getting follow-up pediatric specialty care for Spirit Lake children. As a result of this meeting, organizers decided to bring the specialists to the children through infrastructure built on the Mission of Mercy model with equipment provided by America's Dentists Care Foundation (ADCF) of Wichita, Kansas. The Pediatric Dental Days are not an annual event, and currently no additional events are planned.

### **Spirit Lake Pediatric Dental Day - 2011**

During the 2011 day at Spirit Lake, services were provided to 232 children by nine pediatric dentists, five general dentists, two oral surgeons, and approximately 40 other dental staff. Recipients received dental screenings, cleanings, sealants, fluoride varnish, restorative care, education, and prevention materials. Second-year dental hygiene students from the North Dakota State School of Science in Wahpeton, North Dakota provided oral health education, hygiene services, sterilization support, and helped as family guides. A network of 20 to 25 volunteers was recruited to help as family guides.

Spirit Lake children under the age of 12 were eligible to be seen either pre-screened or as walk-ins. Head Start children from nearby Devils Lake, N.D., also were eligible to receive care. Pre-screening of children, where possible, helped improve the efficiency and number of patients who could be helped in a one-day blitz. Children who could best be treated under general anesthesia by a pediatric dentist were referred directly to a specialist. In addition to pre-screenings, walk-ins also were encouraged through a public information campaign at Spirit Lake in the months leading up to the event. A total of 278 children were pre-screened with the majority of those receiving fluoride varnish. More than \$107,000 in free dental treatments were provided, including:

- 254 sealants
- 68 dental prophylaxes
- 105 fluoride varnish applications
- 254 fluoride varnish applications (including pre-screenings)
- 268 fillings (all types)
- 69 stainless steel crowns
- 21 pulpotomies
- 95 extractions
- 27 general anesthesia referrals to pediatric dentists
- 35 general anesthesia referrals to pediatric dentists (including pre-screening)
- 2 referrals to oral surgeon

The Spirit Lake Indian Health Service dental clinic provided follow-up care and made referrals of the approximately 35 children who needed general anesthesia in a hospital setting by a pediatric dentist. Sixteen organizations, including the North Dakota Association of Pediatric Dentists, the North Dakota Dental Association, and the North Dakota Head Start Dental Home Initiative, were partners in the initiative. The America's Dentists Care Foundation Missions of Mercy brought in all the equipment and Patterson Dental Supply donated supplies. The Spirit Lake event was the first Missions of Mercy event held in conjunction with an American Indian reservation area as well as specifically for children.

### **Standing Rock Pediatric Dental Days: 2013**

A two-day Pediatric Dental Days clinic was held in 2013 at the Standing Rock Sioux Tribe at Prairie Knights Casino and Lodge. The clinic treated 367 children, 60% of whom were from North Dakota and 40% of whom were from South Dakota. More than \$150,000 in donated dental treatment was provided, including:

- 371 restorations (fillings)
- 334 sealants
- 52 steel crowns
- 12 pulpotomies

- 86 extractions
- 165 dental cleanings
- 183 fluoride varnish applications

Screening and referral of children aged 0-18 took place at various sites at Standing Rock during the 90 days preceding the two-day event. Screening sites included schools, Head Start centers, and the Indian Health Service dental clinic. Thirty-five children were identified as needing referral to a pediatric dentist under general anesthesia in a hospital setting.

Sixteen pediatric dentists (from North Dakota, South Dakota, and other parts of the country), seven pediatric dental residents from the University of Nebraska Medical Center Pediatric Dental Residency Program, two general dentists, and two oral surgeons provided care. Hygiene students from the North Dakota State College of Science and more than 40 dental assistants also provided help.

As with the event at Spirit Lake, ADCF transported and set up about 40 dental chairs and coordinated dental equipment for the facility. Patterson Dental Supply donated supplies and provided technical support to help set up and maintain equipment. Financial support was provided by the North Dakota Dental Association, Delta Dental of South Dakota, and Delta Dental of Minnesota, among others. Twenty-three partners participated in the initiative. The event had a budget of approximately \$42,000, which included funds for equipment, dental supplies, food, and necessary facility costs (NDDA, Spring 2013; NDDA, Winter 2013; Palmer, 2014; Silverman, 2012).

### **VARNISH! NORTH DAKOTA- IT'S ALL CONNECTED**

Varnish! ND is a program that has been created to reduce the children's oral health problems and disparities in North Dakota while improving access to preventive dental care for underserved areas. The Smiles for Life Program is supported and used for training by the North Dakota Department of Health Oral Health Program. The program is online and free to train medical professionals including physicians, nurse practitioners, physician assistants, RNs and LPNs on how to conduct dental screenings and apply fluoride varnish.

Fluoride varnish is a solution consisting of five percent sodium fluoride. Clinical strength fluoride is only available by prescription. Fluoride helps strengthen teeth and prevent cavities (NDDoH, Fluoride Facts, nd). Due to fluoride's ability to prevent the initiation and progression of dental caries (Autio-Gold, 2007), fluoride varnish is a highly effective technique and has been reducing tooth decay by 25% to 45% since its introduction in the 1990's. Furthermore, fluoride varnishes are highly accepted throughout the dental community because varnish is easy to use, safe, and convenient to apply (Autio-Gold, 2007). Fluoride varnish costs roughly \$1.25 per application, but is reimbursed by North Dakota Medicaid at \$25.07, Healthy Steps at \$42, and



the Sanford Affordable Care Act Exchange Plans at \$48 per application (ND Medicaid site, NDBCBS, and Lisa Carlson from Sanford). Currently, primary insurance does not reimburse fluoride varnish.

Since October 2012, 51 public health units, head start programs and private clinics totaling 218 healthcare professionals have been trained using Smiles for Life fluoride course six “Caries Risk Assessment, Fluoride Varnish & Counseling.” As a result, these providers have implemented dental screenings and fluoride varnish into their well-baby, well-child and general exam visits.

The medical professionals may use this program in addition to develop their knowledge regarding a variety of oral health issues from infancy to geriatrics. The program also provides continuing education credits for physicians, nurse practitioners, physician assistants, RNs and LPNs.

This program is the nation’s only comprehensive oral health curriculum. It is now in its third edition. The program contains eight online training courses including: (1) the relationship of oral to systemic health; (2) child oral health; (3) adult oral health; (4) acute dental problems; (5) oral health and the pregnant patient; (6) caries risk assessment, fluoride varnish and counseling; (7) the oral examination; (8) geriatric oral health.

This program helps to meet the oral health needs of North Dakota by educating the medical professional workforce on the dental issues and needs of their patients. Patients that do not regularly visit an oral health professional will likely access primary care. Medical professionals may use this training to provide preventive screens and oral health assessments and referrals as needed.

#### **IV. PROPOSED MODELS TO IMPROVE NORTH DAKOTA ORAL HEALTH STATUS**

## INTRODUCTION

After needs and current programs for the state had been identified, the Center for Rural Health along with national content experts, members of the Stakeholder Working Group, and members of the input group developed a list of possible oral health models and best practices that could address one or several of the current state oral health needs. Following is a discussion of state priorities and recommendations, followed by a comprehensive list of each of the possible models that, if adopted, could improve the oral health status of North Dakota.

## NEED

The three identified needs of the state were, again, (in no order):

- **Prevention Programs:** Need for greater oral health literacy and prevention across the state, with greatest need among special populations (to include children, the aging population, Medicaid patients, low-income, homeless, new Americans, American Indians, rural, and those with physical/mental disabilities)
- **Dental Insurance:** Need for Medicare and Medicaid expansion; specifically, increase Medicaid reimbursement to incentivize dentists to accept more Medicaid patients, and restructure services provided among long term care residents to fit current Medicare reimbursement – need for coverage and services for Medicare enrollees
- **Workforce and Access to Care:** Need to improve access to care and need to adjust the uneven distribution of the current workforce in order to meet the needs of North Dakota Citizens, especially special populations

## RECOMMENDATIONS

Following a survey of state input members, five stakeholder meetings, national and state level speaker presentations, and two surveys of participating stakeholders, the five leading priorities/recommendations made by the North Dakota Oral Health Stakeholder Working Group include:

1. Increased funding and reach of safety-net clinics to include services provided in western North Dakota; uses models/idea/support from nonprofit oral health programs similar to Apple Tree Dental and Children’s Dental Services to promote hub-and-spoke models of care.
2. Increased funding and reach of the Seal! North Dakota Program to include using dental hygienists to provide care, and incorporating case management and identification of a dental home as proposed under the North Dakota Dental Association’s case management model. Includes Medicaid reimbursement for services rendered.
3. Expand scope of dental hygienists (DHs) and utilize DHs at the top of their current scope of work to provide community based preventive and restorative services, and education among populations of high need.

4. Create a system to promote dentistry professions among state residents, and encourage practice in North Dakota through a consolidated loan repayment program and partnership/student spots at schools of dentistry.
5. Increased Medicaid reimbursement.

### **Process for Identification of Recommendations**

Following is the process taken by the North Dakota Center for Rural Health to identify stakeholders' priority recommendations for the state. Prior to the final Stakeholder Working Group meeting, the participating stakeholders were sent a survey containing two questions. The intent of the survey was to prepare the stakeholders for discussion, to highlight the proposed models to date, and to identify initiatives that had the greatest level of support. The first question provided the list of 21 models that had been proposed by stakeholder or input group members, and asked participants to identify any model that would not be appropriate for North Dakota. Specifically, the question asked:

Some of the models identified may not fit as a current recommendation to meet the oral health needs in North Dakota. To better focus our discussion on Thursday, please identify any of the models that you do not believe should be a recommendation for the state because it either:

- A) Does not meet the specific need(s) of our state
- B) Is already currently funded and operational in the state, needing no further significant financial or programmatic support
- C) Addresses a need that is already being met by other entities in the state
- D) Conflicts with an existing oral health program; and/or
- E) Has already been implemented in North Dakota and either needs no additional support, or did not effectively meet intended need(s)

Select those that should not be a recommendation – these will be reviewed at the top of the meeting on July 31.

The second question asked participants to review the 21 models, and rank the likelihood and impact of each:

How great of an impact would each of the proposed models have on its intended population/focus in North Dakota?

- No impact
- Fair impact
- Good impact
- Great impact

How likely is it, given the current oral health environment (political, economic, social, demand) that each of the proposed models could be implemented in North Dakota?

- Very unlikely
- Unlikely
- Somewhat unlikely
- Somewhat likely
- Likely
- Very Likely

The results of the first question were presented at the top of the meeting. The models identified for exclusion by 50% or more of the stakeholders were:

- New Fluoride System in West (57%)
- ND AHEC Model – Dental rotations (71%)
- Midlevel Provider (57%)
- Dental School in ND (71%)
- Apple Tree Dental Model (57%)

Following group discussion, the stakeholders concluded that the fluoride program in the state has had significant success, covering roughly 96% of the state. Additionally, the level of natural fluoride in the western half of the state is high. Fluoridated water was identified as very important with regard to preventive oral health services, but because of the existing programs success, it was decided it is not need to provide additional services.

The dental rotations proposed by the North Dakota Area Health Education Center were also identified as a model for exclusion, but after conversation, the group shared that this model was best discussed in relation to working on collaborative relationships with all dental schools. Specifically, the group wanted to continue this conversation, but ensuring that any efforts to do dental rotations would not focus solely on partnership with the University of Minnesota.

After discussion regarding midlevel providers, the group felt that this provider type would meet a need in the state; however, they felt more comfortable discussing the topic with advancing the current scope of work for dental hygienists and/or more readily utilizing the existing dental hygienists workforce to provide preventive services under the most recent expansion to their scope of work.

There was consensus to move forward from the discussion of a dental school because, among many other reasons, it does not meet an immediate need, efforts have yet to be made to work with existing dental schools, and the size of the state may not warrant the development of a new professional school while a border state continues to provide dental education and has a university with a very good reputation and positive student outcomes.

Finally, the group agreed to discuss Apple Tree as an effort to collaborate nonprofit efforts with private practice. This model no longer stood alone in its discussion, but was included with other models.

Six proposed initiatives had no vote to eliminate. From that list, four of the models (bolded below) that had full support also presented as being the most likely with the greatest impact to include: the Sealant Program; expanding the scope of practice for dental hygienists; expanding funding for safety-net clinics; and expanding the loan repayment program. See Appendix I for the graph presenting each model's likelihood and impact.

- **Increase Sealant Program**
- **Expand scopes of practice for dental hygienists**
- **Expand state funding for safety-net clinics**
- **Expand loan repayment programs/incentives for dentists**
- Develop/fund safety-net clinics in the West
- Medicaid reimbursement - increase

Tier one programs that were rated as having *good* or *great impact* and as *likely* or *very likely* included:

- Increased Sealant Program
- Expand Scope of Practice
- Expand Safety-Nets
- NDDA Case Management
- Expand Loan Repayment

Tier two programs that were rated as having the same likelihood as above, but slightly less of an impact included:

- Purchase of Mobile Equipment
- Fluoride in West
- Collaborate with Border Dental Schools

All other proposed models fell below, either indicating no impact or not likely.

The aforementioned results were shared with the stakeholders and the group spent the majority of the final meeting discussing the impact each model would have for North Dakota, the reason other models did not rank higher than they did, what needs continue to be unmet, and new ideas that may help meet the oral health need that combine some of the various models.

At the end of the meeting, each stakeholder had to identify their priority for the state among those already discussed. Each priority was then written on a separate poster board around the room. Each stakeholder was given three dots and was encouraged to place one dot on the three models that were most important for the state. Following this, the group discussed further why some models had no or few dots and why others had many.

The recommendations listed included (in order of priority):

1. Expand Safety-Nets through state funding – using models/ideas/support from nonprofits like Apple Tree and Children’s Dental. Collaboration with a nonprofit to expand services of safety-nets using hub-and-spoke approach to on-site care.
2. Increase Medicaid coverage
3. Increase Sealant program: have state support for program (financial) and create a billing structure so that all sealants can be reimbursed by Medicaid or third party insurers when students have the insurance to cover the care provided. Utilize the current hygienist workforce at their full scope of practice. They can do preventive services and oral health literacy in the schools. This would also partner with the North Dakota Dental Association’s case management model by training the existing hygienists to do case management at the time of the oral health literacy and sealants for the students, linking them to a dental home whenever possible.
4. Increase dental loans, consolidate the loan repayment programs, and work with out of state dental schools to reserve spots/in-state tuition, develop externships/rotations in North Dakota
5. Expand dental hygienists’ scope of practice
6. NDDA Case Management
7. Dental Residencies

To ensure all stakeholders were able to identify their priorities for the state, the identified 21 models, along with the newly identified models which combined initiatives were listed and described and sent out to the stakeholders electronically with a final survey. It was necessary to resurvey the group to allow time to reflect on the meeting discussions for those who were in attendance, but to also allow those who were unable to attend to review the meeting minutes and provide their votes for priority. The final question to the group was:

Following is a list of models proposed throughout the process of identifying oral health needs and recommendations for North Dakota. Please review the list and select the **THREE** priorities and/or recommendations you would make for the state. Please note that the original 21 models are listed, however, models 22 through 24 are proposed solutions developed at the last stakeholder meeting and include recommendations that combine previously listed models.

You may review the original draft description of each model attached, or the minutes from the final stakeholder meeting.

Data from the final stakeholder meeting along with the final survey responses were combined to identify the oral health priorities of the Stakeholder Working Group. The summary of the final recommendations proposed by the Oral Health Stakeholder Working Group was sent for review and approved by the participating members.

Of the above priority models, none of the proposed had a majority of the vote. This is likely because there were several (24) possibilities and because, as the stakeholders have noted, there is not one solution to meeting the oral health needs of the state. While the above are the highest ranked priorities, in order, among the North Dakota Oral Health Stakeholder Working Group, none of the priorities received more than 33% of the stakeholder vote. It is important to also note that all of the stakeholders support the indicated priorities; however, they were simply not one of the top three among 66% of the members.

Earlier data from the initial stakeholder survey and qualitative data from the Stakeholder Working Group Final Consensus Meeting do corroborate these findings. The five priorities listed had the greatest support of the group in the initial survey, with all stakeholders indicating they should be discussed as potential models. The five listed also ranked in the upper tier for impact, likelihood or both in the initial assessment. Finally, the five priorities were listed at the final stakeholder meeting, and received the greater percentage of votes.

Following is a discussion of the five priority recommendations of the North Dakota Oral Health Stakeholder Working Group. The subsequent chapter provides a discussion of the other proposed models that may be current or future recommendations for North Dakotan’s interested in improving the oral health status of the state. Table 5 lists all identified models, indicates the need it would address, and highlights those models identified as priority recommendations by the Stakeholder Working Group.

Table 5. Oral Health Models for North Dakota and their Category of Need

\*Stakeholder priority recommendations are highlighted

MODEL		NEED
1	Purchase of mobile equipment: Provider “check-out” across state	Access to Care
2	New fluoride water systems in the west	Prevention
3	<b>Increased reach of sealant programs in eligible schools (see model 22)</b>	<b>Prevention</b>
4	North Dakota AHEC dental outreach: Dental students in ND schools (model 24)	Workforce
5	Dental therapy/mid-level provider	Workforce
6	Dental school in North Dakota	Workforce
7	<b>Expand the scope of practice and allow dental professionals to practice to the full extent of their training</b>	<b>Workforce</b>
8	<b>Safety-net clinic(s) in western North Dakota (see model 23)</b>	<b>Access to Care</b>
9	<b>Expand safety-net clinics – state funding (see model 23)</b>	<b>Access to Care</b>
10	Expand Children’s Dental efforts (see model 23)	Access to Care
11	Establish dental assisting schools in western North Dakota	Workforce
12	<b>Expand Bridging the Dental Gap: Funding for non-profit (see model 23)</b>	<b>Access to Care</b>
13	Medicare expansion to cover dental	Dental Insurance



MODEL		NEED
14	NDDA case management program (see model 22)	Prevention
15	Apple Tree Dental (see model 23)	Access to Care
16	<b>Increase Medicaid reimbursement</b>	<b>Dental Insurance</b>
17	Eliminate long term care per-resident fee: Make allowable cost	Dental Insurance
18	<b>Expand loan repayments/programs (see model 24)</b>	<b>Workforce</b>
19	integration of oral health and primary care	Prevention
20	Collaborate with border dental schools for student spots: Require students to return to ND (see model 24)	Workforce
21	Use of existing free travel to transport rural or other geographically challenged individuals to current dental practices	Access to Care
22	<b>Increase reach of Sealant Program through state funds, utilization of dental hygienists current scope of practice, and work to incorporate the case management model by training the dental hygienists to complete case assessments and dental home recommendations. Also requires developing case management as an allowable cost and working to ensure reimbursement for sealants to make it a sustainable program.</b>	<b>Prevention</b>
23	<b>Expand safety-net clinics - use models/ideas/support from non-profits like Apple Tree and/or Children's Dental to strengthen hub-and-spoke model of safety-net care in the state</b>	<b>Access to Care</b>
24	<b>Create a system to promote dentistry profession in ND: Increase dental loans, consolidate the loan programs, and work with out of state dental schools to reserve spots/in-state tuition and develop externships/rotations in North Dakota</b>	<b>Workforce</b>

North Dakota is in a position where there needs to be a response to the oral health needs in the state. Data, stakeholder discussion and input responses all indicate a need to provide oral health services to populations in need. There is inadequate prevention, low oral health literacy and poor access and utilization for both preventive and restorative care among Medicaid patients, the uninsured and underinsured. Stakeholders identified the priority recommendations, indicating these activities as the first and necessary steps in a larger effort to improve oral health services in the state.

### **PRIORITY ONE: INCREASED FUNDING AND REACH OF EXISTING SAFETY-NET CLINICS**

The final survey presented 24 possible models. See Appendix J for the results of the final stakeholder survey and the 24 listed models. Four of the fifteen stakeholders indicated that “Expand Reach and Services of Safety-Net Clinics through State Funding” was a top three priority. In addition, model 23 as listed, “Expand Safety-Net Clinics – use models/ideas/support from nonprofits like Apple Tree Dental and/or Children’s Dental to strengthen hub-and-spoke model of safety-net care in the state” had four of fifteen stakeholders indicate it as one of their three top priorities. Models number eight and twelve as ordered in the final survey had top three

priority-ranking among stakeholders as well and also related to the expansion of a safety-net providers.

- Safety-Net Clinics in Western North Dakota (1 of 15 stakeholders indicated it as one of their three top priorities).
- Expand Bridging the Dental Gap: Funding for Nonprofit (2 of 15 stakeholders indicated it as one of their three top priorities).

Each of the four models related to safety-net providers were voted as a state priority and will be discussed below in the order of importance.

### **1A. Expand Reach and Services of Safety-Net Clinics through State Funding**

A safety-net provider organizes and delivers a significant amount of health care services to the uninsured, Medicaid, and other “vulnerable” patient populations. The Institute of Medicine’s (IOM) report (2000), describes safety-net providers as having two distinct characteristics:

1. They offer care to patients regardless of their ability to pay, which is either legally mandated or adopted in their mission statement; and
2. The uninsured, underinsured, and Medicaid patients make up a large portion of the clinic’s patient mix.

Under these criteria, several different providers can be classified as safety-net providers, including federally qualified health centers (FQHCs), local health departments, private not-for-profit agencies, rural health centers, Indian Health Services, institutions, schools, public hospitals, community health centers, free clinics, special service providers, and sometimes physician networks and school-based clinics (Jones & Sajid, 2009).

Patients utilize safety-net clinics when they do not have access to a regular provider, have Medicaid and know that it will be accepted at the clinic, do not want to be turned away because they are in pain or cannot afford to pay for the services received, and the clinic is close to their home and has multiple health care providers (National Maternal and Child Oral Health Resource Center, 2011).

There are five safety-net clinics that provide oral health services to North Dakota residents. Of these five, three are community health centers also identified as federally qualified health centers; one is a nonprofit dental clinic in Bismarck; and one is a nonprofit located in Minnesota that provides services in North Dakota. See the discussion of each under chapter III. *Current North Dakota Oral Health Programs, 2014.*

## *Definitions*

A Community Health Center (CHC) is a nonprofit clinic located in medically underserved areas - both rural and urban. They share a mission of making comprehensive primary care accessible to anyone regardless of ability to pay. CHCs are the broader term, of which, Federally Qualified Health Centers (FQHCs) fall under.

There are three general types of CHCs

- Grant-supported federally-qualified health centers
- Non-grant-supported health centers
- Outpatient health programs/facilities operated by tribal organizations

A Federally Qualified Health Center (FQHC) is a “safety-net” provider such as a community health center, public housing centers, outpatient health programs funded by the Indian Health Service, and programs serving migrants and the homeless. Their main purpose is to enhance the provision of primary care services in underserved urban and rural communities (Rural Assistance Center (RAC), 2014). FQHCs qualify for enhanced reimbursement from Medicare and Medicaid, as well as other benefits. FQHCs must serve an underserved area or population, offer a sliding fee scale, provide comprehensive services, have an ongoing quality assurance program, and have a governing board of directors (HRSA, 2014).

## *Current Safety-Net Providers*

According to the North Dakota Department of Health, in 2013 there were five safety-net clinics providing oral health services in North Dakota. There are no safety-net oral health care providers in western North Dakota. These programs typically serve Medicaid patients or patients who lack insurance and offer sliding fee schedules or reduced fees. The five oral health safety-net clinics that serve North Dakota residents are:

- Bridging the Dental Gap in Bismarck
- Family HealthCare in Fargo
- Northland Community Health Center - Dental Clinic in Turtle Lake
- Valley Community Health Centers Dental Clinic in Grand Forks
- Red River Valley Dental Access Project in Moorhead, Minnesota  
(ND DoH Oral Health Program, 2013).

For specific information on populations served, eligibility, staffing and other program details, for each of the above clinics, read about each earlier in the report under chapter *III. Current North Dakota Oral Health Programs, 2014*.

## *Funding*

Bridging the Dental Gap is a nonprofit community dental clinic. Bridging the Dental Gap is not a federally funded clinic and therefore, does not receive federal money to operate. Their operating funds come for patient payments for services, Medicaid reimbursement, grants, and donations. They are a nonprofit 501(c)3 organization and a member of the United Way (Bridging the Dental Gap (Home)).

A federally qualified community health center, Family HealthCare serves low-income and uninsured individuals around the Red River Valley Region of Minnesota and North Dakota. Family HealthCare partners with several organizations around the Fargo area (Family HealthCare, 2014). As a North Dakota community health center (CHC), Family HealthCare received funding from the Health Resources and Services Administration (HRSA) in 2013 in the amount of \$105,277 and \$54,449 in 2014 (North Dakota Legislative Branch, 2014a).

The Health Resources and Services Administration provides direct funding to community health centers (CHCs) to increase these clinics' capacity to perform outreach and other enrollment activities. In 2014, North Dakota community health centers received \$488,946 in total funding from the HRSA to conduct outreach and enrollment assistance.

Northland Community Health Center is an FQHC and is comprised of five medical clinics in Bowbells, McClusky, Rolette, Rolla, and Turtle Lake. Turtle Lake is the only one of the five to provide dental services (Northland Community Health Center, 2013).

Northland Community Health Center's dental clinic serves individuals of all ages in central North Dakota with low-income, who are uninsured or insured. As a CHC, Northland Community Health Center also receives grants and benefits from the federal government. Northland Community Health Center at Turtle Lake received funding from HRSA in 2013 in the amount of \$77,469 and \$36,753 in 2014 (North Dakota Legislative Branch, 2014a).

Valley Community Health Center (VCHC) provides a dental clinic in Grand Forks and is an FQHC. It serves low-income, uninsured and insured individuals of all ages in the Northern Red River Valley. As a North Dakota CHC, Valley Community Health Center received funding from HRSA in 2013 in the amount of \$72,607 and \$33,659 in 2014 (North Dakota Legislative Branch, 2014a).

The Red River Valley Dental Access Project is an urgent care and walk-in dental clinic located in Minnesota that sees North Dakota patients. The clinic is a humanitarian project that serves low-income, uninsured or Medicaid-eligible individuals with urgent dental pain who lack access to a dentist.

Table 6. North Dakota Safety-Net Clinics

	Location	CHC	FQHC
Bridging the Dental Gap	Bismarck		
Family HealthCare	Fargo	X	X
Valley Community Health Center	Grand Forks	X	X
Northland Community Health Center	Turtle Lake	X	X
Red River Valley Dental Access Project	Moorhead, MN		

### *Service Expansion*

This model includes expansion of current safety-net clinics’ reach and services through state funding. This could include developing oral health services in safety-net clinics that currently do not provide oral health care, and/or providing funding to support spoke sites and a larger workforce at existing oral health safety-net clinics. This model was proposed in partner with the later recommendation to build infrastructure for safety-net clinics in the West. However, the development, funding, and staffing of a new clinic may be time consuming and expensive; expansion of services and reach of existing facilities was then an additional recommendation, specifically with need for state allocated dollars.

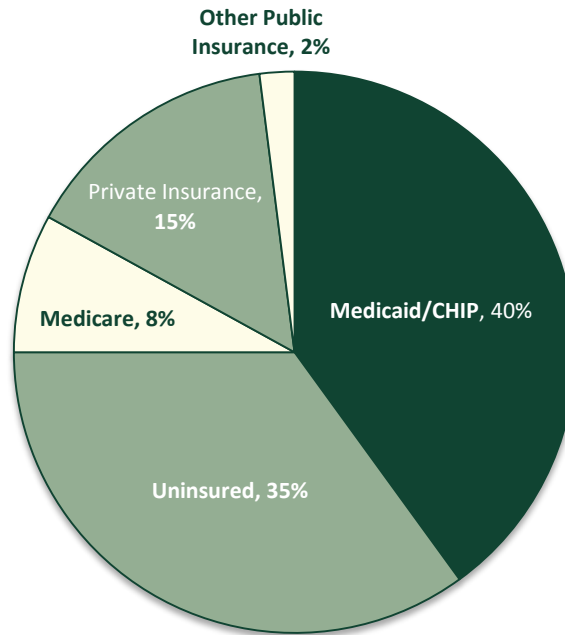
Currently, there are no state appropriated dollars for North Dakota safety-net clinics. Other states do provide state support. In 2014, three safety-net health clinics in Florida received funding in the current year’s state budget; one of which was a dental clinic. In all, the clinics are set to receive \$750,000 from the state in the 2014-2015 budget year to increase services provided to low-income rural residents (Staff Report, 2014).

One resource stated that free clinics (not to include FQHCs) are allowed to receive federal, state or local dollars to support operating costs, however, nationally only 31% were currently receiving government revenue (Darnell, 2010). Additional funds may support hire of a permanent dentist, a full-time hygienist, and/or an oral surgeon. A 2005 report stated that safety-net dental clinics generally operate with limited staffing and low budgets, relying on referral relationships with local dentists. However, those clinics with “full-time dentists or any dental hygienists had higher annual numbers of dental visits” meeting a greater patient demand (Byck, Cooksey & Russinof, 2005).

### *Safety-Net Impact*

On a national scale, FQHCs help provide needed care to uninsured, underinsured, and Medicaid populations who face some form of barrier to accessing health care. See Figure 10 for the national breakdown of insurance coverage for FQHC patients in 2011 (Center for Healthcare Research & Transformation, 2013).

Figure 10. FQHC Patients by Insurance Coverage for the U.S. in 2011



In 2010, FQHCs met the health care needs and provided services for 15% of the uninsured in the U.S., 16% of the Medicaid population, 4% of the Medicare enrollees, 13% of the U.S. population that were under other public insurance, and 2% of those with private insurance. In 2011, North Dakota ranked 49<sup>th</sup> in terms of the amount of federal funding the state received for FQHCs with a dollar amount of approximately \$7.5 million. This was a 107.8% increase in federal funding from 2008 when North Dakota received \$3.5 million (Center for Healthcare Research & Transformation, 2013).

One of the problems FQHCs face nationwide is that the number of patient dental visits tripled from 2000 to 2010. With an insufficient number of locations and inadequate capacity to meet this dramatically increased patient load, these safety-nets are suffering (Center for Healthcare Research & Transformation, 2013). Overall, health centers have a very positive impact on the health care community and communities in which they serve. They lower health care costs, improve patients' health, and create economic opportunities in the form of jobs and training for local community members (National Association of Community Health Centers (About our Centers)).

An evaluation of Illinois' safety-net clinics found that compared to private dental practices, "safety-net dental clinics treated more Medicaid patients, relied more on Medicaid payments for patient fee revenue, and had more sources of revenue." Furthermore, dentists in safety-net

clinics provided more outreach and education on oral health to local communities. These safety-net clinics were found to be an essential provider for Medicaid, low-income, and underserved populations in Illinois (Byck, Russinof & Cooksey, 2002).

### **1B. Expand Safety-Net Clinics – Use Models/Ideas/Support from Nonprofits like Apple Tree and/or Children’s Dental to Strengthen Hub-and-Spoke Model of Safety-Net Care in the State**

As mentioned, in conversation at the final stakeholder meeting, the stakeholders identified a model that would blend those already discussed to include general expansion, expansion in the West, and funding of nonprofits. While the group did not feel strongly about solely seeking support for Apple Tree Dental or Children’s Dental Services, they liked the idea of working with the state to allocate dollars to support similar hub-and-spoke services and nonprofits in North Dakota. Apple Tree Dental and Children’s Dental reach disparate populations and improve oral health care access through hub-and-spoke care, teledentistry, and full utilization of the oral health workforce by employing hygienists to work under general supervision, providing care without a dentist present, and employing midlevel providers to provide both preventive and restorative care. This expansion of safety-net care would include working with possible out-of-state nonprofits to reach North Dakota populations in need. This would include growth of the safety-net clinics and financial support for other nonprofit oral health providers. This proposed model suggested creating a program and financial support to encourage teledentistry and hub-and-spoke services as outlined in models 1A above and 1C and 1D below.

### **1C. Safety-Net Clinics in Western North Dakota**

Of the current safety-net dental clinics in North Dakota, none are located west of Bismarck leaving high demand for oral health care in the western part of the state; specifically among disadvantage populations. Several of the western counties are lacking a sufficient number of dentists to meet the need (Table 7). The population to dentist ratios range from 758:0, 1,095:1, to 9,495:1. This unmet need leads to a higher number of dental caries and overall oral health problems. Furthermore, with a clinic in the western part of the state, patient travel and wait times to dental appointments would decrease.

A safety-net clinic or a community health center providing dental services, located in western North Dakota could serve the special populations that currently lack access to oral health care services. Federal grant dollars and donations could be used to fund such a clinic, similar to some of the other safety-net dental clinics in North Dakota.

Table 7: Number of Dentists and Dentist to Population Ratios in Western North Dakota Counties\*

County	# of Dentists	Dentist Ratio
Adams	1	2,347:1
Billings	0	914:0
Bowman	3	1,094:1
Burke	0	2,1730:0
Divide	0	2,291:0
Dunn	NA	NA
Grant	1	2,350:1
Golden Valley	0	1,856:0
Hettinger	2	1,360:1
McKenzie	NA	NA
McLean	1	9,495:1
Mercer	5	1,722:1
Morton	8	3,589:1
Mountrail	2	4,648:1
Oliver	1	1,840:1
Renville	1	2,611:1
Slope	0	758:0
Stark	8	3,469:1
Sioux	2	2,196:1
Williams	21	1,301:1

(Robert Wood Johnson Foundation, 2014).

### 1D. Expand Bridging the Dental Gap: Funding for Nonprofit

Bridging the Dental Gap, as previously described, is a nonprofit that provides oral health services to low-income, uninsured, and Medicaid patients in the Bismarck-Mandan area. Funded in part by Medicaid payment, the services also rely heavily on grant dollars and donations. State funding could support many of the organizations efforts. One time funding for the nonprofit could aid in the purchase and maintenance of new and current mobile equipment being utilized in the Elderly Care Direct Services program which provides oral health prevention and care to long term care residences in long term care facilities.

Funding could also help establish a program that offers mobile equipment to private dental practices, encouraging the use of such equipment in communities and among populations of high need. See model B3. *Purchase of Mobile Equipment: Provider “Check-Out” Across the State* under B. *Access to Oral Health Services* in chapter IV. *Other Oral Health Models for North Dakota*.

Bridging the Dental Gap also currently limits its reach to patients within a 75 mile radius of Bismarck-Mandan. State funding could expand the reach of the current nonprofit, which is providing more than 600 patient appointments a month, or dollars could support the



infrastructure and development of a similar program in the Northeast, Southeast, or Southwest corner of the state.

A similar program in Turtle Lake, Wisconsin provides oral health services to the underserved, impoverished, and Medicaid populations. This program also utilizes mobile equipment to provide services in the community, to include Head Start schools and long term care facilities (Fos & Hutchison, 2010). “The patient population includes low-income families (below 185 percent of federal poverty level), individuals with disabilities, and those living in supervised-care facilities” (Fos & Hutchison, 2010). While this program anticipated more than 6,000 visits in the year 2002, and reported 4,000 patient encounters in years previous, each of the program’s four clinics continues to have a waiting list of over 300 patients.

Similar to Bridging the Dental Gap, the program originated through Federal grant dollars and relies on Medicaid reimbursement. However, like the North Dakota nonprofit, the program is only 50% self-sustained through Medicaid reimbursement. In 1999-2001 continued funding for the Wisconsin program was facilitated by the region’s U.S. Congressman; in 2002-2003, funding was established as a state budget line item.

## **PRIORITY TWO: INCREASED FUNDING AND REACH OF THE SEAL! NORTH DAKOTA PROGRAM TO INCLUDE USE OF EXPANDED DENTAL HYGIENISTS SCOPE OF WORK, CASE MANAGEMENT, AND MEDICAID REIMBURSEMENT**

Much like priority one, priority two was determined by stakeholder support for multiple models. As presented in the final survey, model three and model twenty-two both discussed expansion of sealant programs and will be discussed below in detail.

- Increase reach of Sealant Program through state funds, utilization of dental hygienists current scope of practice, and work to incorporate Case Management Model by training DHs to complete case assessments and dental home recommendations. Also requires developing case management as an allowable cost and working to ensure reimbursement for sealants to make it a sustainable program (5 of 15 stakeholders indicated it as one of their three top priorities).
- Increased Reach of Sealant Programs in Eligible Schools (3 of 15 stakeholders indicated it as one of their three top priorities).

### **2A. Increased Funding And Reach of The Seal! North Dakota Program To Include Use of Expanded Dental Hygienists Scope of Work, Case Management, and Medicaid Reimbursement**

At the final stakeholder meeting, the participants identified other ideas or models that could meet one or all of the aforementioned oral health needs for North Dakota. One of the new suggestions merged several of the earlier discussed models to develop a comprehensive approach to oral health prevention and education among the pediatric population.

Seal! North Dakota is a federally grant funded initiative. In the past two years the program has reached students at 50 elementary schools and 2 elementary schools respectively. The program, though effective (see discussion in *Seal! North Dakota* under chapter III. *Current North Dakota Oral Health Programs, 2014*) is not sustainable under its current funding source and its services are in jeopardy. This was apparent in the loss of funding in the 2013-2014 school year in which only two schools received sealants for their students.

Also, under its current funding the program must follow the criteria set by the funder, which includes the reach of its services. The current program must provide services to schools where need is the greatest. Students in elementary schools with a 50% or greater free and reduced-fee meal rate and who lack access to dental care are offered the services for free. All students in the school, regardless of need, are offered sealants. While the current program does reach students in need, totaling 100 schools in the next program plan, it does not reach students on the free and reduced lunch plan that are in schools where 55% or more of the students are not on said plan.

The proposed model would expand services of Seal! North Dakota to reach all schools in North Dakota as outlined under the following proposed model. However, this model would rely on dental hygienists completing the oral health screens, sealants, and education in the school systems, utilizing their current scope of practice. Ideally, these hygienists would be under standing orders of a private practice dentist, and not solely public health hygienists. To ensure that the students would continue to utilize oral health services, and not rely solely on the applied sealants, the hygienists would be trained in case management as proposed under the North Dakota Dental Association's Case Management Model. Dental hygienists would then refer the students to the nearest and most appropriate dental home. Read model D2. *Case Management Model: The North Dakota Dental Association* under D. *Oral Health Prevention Programs* in chapter IV. *Other Oral Health Models for North Dakota*.

To make this a sustainable model, Medicaid would have to expand to cover services provided off-site by dental hygienists under the standing order of a practicing dentist. Additionally, it would need to cover case management/referral which it currently does not. If these services were reimbursed through Medicaid and other third party insurers, Seal! North Dakota services could be provided by private practices and other safety-net clinics billing Medicaid and other insurers as appropriate for sealants, case management, and other preventive services, creating a sustainable model of care.

## **2B. Increased Reach of Sealant Programs in Eligible Schools**

With state funding, the program as it currently stands could expand reach to all schools in the state and provide sealants to all students eligible. The Seal! North Dakota school-based dental sealant program has provided preventive services to 52 elementary schools over the last two years, covering 13% of the total number of elementary schools in North Dakota (394 schools).

Other sealant programs have received state funding. In a question to all sealant programs in the state, the North Dakota sealant program heard from at least five states that indicated state dollars support their sealant programs. In addition, to be sustainable, many of the programs worked with Medicaid, CHIP and other third party insurers to cover the sealants and reimburse for care provided. Something North Dakota currently does not do (Children's Dental Health Project, 2014).

### **PRIORITY THREE: EXPANDING THE ROLE OF DENTAL ASSISTANTS AND DENTAL HYGIENISTS**

In the final survey of stakeholders, this proposed model was identified as a priority for the state among 5 of the 15 participants.

When mentioned by both stakeholder and input members alike, it was discussed that the needs in the state could best be met if the state were to more readily use the existing workforce. Specifically, begin to utilize the large volume of dental hygienists and employ them to practice at their full scope of work with the possibility of expanding their scope as they begin practicing at its current limit. There was stakeholder support for utilizing hygienists more readily at their current scope of practice with potential expansion, but little support for increasing the current scope of practice for dental assistants. Most importantly, it was necessary for the group that DHs begin to practice under a standing order of a dentist facilitating the provision of preventive and restorative care and improving levels of oral health literacy in community settings without the dentist present.

#### **Dental Hygienists**

Dental hygienists contribute to the quality of oral health care provided to patients while improving access to care. As a result, many states have expanded their legal scope of practice for dental hygienists (DHs). Dental hygienists' roles were initially structured solely around preventive care; however, they now expand into a variety of basic restorative services. Much of the expansion in the scope or work is the result of initiatives geared toward increasing access to care for underserved populations. Over the past decade, nearly all states have expanded the legal scope of practice of DHs, to include North Dakota (HRSA, 2004).

See *North Dakota Oral Health Regulations* under chapter II. *Oral Health Need in North Dakota* for more information on how dental hygienists are licensed, and for their current scope of work in North Dakota.

During the 2009 Legislative session, House Bill 1176 was passed, which changed the supervision requirements of dental hygienists to allow oral health screening and preventive services. In 2010, North Dakota worked to implement the change associated with new dental hygiene supervision.

Finally, in 2011, the North Dakota Department of Health gathered support for a new public health hygienist statute for dental hygienists working as a state employee. This statute allowed dental hygienists employed by the state of North Dakota to provide varnish applications, sealants and edentulous care to the underserved populations in schools, health centers, assisted living homes, nursing homes, and other settings under the supervision of the North Dakota State Health Officer (ND DoH Family Health Division, 2010).

Currently, North Dakota is working with the American Dental Hygienists Association to be recognized as one among the majority of states that now allows a dental hygienist to provide care without direct supervision; an advancement that will allow dental hygienists to provide increased levels of care in communities.

Research has found that states that expand or favor the role of dental hygienists have more favorable patient outcomes. Expanding the scope of practice of DHs “improves access to oral health services, utilization of oral health services, and oral health outcomes” (HRSA, 2004). More specifically, a significantly higher number of patients responded having no teeth removed due to tooth decay or gum disease among states that have expanded the scope of practice. Furthermore, the percentage of respondents having one to five, six, or all teeth removed as a result of tooth decay or gum disease was significantly lower in states with an expanded scope of practice (HRSA, 2004).

### *Minnesota’s Scope of Practice for Dental Hygienists*

The Minnesota Board of Dentistry defines the permitted scope of practice of dental hygienists. Most dental hygienists must work under the supervision of a dentist, but Minnesota allows hygienists to work without direct supervision in some settings. As of 2001, dental hygienists in Minnesota could enter into a collaborative agreement with a licensed dentist. This agreement designates authorization for the services provided by the hygienist. These hygienists can be employed or retained by a health care facility, program, or nonprofit organization. In order to qualify, hygienists must have 2,400 clinical hours over the previous 18 months or 3,000 clinical hours over their career with a minimum of 200 hours in the past two to three years. Continuing education requirements must also be met. Collaborative practice hygienists can perform several services including administering prophylaxis, applying topical preventive and prophylactic agents, applying sealants, fluoride varnish, coronal polish, charting, x-rays, and root planing (American Dental Hygienist Association, 2014).

Minnesota has 10 accredited dental hygiene programs, including programs at the University of Minnesota, Minnesota State University (Mankato), six state community and technical colleges, and two private non-Minnesota colleges offering campus and online classes in Minnesota. The Minnesota Board of Dentistry also recognizes four Wisconsin programs, two Iowa programs and one program each in North Dakota and South Dakota. Metropolitan State University offers a Bachelor of Science degree in dental hygiene that prepares students with an A.A. degree from

another accredited dental hygiene program to engage in certain practices without a patient first being seen by a dentist.

No specific degree is required for licensure, but applicants must have completed a program approved by the Commission on Accreditation of the American Dental Association. Accredited programs must include at least two years of postsecondary education. Two-year institutions must award an associate degree; four-year institutions must grant an associate degree, baccalaureate degree or certificate (Minnesota Department of Health, 2010).

### *Montana's Scope of Practice for Dental Hygienists*

In 2003, Montana expanded the role of dental hygienists allowing them to obtain a limited access permit to practice under public health supervision in a variety of federally funded health centers and clinics, nursing homes, extended care facilities, home health agencies, group homes for the elderly, disabled, and youth, head start programs, migrant work facilities, and local and state public health facilities. Supervision in this role means that the hygienist can provide services without the authorization of a dentist as long as the hygienist follows established protocols and refers patients to dentists when further treatment is needed. To qualify for this expanded role, hygienists in Montana must have 2,400 hours of experience in the previous three years or 3,000 hours over their careers with 350 hours in each of the preceding two years. Further requirements include 12 hours of continuing education every two years and liability insurance. In this role, hygienists can provide prophylaxis, fluoride, root planing, sealants polish restorations, diagnostic x-rays for the dentist and oral cancer screenings (ADHA, 2014).

### **Dental Assistants**

Currently in North Dakota, dental assistants may perform basic supportive dental procedures under the direct supervision of a licensed dentist. At this level of dental assisting, there are no requirements related to education or training. See *Dental Assistants* under *North Dakota Oral Health Regulations* in chapter II. *Oral Health Need in North Dakota* for more information.

According to the American Dental Association (2011), the scope of practice for dental assistants in North Dakota expanded in 2009 to include basic supportive functions as long as they were qualified with on the job training. The role of qualified dental assistants expanded to include taking x-ray images and other basic supportive functions with qualifications, to include on the job training, board approved infection control, an x-ray course, and passing the Dental Assisting National Board (DANB) exam. Finally, the expanded role of registered dental assistants now includes x-ray imaging, ortho, monitoring nitrous oxide, coronal polishing, taking impressions for athletic mouth guards, and passive post-treatment retainers. Under the new scope of practice, a registered dental assistant must:

- Take a Commission On Dental Accreditation accredited dental assisting course;
- North Dakota Board of Dental Examiners-approved dental assisting course, certified by Dental Assisting National Board
- Complete 3,000 hours of dental assisting instruction and on-the-job training
- Complete annual continuing education (CE) registration.
- To place sealants, dental assistants must take a board approved course and be a registered dental assistant (American Dental Association (ADA), 2011).

While North Dakota has previously expanded the scope of work for both dental assistants and dental hygienists, other states do have more permissive scopes of practice, to include the border states of Minnesota and Montana. North Dakota is already more permissive than South Dakota.

#### **PRIORITY FOUR: CREATE A SYSTEM TO PROMOTE DENTISTRY AS A PROFESSION IN NORTH DAKOTA**

Much like priority one and two, priority four was determined by stakeholder support for multiple models. As presented in the final survey, model eighteen and model twenty-four both discussed expansion of the dental loan repayment programs and incentivization for North Dakota dental practices. Each will be discussed below in detail.

- Create a system to promote dentistry profession in North Dakota: Increase dental loan repayments, consolidate loan programs, and work with out-of-state dental schools to reserve spots/in-state-tuition and develop externships/rotations in North Dakota (4 of 15 stakeholders indicated it as one of their three top priorities).
- Expand Loan Repayment Programs (1 of 15 stakeholders indicated it as one of their three top priorities).

##### **4A. Create a System to Promote Dentistry as a Profession in North Dakota**

A model proposed at the final stakeholder meeting, this model again merges earlier ideas to create a comprehensive system of promoting dental education among North Dakota residents and dental practice in state. While consolidation of the loan repayment programs, and increased dollars and awards would bring more dental school graduates back to North Dakota to practice dentistry, this alone does not address the low number of North Dakota residents that pursue a degree in dentistry. Because of this, stakeholders discussed a more comprehensive model in which the state supports dental students at admission, and follow through by bringing dental graduates back into the state (through dental rotations and expansion of the loan repayments).

The stakeholders proposed working with dental schools to identify those willing to hold spots for North Dakota residents – this would require state dollars. Again, while stakeholders were not concerned about which dental schools were to partner with the state, the UMN SOD Rural Track

Program serves as an example, read more under model C5. *Collaborate with Border Dental Schools for North Dakota Student “Spots” and In-State Rotations* under C. *Oral Health Workforce* in chapter IV. *Other Oral Health Models for North Dakota*.

While it is important to hold student spots at various universities to assist in student opportunities for acceptance, it is also important that students are encouraged to return back to North Dakota for their dental rotations. Similar to the above discussion, this model proposes working with interested schools of dentistry to have students complete their dental rotations in North Dakota. This expense is not yet known for this proposal and would likely vary by the partnering school of dentistry.

#### **4B. Expand Loan Repayments/Programs**

Between 2008 and 2014, 34 students applied for the various state loan repayment programs and did not receive awards because of limited dollars. If the state were to consolidate the loan repayment options, creating consistent and clear guidelines and payment between the various programs, along with increased dollars from the state to allow for more awards, North Dakota could bring more new graduates back into the state, and rural communities, to practice dentistry.

Under this model, state entities would work together to develop a comprehensive student loan repayment program in which the various programs discussed earlier in the report would be managed by one entity, allowing for clarity in what is currently a very confusing system. To review the current loan repayment programs, read *Dental Loan repayments/Grants* under chapter III. *Current North Dakota Oral Health Programs, 2014*. In addition, while consolidating the loan repayment programs, additional dollars could expand the current awards. As discussed, there are more eligible applicants than awards each year. In addition, the largest repayment program covers only \$80,000 of a student’s debt while the average debt of an out-of-state dental student is \$350,000. While additional dollars could increase the repayment each awarded student receives, adding additional dollars to award more loan repayments would bring more dentists to the state.

#### **PRIORITY FIVE: INCREASE MEDICAID REIMBURSEMENT**

While stakeholders indicated a great impact with the increase of Medicaid reimbursement on patient access, it was not deemed a likely proposal for North Dakota. However, in the final assessment, five of the fifteen stakeholders indicated it was a priority for our state. Federal law requires state Medicaid programs to provide dental benefits for children, but not adults. North Dakota’s Medicaid program covers adult dental care for the categorically and/or medically needy (Kaiser Family Foundation, 2014b). While all children covered by Medicaid and the Children’s Health Insurance Program (CHIP) have coverage for dental services, ensuring access to these services remains a concern. In Medicaid, children’s dental benefits have been provided since 1989 through the EPSDT benefit. In CHIP, the children’s dental benefit became mandatory in 2010 through CHIPRA. In 2008, CMS completed reviews of 16 States with low dental utilization rates (30 percent or less) and identified several key barriers to children receiving

adequate dental care. One of those barriers identified were low reimbursement rates. Other identified barriers included limited availability of dental providers, administrative burdens for providers, lack of clear information for beneficiaries about dental benefits, missed dental appointments, transportation, cultural and language competency, and the need for consumer education about the benefits of dental care.

Health care providers may refuse to provide care for Medicaid patients if the rates are lower than private insurance patients, creating access to care issues. Although Medicaid reimbursement rates tend to be lower than rates paid out by private insurance plans, North Dakota rates are higher than other states. The overall reimbursement rate, as defined by the amount paid divided by the amount billed over a five year period in North Dakota is roughly 62%; this leads the nation with North Dakota having one of the highest dental reimbursement rates; however, it is still below the cost of care for dentists. For more information on North Dakota Medicaid coverage, access and utilization, see *Dental Insurance under North Dakota Oral Health Environment* in chapter II. *Oral Health Need in North Dakota*.

Research has shown that states with higher Medicaid reimbursement rates have an increased number of dentists that accept Medicaid patients. Buchmueller, Orzol, and Shore-Sheppard (2013) found that there was a “positive and statistically significant effect of Medicaid payment rates on whether a dentist treats any publically insured patients and the percent of the practice’s patients who have public insurance.” However, the same report indicated that the payment rate would need to match private market fees to adequately meet the issue of access and the “incremental cost of the additional visits induced would be very high” (2013).

Decker reiterates the above research and found in her study that

Changes in state Medicaid dental payment fees between 2000 and 2008 were positively associated with use of dental care among children and adolescents covered by Medicaid. For example, a \$10 increase in the Medicaid prophylaxis payment level (from \$20 to \$30) was associated with a 3.92 percentage point (95% CI, 0.54-7.50) increase in the chance that a child or adolescent covered by Medicaid had seen a dentist . . . Higher Medicaid payment levels to dentists were associated with higher rates of receipt of dental care among children and adolescents. (Decker, 2011)

Access to care among the Medicaid population and pediatric patients in North Dakota were cited as current areas of need for the state. Research has indicated that increasing Medicaid reimbursement to more closely match that of the private market fees would provide greater access to care among these vulnerable populations.

It is important to note in this discussion that while increased Medicaid rates would likely lead to increased willingness of providers to see new and more Medicaid patients, it does not ensure that this population set would utilize the available services.



## **V. OTHER ORAL HEALTH MODELS FOR NORTH DAKOTA**

While the stakeholder group made the aforementioned recommendations for the state, other models were discussed over the duration of this project. The models that follow were described per request of a stakeholder, an input member, or both. While the group identified priorities for the state, all of the following models were suggested at some point in this process. Each of the discussed models may be categorized as meeting at least one of the following needs: dental insurance coverage; access to oral health services; a larger oral health workforce; and/or oral health prevention programs. While a given model may address the issue of both access and preventive care (for example), the following models will be discussed under the primary category of need met.

## **A. DENTAL INSURANCE COVERAGE**

### **A1. Medicare Expansion to Cover Dental**

Since Medicare is funded and administered at the federal level, state level policymakers do not have jurisdiction over Medicare coverage for dental services. As mentioned above, Medicare beneficiaries who are dually eligible for Medicaid coverage and who are deemed categorically and/or medically needy would be able to obtain dental coverage and enable improved access to dental services. North Dakota's Medicaid coverage restrictions are reviewed earlier in the report in the section on *Dental Insurance* under *North Dakota Oral Health Environment* in chapter II. *Oral Health Need in North Dakota*.

Historically, the American Dental Association (ADA) successfully lobbied against a dental benefit at the program's inception in 1964. The amendment regarding coverage for inpatient hospital services was passed in 1980. Although the ACA of 2010 did include legislation supporting routine dental coverage for children, no federal legislative updates have been passed regarding coverage for adults or the Medicare population since 1980. This population has reported low levels of awareness regarding the lack of Medicare dental coverage.

### **A2. Eliminate Long Term Care Per-Resident Fee: Make Allowable Cost**

Currently, long term care facilities rely on dental services provided by nonprofit organizations like that of Bridging the Dental Gap (see chapter III. *Current North Dakota Oral Health Programs* for more information) and Apple Tree Dental (read more under *B. Access to Oral Health Services* in chapter IV *Other Oral Health Models for North Dakota*). This is primarily because it is difficult to transport long term care residents to dental facilities, and because dental provisions are covered under total patient care services as outlined in the individual's contract with long term care facilities. However, while Bridging the Dental Gap provides services to long term care residents while only charging Medicaid and other private insurers, Apple Tree Dental charges a per-resident or per-facility fee in addition to charging patients' insurance groups. This

fee is not an allowable expense for the facility, requiring any long term care facility utilizing said services to cover the expense; a practice that has been deemed cost prohibitive for many organizations.

It is suggested that North Dakota work with nonprofits able to provide dental services in long term care facilities and work to develop a model similar to Bridging the Dental Gap in which the nonprofit or provider sustain their efforts off of the fee schedule alone and not charge additional fees. In this example, care is efficient and a provider can see more patients in a day, with no “no-shows” as care is provided in the place of residence. An alternative would be to work with federal Medicare/Medicaid to identify an allowable cost for dental services provided to residents of long term care facilities and/or allocate funding to long term care facilities to cover the per-resident/per-facility fee that currently prohibits utilization of an otherwise very successful and beneficial oral health service for the aging population.

## **B. ACCESS TO ORAL HEALTH SERVICES**

### **B1. Expand Children’s Dental Efforts**

Children’s Dental Services (CDS) in Minnesota provides in-clinic care while also utilizing portable dental equipment to reach the underserved in their state. CDS is a large independent nonprofit agency that works to provide accessible oral health services to all children from birth until age 21, while also serving pregnant women. In Minnesota, CDS utilizes dental and advanced dental therapists to provide services on and off site. To learn more, read about CDS under chapter *III. Current North Dakota Oral Health Programs, 2014*.

While CDS serves some North Dakota residents at their Moorhead, Minnesota location, they have also recently signed contract with a North Dakota school district to provide oral health services in the identified North Dakota school(s). If successful, North Dakota could look to provide funding to the Children’s Dental Services in Minnesota, to expand their services and reach in several North Dakota communities.

### **B2. Apple Tree Dental**

Apple Tree Dental is a nonprofit dental organization in Minnesota dedicated to bringing dental care to people who otherwise would be without. Apple Tree's nonprofit status and mobile delivery programs work to overcome these problems because they bring care directly to people who need it most. With support from individual donors, foundation grants, and corporate sponsors, Apple Tree can relieve the suffering and improve the lives of people who have barriers to obtaining the dental care they need. Supported financially under the Mayo Clinic model, Apple Tree Dental employs a hub and spoke system to provide care in the locations that need it the most. Like Children’s Dental Services, Apple Tree utilizes advanced/dental therapists and mobile equipment to provide oral health prevention and education in communities where the

need is highest. However, unlike Children’s Dental, Apple Tree Dental does not limit their services to children and pregnant women.

The Apple Tree Mobile Dental Offices are rolled inside a facility such as a nursing home, Head Start center, school or group home and can be set up within minutes. These full-scale dental offices offer all the modern amenities as the traditional dental office, but in a convenient place that is comfortable and familiar to the patient. Apple Tree uses new provider types and telehealth technology to provide their oral health care.

Apple Tree Dental Clinics in Minnesota are currently meeting the oral health needs of North Dakota residents as well. In 1997, Apple Tree Dental opened a dental clinic in Hawley, Minnesota through foundation dollars. For 17 years, that center has been self-sustaining serving 24,740 patients and providing 198,355 dental visits at a dental care value of \$32,299,832. The Hawley clinic has also billed \$438,000 in North Dakota Medicaid.

Apple Tree could work with the private dental community and its professional organizations, community health centers, legislators and government stakeholders, and the North Dakota State Oral Health Program to expand private, public, and nonprofit capacity for community based collaborative practice. However, long term care facilities in North Dakota have reported an inability to cover the per-resident fee charged by Apple Tree Dental in providing on-site care. While the facilities like the model, and find the care provided to be a great service to the residents, facilities cannot continue to absorb the facility fee.

### **B3. Purchase of Mobile Equipment: Provider “Check-Out” Across State**

Bridging the Dental Gap, in partner with the North Dakota Oral Health Coalition is working to establish mobile dental equipment across the state to be utilized by either public health or private dental practice professionals. This equipment would likely be housed in long term care facilities because space is available, and residents are one of the many populations in need of oral health care in North Dakota.

Maintenance of the equipment would be monitored by the registered users. This effort would also require a coordinating agency/staff to ensure an appropriate protocol for check-out, return, and sterilization of resources. Bridging the Dental Gap does have experience implementing a similar model through their Elderly Care Direct Services program; see *Elderly Care Direct Services Program*, under chapter III. *Current North Dakota Oral Health Programs, 2014* for more information. However, the equipment utilized in that program is not as easily transported as would be the resources purchased under this initiative. While the program could be led by an existing oral health program, initial funding would be required to purchase the equipment.

Early estimates have identified eight long term care sites across the state, each looking to house one mobile unit at the cost of \$25,000 per unit. The total ask to fund the equipment needed to employ the initiative is \$200,000. These resources could be utilized by both private practice

dentists and their dental teams, and public health dental teams. Care could then be provided in Head Start schools, at tribal locations, public schools, long term care facilities, and other community programs with populations in high need.

A report on similar programs in North Carolina and Connecticut that were implemented through existing FQHCs noted that, after purchase of the equipment, “because fixed dental facilities or mobile dental vans are not necessary, the capital needed to implement this program is modest. Likewise, FQHC current reimbursement rates are usually adequate to cover program costs” (Bailit & D’Adamo, 2012). In North Carolina, the start-up capital expense for equipment was \$30,000 per mobile unit.

#### **B4. Free Transportation to Transport Rural or other Geographically Challenged Individuals to Current Dental Practices**

This model proposes to work with existing programs to transport populations in need to their dental appointments. Most models that exist work with aging populations, but this option could be explored for all populations of need including tribal populations.

Examples of programs currently in place include the following:

The North Dakota Senior Service Providers strives to promote independence for senior citizens throughout the State of North Dakota through the provision of a variety of services including dining plans, outreach, health options, transit and legal options (North Dakota Senior Service Providers, 2012). Participants may be picked up in their homes and transported to medical visits and other necessities. Their association is made up of 30 non-profit agencies which provide services to senior citizens throughout the State of North Dakota. These agencies operate in each of the 53 counties and four Native American Reservations in the state. Funding for services in an average year is approximately \$11.3 million with about half of that coming from state and federal sources and the other half being generated from local sources. Local funding included over 3.2 million dollars donated by program participants.

The National Center on Senior Transportation is described as the “nation’s go-to resource for senior transportation information, research, and development” and is administered by Easter Seals, Inc. in partnership with the National Association of Area Agencies on Aging (n4a), through a cooperative agreement with the U.S. Department of Transportation, Federal Transit Administration, and with guidance from the U.S. Administration on Aging (AoA) (National Center on Senior Transportation, 2012). Their website directs users to the “Eldercare Locator” ([www.eldercare.gov](http://www.eldercare.gov)), which then directs North Dakota residents to the North Dakota Aging and Disability Resource-LINK page “[www.carechoice.nd.gov](http://www.carechoice.nd.gov)” where local agencies providing transportation can be queried.

The Non-Emergency Medical Transportation (NEMT) is a mandatory benefit in the Medicaid Program, providing a valuable service to countless Medicaid beneficiaries around the country.

However, eligibility for NEMT may be limited to certain populations (the “categorically needy”) at the state’s discretion. There may also be limits on the number of trips that can be paid for each month or prior approval may be required for some medical trips. One challenge communities have struggled with is the coordination of NEMT rides with transit and other human services transportation services. North Dakota’s coverage is limited to the categorically and medically needy (Kaiser Family Foundation, 2014). Copayment requirements are also applicable to beneficiaries dually eligible for Medicare and Medicaid unless they are institutionalized.

It is proposed that North Dakota look to other models or programs and work to identify free transportation for the populations in greatest need; to include tribal populations, rural residents, homeless, low-income households and new Americans.

## **C. ORAL HEALTH WORKFORCE**

### **C1. A Professional School of Dentistry in North Dakota**

While not considered a realistic or necessary effort for North Dakota by the participating stakeholder group and input members, a school of dentistry would address any professional dental workforce concern that has been mentioned. North Dakota has no school of dentistry, has no relationship with border dental schools to provide in-state tuition, and currently has no existing sustainable program to promote local dental rotations by students at border universities. In 2010, the average age of dentists in North Dakota was 50 years old, following retirement age approximately 37% of North Dakota dentists will retire by 2020 (North Dakota Dental Database, 2014). In 2008, there were an estimated 271 jobs for North Dakota dentists with an expected 6% increase by 2018 (Fos & Hutchinson, 2010).

The field of dentistry began as an apprenticeship program, until 1840 with the establishment of the first proprietary school in Baltimore (University of Minnesota, 2013). In 2014, there were 65 dental schools across the U.S. (American Student Dental Association, 2014). There were also 10 dental schools in Canada (ADEA, 2012). In neighboring North Dakota states, there are four dental schools:

- University of Minnesota School of Dentistry
- Creighton University School of Dentistry (NE)
- University of Nebraska Medical Center College of Dentistry
- Marquette University School of Dentistry (WI) (American Student Dental Association, 2014).

In 2010, 47% of practicing North Dakota dentists reported earning their degree in dentistry from the University of Minnesota; 12% from Creighton University. Since 1997, only 5 accredited dental schools have opened. Since 2011, four additional dental schools have passed initial accreditation or filed an application. There are also six schools under serious consideration for

accreditation, one of which is in Wisconsin. Only one of the fifteen dental schools that have opened or are under review border North Dakota (Anderson, 2011).

Table 8. Annually Dental School Tuition for Residents and Nonresidents\*

Estimated Tuition*	University of Minnesota		Creighton University		University of Utah		University of Nebraska		Marquette University	
	Resident	Non-resident	Resident	Non-resident	Resident	Non-resident	Resident	Non-resident	Resident	Non-resident
Year 1	\$32,555	\$58,887	\$52,886	\$52,886	\$33,837	\$64,059	\$28,692	\$68,353	\$40,990	\$49,650
Year 2	\$33,857	\$61,243	\$52,886	\$52,886			\$28,692		\$40,990	\$49,650
Year 3	\$35,212	\$63,693	\$52,886	\$52,886			\$28,692		\$40,990	\$49,650
Year 4	\$36,620	\$66,240	\$52,886	\$52,886			\$28,692		\$40,990	\$49,650

\* Estimated tuition does not include fees and other charges (FindTheBest, 2014).

### *University of Minnesota*

In 1888, The University of Minnesota College of Dentistry was founded as a Division of the Department of Medicine. At that time, it was the eighth university-based dental school in the country (University of Minnesota, 2013). Currently, 98 new dental students were admitted to the University of Minnesota College of Dentistry. Of the 1,166 applicants, 30 were from North Dakota; however, only six were accepted and entered into dental school. Furthermore, the University of Minnesota College of Dentistry is the only dental school with American Indian students. There are seven American Indian students in the program.

Graduating 47% of practicing dentists in North Dakota, the University of Minnesota College of Dentistry has seven programs. The early decision rural dentistry track program is a new program created by the School of Dentistry for dental students who want to have a career as a rural dentist. To qualify for this program, the student must have a strong commitment to practice in a rural area, be a U.S. citizen or permanent resident with preference going to residents of Minnesota, provide a community level of support, complete prerequisites and have at least a 3.4 cumulative GPA and a 3.2 GPA in science courses, have 30 hours of shadowing a rural health dentist, and have a letter of support from a rural health dentist who will also serve as their mentor (University of Minnesota, 2013).

Another program at UMN is the Building Bridges to a Career in Dentistry Program. This program strives to give students from underrepresented and disadvantaged communities the opportunity to compete, enter, and graduate from UMN's School of Dentistry. The program was created in September 2010 and is a Health Careers Opportunity Program funded by the Bureau of Health Professions of the Health Resources and Services Administration (University of Minnesota, 2013).

### *Creighton University*

Producing 12% of the professional dental workforce in North Dakota, Creighton University School of Dentistry was founded in 1905. In 2011, the school celebrated the graduation of its 5,000<sup>th</sup> graduate. The school has nine oral health departments. The three dental programs include a professional dental degree program, an advanced standing program, and a pre-dental post-baccalaureate program. The dental degree program is a four-year program that awards a Doctor of Dental Surgery (DDS) degree (Creighton University School of Dentistry, 2014).

### *Funding a School of Dentistry: University of Utah*

In 2012, the University of Utah trustees approved a School of Dentistry and a related four-year doctoral program. The School was funded through \$37 million in private pledges. The first cohort entered into the program in fall 2013 and had 20 students. While the state of Utah had a dental school prior to this program, it was deemed necessary to have an additional professional school to maintain an appropriate dentist to patient ratio; Utah needs 75 to 85 new dentists per year to meet patient demand. The overall goal of the new school was to improve access to dental care for Utah's rural and underserved areas and recruit students into the program from these communities (Maffly, 2012).

Prior to the opening of their new dental school, the University of Utah operated a regional dental education program housed in the School of Medicine. In this program, students took their first year of dental education and training at the University of Utah and then transferred to Creighton University in Nebraska. As an incentive to return to Utah to practice after graduation, part of their tuition is reimbursed. Tuition for this program is \$28,735 per year, which is the same as the medical school's tuition. The program is expected to employ 42 full-time and 45 part-time faculty members. Legislation has been passed approving a new building for the school. The school is expected to retire this program once the School of Dentistry becomes operational by 2016 (Maffly, 2012).

## **C2. New Oral Health Professional: Midlevel Dentistry**

The dental therapy profession is emerging in the U.S. The model has shown promise for improving oral health in remote Alaska Native communities, and in rural and urban areas in Minnesota.

Dental therapists (DTs) are licensed oral health care professionals (OHCPs) who practice on a dental care team to educate patients and provide clinical and therapeutic patient services. Dental therapists are midlevel providers with distinct educational, examination, and practice requirements (Minnesota Board of Dentistry, 2014). Dental therapists' scope of practice includes basic preventive and restorative treatment for children and adults, as well as, extractions of primary teeth under dentist supervision. Dental therapists practice in areas with larger



populations of low-income, uninsured, and underserved people or dental health professional shortage areas (University of Minnesota, 2014).

The purpose of this model is to create a new oral health specialization (dental therapist) in order to lessen the need for multiple dentists in rural, underserved areas by expanding the capacities of dental clinics with onsite dental therapists or oral health care practitioners to work alongside dentists. The goal is to provide high-quality, lower cost services to individuals who may not be able to receive them otherwise. The practice of DTs/OHCPs is under general dentist supervision and is limited to mostly oral health prevention and education. Some examples of their scope of practice include nutritional counseling and dietary analysis, radiographs, application of fluoride and sealants, temporary restorations and pain alleviation, and making mouth guards.

An advisory panel consisting of representatives from all three U.S. dental therapy education programs, persons involved in the practice of dental therapy, and persons involved in the development of educational standards for dental therapists were included on a panel with the purpose of developing dental therapy national education standards (Kim, 2013). On a national level, approximately 33% of work performed by dental health aid therapists (DHATs), DTs, and advanced dental therapist (ADTs) is preventive. Furthermore, 28% is evaluation and assessment, 24% is restorative, and the remaining 15% consists of pulpotomies, pulpal therapies, scaling and root planing, extractions, palliative care, and nitrous oxide (Kim, 2013). Breaking down evaluation and assessment, 56% were clinical oral exams, 41% were radiographs, and the remaining 2-3% were pulp vitality tests and other procedures. For preventive procedures performed by DHATs, DTs, and ADTs, 44% are sealants, 43% are fluoride varnishes, 7.5% are prophylaxis, and the remaining 5% is divided between fluoride treatments, placement and removal of space maintainers, and other preventive procedures (Kim, 2013).

Nationally, 47% of the revenue generated by DHATs, DTs, and ADTs comes from restorative oral health care procedures, while 21% (\$653,634) comes from evaluation and assessment and another 21% (\$627,976) from preventive care services. Revenue from evaluation and assessment breaks down to approximately 69% for clinical oral exams and 31% for radiographs (Kim, 2013). Revenue generated related to preventive procedures performed by DHATs, DTs, and ADTs includes 47% from sealants, 28% from fluoride varnishes, 12% from prophylaxis, 6% from placement/removal of space maintainers, and 6% from fluoride treatments and other procedures (Kim, 2013).

In Minnesota, 84% of dental therapists are enrolled in public health insurance programs. Overall, dental therapists have helped decrease patient travel time and wait time, increased direct costs savings, increased dental team productivity, increased patient satisfaction, and lowered appointment cancellation rates (Minnesota Board of Dentistry, 2014).

### *Minnesota's Dental Therapy Program*

In Minnesota, over 70% of the counties are classified as fully or partially designated dental health professional shortage areas (HPSAs). An estimated 656,000 Minnesota residents live in areas with an insufficient number of oral health providers with 45% of the dentist workforce over age 55. In 2009, Minnesota became the first state to authorize dental therapists (DTs) to practice in the general public (Minnesota Board of Dentistry, 2014).

Minnesota legislation which approved the certification and use of DTs came from a series of negotiations between patient advocates, the Minnesota Dental Association (MDA), and the University of Minnesota. Minnesota's legislation created two levels of DT: the dental therapist (DT) and the advanced dental therapist (ADT). These two "midlevel" providers are required to work as part of a dental team to provide educational, clinical, and therapeutic services to residents of Minnesota.

Both ADTs and DTs are referred to as "midlevel" providers because their scope of practice falls between that of a dentist and other allied oral health care professional (i.e., dental hygienists or dental assistant) (Minnesota Board of Dentistry, 2014).

The primary difference between an ADT and a DT is the level of supervision required with greater supervision requirements for DTs (University of Minnesota, 2014). Dental therapists and advanced dental therapists in Minnesota are allowed to practice in all of the state's rural and urban underserved communities that primarily serve low-income, uninsured, and underinsured patients (Minnesota Board of Dentistry, 2014). DTs are intended to expand the capacities of dental clinics, with DTs working closely with an on-site dentist. The first class of DTs graduated in the summer of 2011.

### *Dental Therapy Education and Certification*

Currently, two universities in Minnesota offer dental therapy degrees: Metropolitan State University and the University of Minnesota.

The University of Minnesota offers either a 40 month (four year) bachelor's degree program in dental therapy or a 28-month (two year) master's program in advanced dental therapy. In order to be accepted into the master's program, a student must have a Bachelor of Science or Bachelor of Arts degree, completed the prerequisite courses (chemistry, general biology, English composition, general psychology, microbiology, biochemistry, statistics, human anatomy, physiology, and an intensive writing course), supply high school and college transcripts with a minimum 3.00 cumulative GPA, official TOEFL scores for non-English speaking students, and a personal interview. Upon completion of the program, a student will be eligible for a licensure as a Dental Therapist and credentialing as an Advanced Dental Therapist in Minnesota after completing 2,000 hours of dental therapy practice and a Board of Dentistry comprehensive exam (Pew Center on the States, 2014; University of Minnesota, 2014).

In 2012, the University of Minnesota DT/ADT programs reported a maximum enrollment of 10 students per year. DT students follow many of the same courses, and are trained by the same faculty and at the same facilities as students in the dentistry and dental hygiene programs. Students who successfully complete either the bachelor's degree as a dental therapist or master's degree as an advanced dental therapist and successfully pass the competency and licensure exams for DTs and certification exam for ADTs are awarded a license to practice in Minnesota (Hecke, 2012; Minnesota Board of Dentistry, 2014). As of February 2014, there were 32 licensed dental therapists in Minnesota, six of whom were licensed as advanced dental therapists. The first graduating class was in 2011 with 6 licensed dental therapists. Over the next three years the number of new licensed dental therapists included 12 in 2012, 11 in 2013, and 3 in 2014. The first advanced dental therapist was certified in 2013 (Minnesota Board of Dentistry, 2014).

Metropolitan State University offers an OHCP degree for dental hygienists who want to become dually certified as a DT and hygienist. Hygienists who complete the degree are eligible for licensure as a DT-hygienist (or OHCP) in Minnesota. Before entering the two-year program, hygienists must complete three prerequisite courses on dental care. The program lasts seven semesters (Hecke, 2012).

### *Dental Therapy Scope of Practice*

Minnesota A/DTs and OHCPs work with an on-site dentist under direct or indirect supervision. They are intended to both increase the capacity of existing dental clinics and to decrease the costs of dental care. Advanced DTs will be able to do some of their work under the general supervision of a dentist, enabling them to work outside the clinic of the supervising dentist. This could enable them to practice in areas where there are currently no dental practices, including rural and frontier communities (Hecke, 2012).

A licensed dental therapist in Minnesota may perform the following services under general supervision, unless restricted or prohibited in the collaborative management agreement. The services include:

- Oral health instruction and disease prevention education (including nutritional counseling and dietary analysis)
- Preliminary charting of the oral cavity
- Making radiographs
- Mechanical polishing
- Application of topical preventive or prophylactic agents (including fluoride varnishes and pit and fissure sealants)
- Pulp vitality testing
- Application of desensitizing medication or resin
- Fabrication of athletic mouth guards
- Placement of temporary restorations

- Fabrication of soft occlusal guards
- Tissue conditioning and soft reline
- Atraumatic restorative therapy
- Dressing changes
- Tooth reimplantation
- Administration of local anesthetic
- Administration of nitrous oxide (Minnesota Board of Dentistry, 2009).

Under indirect supervision, a licensed dental therapist may perform

- Emergency palliative treatment of dental pain
- Placement and removal of space maintainers
- Cavity preparation
- Restoration of primary and permanent teeth
- Placement of temporary crowns
- Preparation and placement of preformed crowns
- Pulpotomies on primary teeth
- Indirect and direct pulp capping on primary and permanent teeth
- Stabilization of reimplanted teeth
- Extractions of primary teeth
- Suture removal,
- Brush biopsies
- Repair of defective prosthetic devices
- Recementing of permanent crowns (Minnesota Board of Dentistry, 2009).

ADTs may provide the same services as a DT under *general* supervision (DTs require indirect supervision). In addition, ADTs may assess patients and create treatment plans, complete an oral evaluation, develop a treatment plan, and perform simple/nonsurgical extractions of permanent teeth (Hecke, 2012; Pew Center on the States, 2014).

### ***Reimbursement***

In Minnesota, DTs are reimbursed for the services they provide to Minnesota Health Care Plan enrollees using a fee-for-service payment model. The state is also working with the Centers for Medicare and Medicaid Services (CMS), the National Plan and Provider Enumeration System, and the National Uniform Claim Committee to establish a distinct taxonomy for DTs to enable them to bill for services provided to enrollees in other health care plans (Hecke, 2012).

In terms of Medicaid reimbursement, there are several options a State can choose from when adding a Dental Therapist model. These options are contingent upon the level of dentist supervision, whether the dental therapist will be classified as a billing provider or just a rendering provider, and the reimbursement level the State decides to reimburse Dental Therapists

(DTs) for their services. In terms of billing versus non-billing provider, the State can decide to make a DT a billing provider or not. If a DT is a billing provider, the DT needs to have an employer contract, must register with the State Medicaid program and any state managed care programs, and must obtain a provider identification number for billing purposes. The State must complete a Medicaid State Plan Amendment adding the DT as a billing provider. This amendment is a document that communicates the State's designed plan to the Federal CMS. It also informs CMS the rate at which the provider will be reimbursed. For a DT to be added, the State must have a supervising dentist on the plan. In contrast, if a State decides that a DT will not be a billing provider, but only a rendering provider, the State does not need to inform CMS of the new provider. The purpose of informing CMS and completing the Medicaid State Plan Amendment is to receive Medicaid reimbursement from the Federal Government. With this background information, there are three main routes from which a State can choose for a DT.

The first, as is the case in Alaska, is a State decides to have dental therapists under some level of dentist supervision, the DT is not a billing provider, and the State reimburses DTs at the same level or rate as dentists. This is the simplest plan since DTs do not need to register with the State and Federal Medicaid Plans and the reimbursement level is the same regardless of service provider (DT or dentist).

The second option, as is the case in Minnesota, the State decides to have dental therapists under some level of dentist supervision, the DT is a billing provider, and the State reimburses DTs at a lower rate than dentists. In this case, the DT must register with State and Federal Medicaid to receive reimbursement and must have a provider number for billing and claims purposes.

The third option is that the State decides to have dental therapists under some level of dentist supervision, the DTs is not a billing provider, and the State reimburses DTs at a lower rate than dentists. In this option, States must take extra time to review each claim to ensure that the rendering provider is a DT, in which case the reimbursement rate would be lower than if the rendering provider were a dentist.

If a State decides to allow DTs to practice without dentist supervision, the State must submit a Medicaid State Plan Amendment identifying the new provider and the reimbursement rate that the provider will receive. The provider must enroll in the State Medicaid plan and any State managed care plans and obtain a provider identification number for billing purposes.

### *Effect of Dental Therapy on Oral Health Access, Care and Literacy*

As of February 2014, Minnesota had 32 licensed dental therapists, with 6 certified as advanced dental therapists (Minnesota Board of Dentistry, 2014). Forty-seven percent of the DTs in Minnesota practice in community-based clinics or federally qualified health centers (FQHCs). Twenty-two percent work in private practices, 13% practice in a hospital or health system, and 19% of practice locations are unknown (Minnesota Board of Dentistry, 2014). In 2012, only two complaints were filed against dental therapists; both cases have been resolved without action.

Similarly, in 2013, two complaints were filed and still pending. None of the complaints filed against dental therapists were directly related to patient safety issues. Furthermore, no Board disciplinary actions have been taken (Minnesota Board of Dentistry, 2014).

People's Center Health Services is a federally qualified health center (FQHC) in Minneapolis, Minnesota and in April 2012, was the first FQHC to hire a dental therapists. With one-fourth of the clinic's dental patients lacking insurance and qualifying for a sliding fee discounted rate, two-thirds on Medicaid or other public insurance, and 50-60% of East African descent, the clinic needed a plausible solution to better provide dental services to its' underserved population. A dental therapist was considered to fill the gap because a dental therapist could serve more patients with limited financial resources, the dental therapist could work the extended clinic hours without the presence of a dentist, and the use of a dental therapists would help attract and retain dentists at the clinic by allowing them to perform more skilled tasks and decrease workloads (Pew Center on the States, 2014).

Over a one year period, the dental therapist had directed 1,765 patient visits at a cost to the clinic of \$136,070, which included salary, benefits, taxes, dentist's supervisory time, and supplies. Sixty-five percent of the patients were on Medicaid with an estimated Medicaid reimbursement of \$166,920.

Prior to hiring the dental therapist, the dental director of the clinic reported being hesitant about hiring a dental therapist due to the level of training and insecurity about their treatment options. This uncertainty about the role of a dental therapist was quickly overturned to appreciation with reduced workloads for the dentists, reduced wait times for patients, and greater capacity to see patients quicker (Pew Center on the States, 2014).

### ***Program Evaluation***

Minnesota's dental therapist program is being evaluated using five criteria: (1) number of new patients served; (2) reduction in wait times for services; (3) decreased patient travel time, (4) impact on emergency room usage for oral health care; and (4) costs to the public health system.

Between August 2011 to July 2013, 6,388 new patients received oral health services at the study's clinics. On average, dental therapists worked from one hour per week to 36 hours per week, or the equivalent of seven FTEs. Clinics with few dentists saw a significant increase in access for new patients as a result of the addition of a dental therapist, with one clinic reporting a doubling of new patients. Not only were clinics reporting an increase in the number of patients treated, but also an increase in the number of underserved and special populations treated, as well as the number of children and medically complex individuals served. Finally, an estimated 84% of the patients treated by dental therapists were on public insurance (Minnesota Board of Dentistry, 2014).

An estimated one-third of patients reported having reduced wait times since the implementation of dental therapists. Wait time to see a dental therapist was also reduced. Over 80% of patients reported that they were able to schedule their appointment to see a dental therapist in under a month. Furthermore, when pain or a dental emergency was present, the wait time for an appointment was even shorter (77% of patients reported getting an appointment in under a week), which could be a predictor of reduced hospital emergency room use for oral health problems.

Patients also reported reduced travel times; specifically, 93% reported less than an hour travel time compared to 74% who travelled less than an hour before dental therapy was introduced. Patients in rural areas (59%) reported a greater reduction in travel time than their urban counterparts (41%). Clinics plan to use dental therapists to continue to alleviate travel barriers by placing DTs in nontraditional patient settings, including elementary schools, medical settings, and elderly homes (Minnesota Board of Dentistry, 2014).

Patients also reported reduced travel times; specifically, 93% reported less than an hour travel time compared to 74% who travelled less than an hour before dental therapy was introduced. Patients in rural areas (59%) reported a greater reduction in travel time than their urban counterparts (41%). Clinics plan to use dental therapists to continue to alleviate travel barriers by placing DTs in nontraditional patient settings, including elementary schools, medical settings, and elderly homes (Minnesota Board of Dentistry, 2014).

Dental therapists may help reduce patient's emergency room use for oral health needs. In 2012, there were 28,115 non-injury oral health emergency room (ER) visits in Minnesota, with an associated cost of \$15,520,215. Thirty-seven percent of the total cost (\$5,663,760) was from patients on public assistance. However, it is still too early to determine the relational impact of dental therapists on ER use for oral health care. In general, only 11% of patients see dental therapists for a dental emergency, 44% for fillings, 32% for routine check-ups, and 12% for other oral health. An estimated 53% of patients with a dental emergency did not have a dental appointment in over a year (Minnesota Board of Dentistry, 2014). Theoretically, the use of a dental therapist would reduce the work load of the practicing dentist, making greater availability and ease of access for those in need of urgent oral health care. Greater utilization of preventive services among "new patients" also holds the potential to reduce the need for emergency oral health services.

Currently, the data on dental therapists' payments and services billed is unavailable. However, state public program rates for dental therapists is the same as the rates for dentists' services (Minnesota Board of Dentistry, 2014). Evaluation for the fifth measure is ongoing.

Other outcomes of note include personnel cost savings, increased dental team productivity, and improved patient satisfaction. Two-thirds of clinics reported significant savings in personnel costs by employing a dental therapist instead of a dentist because dental therapists salaries are

approximately half that of a dentist. Clinics estimated approximate savings between \$35,000 and \$62,000. For increased dental team productivity, clinics observed the versatility and flexibility dental therapists have brought to their teams, which had increased productivity. Furthermore, dental therapists have freed dentists to focus on complex procedures, which has allowed for more appropriate scheduling, financial benefits, and allowed for expanded complex clinic services. In terms of patient satisfaction, several clinics reported high level of patient satisfaction associated with dental therapists ability to spend more time with patients providing education and prevention information. Clinics have been able to expand their services, capacity, and clinic size by adding more dental chairs to serve more underserved patients (Minnesota Board of Dentistry, 2014).

The program is still in its infancy. More exhaustive research needs to take place over an extended period of time to more accurately assess the long-term impacts of dental therapy. A limitation in this model was the patient flow to see a dental therapist. Patients saw dental therapists during a follow-up visit, not for the initial visit as intended. Another limitation relates to dental therapists finding employment. Since the program was new, it took some dental therapists a while to obtain employment and for some, when employment was found, it was only part-time status – limiting the number of patients they could see and the satisfaction of the A/DT.

### *Alaska's Dental Therapy Program*

Alaska has a long history of developing alternative health care workforce models, starting with the Community Health Aide (CHA) program in the 1950s. Initially, this program was aimed at treating the tuberculosis epidemic which was afflicting many of Alaska's rural, mostly Alaska Native communities. The program was highly successful and continues to thrive to this day. The role of the CHA has been expanded to include a wide range of preventive and basic health care activities (Hecke, 2012).

Today, rural Alaska faces a new epidemic: tooth decay. According to the Dental Health Aide Therapist (DHAT) Training Program's website, "the Alaska Native population has the highest tooth decay rate of any population group in the United States. Children aged 6-14 have twice the rate of caries than the general population, while children aged 2-4 years have five times the rate."

Lack of access to dental care is often cited as a major reason for these high rates. According to Scott Wetterhall, principle investigator of a recent study on Alaska's Dental Health Aide Therapist (DHAT) model,

There is an acute shortage of dentists willing to practice in small, remote villages in Alaska...Relying on a traditional itinerant care approach leaves people with limited access to emergency and preventive treatment, allows disease and associated pain to worsen and fosters expectations that dental care should be sought only when a person is in pain. (Hecke, 2012)



The Alaska Native Tribal Health Consortium (ANTHC) developed Alaska's DHAT model to deal with these chronic dental care shortages, and the first DHATs were certified in 2004. Alaska's DHAT model is the first in the United States, and is based on New Zealand's dental nurse model. Alaska's DHATs practice at remote sites managed by tribal regional health corporations (Hecke, 2012).

An essential part of Alaska's DHAT program is that DHATs are recruited from the rural and frontier areas where they serve. There are two reasons for this. First, locally recruited students are more likely to work and live in these rural and frontier areas on a long-term basis. Most dentists are recruited and trained outside rural and frontier areas, and are less likely to choose to practice in remote areas. Second, because they are from the same culture as their patients, DHATs can provide more culturally sensitive care and education to patients (Hecke, 2012; Williard, 2014).

### *Dental Health Aide Therapy Education and Certification*

The DHAT program in Alaska is a 24-month program which requires an additional 400 hours of clinical practice in a tribal location with direct dentist supervision (Pew Center on the States, 2014). This educational track prepares DHAT students to provide a limited scope of oral hygiene instructions, preventive services, and urgent and basic restorative care under dentist supervision. Year one of the program is held at the University of Washington DENTEX training center in Anchorage, Alaska. The second year is held at the Yuut Elitnaurviat Dental Training Clinic in Bethel, Alaska. Upon successful completion of the program, DHATs are certified by the Community Health Aide Program Certification Board to practice in the Alaska Tribal Health System. Recertification by way of a continual competency evaluation is required every two years (Advisory Panel, Community Catalyst, 2013). Students may enter the program with no additional higher education; they must have passed the general education development (GED) test or have a high school diploma.

Once certified, the DHAT can work under direct, indirect or general supervision of a dentist. Under general supervision the dentist does not have to be in the same building or even the same city. DHAT certification is done through a federal board and requires completion of an approved program of dental therapy, successful completion of a preceptorship under the direct supervision of a dentist which must be a minimum of 400 hours or 3 months, and verification by a licensed dentist that the DHAT is competent in their entire scope of practice. Once certified, the DHAT must maintain certification and apply for recertification every 2 years. To recertify, they must complete 24 hours of approved continuing dental education related to their clinical scope of practice and successfully demonstrate their continued competency within their entire scope of practice through a minimum of 80 hours of direct supervision by a dentist (Williard, 2014). There are currently 24 federally certified New Zealand and Alaska trained DHATs serving rural Alaskans.

### *Dental Health Aide Therapist Scope of Practice*

Alaska Dental Therapists are closely tied to their supervising dentists through telemedicine and phone consultations. This relationship of the DHATs is designed to be similar to the supervisory relationships between physician and physician assistants and includes prospective discussion of cases, concurrent availability of consultations, and retrospective quality review of the patients seen by the DHAT (Hecke, 2012).

Scope of Practice for Alaska DHATs include:

- Dental prophylaxis
- Dental radiology
- Traumatic Restorative Treatment (ART)
- Scaling and polishing techniques
- Root planing and periodontal soft tissue curettes
- Placing sulcular medicinal or therapeutic materials
- Periodontal probing
- Administration of local anesthetics and identification and responding to the side effects of local anesthetics
- Advanced understanding of tooth morphology, structure and function
- Placement of simple and complex fillings
- Stainless steel crown placement
- Diagnosis and treatment of caries and performance of pulpotomies
- Performance of uncomplicated extractions of primary and permanent teeth
- Response to emergencies to alleviate pain and infection
- Recognition of and referring conditions needing space maintenance (Hecke, 2012)

These practices occur under the general supervision of a dentist, which means the dentist gives a standing order for the procedures and the dental therapists carries out the orders (Pew Center on the States, 2014). The dentist does not need to be at the location the care is being provided.

There are also several services that are not included in a DHAT's scope of practice. Such exclusions include: scaling and root planing, root canal therapy, cast metal restorations, adult crown and bridge, implants, partial and complete denture fabrication, prescription of medications (other than local anesthesia used during treatment), orthodontics, oral and maxillofacial surgeries involving tissue flaps and/or cutting of bone, nitrous oxide administration, orthodontics. In addition, the DHAT practice would be further limited by other patient variables which may require referral to a dentist, such as co-existing medical conditions or behavioral concerns (Williard, 2014).

### *Effect of Dental Therapy on Oral Health Access, Care and Literacy*

Prior to the introduction of dental therapists, dentists were working 12 to 14 hour days, travelling to distant village clinics once or twice a year for two to six weeks. From a patient perspective, patients had access to a dentist only six weeks out the year. With the new dental health aide therapists, dentists now visit these same villages for only two weeks annually to perform advanced oral health services while dental therapists located in the village provide care throughout the rest of the year.

### *Program Evaluation*

In 2012, DHATs in Alaska conducted 1,000-1,600 patient visits serving 600-700 patients depending on their location. Most of their work was split between diagnostic work (exams and x-rays), restorative dental (fillings and stainless-steel crowns), preventive (cleanings, fluorides, and sealants), and other procedures. Financially, net revenue (revenue generated minus salary) was positive for the clinic, which means that hiring DHATs was financially profitable and resolved the issue of access in these communities. Finally, providers and patients reported positive experiences with DHATs. One dental therapist stated “people don’t ask to see a dentist instead of me... in fact, they were excited that I came to the village” (Pew Center on the States, 2014).

### *Dental Therapy in Minnesota verse Alaska*

The education requirements are different in both states. Minnesota’s DT program is 40-months long and students earn a bachelor’s of science degree. Minnesota’s ADT program is a Master’s degree program. It is 28-months in length and students must have a BA/BS before admission to the ADT program. Alaska’s DHAT program is 24-months plus 400 hours of clinical practice and does not require any formal higher education prior to acceptance. The biggest difference between Alaska’s DHAT and Minnesota’s A/DT programs is the educational requirements, but more accurately, the prerequisites required to enter into the programs. Both are approximately 2 years in length, but the Minnesota programs require at least 2 more years of education (not in dental therapy) prior to enrolling in the A/DT program (Williard, 2014).

The scope of practice is slightly different in both states. Minnesota has two DT positions; whereas, Alaska only has one DHAT position. Alaska’s DHAT is more comparable to Minnesota’s ADT based on the level of supervision to practice. Minnesota’s ADT can perform all of the duties assigned to a DT, along with nonsurgical extractions, oral health evaluation and assessment, and can provide, dispense, and administer analgesics, anti-inflammatories, and antibiotics. Minnesota’s program was created with a more limited scope of practice than Alaska’s program by requiring the new providers to practice under a collaborative agreement with a dentist present in the office (Commonwealth Fund, 2010)

If a Dental Therapist or Advanced Dental Therapist from Minnesota (or a DT trained in another country) wanted to work in Alaska, they would have to submit their transcripts and request

consideration for certification through the Community Health Aide Program Certification Board. The Board would gather information about their training, looking at things like transcripts and course syllabi to determine if they have met the educational requirements for a DHAT and then make a determination on certification or they could recommend additional coursework. The Minnesota DT may need a fair amount of additional coursework, while the ADT may need very little. It is unknown at this point if either DT or ADT would be allowed to practice without additional coursework of some kind. To date no Minnesota DT or ADT has tried to receive certification in Alaska (Mary Williard, 2014). Similarly, DHATs from Alaska are not allowed to practice in Minnesota without updating licensure requirements to meet those required to practice in Minnesota. Licensure is based on a state-by-state basis; therefore, professionals are required to become licensed in each state.

In recent news, Maine has become the third state to implement the dental therapist model. The model was signed into law in 2014 and is a hygiene-based program. The educational requirements include being a registered dental hygienist in addition to a post-secondary dental therapy program with mandatory licensure upon completion. The scope of practice is both preventive and restorative and direct supervision of a dentist and a written practice agreement is required (ADHA, 2014).

### *Meeting North Dakota Oral Health Needs*

North Dakota has reported a workforce/access need among special populations to include pediatric, aging, Medicaid, special needs, uninsured, and low income. There has also been emphasis on preventive care and oral health literacy for the overall population. These needs may all be met through the implementation of DT/ADT. A 2013 report stated that integration of more midlevel oral health providers into practices will help treat underserved patients and alleviate the stress on dentists (Pew Center on the States, 2013b).

This model would allow more individuals in underserved areas to access oral health services. It would help alleviate the stress and strain on dentists who are currently unable to accept new patients and/or new Medicaid patients and would improve access in small, rural communities. Furthermore, if a contingency plan were placed in the model stating that all dental therapists must accept Medicaid patients, more Medicaid patients, especially children, could gain access to oral health care.

To ensure success, several steps would need to be taken for a new dental therapy program. Dental therapy trainers and supervisors would need to learn the new techniques and skills necessary for teaching and working with DTs. Prior to DTs entering the workforce, several policies need to be implemented regarding regulation, reimbursement, and malpractice. One strategy currently being pursued to ensure the integration of DTs into the dental community is the creation of a set of national accreditation standards for DT training programs.

North Dakota has two options with regard to dental therapy: (1) North Dakota can create the dental therapist subspecialty allowing DTs educated in other states (Minnesota for example) to practice in North Dakota; or, (2) North Dakota could create the curriculum and training to certify DTs/ADTs in the state by working with programs already providing oral health training. The second option would still require the development of the subspecialty, but also includes developing a program to train the specialists as well. In order for North Dakota to implement the dental therapist model, the scope of practice would need to be changed to acknowledge a new provider. This change tends to be a legislative change, which if authorized, certification language would be created through legislation. The Board of Dentistry would advise on the details related to the scope of practice and certification process.

Adoption of dental therapy also requires wide-spread support of the dental therapy profession, especially among oral health professionals. Without wide-spread support from the key players, it would be difficult to successfully implement this type of midlevel oral health care provider.

### *Pros and Cons for North Dakota*

North Dakota has reported increased need for oral health prevention and care among special populations. The role of a dental therapist in other programs is specifically that – to meet the needs of the currently underserved through preventive care and education. Dental therapists could work in various community health centers, specifically targeting special populations and providing preventive services. Dental therapists would also function well in mobile units, as has been seen in Minnesota’s Children’s Dental Program, and Apple Tree Dental.

With a dental therapist providing more preventive care traditionally complete by a dentist, the dentist has greater availability to accept and provide care for more complex cases – restorative. It has been stated that, in North Dakota, there is need to increase access to care among the Medicaid population and other special populations. This model would not only provide access to special and rural populations, but would also generate available workforce to address oral health prevention and oral health literacy in the community.

In terms of cost savings, the addition of a dental therapist does not directly impact the cost to patients. The cost savings occur at the practice level, in that, having a dental therapist on staff can help lower costs to the practice in terms of a lower salary and freeing the dentist to perform more complex procedures that bill out at higher rates. Additionally, having dental therapists on site allows the practice to take on more Medicaid patients, which increases reimbursement as well.

It is important to note that, while this model does increase access, specifically among special populations, it does not address the culture of oral health in the state. Efforts would need to be made to encourage patients to make, and keep, appointments. This is especially true of emergency care. While increased prevention and utilization of oral health professionals would ameliorate the number of emergent oral health presentations at the emergency room, this can

only be achieved if the population frequenting emergency rooms for oral health care began to utilize available oral health services. This is an issue of oral health literacy and prevention, as opposed to workforce. However, dental therapists could provide education to said populations.

One barrier found in Minnesota is that dental therapists are being used more in follow-up appointments and less for primary visits as intended. If this were to happen in North Dakota, the access to oral health care barrier would not be eliminated because patients would still have to see a dentist first. The intent of dental therapy is to offer an additional provider that can aid in the primary delivery of oral health care.

Some additional barriers to dental therapy in North Dakota include: the need to develop an educational program to train dental therapists; the cost of further education; provider buy-in; and the continued need for dental assistants in the state. Minnesota and Alaska both reported a challenge in finding staff capable of teaching in a program for dental therapy. North Dakota would not only likely face a similar challenge, but may compete with Minnesota for faculty. If North Dakota were to simply allow the practice of dental therapy without the addition of a training program, there would likely be no practicing A/DTs in the state, and/or, North Dakota would be in competition with Minnesota for their limited number of A/DT graduates.

Finally, while there is a need for a growth in oral health workforce to meet the needs of special populations in North Dakota, the most significant challenge reported by provider groups and nonprofit organizations is the need for dental assistants. The addition of a dental therapist would not address this need, and would likely leave hygienists to fill the dental assisting gap, requiring them to practice beneath their scope of work. However, the North Dakota Dental Hygienists Association has indicated that a majority of licensed hygienists in the state favor the development of a midlevel and would be interested in pursuing the certification if adopting an Advanced Dental Hygiene Practitioner program as opposed to Minnesota's A/DT program.

### **C3. North Dakota Area Health Education Center (AHEC) Dental Outreach Model**

The goal of the North Dakota AHEC Dental Outreach Model is to provide out of state dental students with clinical experiences in North Dakota prior to graduation. These clinical experiences would reinforce their knowledge of the principles of delivering dental health care, while providing needed dental services to a variety of patients in North Dakota; specifically, those who are underserved. Rotations may also take place in contemporary off-site clinical settings to expand the reach of the care provided. Such experiences may also enable students to participate in community dental health education, as well as dental career promotion and inter-professional education activities.

As the state does not have dental school, North Dakota relies on a return import of dental graduates to sustain the dental workforce; specifically, students from the regional schools of dentistry (University of Minnesota, Creighton University, University of Nebraska, University of Iowa and other institutions). Dental uneven distribution of workforce creates critical shortages in

rural, underserved and Native American communities and non-existent dental clinical rotation experiences challenges the opportunity to recruit the dental workforce.

The AHEC Dental Outreach Model would establish clinical sites in areas of high need in North Dakota, to include: North Dakota State College of Science; Northland Community Health Center; Quentin Burdick Health Center; and other FQHCs. Under this model, the AHEC would need to identify and contract with adjunct faculty and obtain financial support for the students that would participate in the four week dental clinical rotation. As it stands, the model proposes to accept two dental students a year over a four year pilot project.

Following a pilot, the model would then be partnered with efforts of the North Dakota Dental Association, the North Dakota Oral Health Coalition, the North Dakota Department of Health, and other appropriate partners for formalization. To build and sustain the program following pilot, it would require legislative approval as a state program. The pilot is proposed to be funded primarily through state grant and federal dollars.

#### **C4. Establish Dental Assisting Schools in Western North Dakota**

There is one entry-level dental program in North Dakota at the North Dakota State College of Sciences in Wahpeton, North Dakota. The program offers an Associate in Science degree for Dental Hygiene and a Dental Assisting Certificate; however, the program is limited to admitting only 26 dental hygiene students and 20 dental assisting students annually. Boarding states have 13 (Minnesota), 1 (South Dakota) and 2 (Montana) CODA-Accredited Dental Assisting Programs (Dental Assisting Nation Board, Inc., 2014).

While there is a dental assisting school in North Dakota, it is not located in the West where the need for DAs is the greatest. Some conversations have focused on not only adding new programs for certified DAs in the state, but offering the education online as well. This effort would require support from various entities, including those institutions already providing these programs, as well as funding to develop said programs, hire personnel, and support initial cost of developing said opportunity at each institution. Two existing universities in Bismarck, North Dakota have discussed this possibility.

#### **C5. Collaborate with Border Dental Schools for North Dakota Student “Spots” and In-State Rotations**

North and South Dakota do not have dental schools. The closest dental schools for North Dakota students are in Minnesota, Iowa, Nebraska, Wisconsin, and Illinois and include the following:

- University of Minnesota’s School of Dentistry, Minneapolis, MN
- University of Iowa College of Dentistry and Dental Clinics, Iowa City, IA
- Creighton University School of Dentistry, Omaha, NE
- University of Nebraska Medical Center College of Dentistry, Lincoln, NE

- Marquette University School of Dentistry, Milwaukee, WI
- University of Illinois at Chicago College of Dentistry, Chicago, IL
- Midwestern University College of Dental Medicine, Downers Grove, IL
- Southern Illinois University School of Dental Medicine, Alton, IL

(American Student Dental Association, 2014)

Only one border state provides a school of dentistry. In the last year 11 out of the 29 North Dakota applicants were eligible and were invited for interview last year at the University of Minnesota's School of Dentistry (UMN SOD). Two withdrew their applications before the interview; one was denied after the interview. Eight of those interviewed were offered admission, three declined; 5 accepted and matriculated. The rest of the applicants were not eligible due to low dental admission test (DAT) scores. Two who were denied in 2013, re-applied in 2014 and were offered admission.

The UMN SOD assures they will accept as many North Dakotans into the program as are eligible. However, they are unsure if they would reserve positions for North Dakota residents. In order to secure more spots for North Dakota applicants, applicants need to know what the UMN SOD is looking for and how to prepare and be more competitive. The UMN SOD holds monthly advising sessions for this purpose. This information is also available online.

One opportunity to encourage North Dakota students to prepare and apply to dental school includes participating in an advising session and tour of the UMN SOD. A pre-dental club from one of the North Dakota universities schedules an annual tour and advising session for the UMN SOD. Students from this pre-dental club are generally those who make it into the UMN SOD. The Dean suggests that both North Dakota Universities look to support pre-dental clubs and encourage they set up an advising session and a school tour annually for interested North Dakota applicants.

Another example of the current potential for partnering with schools to ensure more spots for North Dakota students and enticing dental graduates to practice in rural North Dakota is the UMN SOD's Early Decision Rural Dentistry Track Program. Dean Leon Assael and Chief Administrative Officer Jeff Ogden have each expressed their willingness to work and partner with the state of North Dakota offices and expand their rural track program to include North Dakota rural communities.

The program recruits dental students early on in college and sets them up with a faculty mentor who is practicing in a rural community. Students are required to be involved in their rural community during college summer breaks and satisfy GPA and DAT requirements. The UMN SOD just submitted a formal request to the Minnesota legislature for appropriated funds to support the program, including funds to support capital and operating costs, as well as bridge the gap created by the greater mix of the rural population covered through public programs, specifically addressing the difference between the cost of services provided and public program



coverage for specific procedures and reimbursement rates. Capital funds would go to support remodeling existing dental clinics to accommodate setting up six-chair dental clinics, working with a faculty member who manages the clinic, and ensuring that the clinic has a business manager and a team of dental hygienists. In return for the state's appropriated funds, their request outlined three benefits to the state of Minnesota:

1. The program benefits rural communities by taking over the states' role for being a support system for oral health in rural communities.
2. The program serves as an economic development tool, using appropriated funds to re-establish health care facilities in rural areas, attracting people and jobs and further strengthening the economic viability of the rural community.
3. The program serves as a dedicated pathway funneling dental graduates to serve the needs of rural communities.

For the aforementioned model to work in North Dakota, North Dakota would need to cooperate with the UMN SOD and establish dental clinics and faculty members in rural communities in-state. If the infrastructure and staffing were appropriate, North Dakota could then work with the UMN SOD Early Decision Rural Dentistry Track Program to recruit students to North Dakota.

Outside of the rural track program, a hurdle for North Dakota students interested in dentistry is the cost of education. Currently the UMN SOD charges out of state tuition to North Dakota dental students. This had not always been the arrangement, but the UMN noted that the reciprocity agreements with North Dakota and Manitoba had no benefit to Minnesota residents. Additionally, they were costing the UMN a significant amount in lost tuition dollars

In recent conversations with the UMN SOD's CAO Jeff Ogden, Mr. Ogden expressed interest in allowing North Dakota students to obtain reduced tuition rates in return for North Dakota's assistance in funding training sites for dental students participating in the rural track. As mentioned, this model would require North Dakota to provide funding to support dental rotations and staffing for rural dental clinics (existing and/or non).

While the example above highlights partner with Minnesota, this model proposes replicating such a relationship to encourage students enrolled in all schools of density to come to North Dakota to complete their dental rotations. State dollars could pay the cost of students completing rotations in the state.

## **D. ORAL HEALTH PREVENTION PROGRAMS**

### **D1. Water Fluoridation in Western North Dakota**

One of the possible preventive oral health solutions proposed by the participating organizations was to ensure that the newer communities in western North Dakota were receiving fluoridated water. While all participating members agreed that fluoridated water is imperative for prevention

of oral health caries, it was also noted that North Dakota does especially well with regard to fluoride exposure. Again, in North Dakota, the percent of the population served by fluoridated public water systems has remained relatively constant over time, from 96% in 1992 to 96% in 2006, to 97% in 2012 (Fluoride Action Network, 2012). In 2012, North Dakota ranked fifth in the United States for percentage of the population with fluoridated water; only Kentucky, Maryland, Illinois, and Minnesota ranked higher (CDC, 2012). For comparison, the percentage of the entire U.S. population with fluoridated water from a community water system (CWS) was 74.6% (CDC, 2012). Additionally, a representative of the fluoridated water program out of the Department of Health reported that the amount of fluoride in the drinking water in Western half of the state is naturally high. As a result of the aforementioned coverage, no stakeholder or input member felt that increasing fluoride exposure was a priority for the state.

## **D2. Case Management Model: The North Dakota Dental Association**

A model is currently being considered and proposed by the North Dakota Dental Association that enables registered dental assistants and hygienists, employed by a collaborative dental office, to provide oral health assessments, fluoride varnish applications and case management for high-risk dental patients in community settings. If employed, the model would address preventive services among high-risk populations, would connect special populations to dental homes when possible, and would provide oral health literacy.

Community settings could include pre-schools, elementary schools, medical settings, or long term care facilities. These dental professionals would identify high-risk patients and link them with a dental home. Case management, whereby families and patients are educated, motivated, and followed for referral for definitive treatment in a dental home, has been shown to be an effective way to reduce barriers to care for Medicaid recipients (Silverman, Douglass & Graham, 2013). Connection to the dental home ensures that children and high-risk adults will have access to comprehensive care as well as maximum exposure to preventive services. The proposed model would depend on reimbursement to the collaborative dental offices for outreach services with the hope, over time, to demonstrate lower caries rates, linkage to dental homes, and lower costs to Medicaid and other third parties for this population.

This outreach model would be investigated in North Dakota by a study designed and managed by the American Academy of Pediatric Dentistry (AAPD). The AAPD would develop the criteria for service reimbursement to collaborative dentists and would provide the training necessary for effective case management among both dental assistants and dental hygienists. The regulatory infrastructure to allow this model has been recently affirmed by the North Dakota Board of Dental Examiners. This also includes the ability of dental assistants to assist hygienists for sealant placement. It is expected that grant funding would not only fund the administrative costs of the study but also reimburse the collaborative dental offices for the outreach services. The pilot is set to take place in a rural dental office with higher Medicaid population, a CHC, FQHC, and/or pediatric dental practice with high Medicaid. If the model proves successful in meeting its

goals, Medicaid programs and other third-party reimbursement sources will be better able to make evidenced-based decisions regarding reimbursement for these services; specifically, case management. The North Dakota Dental Association reports that the model may be implemented in late 2014 or early 2015.

The following organizations in North Dakota have endorsed the concept of this study and its goals:

- North Dakota Dental Association
- North Dakota Dental Hygienists Association
- North Dakota Dental Assistants Association
- North Dakota Oral Health Coalition
- North Dakota Dental Foundation
- Blue Cross/Blue Shield of ND Dental Service Corporation
- North Dakota Board of Dental Examiners
- Oral Health Program-ND State Department of Health
- Bridging the Dental Gap, Inc.
- American Academy of Pediatrics-North Dakota Chapter
- Red River Valley Dental Access Project

(Holman, 2014)

### **D3. Integration of Oral Health and Primary Care**

The successful integration of oral health and primary care offers some immediate solutions to what the Surgeon General has referred to as a “silent epidemic”, namely the lack of dental services received by high risk sectors of the population characterized as having low levels of oral health literacy and facing significant barriers to oral health care. These include children, the elderly, the chronically ill, low-income, and the disabled and/or institutionalized. The goal is to facilitate change in the clinical practice of primary care practitioners in the safety-net setting by expanding the oral health clinical competency of primary care clinicians and improve access to early detection and preventive intervention. For example, most children are exposed to medical care but not dental care at an early age; thus, primary care medical providers have the opportunity to play an important role in helping children and their families gain access to dental care while providing preventive services.

Leading health insurers are establishing the business case for incenting better oral health access and care. A multi-year Michigan Blue Cross & Blue Shield study realized cost savings of approximately 10% annually for individuals with diabetes receiving periodontal care; cost reductions ranged from 20 to 40% for individuals with diabetes and at least one other chronic condition (Blue Cross & Blue Shield of Michigan, 2009). Other studies have estimated annual medical cost savings of \$2,840/person for individuals with diabetes receiving dental care and

cost savings ranging from \$1,090 to \$5,681 for patients with heart disease and stroke receiving dental care, respectively (Jeffcoat, Jeffcoat, Gladowski, Bramson & Blum, 2014).

Oral health has been successfully integrated into primary care in several community health centers throughout the U.S., including Neighborcare Health, Seattle Washington and the Marshfield Clinic in Wisconsin. Community health centers are in a better position to overcome the problems associated with the historical separation of medical and dental care because they are engaged in the delivery of both types of services. CMS is also working to ensure that oral health is included in Medicaid's medical home initiative and the Accountable Care Organization demonstration as required by the Affordable Care Act.

Among the challenges faced in implementing these new models are identifying successful models and establishing reimbursement mechanisms to support integrated oral health and primary care. In North Dakota, HB 1176 was passed in 2009 authorizing general supervision of licensed dental hygienists for procedures authorized in advance by a dentist. It would be possible to utilize the expanded scope of work to integrate oral health into a primary care setting.

## **VI. REPORT LIMITATIONS**

## **LIMITATIONS OF NEED REPORT AND PROPOSED MODELS**

The Center for Rural Health acknowledges that the policy process is complex and that many come to it with previous experience, relationships, and knowledge. While the CRH stakeholder process was inclusive, objective, and transparent, we cannot guarantee that the final stakeholder recommendations were based exclusively on the information shared and discussions had during stakeholder meetings. In fact, the stakeholders were selected because of their involvement in providing oral health care to the North Dakota population. Thus, while various groups with their points of view may have lobbied stakeholder group members, we are confident that the stakeholders had extensive experience with North Dakota's oral health issues frequently dealing with all involved groups. We appreciate stakeholder and input group member involvement in this project and respect their integrity.

Another limitation is the timeline in which this report was complete. Funded in late early June 2014, the report was to be developed along with stakeholder recommendations by the end of August; intent to inform the Health Services Interim Committee. In that period of time, the CRH worked to identify stakeholder and input members, completed research on the needs and proposed models, and facilitated five stakeholder meetings to develop the priorities for the state. While the stakeholders were well versed in oral health initiatives and various proposed models, a more generous timeline would have allowed for a more thorough review, understanding, and description of each proposed model. As a result, the CRH will continue to explore the proposed models, along with state oral health data, in an effort to continue to inform the oral health efforts of the state. Specifically, the CRH staff are currently reviewing dentist and dental hygienist workforce survey data and CMS utilization reports.

## **APPENDICES**

## APPENDIX A

### NORTH DAKOTA CENTER FOR RURAL HEALTH ORAL HEALTH REPORT DEVELOPMENT

Following is a brief outline of the process and steps taken by staff at the North Dakota Center for Rural Health in the development of the North Dakota Oral Health Report: Needs and Proposed Models, 2014.

#### Oral Health Stakeholder Working Group

- May 27, 2014: Invitation to Organizations identified for the North Dakota Stakeholder Working Group
- Five Stakeholder Working Group Meetings between June and July 2014; two in-person
  - Meeting one: Group discussion on oral health needs in North Dakota
  - Meeting two: Review of needs, presentations from North Dakota Input Group members, presentation from national content experts on potential models
  - Meeting three: Review of needs, presentations from North Dakota Input Group members, presentation from national content experts on potential models
  - Meeting four: Review of needs, presentations from North Dakota Input Group members, presentation from national content experts on potential models
  - Meeting five: Stakeholder discussion on potential models and final state recommendations
- Meeting minutes sent following each meeting to invite feedback
- Draft of North Dakota Oral Health Need Report sent to stakeholders for review
- List of Current North Dakota Oral Health Programs sent to group for review
- List of proposed models/best practices for North Dakota sent to group for review
- Preliminary survey of the participating stakeholders to identify recommendations for the state (See *Process for Identification of Recommendations* under Recommendations in chapter IV. Proposed *Models to Improve North Dakota Oral Health Status* for survey questions and results)
- Final stakeholder meeting activities to include voting for priority recommendations
- Final survey of stakeholders to rank recommendations/priorities
- Draft of Current North Dakota Oral Health Programs sent to group for review
- Draft of Proposed Models for North Dakota sent to group to review and to invite feedback
- Final recommendation of the group sent to participating members for review

#### Oral Health Input Group

- May 27, 2014: Invitation to Organizations identified for the North Dakota Oral Health Input Group



- Feedback solicited on three questions
  - (1) What are the unmet oral health needs in North Dakota, if any?; (2) If there are unmet needs, what solutions would you or your organization propose or support?; and (3) Is your organization currently working on any projects/initiatives to meet North Dakota oral health needs? If so, what is being done?
- Input organizations invited to present at stakeholder meetings based on their responses to the above questions. Presenting organizations included:
  - North Dakota Dental Hygienists' Association
  - North Dakota Dental Association
  - Bridging the Dental Gap
  - North Dakota Oral Health Coalition
  - North Dakota Public Health Association/Grand Forks Public Health
  - Valley Community Health Center
  - Practicing dentist from Western North Dakota (member of the NDDA)
- Input organizations contacted via phone or email to answer questions about specific programs and initiatives for the current program and proposed model report.
- Draft of North Dakota Oral Health Need Report sent to input members for review
- Draft of Current North Dakota Oral Health Programs sent to group for review
- Draft of Proposed Models for North Dakota sent to group to review and to invite feedback

### **Partners and Data Analysis**

- Contact with the North Dakota Department of Health State Epidemiologist
  - Provided recent data for need report
  - Developed collaborative relationship for dissemination and analysis of North Dakota Oral Health Workforce survey
  - DoH provided surveys of dental hygienists and dentists – CRH research team input and analyzed survey responses
- Contact with state Director of Medicaid
  - Provided recent data for need report
- Contact with Department of Health, Oral Health Program
  - Shared information on current programs
- Contact with the North Dakota Legislative Health Services Interim Committee
  - Share drafts
  - Inquire on data interests and educational opportunities for committee
- Secondary data analysis using existing statewide oral health reports and both state and national databases
- Data provided by the North Dakota Board of Dental Examiners
- Program report sent to various entities for review and input

## APPENDIX B

### NORTH DAKOTA RULES FOR DENTAL HYGIENE

Under the rules, a dental hygienist may perform 32 services under the general (or indirect or direct) supervision of a dentist.

1. Complete prophylaxis to include removal of accumulated matter, deposits, accretions, or stains from the natural and restored surfaces of exposed teeth. The dental hygienist may also do root planing and soft tissue curettage upon direct order of the dentist.
2. Polish and smooth existing restorations.
3. Apply topical applications of drugs to the surface tissues of the mouth and to exposed surfaces of the teeth, including anticariogenic agents and desensitizing solutions.
4. Take impressions for study casts.
5. Take and record preliminary medical and dental histories for interpretation by the dentist.
6. Take and record pulse, blood pressure, and temperature.
7. Provide oral hygiene treatment planning.
8. Take dental radiographs.
9. Apply therapeutic agents subgingivally for the treatment of periodontal disease.
10. Hold impression trays in the mouth after placement by a dentist (e.g., reversible hydrocolloids, rubber base, etc.).
11. Receive removable dental prosthesis for cleaning and repair.
12. Dry root canal with paper points.
13. Place and remove rubber dams.
14. Place and remove matrix bands or wedges.
15. Take occlusal bite registration for study casts.
16. Place retraction cord in the gingival sulcus of a prepared tooth prior to the dentist taking an impression of the tooth.
17. Fabricate, adjust, place, recement, or remove a temporary crown, bridge, onlay, or temporary restorative material. This applies only to dentitions actively under treatment for which a permanent restoration is being fabricated.
18. Adjust permanent crowns outside of the mouth.
19. Perform nonsurgical clinical and laboratory oral diagnostic tests for interpretation by the dentist.
20. Apply pit and fissure sealants. Adjust sealants with slow speed handpiece.
21. Place and remove periodontal dressings, dry socket medications, and packing.
22. Remove sutures.
23. Monitor a patient who has been inducted by a dentist into nitrous-oxide relative analgesia.
24. Take impressions for fixed or removable orthodontic appliances, athletic mouth guards, bleaching trays, bite splints, flippers, and removable prosthetic repairs.

25. Preselect and prefit orthodontic bands.
26. Place, tie, and remove ligature wires and elastic ties, and place orthodontic separators.
27. Place and remove arch wires or appliances that have been activated by a dentist.
28. Cut and remove arch wires or replace loose bands, loose brackets, or other orthodontic appliances for palliative treatment.
29. Acid-etch enamel surfaces prior to pit and fissure sealants, direct bonding of orthodontic brackets, or composite restorations.
30. Place orthodontic brackets using an indirect bonding technique by seating the transfer tray loaded with brackets previously positioned in the dental laboratory by a dentist.
31. Take face bow transfers.
32. Orally transmit a prescription that has been authorized by the supervising dentist.

N.D. Admin. Code § 20-04-01-01.

## APPENDIX C

### NORTH DAKOTA RULES FOR DENTAL ASSISTING

The rules include a list of 33 specific duties with the following specified limitations:

*A dental assistant* may perform nos. 1-6 under *direct* supervision of a dentist.

*A qualified dental assistant* may perform nos. 1-7 under *direct* supervision of a dentist.

*A registered dental assistant* may perform nos. 1-24 under *indirect* supervision of a dentist.

*A registered dental assistant* may perform nos. 25-31 under *direct* supervision of a dentist.

*A registered dental assistant* may perform nos. 32-33 under *general* supervision of a dentist.

1. Take and record pulse, blood pressure, and temperature.
2. Take and record preliminary dental and medical history for the interpretation by the dentist.
3. Apply topical medications and drugs to oral tissues, including topical anesthetic, but not including desensitizing or caustic agents or anticariogenic agents.
4. Receive removable dental prosthesis for cleaning or repair.
5. Take impressions for study casts.
6. Hold impression trays in the mouth (e.g., reversible hydrocolloids, rubber base).
7. Take dental radiographs.
8. Apply anticariogenic agents topically.
9. Apply desensitizing solutions to the external surfaces of the teeth.
10. Dry root canal with paper points.
11. Place and remove rubber dams.
12. Take occlusal bite registration for study casts.
13. Place retraction cord in the gingival sulcus of a prepared tooth prior to the dentist taking an impression of the tooth.
14. Remove excess cement from inlays, crowns, bridges, and orthodontic appliances with hand instruments only.
15. Perform nonsurgical clinical and laboratory oral diagnosis tests, including pulp testing, for interpretation by the dentist.
16. Apply pit and fissure sealants if the registered dental assistant has provided documentation of a board-approved sealant course. Adjust sealants with slow-speed handpiece.
17. Polish the coronal surfaces of the teeth with a rubber cup or brush only after necessary scaling by a hygienist or dentist.
18. Polish restorations.
19. Place and remove periodontal dressings, dry socket medications, and packing.
20. Remove sutures.
21. Monitor a patient who has been inducted by a dentist into nitrous-oxide relative analgesia.

22. Take impressions for fixed or removable orthodontic appliances, athletic mouth guards, bleaching trays, bite splints, flippers, and removable prosthetic repairs.
23. Preselect and prefit orthodontic bands.
24. Place, tie, and remove ligature wires and elastic ties, and place orthodontic separators.
25. Place and remove arch wires or appliances that have been activated by a dentist.
26. Acid-etch enamel surfaces prior to direct bonding of orthodontic brackets or composite restorations.
27. Place orthodontic brackets using an indirect bonding technique by seating the transfer tray loaded with brackets previously positioned in the dental laboratory by a licensed dentist.
28. Take face bow transfers.
29. Place and remove matrix bands and wedges.
30. Adjust permanent crowns outside of the mouth.
31. Orally transmit a prescription that has been authorized by the supervising dentist.
32. Fabricate, adjust, place, recement, or remove a temporary crown, bridge, or onlay or temporary restorative material. This applies only to dentitions actively under treatment for which a permanent restoration is being fabricated.
33. Cut and remove arch wires or replace loose bands, loose brackets, or other orthodontic appliances for palliative treatment.

N.D. Admin. Code § 20-03-01-01.

## APPENDIX D

### SUPERVISION RULES

#### Rules for Dental Hygienists and Registered Dental Assistants in North Dakota

General Supervision		Indirect Supervision		Direct Supervision		PROCEDURE
RDH						
RDH			RDA			Polish and smooth existing restorations.
RDH			RDA			Polish the coronal surfaces of teeth with a rubber cup or brush only after necessary scaling by a RDH or DDS
RDH			RDA	QDA	DA	Apply topical medications and drugs to oral tissues, including topical anesthetic, but not including desensitizing or caustic agents or anticariogenic agents.
RDH			RDA			Apply anticariogenic agents topically.
RDH			RDA			Apply desensitizing solutions to the external surfaces of the teeth
RDH			RDA	QDA	DA	Take impressions for study casts.
RDH			RDA	QDA	DA	Take and record preliminary medical and dental histories for the interpretation by the dentist.
RDH			RDA	QDA	DA	Take and record pulse, blood pressure, and temperature.
RDH						Provide oral hygiene treatment planning.
RDH			RDA	QDA		Take dental radiographs.
RDH						Apply therapeutic agents subgingivally for the treatment of periodontal disease.
RDH			RDA	QDA	DA	Hold impression trays in the mouth after placement by a dentist (e.g. reversible hydrocolloids, rubber base, etc.).
RDH			RDA	QDA	DA	Receive removable dental prosthesis for cleaning and repair.
RDH			RDA			Dry root canal with paper points
RDH			RDA			Place and remove rubber dams.
RDH				RDA		Place and remove matrix bands or wedges.
RDH			RDA			Take occlusal bite registration for study casts.
RDH			RDA			Place retraction cord in the gingival sulcus of a prepared tooth prior to the dentist taking an impression of the tooth.
RDH	RDA					Fabricate, adjust, place, recement, or remove a temporary crown, bridge, onlay, or temporary restorative material. This applies only to dentitions actively under treatment for which a permanent restoration is being fabricated.
RDH				RDA		Adjust permanent crowns outside of the mouth.
RDH			RDA			Remove excess cement from inlays, crowns, bridges, and orthodontic appliances with hand instruments only.
RDH			RDA			Perform non-surgical clinical and laboratory oral diagnostic tests, including pulp testing, for interpretation by the dentist.

General Supervision		Indirect Supervision		Direct Supervision		PROCEDURE
RDH			RDA			
RDH			RDA			Remove sutures.
RDH			RDA			Monitor a patient who has been inducted by a dentist into nitrous-oxide relative analgesia.
				RDH		Administer local anesthesia under the direct supervision of a dentist if criteria in section 20-04-01-03 are met.
RDH			RDA			Take impressions for fixed or removable orthodontic appliances, athletic mouth guards, bleaching trays, bite splints, flippers, and removable prosthetic repairs.
RDH			RDA			Preselect and prefit orthodontic bands
RDH			RDA			Place, tie, and remove ligature wires and elastic ties, and place orthodontic separators.
RDH					RDA	Place and remove arch wires or appliances that have been activated by the dentist.
RDH	RDA					Cut and remove arch wires or replace loose bands, loose brackets or other orthodontic appliances for palliative treatment.
RDH					RDA	Place ortho brackets using an indirect bonding technique by seating the transfer tray loaded with brackets previously positioned by the DDS; acid-etch enamel surfaces prior to direct bonding of orthodontic brackets, or composite restorations.
RDH					RDA	Place orthodontic brackets using an indirect bonding technique by seating the transfer tray loaded with brackets previously positioned in the dental laboratory by a licensed dentist.
RDH					RDA	Take face bow transfers.
RDH			RDA			Apply pit and fissure sealants if criteria set out in 20-03-01-04 of the ND Administrative Rules are met. Adjust sealants with slow speed handpiece.

N.D. Admin. Code §§ 20-03-01 and 20-04-01; N.D. Cen. Code §43-20-03

## APPENDIX E

### PERMITTED FUNCTIONS AND SUPERVISIONS LEVELS BY STATE

**Key:**

**D** Direct Supervision Levels; dentist needs to be present

**G** General Supervision Levels; dentist needs to authorize prior to services, but need not be present

**A** Direct Access Supervision Levels; hygienist can provide services as s/he determines appropriate without specific authorization

Two letters denote separate supervision levels depending on setting Private/ Public

1. Rules pending

2. Upon direct order

3. On patients 18 years or older

4. Public health supervision applies to fluoride varnish only.

5. Participating in remote supervision pilot program

Footnotes apply to both settings if applicable

**Disclaimer: Information based on staff research. This document should not be considered a legal document.**

## Dental Hygiene Practice Act Overview: Permitted Functions and Supervision Levels by State

FUNCTION	AL	AK	AZ	AR	CA	CO	CT	DE	DC	FL	GA	HI	ID	IL	IN	IA	KS
Prophylaxis	D	G/A	G/A	G/A <sup>1</sup>	G/A	A	G/A	G	G	G/A	D	D/G	G	G	D/G	G/A	G/A
X-Rays	D	G/A	G/A	G	G/A	A	G/A	G	G	G		D/G	G	G	D/G	G/A	G
Local Anesthesia		G/A	D	D	D	G	D		D	D		D	G	D	D	D	D
Topical Anesthesia	D	G/A	G/A		G/A	A	G/A	G	G	G	D	D/G	G	G	D	G/A	G/A
Fluoride	D	G/A	G/A	G/A <sup>1</sup>	G/A	A	G/A	G	G	G/A <sup>4</sup>	D	D/G	G	G	D/G	G/A	G/A
Pit/ Fissure Sealants	D	G/A	G/A	G/A <sup>1</sup>	G/A	A	G/A	G	G	G/A	D	D/G	G	G	D	G/A	G
Root Planing	D	G/A	G	D	G/A	G	G/A	G	G	D	D	D/G	G	G	D	G/A	G
Soft Tissue Curettage	D	G	G	D	D	G		G	G	D	D	D/G		G			G
Administer N2O		D	D	D	D	D			D				D	D		D	G
Study Cast Impressions	D	G	G	G	G/A	A	G/A	G	G	D	D	D/G	D	G	D	G	G
Place Perio Dressings	D	G	D		G/A	G	G/A	G	D	G	D	D/G			D	G	G
Remove Perio Dressings	D	G	D		G/A	G	G/A	G	D	G	D	D/G	G	G	D	G	G
Place Sutures			D									D/G					
Remove Sutures	D	G	G		G/A	G	G/A	G	D	G	D	D/G	G	G	D	G	G
Dental Hygiene Diagnosis						A	G										
Treatment Planning					G/A	A										G	G/A
Dental Hygiene Assessment																	
Prescriptive Authority																	



## Dental Hygiene Practice Act Overview: Permitted Functions and Supervision Levels by State

FUNCTION	KY	LA	ME	MD	MA	MI	MN	MS	MO	MT	NE	NV	NH	NJ	NM	NY	NC
Prophylaxis	G/A	D/G	G/A	G	G/A	G/A	G/A	D	G/A	G/A	G/A	G/A	G/A	D/G	G/A	G	D/G
X-Rays	G	D/G	G	G	G/A	G/A	G/A	D	G	G/A	G	G/A	G	D/G	G/A	G	D/G
Local Anesthesia	D	D	D	D	D	D	G		D	D	D	D/G	D	D	D/G	D	
Topical Anesthesia	D	D/G	G/A	G	G/A	G/A	G		G	G/A	G	G/A	G	D	D	G	D/G
Fluoride	G/A	D/G	G/A	G	G/A	G/A	G/A	D/G <sup>4</sup>	G/A	G/A	G/A	G/A	G/A	D/G	G/A	G	D/G
Pit/ Fissure Sealants	G/A	D/G	G/A	G	G/A	G/A	G/A	D	G/A	G/A	G/A	G/A	G/A	D/G	G	G	
Root Planing	G/A	D	G/A	G	G/A	G/A	G/A	D	G	G/A	G	G/A	G/A	D/G	G	G	D/G
Soft Tissue Curettage			G/A	G		D	G	D	G	G/A	G	G/A			G		
Administer N2O	D	D <sup>1</sup>				D	G	D	D			D/G	D	D		D	
Study Cast Impressions	G	D	G/A	G	G/A	G/A	G		G	G	G	G/A	G	D	G	D	D/G
Place Perio Dressings	G	D	D	G	G/A	G/A	G		G	G	G	G/A		D		D	
Remove Perio Dressings	G	D	G/A	G	G/A	G/A	G		D	G	G	G/A	G	D	G	D	D/G
Place Sutures																	
Remove Sutures	G	D	G/A	G	G/A	G/A	G		G	G	G	G/A	G	D		D	D/G
Dental Hygiene Diagnosis																	
Treatment Planning												G/A					
Dental Hygiene Assessment																	
Prescriptive Authority															G/A		

## Dental Hygiene Practice Act Overview: Permitted Functions and Supervision Levels by State

FUNCTION	ND	OH	OK	OR	PA	RI	SC	SD	TN	TX	UT	VT	VA	WA	WV	WI	WY
Prophylaxis	G	G/A	G	G/A	G/A	G/A	G	G	G	G/A	G	G/A	G/A <sup>5</sup>	G/A	G/A	G/A	G
X-Rays	G	G	G	G/A	G/A	G/A	G	G	G	G/A	G	G/A	G	G	G	G	G
Local Anesthesia	D	D	D	G	D	D	D	D	D		D	D	D <sup>3</sup>	D	D	D	D
Topical Anesthesia	G	G	G	G/A	G/G	G/A	D	G	G	G/A	G	G/A	G	G	G	G	G
Fluoride	G	G/A	G	G/A	G/G	G/A	G	G	G	G/A	G	G/A	G/A <sup>5</sup>	G/A	A	G	G
Pit/ Fissure Sealants	G	G/A	G	G/A	G/A	G/A	D/G	G	G	G/A	G	G/A	G/A <sup>5</sup>	G/A	G	G/A	D
Root Planing	G <sup>2</sup>	G	G	G/A	G/A	G/A	D/G	G	D	G/A	G	G/A	G	G/A	G	G/A	G
Soft Tissue Curettage	G <sup>2</sup>	D	G	G/A				G	D		G			D/A			
Administer N2O		D	D	D		D		D	D		D		D <sup>3</sup>	D			D
Study Cast Impressions	G	G	G	G/A	D	D	D		D	G/A	G	G	G	G	G	G	G
Place Perio Dressings	G	G	G	G/A		D				G/A	G	G	G	D	D	D	D
Remove Perio Dressings	G	G	G	G/A		D	D		D	G/A	G	G	G	D	D	D	D
Place Sutures																	
Remove Sutures	G	D	G	G/A	D	D	D		D	G/A	G	G	G	D	D	D	G
Dental Hygiene Diagnosis				A													
Treatment Planning	G			A													
Dental Hygiene Assessment																	
Prescriptive Authority				G/A													

(American Dental Hygienists' Association (ADHA), 2013a)

## APPENDIX F

### ENTITIES PARTICIPATING IN THE DEVELOPMENT OF THE REPORT

#### North Dakota Oral Health Stakeholder Working Group

The Stakeholder working group consisted of entities in the state that served populations in need of oral health care. It was the task of the stakeholders to provide information regarding oral health access issues and possible solutions. The stakeholders met for five working group meetings to hear presentations on oral health and to work to identify potential models to meet the oral health needs of North Dakotans. The organizations represented included:

- Blue Cross Blue Shield of North Dakota (Private Insurer)
- Chamber of Commerce/Statewide Vision and Strategy Committee
- Community Healthcare Association of the Dakotas
- Developmental Homes
- Family HealthCare
- Family Voices of North Dakota
- Fargo Public Schools
- Long Term Care Association of North Dakota
- North Dakota American Association of Retired Persons
- North Dakota Association of Community Providers
- North Dakota Department of Health, Oral Health Program
- North Dakota Disabilities Advocacy Consortium
- North Dakota Head Start Association
- North Dakota Indian Affairs Commission
- Sanford Bismarck Emergency and Trauma Center
- Third Street Clinic

#### North Dakota Oral Health Input Group

The North Dakota Oral Health Input Group consisted of entities in the state that worked in or with oral health, to include provider organizations. Twenty-five entities and/or organizations were asked to provide input. Input group members were asked to share their knowledge regarding oral health access, workforce, and models. Those invited included:

- American Academy of Pediatrics, North Dakota Chapter
- American College of Emergency Physicians, North Dakota Chapter
- Blue Cross Blue Shield of North Dakota
- Bridging the Dental Gap\*
- Cankdeska Cikana Community College (Tribal College)
- Consensus Council
- Grand Forks Public Health Department\*
- Kalix
- North Dakota Academy of General Dentistry

- North Dakota Association of Counties
- North Dakota Dental Assistants Association
- North Dakota Dental Association\*\*
- North Dakota Dental Hygienists' Association\*
- North Dakota Department of Health, Health Equity Office
- North Dakota Department of Health
- North Dakota Department of Human Services
- North Dakota Department of Public Instruction
- North Dakota Health Information Network
- North Dakota Hospital Association
- North Dakota Oral Health Coalition\*
- North Dakota Public Health Association\*
- North Dakota Board of Dental Examiners
- North Dakota State College of Science
- North Dakota State Council on Developmental Disabilities
- North Dakota Women and Infants and Children (WIC)
- Valley Community Health Center\*

\* Spoke at a Stakeholder Meeting

### **National Content Experts**

During the Stakeholder Working Group identification and development of oral health best practices and models for North Dakota, four national experts were invited to speak to models that have worked in their respective states. Following is the list of content experts that addressed potential oral health models:

- Children's Dental Services; Sarah Wovcha, Executive Director
- University of Minnesota School of Dentistry; Dr. Leon Assael, Dean
- Dental Health Aide Therapist Educational Program, Alaska; Dr. Mary Williard, Director
- Apple Tree Dental; Dr. Michael Helgeson, CEO

## APPENDIX G

### NORTH DAKOTA PUBLIC HEALTH ASSOCIATION: ORAL HEALTH RESOLUTION

#### Access to Oral Health Care

Whereas, oral health is an important part of overall health and well-being throughout life and dental caries (tooth decay) is the single most common chronic childhood disease; and

Whereas, the US Surgeon General's Report on Oral Health, states that tooth decay, although preventable, is a chronic disease impacting children's ability to learn, speech development, eating habits, activities and self-esteem; and

Whereas, among adults, diet, nutrition, sleep, psychological status, social interaction and career achievement are affected by impaired oral health. Acute dental conditions contribute to a range of problems for employed adults, including restricted activity, sick days and work loss; and

Whereas, dental disease is not uniformly distributed in North Dakota:

- Minority children have more untreated tooth decay and urgent dental needs
- Native American children experienced more dental caries (81% vs. 49%) than whites and also had more untreated dental decay (39% vs. 17%).
- Children in rural areas have more untreated tooth decay compared to children in urban areas (28% vs. 17%)
- Children in schools with high rates of poverty were more than twice as likely to have untreated tooth decay (32% vs. 15%)
- In 2011, only 28.6 percent of North Dakota children on Medicaid age 1-20 received preventive dental services and only 15.2 percent received any dental treatment services
- More than one-fourth (29%) of ND adults had not visited the dentist within the past year and nearly one-fifth (19%) of adults age 65 and older had lost their natural teeth due to tooth decay or gum disease

Whereas, oral health care is not universally available for all populations in North Dakota and many individuals, including older adults, populations of lower socioeconomic status, racial, cultural or linguistic minorities, migrant workers, people with special health care needs, rural populations, homeless individuals and very young children; and

Whereas, numerous barriers exist that prevent access to oral health care, including:

- Lack of knowledge,
- Cultural values and beliefs,
- Inability to take time off from work,
- Lack of transportation and dental insurance

- Lack of available providers, providers that accept Medicaid insurance, public health programs and community health centers that provide dental services,
- Underutilization and underfunding of federal and state oral health programs, and
- A state dental practice act that restricts scope and practice for allied dental health professionals; and

Whereas, more than one-fourth of North Dakota Counties are designated as Dental Health Professional Shortage Areas (HPSAs); and

Whereas, all individuals should have access to needed oral health prevention and treatment services,

**Therefore, be it resolved that the North Dakota Public Health Association supports policy efforts to:**

- **Build an effective health infrastructure that meets the oral health needs of all North Dakotans and integrates oral health effectively into overall health.**
- **Remove known barriers between people and oral health services**
- Promote medical dental collaboration to improve oral health.
- Expand the scope of practice to allow dental professionals to practice to the full extent of their education and training.
- Develop and implement new innovative workforce models and effective programs to expand access to oral health services that can reduce disparities.
- Adequately fund public programs to allow equitable access to services.

**References:**

Surgeon General’s Report on Oral Health 2000. <http://www.surgeongeneral.gov/library/reports/>.

North Dakota Oral Health Program, <http://www.ndhealth.gov/oralhealth/>.

Oral Health in North Dakota Burden of Disease and Plan for the Future 2012 – 2017, [http://www.ndhealth.gov/oralhealth/Publications/2012-2017\\_Oral\\_Health\\_State\\_Plan.pdf](http://www.ndhealth.gov/oralhealth/Publications/2012-2017_Oral_Health_State_Plan.pdf).

ND Area Health Education Center <http://www.ndahec.org/>.

Health Resources and Services Administration. State Health Professions Shortage Areas <http://hpsafind.hrsa.gov/HPSASearch.aspx>.

## APPENDIX H

### NORTH DAKOTA ORAL HEALTH COALITION MEMBERSHIP LIST

#### The North Dakota Oral Health Coalition Membership

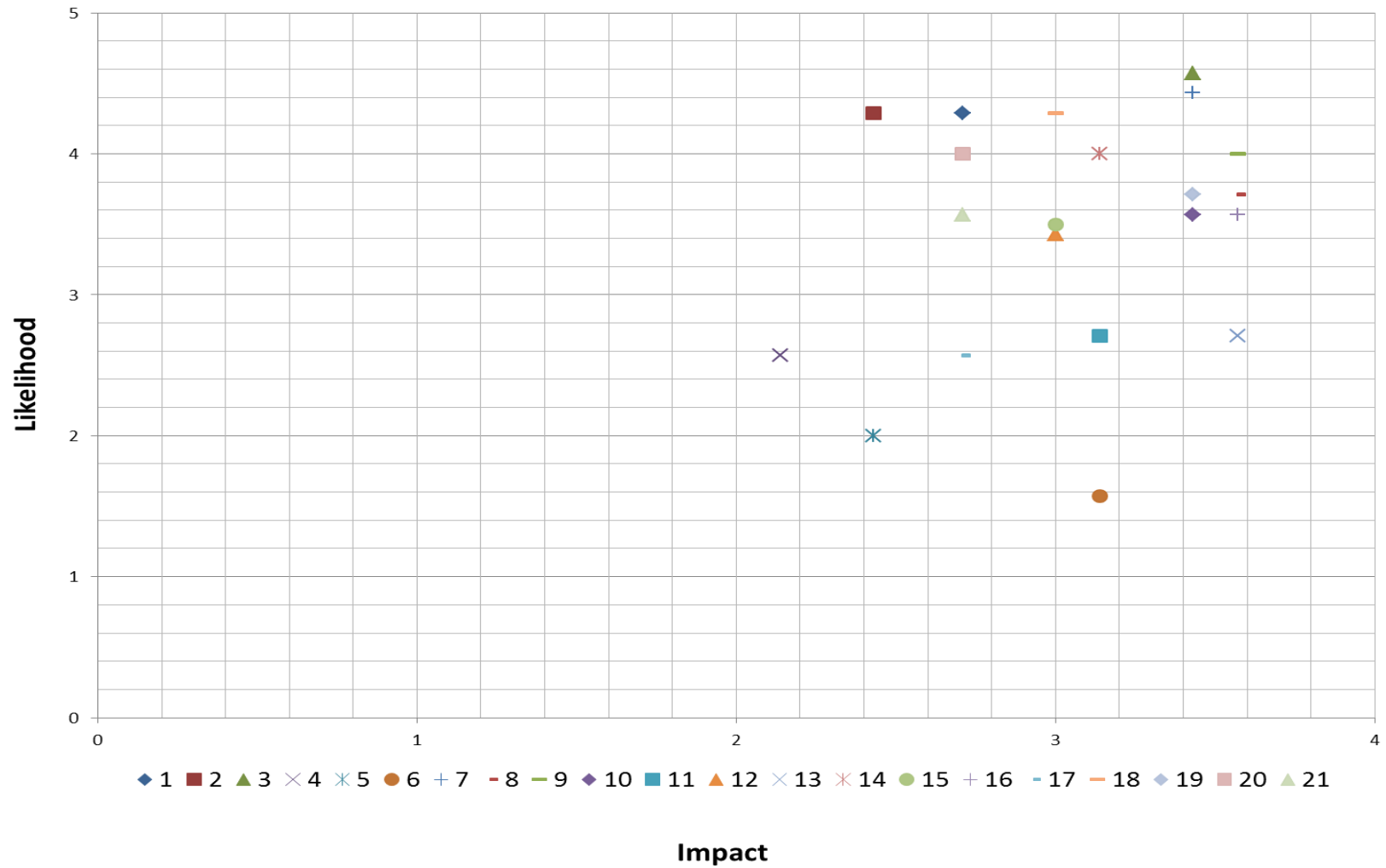
- + Allied Dental Education, North Dakota State College of Science
- + Bismarck-Burleigh Public Health
- + Bismarck Early Childhood Education Program
- + Bridging the Dental Gap, Inc.
- + Center for Rural Health, University of North Dakota, School of Medicine and Health Sciences
- + Child and Adolescent Health Services, North Dakota Department of Health
- + Community Action Region VI Head Start
- + Community Health Care Association of the Dakotas
- + Comprehensive Cancer Program, North Dakota Department of Health
- + Custer District Health Unit
- + Dakota Medical Foundation
- + Dacotah Foundation
- + Diabetes Program, North Dakota Department of Health
- + Division of Children's Special Health Services, North Dakota Department of Health
- + Early Explorers Early Head Start
- + Fraser Ltd.
- + Grand Forks County Social Services
- + Grand Forks Public Health Department
- + Head Start State Collaboration Office, North Dakota Department of Human Services
- + Health Tracks Program, North Dakota Department of Human Services
- + Healthy North Dakota
- + KAT Productions
- + Medcenter One
- + Medicaid Program, North Dakota Department of Human Services
- + North Dakota American Academy of Pediatrics
- + North Dakota Chapter, American Academy of Pediatrics
- + North Dakota Community Action Association
- + North Dakota Dental Assistants' Association
- + North Dakota Dental Association
- + North Dakota Dental Hygienists' Association
- + North Dakota Long Term Care Association
- + North Dakota Medical Association
- + Northern Valley Dental Health Coalition
- + Northland Community Health Center
- + Oral Health Program, North Dakota Department of Health
- + Office of Community Assistance, North Dakota Department of Health
- + Office of Senator Kent Conrad
- + Ransom County Public Health
- + Red River Valley Dental Access Program
- + Ronald McDonald House
- + Southwestern District Health Unit
- + Tobacco Prevention and Control Program, North Dakota Department of Health
- + Upper Missouri District Health Unit
- + Valley Community Health Center
- + West River Head Start

The coalition also has many individual members dedicated to improving oral health in North Dakota.



## APPENDIX I

### LIKELIHOOD AND IMPACT OF THE 21 PROPOSED ORAL HEALTH MODELS: NORTH DAKOTA ORAL HEALTH STAKEHOLDER PERSPECTIVES, 2014



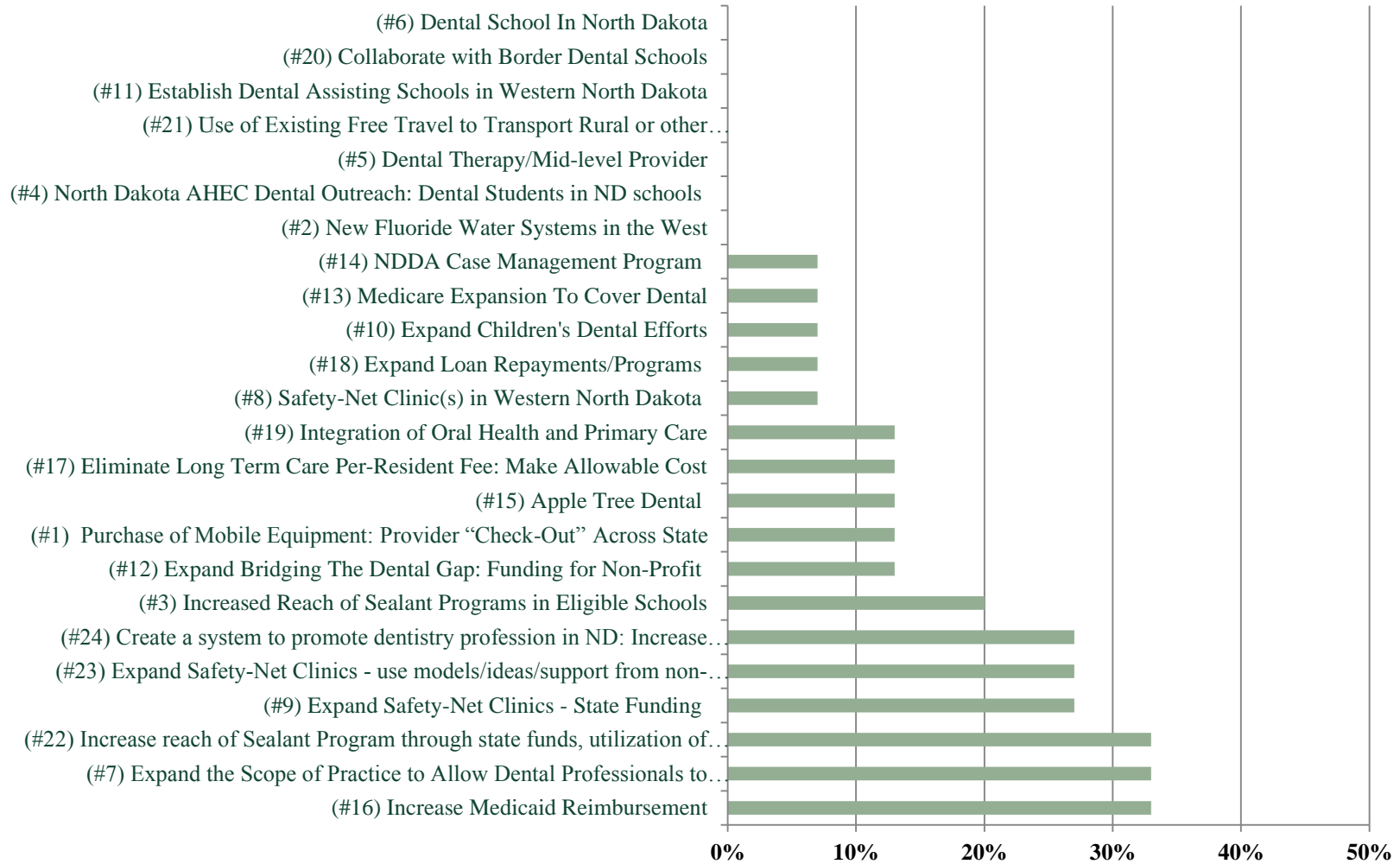


## **North Dakota Oral Health Proposed Model Legend**

1. Purchase of Mobile Equipment: Provider “Check-Out” Across State
2. New Fluoride Water Systems in the West
3. Increased Reach of Sealant Programs in Eligible Schools
4. North Dakota AHEC Dental Outreach: Dental Students in ND schools
5. Dental Therapy/Midlevel Provider
6. Dental School In North Dakota
7. Expand the Scope of Practice and Allow Dental Professionals to Practice to the Full Extent of their Training
8. Safety-Net Clinic(s) in Western North Dakota
9. Expand Safety-Net Clinics – State Funding
10. Expand Children’s Dental Efforts
11. Establish Dental Assisting Schools in Western North Dakota
12. Expand Bridging the Dental Gap: Funding for Nonprofit
13. Medicare Expansion to Cover Dental
14. NDDA Case Management Program
15. Apple Tree Dental
16. Increase Medicaid Reimbursement
17. Eliminate Long Term Care Per-Resident Fee: Make Allowable Cost
18. Expand Loan Repayments/Programs
19. Integration of Oral Health and Primary Care
20. Collaborate with Border Dental Schools for Student Spots: Require Students to Return to North Dakota
21. Use of Existing Free Travel to Transport Rural or other Geographically Challenged Individuals to Current Dental Practices

## APPENDIX J

### PERCENT OF STAKEHOLDERS INDICATING EACH MODEL AS ONE OF THEIR TOP THREE PRIORITIES, 2014



## Ordered List of Models as Presented in Final Survey and Discussion

1. Purchase of Mobile Equipment: Provider “Check-Out” Across State
2. New Fluoride Water Systems in the West
3. Increased Reach of Sealant Programs in Eligible Schools (see Model 22)
4. North Dakota AHEC Dental Outreach: Dental Students in ND schools (see Model 24)
5. Dental Therapy/Mid-level Provider
6. Dental School In North Dakota
7. Expand the Scope of Practice and Allow Dental Professionals to Practice to the Full Extent of their Training
8. Safety-Net Clinic(s) in Western North Dakota (see Model 23)
9. Expand Safety-Net Clinics – State Funding (see Model 23)
10. Expand Children’s Dental Efforts (see Model 23)
11. Establish Dental Assisting Schools in Western North Dakota
12. Expand Bridging The Dental Gap: Funding for Non-Profit (see Model 23)
13. Medicare Expansion To Cover Dental
14. NDDA Case Management Program (see Model 22)
15. Apple Tree Dental (see Model 23)
16. Increase Medicaid Reimbursement
17. Eliminate Long Term Care Per-Resident Fee: Make Allowable Cost
18. Expand Loan Repayments/Programs (see Model 24)
19. Integration of Oral Health and Primary Care
20. Collaborate with Border Dental Schools for Student Spots: Require Students to Return to ND (see Model 24)
21. Use of Existing Free Travel to Transport Rural or other Geographically Challenged Individuals to Current Dental Practices
22. Increase reach of Sealant Program through state funds, utilization of dental hygienists current scope of practice, and work to incorporate the Case Management Model by training the DHs to complete case assessments and dental home recommendations. Also requires developing case management as an allowable cost and working to ensure reimbursement for sealants to make it a sustainable program.
23. Expand Safety-Net Clinics - use models/ideas/support from non-profits like Apple Tree and/or Children's Dental to strengthen hub-and-spoke model of safety-net care in the state
24. Create a system to promote dentistry profession in ND: Increase dental loans, consolidate the loan programs, and work with out of state dental schools to reserve spots/in-state tuition and develop externships/rotations in ND

## REFERENCES

- Academy of General Dentistry. (2014). Dental assistant duties and functions. Retrieved from: [http://www.agd.org/media/129428/dental\\_asst.\\_duties\\_\\_danbupdates8\\_10\\_11\\_.pdf](http://www.agd.org/media/129428/dental_asst._duties__danbupdates8_10_11_.pdf).
- Advisory Panel, Community Catalyst. (2013). Recommended standards for dental therapy education programs in the United States. Retrieved from: <http://www.communitycatalyst.org/doc-store/publications/dental-therapy-education-standards.pdf>.
- American Academy of Pediatric Dentistry (AAPD). American Academy of Pediatric Dentistry Head Start Dental Home Initiative. Retrieved from: [http://www.tn.gov/education/early\\_learning/doc/HS\\_AADPD.pdf](http://www.tn.gov/education/early_learning/doc/HS_AADPD.pdf).
- American Dental Association (ADA). (2011). Expanded functions for dental assistants. *Department of State Government Affairs*. Retrieved from: <http://www.aapd.org/assets/1/7/StateLawsonDAs.pdf>.
- American Dental Education Association (ADEA). (2011). UCF plans to open dental school in 2014. *Bulletin of Dental Education*, 44(6). Retrieved from: [www.adea.org/BDEBlog.aspx?id=20507&blogid=27619](http://www.adea.org/BDEBlog.aspx?id=20507&blogid=27619).
- ADEA. (2012). List of all dental schools in the U.S. Retrieved from: [www.adea.org/publications/tde/documents/2012dentalschoolslist.pdf](http://www.adea.org/publications/tde/documents/2012dentalschoolslist.pdf).
- ADEA. (2014). U.S. and Canadian Dental Schools. Retrieved from [http://www.adea.org/dental\\_education\\_pathways/aadsas/Pages/PDS.aspx](http://www.adea.org/dental_education_pathways/aadsas/Pages/PDS.aspx).
- American Dental Hygienists' Association (ADHA). (2013a). Dental Hygiene Practice Act overview: Permitted functions and supervision levels by states. Retrieved from: [https://www.adha.org/resources-docs/7511\\_Permitted\\_Services\\_Supervision\\_Levels\\_by\\_State.pdf](https://www.adha.org/resources-docs/7511_Permitted_Services_Supervision_Levels_by_State.pdf).
- ADHA. (2013b). The Benefits of Dental Hygiene-Based Oral Health Provider Models. July. Retrieved from: [http://www.ncsl.org/documents/summit/summit2013/online-resources/ADHA\\_handout.pdf](http://www.ncsl.org/documents/summit/summit2013/online-resources/ADHA_handout.pdf).
- ADHA. (2013c). Entry-Level Dental Hygiene Programs. Retrieved from [http://www.adha.org/resources-docs/71617\\_Entry\\_Level\\_Schools\\_By\\_States.pdf](http://www.adha.org/resources-docs/71617_Entry_Level_Schools_By_States.pdf).
- ADHA. (2014). Direct access states. Retrieved from: <http://www.adha.org/direct-access>.
- American Student Dental Association. (2014). U.S. Dental Schools. Retrieved from: <http://www.asdanet.org/us-dental-schools.aspx>.
- American Student Dental Association. (Dental Student Debt). (2014). Retrieved from: <http://www.asdanet.org/debt.aspx>.
- Anderson, E.L. (2011). Expansion in dental education: New schools. *American Dental Education Association*. Retrieved from: <http://www.dentalboards.org/PDFS/2011MidYearPresentations.pdf>.

- Autio-Gold, J. (2007). Recommendations for fluoride varnish use in caries management. *Dentistry Today*. Retrieved from: <http://www.dentistrytoday.com/materials/1474>.
- Bailit, H. & D'Adamo. (2012). State case studies: Improving access to dental care for the underserved. *Journal of Public Health Dentistry*, 72(3). Retrieved from: <http://onlinelibrary.wiley.com/doi/10.1111/j.1752-7325.2012.00346.x/pdf>.
- Basic Screening Survey (BSS) for Children Attending Third-Grade. (2014). Data provided by the North Dakota Department of Health, Oral Health Program.
- Basic Screening Survey (BSS) for Older Adults. (2014). Data provided by the North Dakota Department of Health, Oral Health Program.
- Behavioral Risk Factor Surveillance System (BRFSS). (2013). Center for Disease Control and Prevention. <http://www.cdc.gov/brfss/>.
- Blue Cross & Blue Shield of Michigan. (2009). U of M study links good oral care to lower diabetes costs. *Dental Care News; A quarterly Publication for Dentists*, October.
- Borchgrevink, A., Snyder, A. & Gehshan, S. (2008). The effects of Medicaid reimbursement rates on access to dental care. *National Academy for State Health Policy*.
- Bridging the Dental Gap (Home). Retrieved from: <http://bridgingthedentalgap.com/>.
- Buchmueller, T., Orzol, S., Shore-Sheppard, L. (2013). The effect of Medicaid payment rates on access to dental care among children. *The National Bureau of Economic Research*, Working Paper No. 19218.
- Bureau of Labor Statistics, Data provided by. (2014).
- Byck, G., Cooksey, J. & Russinof, H. (2005). Safety-net dental clinics. *Journal of the American dental association*. 136(7), 1013-21.
- Byck, G.R., Russinof, H.J., and Cooksey, J.A. (2002). Safety net dental clinics in Illinois: Their role in oral health care. *Illinois Regional Health Workforce Center*. Retrieved from: <http://www.ihrp.uic.edu/files/Safety%20Net%20Dental%20Clinics%20in%20IL.pdf>.
- Center for Health Workforce Studies. (2012a). Interviews of oral health stakeholders in North Dakota.
- Center for Health Workforce Studies. (2012b). Oral health in North Dakota: A background report.
- Center for Healthcare Research & Transformation. (2013). Federally qualified health centers: An overview. Retrieved from: [http://www.chrt.org/assets/policy-papers/CHRT\\_Federally-Qualified-Health-Centers-An-Overview.pdf](http://www.chrt.org/assets/policy-papers/CHRT_Federally-Qualified-Health-Centers-An-Overview.pdf).
- Center for Rural Health. (2005). North Dakota Dentists Survey Results Health Profession Tracking Program. Retrieved from [www.med.und.edu/family-medicine/dentalreport3-05.pdf](http://www.med.und.edu/family-medicine/dentalreport3-05.pdf).
- Center for Rural Health. (2014). North Dakota Dental Health Professional Shortage Areas. Retrieved from: <http://www.med.und.edu/family-medicine/hpsadental.pdf>.

- Centers for Disease Control and Prevention (CDC). (2012). 2010 water fluoridation statistics. Retrieved from: <http://www.cdc.gov/fluoridation/statistics/2010stats.htm>.
- Children's Dental Health Project. (2014). Topics and resources. Retrieved from: <https://www.cdhp.org/resources/314-dental-sealants-proven-to-prevent-tooth-decay>.
- Children's Dental Services. (2004). Retrieved from: <http://www.childrensdentalservices.org/>.
- Commonwealth Fund, The. (2010). Alaska and Minnesota: Increasing access to dental care. *States in Action Newsletter (Archive), March/April Issue*. Retrieved from: <http://www.commonwealthfund.org/publications/newsletters/states-in-action/2010/mar/march-april-2010/snapshots/alaska-and-minnesota>.
- Creighton University School of Dentistry. (2014). Retrieved from: <https://www.creighton.edu/dentalschool/>.
- Dalrymple, J., Dwelle, T., Gallup-Millner, T., Muccatira, D. & Reed, G. (2013). Children with special health-care needs in North Dakota. *North Dakota Department of Health*.
- Dalrymple, J., Dwelle, T., Mertz, K., Yineman, K. & Reed, G. (2012). Burden of disease and plan for the future 2012-2017. North Dakota Department of Health. Retrieved from [http://www.ndhealth.gov/oralhealth/Publications/2012-2017\\_Oral\\_Health\\_State\\_Plan.pdf](http://www.ndhealth.gov/oralhealth/Publications/2012-2017_Oral_Health_State_Plan.pdf).
- Darnell, J.S. (2010). Free clinics in the United States: A nationwide survey. *Archives of Internal Medicine*, 170(11), 946-953.
- Decker, J. (2011) Medicaid payment levels to dentists and access to dental care among children and adolescents. *The Journal of the American Medical Association*, 306(2), 187-193.
- Delta Dental. (2014). Tobacco use and oral health. Retrieved from: [http://www.deltadentalins.com/oral\\_health/tobaccodw.html](http://www.deltadentalins.com/oral_health/tobaccodw.html).
- Dental Assisting Nation Board, Inc. (2014). CODA-Accredited dental assisting programs. Retrieved from: <http://www.danb.org/The-Dental-Community/Dental-Assistants/Dental-Assisting-Programs/CODA-Accredited-Dental-Assisting-Programs.aspx>.
- Dental Lifeline Network (About Us). (2014). Retrieved from: [dentallifeline.org/about-us/](http://dentallifeline.org/about-us/).
- Dental Lifeline Network: North Dakota. (2013). Join Dental Lifeline's Network of North Dakota DDS heroes. Retrieved from: [http://dentallifeline.org/assets/2012NorthDakotaAnnualReport\\_Web.pdf](http://dentallifeline.org/assets/2012NorthDakotaAnnualReport_Web.pdf).
- Families USA. (2008). Left behind: North Dakota's uninsured children. Retrieved from: <http://research.policyarchive.org/15440.pdf>.
- Family HealthCare. (Our Partners). (2014). Retrieved from: <http://famhealthcarefargo.org/about-2/our-partners/>.
- Family HealthCare. Retrieved from: <http://famhealthcarefargo.org/>.

- Family Voices of North Dakota. Understanding Medicaid and EPSDT/health tracks for children in North Dakota. PowerPoint Presentation. U.S. Department of Health & Human Services, *Centers for Medicare and Medicaid Services*. Retrieved from: [http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=9&ved=0CGkQFjAI&url=http%3A%2F%2Fwww.fv-ncfpp.org%2Ffiles%2F9113%2F0677%2F7140%2FUnderstanding\\_Medicaid\\_and\\_EPSDT\\_in\\_ND.ppt&ei=YHjEU6PEItOSyASdyoKQBA&usg=AFQjCNF7XN8uflt6k8\\_pNf9Ldn8qPGnatw&sig2=xBbL2vfhPViSNk-DFMcbEQ](http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=9&ved=0CGkQFjAI&url=http%3A%2F%2Fwww.fv-ncfpp.org%2Ffiles%2F9113%2F0677%2F7140%2FUnderstanding_Medicaid_and_EPSDT_in_ND.ppt&ei=YHjEU6PEItOSyASdyoKQBA&usg=AFQjCNF7XN8uflt6k8_pNf9Ldn8qPGnatw&sig2=xBbL2vfhPViSNk-DFMcbEQ).
- FindTheBest. (2014). Compare dental schools. Retrieved from: <http://dental-schools.findthebest.com/>.
- Fluoride Action Network. (2012). State fluoride database: North Dakota. Retrieved from: <http://fluoridealert.org/researchers/states/north-dakota/>.
- Fos, P. & Hutchison, L. (2010). The state of rural oral health. *Rural Healthy People*. Retrieved from: <http://sph.tamhsc.edu/centers/rhp2010/10Volume1oralhealth.pdf>.
- Head Start Program Information Report (PIR). (2011). Data Provided by North Dakota Department of Health, Oral Health Program. State Epidemiologist.
- Health Resources and Services Administration (HRSA). (2004). The professional practice environment of dental hygienists in the fifty states and the District of Columbia, 2001. Retrieved from: <http://bhpr.hrsa.gov/healthworkforce/reports/dentalhygiene50statesdc.pdf>.
- HRSA. (2014). Designated Dental Care Health Professional Shortage Areas. Retrieved from <http://bhpr.hrsa.gov/shortage/hpsas/updates/09012011dentalhpsas.html>.
- Hecke, S. (2012). Dental therapists: A promising practice for frontier communities. Report by the *National Center for Frontier Communities*.
- Holman, B., North Dakota Dental Association. (2014). Case management, testimony. *North Dakota Health Services Interim Committee, April*. Fargo, North Dakota.
- Impact Foundation. (2014). Red River Valley Dental Access project. Retrieved from: [http://www.impactgiveback.org/nonprofit\\_profile?id=a0EA0000005Wq0JMAS](http://www.impactgiveback.org/nonprofit_profile?id=a0EA0000005Wq0JMAS).
- InsureKidsNow.gov. (2014). Children's Health Coverage Programs in North Dakota. Retrieved from: <http://www.insurekidsnow.gov/state/northdakota/>.
- Jeffcoat, M., Jeffcoat, R., Gladowski, P., Bramson, J., & Blum, J.(2014). Impact of periodontal therapy on general health: Evidence from insurance data for five systemic conditions. *American Journal of Preventive Medicine*, 47(2), 166-174.
- Jones, A.S. & Sajid, P.S. (2009). A primer on health care safety nets. *Robert Wood Johnson Foundation*. Retrieved from: [www.rwjf.org/content/dam/farm/toolkits/toolkits/2009/rwjf50923](http://www.rwjf.org/content/dam/farm/toolkits/toolkits/2009/rwjf50923).
- Kaiser Family Foundation. (2014a). Dental Care Health Professional Shortage Areas. Retrieved from: <http://kff.org/other/state-indicator/dental-care-health-professional-shortage-areas-hpsas/>.

- Kaiser Family Foundation. (2014b). Medicaid Benefits: Dental Services. *State Health Facts*.  
<http://kff.org/medicaid/state-indicator/dental-services/>.
- Kaiser Family Foundation. (2014c). Number of children ever enrolled in the Children's Health Insurance Program (CHIP): North Dakota. Retrieved from: <http://kff.org/other/state-indicator/annual-chip-enrollment/>.
- Kaiser Family Foundation. (2014d). Number of federally-funded federally qualified health centers. Retrieved from: <http://kff.org/other/state-indicator/total-fqhcs/>.
- Kim, F.M. (2013). Economic viability of dental therapists. Prepared for *Community Catalyst*. Retrieved from: <http://www.communitycatalyst.org/doc-store/publications/economic-viability-dental-therapists.pdf>.
- Maffly, B. (2012). University of Utah trustees approve dental school. *Salt Lake Tribune*. April 11. Retrieved from: <http://www.sltrib.com/sltrib/news/53886792-78/dental-program-utah-students.html.csp>.
- Mertz, K., Director of the Division of Family Health for the North Dakota Department of Health. (2013). Testimony. *North Dakota Health Services Interim Committee, October*. North Dakota.
- Minnesota Board of Dentistry. (2009). Dental therapist scope of practice. Retrieved from: <http://www.dentalboard.state.mn.us/Portals/3/Licensing/Dental%20Therapist/DTSCOPE.pdf>.
- Minnesota Board of Dentistry. (2014). Early impacts of dental therapists in Minnesota. Retrieved from: <http://www.health.state.mn.us/divs/orhpc/workforce/dt/dtlegisrpt.pdf>.
- Minnesota Dental Hygienists' Association. (2013). Dental Hygiene Programs in Minnesota. Retrieved from: <http://www.mndha.com/schools.htm>.
- Minnesota Department of Health. (2010). Minnesota Dental Hygienists Facts and Data 2006-07. <http://www.health.state.mn.us/divs/orhpc/workforce/dh/dhwkfc06.html>.
- Moulton, P., Johnson, S. & Lang, T. (2010). 2010 Snapshot of North Dakota's health care workforce. *University of North Dakota School of Medicine & Health Sciences*.
- National Academy for State Health Policy (NASHP). (2012). North Dakota CHIP Fact Sheet. Retrieved from: <http://nashp.org/sites/default/files/CHIP/2012/NASHP-2012-North-Dakota-CHIP-Fact-Sheet.pdf?q=files/CHIP/2012/NASHP-2012-North-Dakota-CHIP-Fact-Sheet.pdf>.
- National Association of Community Health Centers (About Our Health Centers). Retrieved from: <http://www.nachc.com/about-our-health-centers.cfm>.
- National Center on Senior Transportation. (2012). Retrieved from: [www.seniortransportation.net](http://www.seniortransportation.net).
- National Maternal and Child Oral Health Resource Center. (2011). Safety net dental clinic manual. Retrieved from: <http://www.dentalclinicmanual.com/>.
- National Survey of Children's Health. (2014). Data provided by the North Dakota Department of Health, Oral Health Program.



North Dakota Board of Dental Examiners. (2013). Licensure Workforce Survey Results.

North Dakota Board of Dental Examiners. (2014). Licensure Data.

North Dakota Administrative Code (N.D. Admin. Code). § 20-01-02-01.

N.D. Admin. Code. §§ 20-02-01-01 to 20-02-01-10.

N.D. Admin. Code. §§ 20-03-01-01 to 20-03-01-06.

N.D. Admin. Code. §§ 20-04-01-01 to 20-04-01-08.

North Dakota Century Code (N. D. Cent. Code). §§ 43-20-01.1 to 43-20-12.

N.D. Cent. Code. §§ 43-28-01 to 48-28-18.

North Dakota Dental Association (NDDA) (Donated Dental Services in North Dakota). Retrieved from: <http://www.nddental.com/?id=47&page=Donated+Dental...Info>.

NDDA (Give Kids A Smile). Retrieved from: <http://www.nddental.com/?id=99>.

NDDA (ND Dental Loan Repayment Program). Retrieved from: <http://www.nddental.com/?id=35>.

NDDA. (Spring 2013). Standing Rock Pediatric Dental Days. *North Dakota Dental Association Newsletter*, 3(1), 12. Retrieved from: [http://www.nddental.com/image/cache/Spring\\_Newsletter.pdf](http://www.nddental.com/image/cache/Spring_Newsletter.pdf).

NDDA. (Winter 2013). Standing Rock Pediatric Dental Days. *North Dakota Dental Association Newsletter*, 3(3), 12. Retrieved from: [http://www.nddental.com/image/cache/Winter\\_Newsletter\\_2013.pdf](http://www.nddental.com/image/cache/Winter_Newsletter_2013.pdf).

North Dakota Dental Database. (2014). Provided by the North Dakota Department of Health.

North Dakota Dental Hygienists' Association (ND DHA). (2011). Dental Hygiene Fact Sheet. Retrieved from: <http://www.nddha.org/proissues.html>.

North Dakota Department of Health (ND DoH). (2005a). Children's Special Health Services. Retrieved from: <http://www.ndhealth.gov/cshs/>.

ND DoH. (2005b). Specialty Care Program. Retrieved from: <http://www.ndhealth.gov/cshs/program.htm>.

North Dakota Department of Health (ND DoH). (2005). Specialty Care Program. Retrieved from: <http://www.ndhealth.gov/cshs/program.htm>.

ND DoH. (2008). Head Start dental home initiative formed to address childhood tooth Decay: Press release. December, 15. Retrieved from: <http://www.ndhan.gov/data/mrNews/Dental%20initiative.pdf>.

ND DoH. (2014). Smiles for Life online training. Retrieved from: <http://www.ndhealth.gov/oralhealth/NDSmilesForLife.htm>.

ND DoH. Fluoride facts for parents. Retrieved from:  
[http://www.ndhealth.gov/oralhealth/Publications/Fluoride\\_Facts\\_Parents.pdf](http://www.ndhealth.gov/oralhealth/Publications/Fluoride_Facts_Parents.pdf).

ND DoH Oral Health Program. (2005). Retrieved from <http://www.ndhealth.gov/oralhealth/>.

ND DoH Oral Health Oral Health Program. (2010). Grant provides for additional dental care for children and the elderly. *Focus on Oral Health: A Newsletter for North Dakota's Oral Health Community, November*. Retrieved from:  
<http://www.ndhealth.gov/oralHealth/Publications/November2010.pdf>.

ND DoH Oral Health Program (2011). Oral health facts: Programs and services. Retrieved from:  
[http://www.ndhealth.gov/oralhealth/publications/Fact\\_Sheet\\_Programs.pdf](http://www.ndhealth.gov/oralhealth/publications/Fact_Sheet_Programs.pdf).

ND DoH Oral Health Program. (2013). Directory of dental access programs. Retrieved from:  
[http://www.ndhealth.gov/oralhealth/Publications/Fact\\_Sheet\\_Dental%20Access.pdf](http://www.ndhealth.gov/oralhealth/Publications/Fact_Sheet_Dental%20Access.pdf).

ND DoH. Oral Health Program. Retrieved from: <http://www.cdc.gov/HealthyYouth/yrbs/index.htm>.

ND DoH, Family Health Division. (2010). Dental public health activities & practices: Healthy Smiles Fluoride Varnish program. *Association of State and Territorial Dental Directories*. Retrieved from: <http://www.astdd.org/bestpractices/DES37002NDfluoridevarnish.pdf>

North Dakota Department of Human Services (ND DHS). (2010). Children's Health Insurance Program (CHIP): North Dakota Healthy Steps. Retrieved from:  
<http://www.nd.gov/dhs/services/medicalserv/chip/>.

ND DHS. North Dakota Health Tracks. Retrieved from:  
[http://www.state.nd.us/humanservices/policymanuals/medicaid-508/north\\_dakota\\_health\\_tracks.htm](http://www.state.nd.us/humanservices/policymanuals/medicaid-508/north_dakota_health_tracks.htm).

North Dakota Division of Vital Records. (2013). Oral and pharyngeal cancer deaths. North Dakota Department of Health.

North Dakota KIDS COUNT. (2011). Putting North Dakota's Children's Health Insurance Program (CHIP) in perspective. Retrieved from:  
[http://www.ndkidscount.org/publications/closeups/CHIPReport\\_Jan2011.pdf](http://www.ndkidscount.org/publications/closeups/CHIPReport_Jan2011.pdf).

North Dakota Legislative Branch. (2014a). Appendix F: North Dakota Community Health Centers: Outreach and Enrollment Funding and Activities. Retrieved from:  
[http://www.legis.nd.gov/files/committees/63-2013nma/appendices/15\\_5083\\_03000appendixf.pdf?20140818142458](http://www.legis.nd.gov/files/committees/63-2013nma/appendices/15_5083_03000appendixf.pdf?20140818142458).

North Dakota Legislative Branch. (2014b). Dentists' loan repayment program. *Chapter 43-28*. Retrieved from: <http://www.legis.nd.gov/cencode/t43c28-1.pdf?20140705194548>.

North Dakota Oral Health Coalition. (2013). Key accomplishments. Retrieved from:  
[http://www.ndhealth.gov/oralhealth/Coalition\\_3.pdf#page=1&zoom=auto,-13,798](http://www.ndhealth.gov/oralhealth/Coalition_3.pdf#page=1&zoom=auto,-13,798).

North Dakota Oral Health Coalition. (2014). Retrieved from:  
[http://www.ndhealth.gov/oralhealth/Coalition\\_1.pdf](http://www.ndhealth.gov/oralhealth/Coalition_1.pdf).

- North Dakota Oral Health Coalition. (2014). The North Dakota Oral Health Coalition Membership. Retrieved from : [http://www.ndhealth.gov/oralhealth/Coalition\\_2.pdf](http://www.ndhealth.gov/oralhealth/Coalition_2.pdf).
- North Dakota Public Health Association (NDPHA) (Welcome). (2011). Retrieved from: <https://www.ndpha.org/>.
- NDPHA. (2011). Legislation: Resolutions. Retrieved from: <https://www.ndpha.org/legislation/resolutions.asp>.
- NDPHA. (2014). Access to oral health care resolution. *Passed at the NDPHA Annual Meeting*. Grand Forks, North Dakota.
- North Dakota Senior Service Providers. (2012). Retrieved from: [www.ndseniorservice.org](http://www.ndseniorservice.org).
- North Dakota State College of Science (NDSCS). (2013). Give kids a smile day. Retrieved from: <https://www.ndscs.edu/academics/things-to-know-academics/academic-clusters-departments/allied-dental-education/give-kids-a-smile-event/>.
- Northland Community Health Center. (2013). Retrieved from: <http://www.northlandchc.org>.
- Olson, M. (2014). Nursing home outreach: Meeting the dental health needs for Bismarck/Mandan elderly. PowerPoint Presentation given at the *North Dakota Oral Health Stakeholder Working Group Meeting*. Bismarck, North Dakota.
- Oral Health Facts Summary. (2009). North Dakota Department of Health Oral Health Program at NDHealth.gov. Retrieved from <http://www.ndhealth.gov/oralhealth/Publications/Oral%20Health%20Facts%20Summary.pdf>.
- Palmer, C. (2014). Dental partnerships in Indian County outlined. *American Dental Association*. Retrieved from: <http://mobile.ada.org/news/9796.aspx>.
- Petersen, P.E. (2009). Oral cancer prevention and control – The approach of the World Health Organization. *Oral Oncology*, 45 (4-5): 454-460.
- Pew Center on the States. (2013a). Falling Short: Most States Lag on Dental Sealants. Retrieved from: [http://www.pewtrusts.org/~media/legacy/uploadedfiles/pcs\\_assets/2013/Pewdentalsealantsreportpdf.pdf](http://www.pewtrusts.org/~media/legacy/uploadedfiles/pcs_assets/2013/Pewdentalsealantsreportpdf.pdf).
- Pew Center on the States. (2013b). In search of dental care: Two types of dentist shortages limit children’s access to care. Retrieved from: [http://www.pewtrusts.org/~media/legacy/uploadedfiles/pcs\\_assets/2013/Insearchofdentalcarepdf.pdf](http://www.pewtrusts.org/~media/legacy/uploadedfiles/pcs_assets/2013/Insearchofdentalcarepdf.pdf).
- Pew Center on the States. (2014). Expanding the dental team: Increasing access to care in public settings. Retrieved from: [http://www.pewtrusts.org/~media/Assets/2014/06/27/Expanding\\_Dental\\_Case\\_Studies\\_Report.pdf](http://www.pewtrusts.org/~media/Assets/2014/06/27/Expanding_Dental_Case_Studies_Report.pdf).
- Red River Valley Dental Access Project (History). (2010). Retrieved from: [http://www.rrdentalaccess.com/index.php?option=com\\_content&view=article&id=46&Itemid=53](http://www.rrdentalaccess.com/index.php?option=com_content&view=article&id=46&Itemid=53).

- Red River Valley Dental Access Project (Home). (2010). Retrieved from:  
<http://www.rrdentalaccess.com/>.
- Red River Valley Dental Access Project. Urgent Care Walk-In Dental Clinic brochure. Retrieved from: [http://www.rrdentalaccess.com/images/stories/RRVDA\\_Brochure\\_kp.pdf](http://www.rrdentalaccess.com/images/stories/RRVDA_Brochure_kp.pdf).
- Robert Wood Johnson Foundation. (2014). County Health Rankings & Roadmaps: North Dakota Dentists. Retrieved from: <http://www.countyhealthrankings.org/app/north-dakota/2013/measure/factors/88/data?sort=sort-0>.
- Ronald McDonald Care Mobile of North Dakota (RMCMND). (2014). *Annual Report 2013*. Retrieved from: <http://rmhcbismarck.org/uploads%5Cresources%5C419%5Crmcm-annual-report-2013.pdf>.
- RMCMND. Site partner information. Retrieved from:  
<http://www.rmhcbismarck.org/uploads%5Cresources%5C399%5Csite-partner-information.pdf>.
- Ronald McDonald House Charities Bismarck (Care Mobile). (2014). Retrieved from:  
<http://rmhcbismarck.org/caremobile/>.
- Rural Assistance Center (RAC). (2014). Healthy Smiles, Healthy Children Access to Care Grants. Retrieved from: <http://www.raconline.org/funding/2629>.
- Seefeldt, J., Oral Health Prevention Coordinator at the North Dakota Oral Health Program. (2014). Personal communication, August 14.
- Silverman, J. (2012). Spirit Lake Pediatric Dental Day. *Pediatric Dentistry Today*. Retrieved from: <http://www.pediatricdentistrytoday.org/2012/March/XLVIII/2/news/article/39/>.
- Silverman, J., Douglass, J. & Graham, L. (2013). The use of case management to improve dental health in high risk populations. *Pediatric Oral Health Research & Policy Center, American Academy of Pediatric Dentistry*, June. Retrieved from:  
<http://www.aapd.org/assets/1/7/POHRPC-TR3-2013-Final.1.pdf>.
- Smiles for Life: A national oral health curriculum. Retrieved from:  
<http://www.smilesforlifeoralhealth.org/buildcontent.aspx?tut=555&pagekey=62948&cbreceipt=0>.
- Staff Report. (2014). Area safety net clinics receive state funding. *The Gainesville Sun*. Retrieved from:  
<http://www.gainesville.com/article/20140609/ARTICLES/140609634/1002/news01?Title=Area-safety-net-clinics-receive-state-funding>.
- The Oral Cancer Foundation. (2014). Risk Factors. Retrieved from:  
[http://www.oralcancerfoundation.org/cdc/cdc\\_chapter3.htm](http://www.oralcancerfoundation.org/cdc/cdc_chapter3.htm).
- Third Street Clinic (About, Mission Statement). (2012). Retrieved from:  
<http://thirdstreetclinic.org/about/mission-statement/>.
- Third Street Clinic (Eligibility Requirements). Retrieved from:  
<http://thirdstreetclinic.org/services/eligibility-requirements>.

- United States Department of Health and Human Services (US DHHS). (2009). Fact Sheet: Federally qualified health center. Retrieved from:  
<http://www.aha.org/content/11/09AprilFQHCfactsheet.pdf>.
- US DHHS Centers for Medicare & Medicaid Services (CMS). (2012). Form CMS-416: Annual EPSDT participation report.
- US DHHS CMS. (2013). Federally qualified health centers: Rural health fact sheet series. *Medicare Learning Network*. Retrieved from: <http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/fqhcfactsheet.pdf>.
- US DHHS CMS. (2014). Medicaid Claims data: North Dakota oral health indicators. Provided by the North Dakota Department of Health and Human Services.
- United States Department of Health and Human Services (US DHHS) National Health Service Corps. SLRP eligibility requirements. Retrieved from:  
<http://nhsc.hrsa.gov/currentmembers/stateloanrepaymentprogram/eligibility/index.html> .
- United States Environmental Protection Agency (EPA). (2013). Basic Information about fluoride in drinking water: Review of Fluoride drinking water standard. Retrieved from:  
<http://water.epa.gov/drink/contaminants/basicinformation/fluoride.cfm#six>.
- University of Minnesota. (2013). Dentistry: For Alumni of the School of Dentistry. *Fall*. Retrieved from:  
[http://www.dentistry.umn.edu/prod/groups/sod/@pub/@sod/documents/content/sod\\_content\\_466027.pdf](http://www.dentistry.umn.edu/prod/groups/sod/@pub/@sod/documents/content/sod_content_466027.pdf).
- University of Minnesota. (2014). School of Dentistry: Dental Therapy. Retrieved from:  
<http://www.dentistry.umn.edu/programs-admissions/dental-therapy/index.htm>.
- University of North Dakota School of Medicine & Health Sciences. (2014). North Dakota Dental State Loan Repayment Program. Retrieved from: <http://www.med.und.edu/family-medicine/dental-state-program.pdf>.
- Warnakulasuriya, S., Dietrich, T., Bornstein, M., Peidro, E., Preshaw, P., Walter, C., Wennstrom, J., Bergstrom, J. (2010). Oral health risks of tobacco use and effects of cessation. *International Dental Journal*, 60, p.7-30.
- WebMd. (2014). Smoking and Oral Health. Retrieved from: <http://www.webmd.com/oral-health/guide/smoking-oral-health>.
- Western Interstate Commission for Higher Education (WICHE). (2013). North Dakota & WICHE: Working together for three decades. Retrieved from: <http://www.wiche.edu/nd>.
- Williard, M. (2014). Dental health aide therapist (DHAT). PowerPoint Presentation given at the *North Dakota Oral Health Stakeholder Working Group Meeting*. Grand Forks, North Dakota.
- Wovcha, S. (2014). Community based care models and workforce initiatives. PowerPoint Presentation given at the *North Dakota Oral Health Stakeholder Working Group Meeting*. Bismarck, North Dakota.

Yineman, K., Director of the North Dakota Oral Health Program. (2014). Personal communication, July 8.

Youth Risk Behavior Surveillance. (2013). Center for Disease Control and Prevention. <http://www.cdc.gov/HealthyYouth/yrbs/index.htm>.

- 
- <sup>i</sup> Basic Screening Survey (BSS) for Children Attending Third-Grade. (2014). Data provided by the North Dakota Department of Health, Oral Health Program.
- <sup>ii</sup> Basic Screening Survey (BSS) for Children Attending Third-Grade. (2014). Data provided by the North Dakota Department of Health, Oral Health Program.
- <sup>iii</sup> US DHHS CMS. (2014). Medicaid Claims data: North Dakota oral health indicators. Provided by the North Dakota Department of Health and Human Services.
- <sup>iv</sup> North Dakota Board of Dental Examiners. (2013). Licensure Workforce Survey Results.
- <sup>v</sup> US DHHS CMS. (2014). Medicaid Claims data: North Dakota oral health indicators. Provided by the North Dakota Department of Health and Human Services.
- <sup>vi</sup> United States Department of Health and Human Services (US DHHS) Centers for Medicare & Medicaid Services (CMS). (2014). Medicaid Claims data: North Dakota oral health indicators. Provided by the North Dakota Department of Health and Human Services.
- <sup>vii</sup> Behavioral Risk Factor Surveillance System (BRFSS). (2013). Center for Disease Control and Prevention. <http://www.cdc.gov/brfss/>.
- <sup>viii</sup> Basic Screening Survey (BSS) for Older Adults. (2014). Data provided by the North Dakota Department of Health, Oral Health Program.
- <sup>ix</sup> North Dakota Board of Dental Examiners. (2014). Licensure Data.
- <sup>x</sup> Robert Wood Johnson Foundation. (2014). County Health Rankings & Roadmaps: North Dakota Dentists. Retrieved from: <http://www.countyhealthrankings.org/app/north-dakota/2013/measure/factors/88/data?sort=sort-0>.
- <sup>xi</sup> North Dakota Board of Dental Examiners. (2013). Licensure Workforce Survey Results.
- <sup>xii</sup> Head Start Program Information Report (PIR). (2011). Data Provided by North Dakota Department of Health, Oral Health Program. State Epidemiologist.
- <sup>xiii</sup> Basic Screening Survey (BSS) for Children Attending Third-Grade. (2014). Data provided by the North Dakota Department of Health, Oral Health Program.