Access to Oral Health Care in Nebraska

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SUMMARY

Oral health contributes to overall health; therefore, it is important to understand the level of access to oral health care in Nebraska. Our analysis of the most recently available data in Nebraska on access to oral health care and on the oral health workforce indicates that in 2010, 68.4% of Nebraskans aged 18 years and older visited a dentist within the past year. The total number of dentists practicing in Nebraska in 2012 was 1,028, compared to 1,017 in 2008; however, the number of dentists per 100,000 population decreased by 2.85% between 2008 and 2012, and the number of dentists older than 60 years increased by 39.29%, raising concerns about the retiring dental workforce. Also, in 2012, 53.6% of dentists practicing in Nebraska were practicing part-time, and only 39.2% practiced in rural areas. Twenty Nebraska counties were without a dentist in 2012. The State of Nebraska designates 44 counties as general dentistry shortage areas, and the Health Resources and Services Administration designates 72 dental Health Professional Shortage Areas in Nebraska. To meet the oral health objectives outlined in Healthy People 2020 and to provide services to the additional children who will have dental coverage under the Affordable Care Act, access to care and dental workforce needs in Nebraska will require the attention of both policymakers and providers.

Introduction

According to an oral health report by the US Surgeon General, oral health cannot be differentiated from general health and is essential for well-being. Proper oral health care implies not only having clean teeth but also early detection of nutritional diseases and more general diseases such as microbial infections, immune disorders, and oral cancer. Improper oral care can lead to dental problems like pain or loss of teeth, or might give rise to infection or even cancer, which can be fatal.[1] There is evidence of a link between oral health and general health. For example, severe periodontal disease is associated with diabetes, and some general diseases increase the risk of oral disease, which in turn becomes a risk factor for many other diseases.[2] Moreover, these dental problems or their treatment are responsible for 164 million work hours lost and 51 million school hours lost.[3] In the United States in 2010, 69.6% of the population visited a dentist, dental hygienist, or dental clinic in the past year.[4] In 2012, the number of professionally active dentists in the United States per 100,000 people was 62.4.[5,6] A report by the American Dental Association (ADA) estimates that 5% more children will have dental coverage by 2018 as a result of implementation of the Affordable Care Act's provision to include pediatric dental care as an essential benefit of health insurance.[7] There is no current information on the status of access to oral health care in Nebraska. Therefore, this report assesses Nebraskans' access to oral health care and analyzes the trends and characteristics of Nebraska's dental workforce.

Data Sources

We obtained data for access to oral health care from the Behavioral Risk Factor Surveillance System (BRFFS) for the state of Nebraska for the years 2008 and 2010.[4] Our indicators were date of last visit to a dental clinic and number of adults who have had 1 or more permanent teeth extracted. We used workforce survey data for 2008-2012 from the Health Professions Tracking Service (HPTS) at the University of Nebraska Medical Center to assess the supply of the dental workforce.[8] Annually, the HPTS surveys individual dentists who have previously reported a practice location in Nebraska, who are newly licensed in Nebraska, or who have a Nebraska address but

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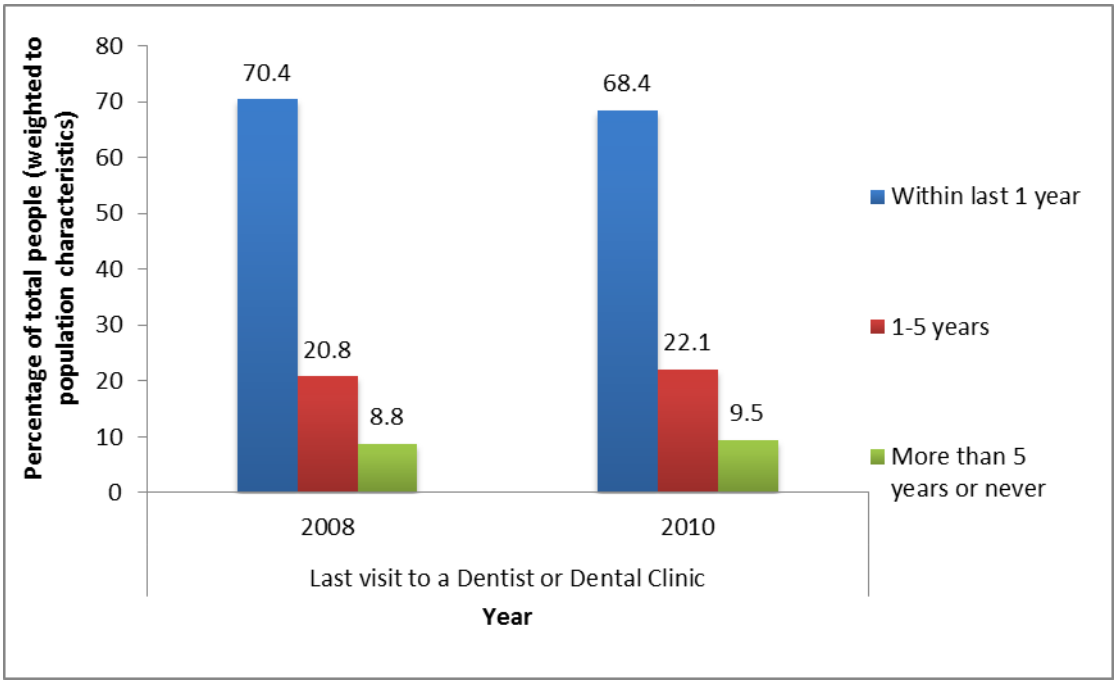
whose practice information is unknown. Data from 2008 to 2012 was used to assess trends and distribution of dentists based on gender, age, employment status, self-reported primary specialty, and primary practice location in Nebraska. Data from 2012 was used to assess the employment settings, self-reported primary specialty, and age distribution based on rural/urban practice locations. Change in the demographic characteristics of the dentists from 2008 to 2012 was calculated. We used the USDA Business and Industry Loan Program definition of urban and rural counties, which classifies Douglas, Lancaster, and Sarpy counties as urban counties and all other Nebraska counties as rural counties. Dentists employed in a federal institution were excluded from the study. Population data for Nebraska for 2008-2011 and a projected population estimate for 2012 was obtained from the US Census Bureau.[6] Dentists who reported their primary specialty as general dentistry were classified as general dentistry practitioners; others were classified as specialist dentists. We compared our data on the supply of dentists with data from the American Dental Association for 2012.[5] A map of the state-designated shortage areas for general dentistry was obtained from the Nebraska Department of Health and Human Services' Office of Rural Health website.[9] Data on enrollment of people in private dental plans was obtained from the National Association of Dental Plans.[10]

Results

Exhibit 1 shows that in Nebraska, 70.4% of people in 2008 and 68.4% of people in 2010 had a dental visit during the past year. Approximately 8.8% of people in 2008 and 9.5% of people in 2010 had a dental visit more than 5 years ago or never. These percentages are weighted to population characteristics.

Exhibit 1. Time Since Last Visit to a Dentist or Dental Clinic, Nebraska 2008 and 2010

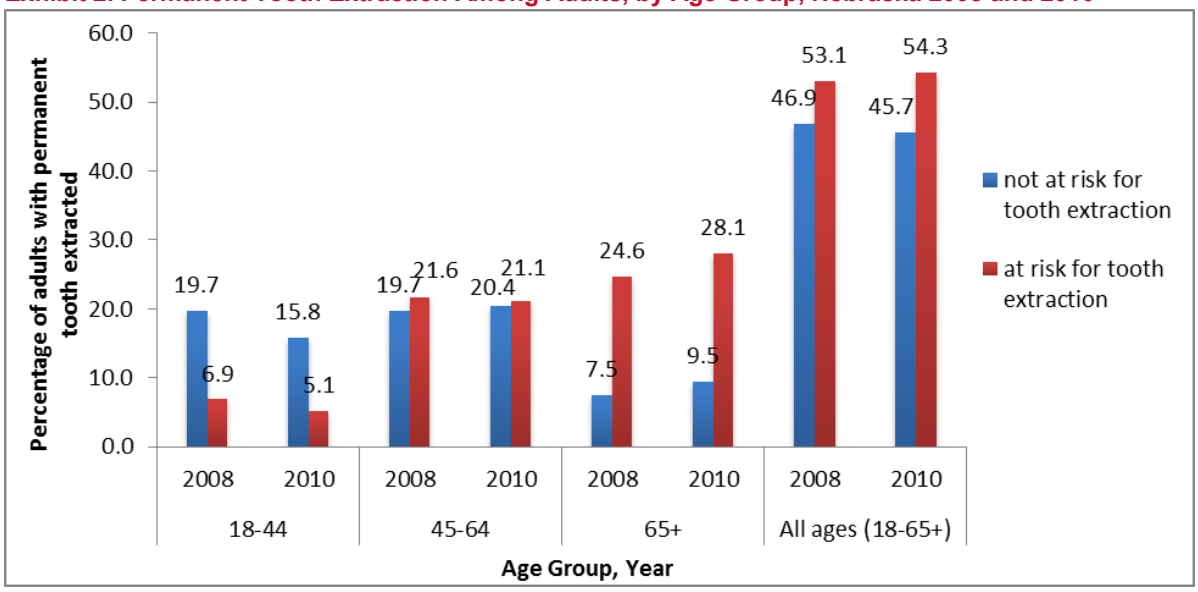


Data Source: Nebraska Behavioral Risk Factor Surveillance System, 2008 and 2010.

Exhibit 2 shows that in Nebraska, 53.1% of people in 2008 and 54.3% of people in 2010 were at risk of permanent tooth extraction due to dental decay or gum disease. A higher percentage of people in the 65+ years age group were at risk of tooth extraction, and a lower percentage of people in the 18-44 years age group were at risk of tooth extraction in both 2008 and 2010.

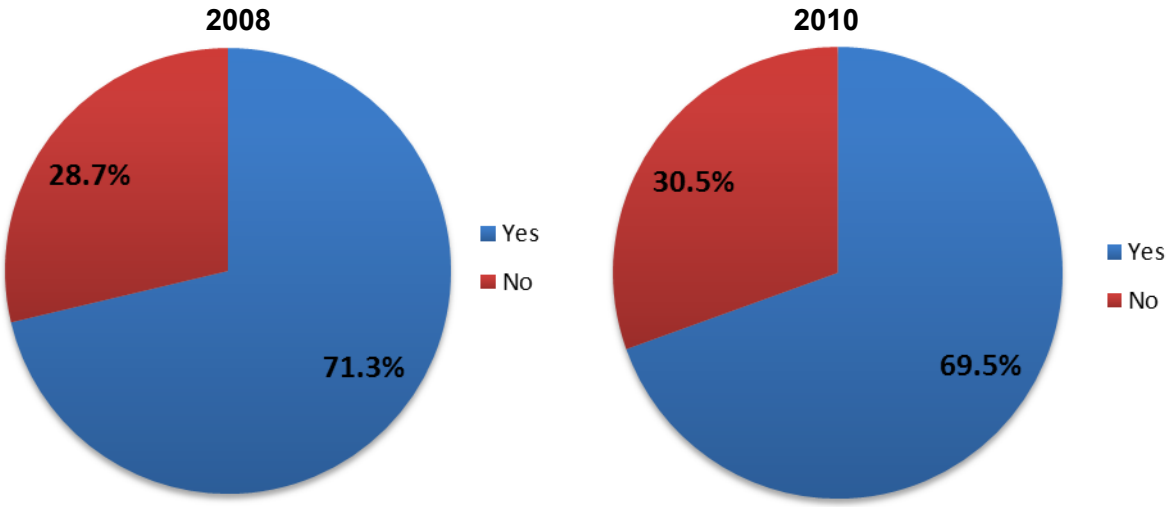
Exhibit 3 shows that in Nebraska, the percentage of adults who have visited a dentist, dental hygienist, or dental clinic within the past year decreased from 71.3% in 2008 to 69.5% in 2010.

Exhibit 2. Permanent Tooth Extraction Among Adults, by Age Group, Nebraska 2008 and 2010



Data Source: Nebraska Behavioral Risk Factor Surveillance System, 2008 and 2010.

Exhibit 3. Percentage of Adults Who Visited a Dentist, Dental Hygienist, or Dental Clinic within the Past Year, Nebraska 2008 and 2010

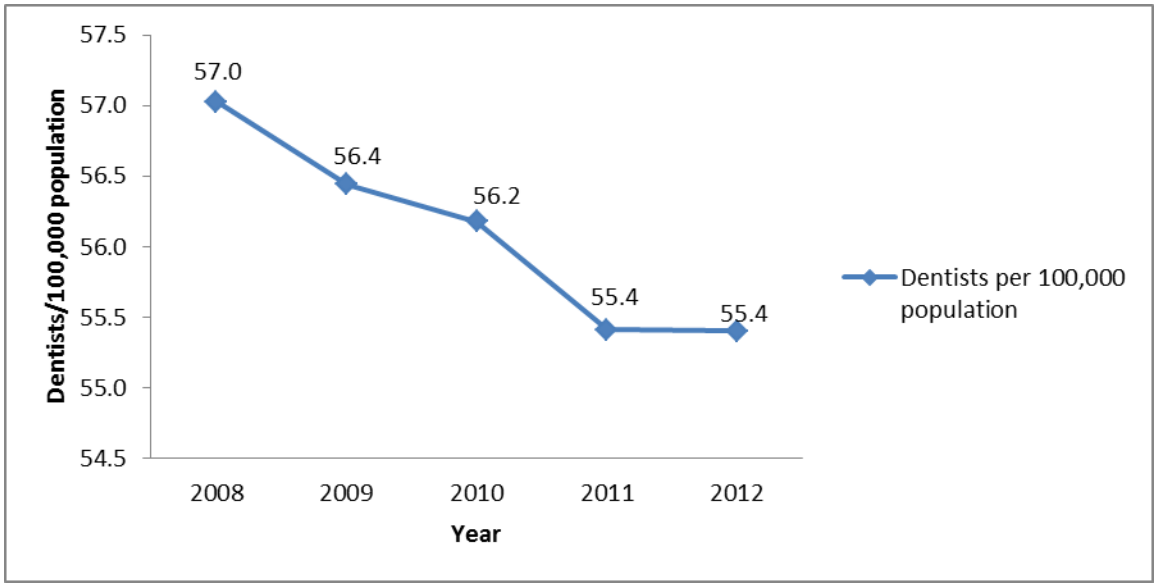


Data Source: Nebraska Behavioral Risk Factor Surveillance System, 2008 and 2010.

Exhibit 4 shows a steady decline in the number of dentists per 100,000 population in Nebraska. Between 2008 and 2012, the number of dentists per 100,000 population decreased by 2.85%.

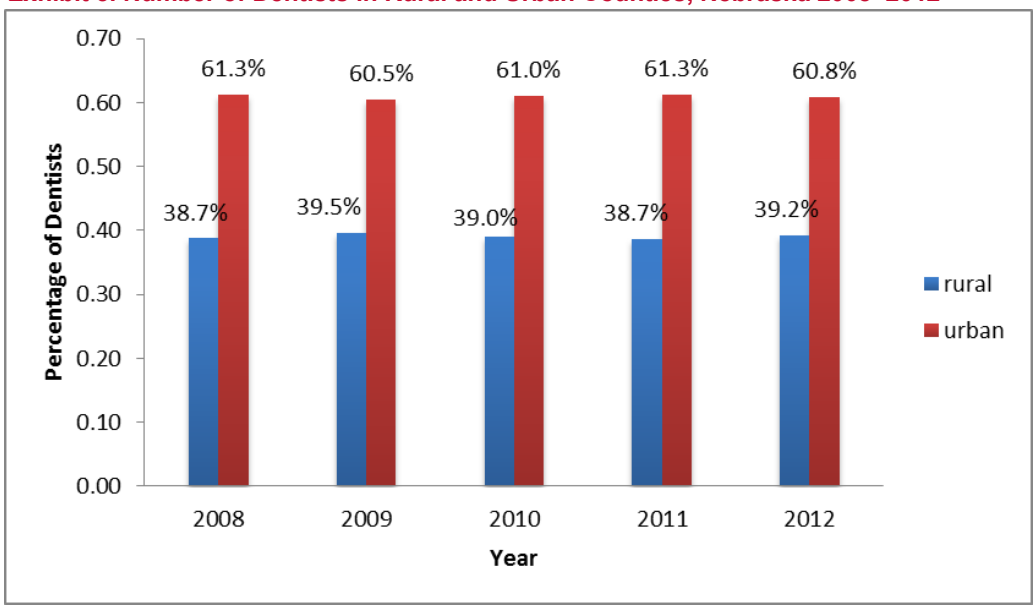
Exhibit 5 indicates minimal change in the distribution of dentists in urban and rural counties throughout 2008-2012. However, a higher proportion of dentists are located in urban counties. Of the 93 counties in Nebraska, 20 (all rural) were without a dentist in 2012. Another 31 counties had only 1 or 2 dentists.

Exhibit 4. Dentists per 100,000 Population, Nebraska 2008–2012



Data Source: UNMC Health Professions Tracking Service, 2008-2012; US Census Bureau.

Exhibit 5. Number of Dentists in Rural and Urban Counties, Nebraska 2008–2012

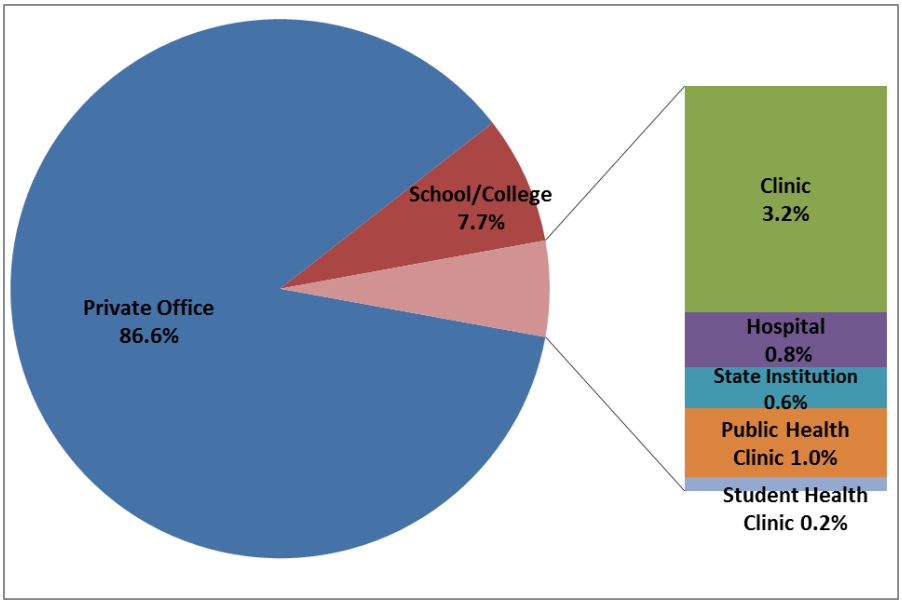


Data Source: UNMC Health Professions Tracking Service, 2008-2012.

Exhibit 6 shows the different employment settings of dentists in 2012. The most frequent employment setting was private offices (86.6%), followed by schools/colleges (7.7%); clinics, including hospital clinics and free-standing clinics (3.2%); public health clinics (1.0%); hospitals (0.8%); state institutions (0.6%); and student health clinics (0.2%).

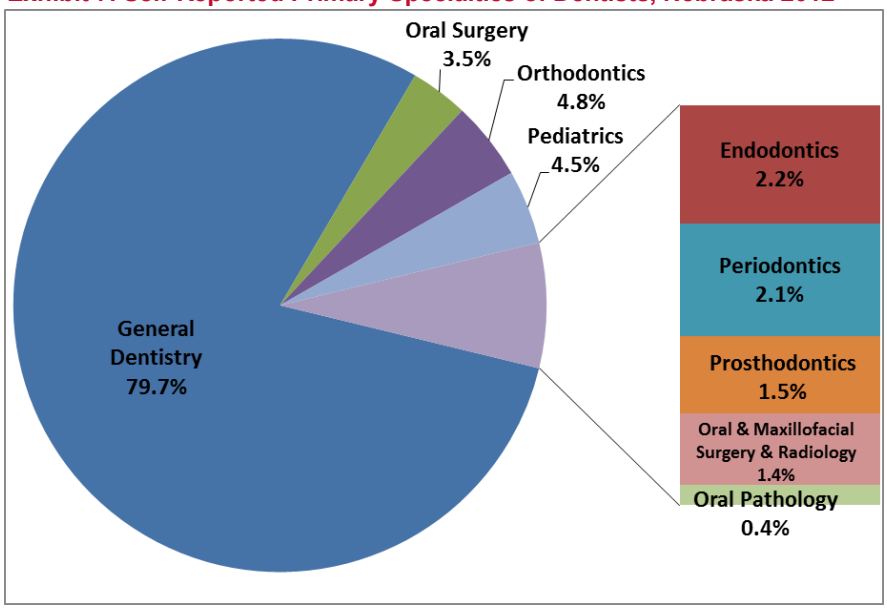
Exhibit 7 shows the different self-reported primary specialties of dentists in 2012. The majority of dentists (79.7%) were general dentistry practitioners.

Exhibit 6. Employment Settings of Dentists, Nebraska 2012



Data Source: UNMC Health Professions Tracking Service, 2008-2012.

Exhibit 7. Self-Reported Primary Specialties of Dentists, Nebraska 2012



Data Source: UNMC Health Professions Tracking Service, 2008-2012.

Exhibit 8 shows the change in demographic characteristics of dentists in Nebraska from 2008 to 2012. In 2012, the majority of dentists were male and a little more than half worked part-time. Most dentists (80%) reported practicing general dentistry, and about 61% practiced in urban areas.

Exhibit 9 shows that the number of dentists leaving the workforce and the number of dentists joining the workforce remained fairly constant over the 5-year period. An almost equivalent number of dentists joined the workforce every year as became inactive; therefore, the number of dentists joining the workforce resulted in only a slight increase in the total number of dentists.

Exhibit 8. Demographic Changes in the Number of Dentists, Nebraska 2008–2012

Characteristic	2008	2012	Percentage Change between 2008-2012
Total Number of Dentists (Counts)	1,017	1,028	+1.08
Gender (%)			
Male	834 (82)	815 (79)	-2.28
Female	183 (18)	213 (21)	+16.39
Employment Status (%)			
Full-time	465 (46)	477 (46)	+2.58
Part-time	552 (54)	551 (54)	-0.18
Primary Specialty (%)			
General Dentistry	810 (80)	819 (80)	+1.11
Specialty	207 (20)	209 (20)	+0.97
Age Group (%)			
21-40 years	292 (29)	294 (29)	+0.68
41-60 years	529 (52)	461 (45)	-12.85
60+ years	196 (19)	273 (26)	+39.29
Rural-Urban Distribution (%)			
Rural	394 (39)	406 (39)	+2.28
Urban	623 (61)	626 (61)	+0.32
Dentists per 100,000 Population	57.03	55.62	-2.85

Data Source: UNMC Health Professions Tracking Service, 2008-2012; US Census Bureau.

Exhibit 9. Dentists Who Left or Joined the Workforce, Nebraska 2008–2012

Year	Number of Dentists Who Left the Workforce	Number of Dentists Who Joined the Workforce	Total
2008	46		1,017
2009	44	43	1,014
2010	50	56	1,026
2011	26	45	1,021
2012		33	1,028

Data Source: UNMC Health Professions Tracking Service, 2008-2012.

Exhibit 10 compares the HPTS dental workforce data with data for Nebraska from the ADA. The ADA data include all professionally active dentists, including federal employees. Hence, this comparison includes federal employees from the HPTS database to make the 2 data sets comparable. The HPTS data identifies 180 fewer dentists in Nebraska than the ADA data.

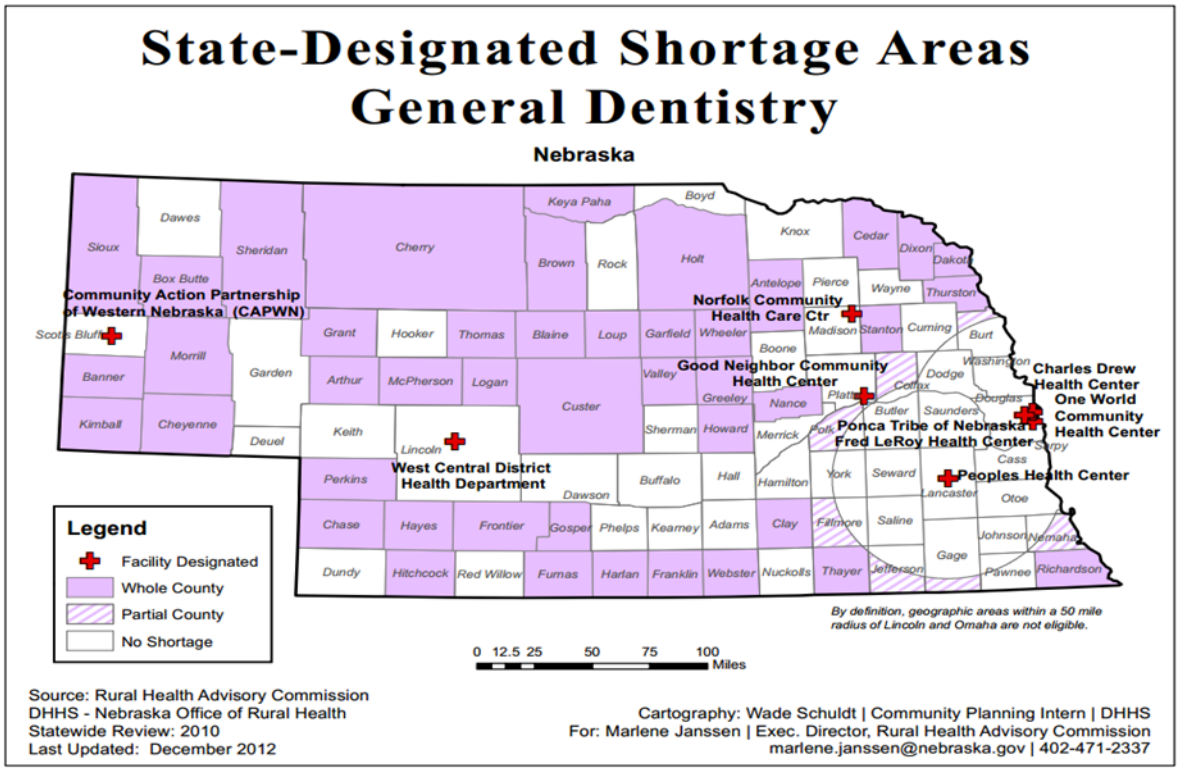
Exhibit 11 shows a map highlighting the state-designated shortage areas for general dentistry in 2012. Forty-four counties were designated as complete shortage areas, defined on the basis of population-to-dentist ratio and on other high need indicators.[11]

Exhibit 10. Comparison of Active Dental Workforce Data from HPTS and the American Dental Association, Nebraska 2012

Active Dental Workforce Data	Health Professions Tracking Service	American Dental Association
Number of Dentists	1,043	1,223
Male	826	946
Female	217	263
Not indicated	-	8
Specialty		
General Dentistry	832	997
Other Specialties	211	226

Data Source: UNMC Health Professions Tracking Service, 2008-2012; American Dental Association, 2012, downloaded from www.statehealthfacts.org on February 25, 2013.

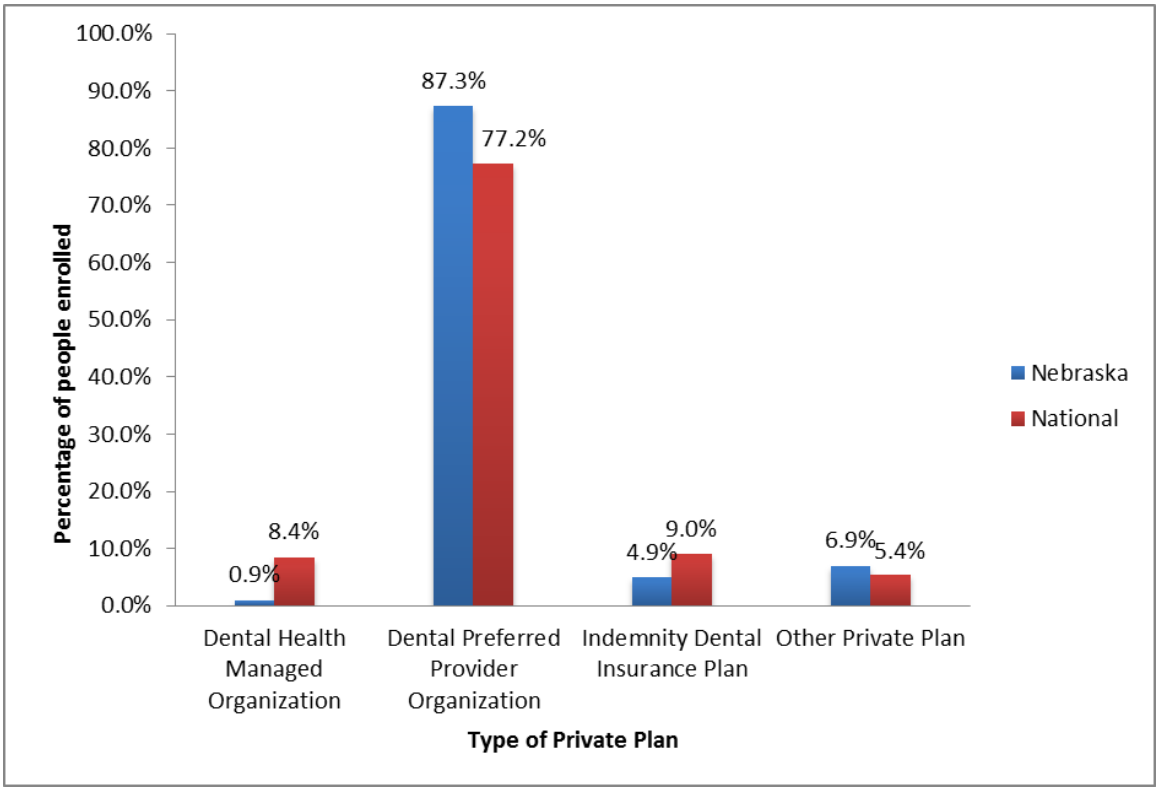
Exhibit 11. State-Designated Shortage Areas for General Dentistry, Nebraska 2012



Data Source: Rural Health Advisory Commission, Nebraska Department of Health and Human Services, Office of Rural Health, 2012.

Exhibit 12 shows a comparison of state and national enrollment in private dental plans in 2012. Of Nebraskan's enrolled in private plans, 0.9% were enrolled in a dental health managed organization plan, 87.3% in a dental preferred provider organization plan, 4.9% in an indemnity dental insurance plan, and 6.9% in other private plans.[10]

Exhibit 12. Percentage of People Enrolled in a Private Dental Plan, Nebraska and the United States, 2012



Data Source: NADP/DPPA Joint Dental Benefits Report on Enrollment, 2012.

Discussion and Policy Implications

The US Department of Health and Human Services initiative Healthy People 2020 has launched new 10-year goals for health promotion and disease prevention, including the objectives in Exhibit 13 pertaining to oral health of children and adults in the United States.[12]

Oral Health Surveillance Data and Community Water Fluoridation

Nebraska meets the Healthy People 2020 objective of percentage of untreated decay at time of screening for 6 to 9 year olds[13] and the 2 objectives for permanent tooth loss.[4] It does not meet the objectives for percentage of 6 to 9 year olds without dental caries experience[13] and the population served by fluoridated water by community water systems,[14] and it lacks an oral health surveillance system. No other oral health data was available to track other objectives.[13] Although an improvement in access to oral health in Nebraska is required to reach the objectives of Healthy People 2020, more importantly, oral health surveillance data is needed to see where the state stands at present, to determine state deficiencies, and to work toward improving Nebraska's oral health status. However, Nebraska currently does not have an oral health surveillance system, which leads to less data available to evaluate the effectiveness of oral health improvement pro-

grams, and no clarity on where the state stands on some Healthy People 2020 objectives. Policymakers should consider Nebraska's need for a State oral health surveillance system to track outcomes and access and the need to increase the percentage of the population served by community water fluoridation, which is proven to reduce tooth decay and thus reduce the need for dental services.[15-17]

Oral Health Care Delivery and Reimbursement

According to Nebraska's Oral Health and Dentistry State Plan, 53% of children enrolled in Medicaid were receiving dental care in 2011, which is higher than the national percentage of 38.1%.[13] Medicaid-eligible children receive dental services such as teeth cleaning, fillings, extractions, x-rays, dental surgery, and dental disease control.[18] Adult dental Medicaid benefits, similar to those for children, include dental exams, preventive services, basic and advanced restorative services, periodontal services, dentures, and oral surgery services.[19] Adult dental Medicaid benefits in Nebraska have an annual limit of $1,000.[18] In the United States, 6 states do not provide any dental coverage and 16 provide only emergency services.[19] For those who are not eligible for Medicaid, there is private dental insurance or employer-sponsored coverage. Dental benefit plans can be through direct reimbursement; preferred provider organizations; capitation programs; or usual, customary, and reasonable programs.[20] According to a fact sheet on dental benefits in Nebraska, in 2012, 0.9% of Nebraskans were enrolled in a dental health managed organization plan, 87.3% in a dental preferred provider organization plan, 4.9% in an indemnity dental insurance plan, and 6.9% in other private plans. Of these private dental benefits, 97% were group coverage, 2% were individual, and 1% was integrated with medical coverage.[10]

An important problem in the delivery of oral health care is the increasing number of patients being seen in a hospital emergency room (ER) for dental emergencies that could easily have been prevented.[15,16] Medicaid patients are also seen in ERs for dental problems because they are unable to find a dentist who will accept Medicaid patients. ER visits by Medicaid patients add to state expenses. Also, Medicaid reimbursement rates have been positively linked to access to dental care. Hence, it is important to ensure that Medicaid reimbursement rates are at a level that encourages and involves more participation of dentists.[15] Also, ER visits can be reduced by implementing preventive services by dental providers other than dentists.[16] Moreover, funding and reimbursement of current dental services are focused more on treatment than on prevention, although most oral diseases are preventable. Hence, a thoughtful reevaluation of reimbursement in the oral health care system is needed.[21]

Workforce

After factoring in population growth, we found a steady decline in the supply of dentists in Nebraska. Although the increase in the number of dentists in rural areas was higher than in urban areas, it has not kept up with the population growth in the state. This shortfall could be due to dentists moving out of state, which is evident from the 12.85% decrease in the number of dentists between 41 to 60 years of age from 2008 to 2012. In addition to this, the number of dentists over 60 years of age has increased by 39.29% from 2008 to 2012. This implies that there will be a more acute shortage of dentists in the state when these older dentists begin to retire. Also, almost half of the total dentists were working part-time in 2012.

Comparison of HPTS and ADA data suggests that the total number of active dentists reported by HPTS was lower. This discrepancy could be because HPTS is a state-level database that surveys dentists annually and may be more reflective of the changes happening at the local and state level than the ADA data, which is a national-level database. Hence, an important policy implication is that state-level data is more accurate for analyzing dental workforce issues and making policy decisions.

With the likely increase in demand for oral health care due to the Affordable Care Act, and with the intent to meet the objectives of Healthy People 2020, policymakers should consider a plan to in-

crease the dental workforce as a step toward improving access to oral health care.[16,21] Nebraska has 2 dental schools—University of Nebraska Medical Center College of Dentistry and Creighton University School of Dentistry. A possible policy solution could be increasing the class size of dental programs in the state; however, this option would be limited by the classroom and laboratory space available in the dental school buildings.

Currently, the Nebraska Student Loan Program offers a maximum annual loan of $20,000 per year for up to 4 years to state residents who agree to practice in a shortage area for each year the loan is given. The Nebraska Loan Repayment Program gives a practitioner a maximum annual loan of $40,000 if they agree to practice in a shortage area for 3 years.[22] These programs could be the reason for the 2.28% increase in the number of dentists in rural areas of Nebraska. More programs like this should be promoted. In addition, to address dentist shortages in rural areas, policymakers should consider the findings from a study of graduates from the University of Nebraska Medical Center's College of Dentistry, which showed that female dental students and non-resident dental students are more likely to practice in rural areas.[23]

Policymakers could also explore the potential of expanding the scope of practice of other dental providers, such as dental hygienists, to address some shortages in access to preventive and basic oral care, including cleaning, and application of sealants and fluorides,[24] which are among the objectives of Healthy People 2020.[12] Policymakers could also consider utilizing the practice sites of pediatricians, family physicians, nurses, and nurse practitioners for delivery of preventive dental services. Children who visit these providers for medical services could be assessed for oral hygiene as well, and for many preventable oral disorders.[17] Nebraska state law allows dental hygienists to obtain a Public Health Authorization Permit, enabling them to provide services such as oral prophylaxis; pulp vitality testing; application of fluorides, sealants, and other topical agents; and other functions that any dental assistant is authorized to perform, in various public health settings but without the supervision of a dentist.[25] Dental hygienists with this status could provide services to underserved populations.[25] In 2012, only 75 dental hygienists in Nebraska had this permit.[8] More dental hygienists should be recruited and given incentives to apply for this permit.

Innovative workforce models that create new types of dental providers, such as the Dental Health Aid Therapists (DHAT) Program implemented in Alaska in 2003 and introduced by the state of Minnesota to train basic and advanced levels of dental therapists (DTs), the community dental health co-coordinator (CDHC) and the oral preventive assistant (OPA) proposed by the ADA, and the advanced dental health practitioner (ADHP) proposed by the American Dental Hygienists' Association,[17,21] could be a solution to solve problems of access to oral care for underserved populations in Nebraska. DHATs are indirectly supervised by a dentist who is not practicing in the same community, and they provide dental screenings, take X-rays, diagnose, apply sealants and topical fluorides, conduct extractions and restorations, and refer patients who need care outside their scope of practice. DTs provide preventive and restorative oral care. CDHCs and OPAs would provide educational services, coordinate care, and provide intraoral assessment and limited intraoral treatment in safety net facilities, but would be required to work under the supervision of a dentist. ADHPs, on the other hand, would go through more advanced education and could thus work autonomously, providing diagnostic, therapeutic, preventive, and restorative dental services.[17]

Exhibit 13. Healthy People 2020 Oral Health Goals and Nebraska's Status

Objective	Baseline	Target	Nebraska's Status
1. Reduce the proportion of children with dental caries experience in their primary teeth for the following age groups			
• 3 to 5 years	33.3%	30.0%	No data
• 6 to 9 years	54.4%	49.0%	59.3%[13]
• 13 to 15 years	53.7%	48.3%	No data
2. Reduce the proportion of children with untreated dental decay in their primary/permanent teeth for the following age groups			
• 3 to 5 years	23.8%	21.4%	No data
• 6 to 9 years	28.8%	25.9%	17%[13]
• 13 to 15 years	17.0%	15.3%	No data
3. Reduce the proportion of adults with untreated dental decay for the following age groups			
• 35 to 44 years	27.8%	25.0%	No data
• 65 to 74 years	17.1%	15.4%	No data
• 75 years and older	37.9%	34.1%	No data
4. No permanent tooth loss			
• Reduce the proportion of adults aged 45 to 64 years who have ever had a permanent tooth extracted because of dental caries or periodontal disease	76.4%	68.8%	47.1%[4]
• Reduce the proportion of adults aged 65 to 74 years who have lost all of their natural teeth	24.0%	21.6%	15.2%[4]
5. Reduce the proportion of adults aged 45 to 74 years with moderate or severe periodontitis	12.7%	11.4%	No data
6. Increase the proportion of oral and pharyngeal cancers detected at the earliest stage	32.5%	35.8%	No data
7. Increase the proportion of children, adolescents, and adults who used the oral health care system in the past year.	44.5%	49.0%	No data
8. Increase the proportion of low-income children and adolescents who received any preventive dental service during the past year	26.7%	29.4%	No data
9. Increase the proportion of school-based health centers with an oral health component that includes the following			
• Dental sealants	24.1%	26.5%	No data
• Dental care	10.1%	11.1%	No data
• Topical fluoride	29.2%	32.1%	No data
10. Health centers with an oral health component			
• Increase the proportion of Federally Qualified Health Centers that have an oral health care program.	75%	83%	No data
• Increase the proportion of local health departments that have oral health prevention or care programs.	25.8%	28.4%	No data
11. Increase the proportion of patients who receive oral health services at Federally Qualified Health Centers each year	17.5%	33.3%	No data
12. Increase the proportion of children who have received dental sealants on 1 or more of their primary/permanent molar teeth for the following age groups			
• 3 to 5 years	1.4%	1.5%	No data
• 6 to 9 years	25.5%	28.1%	No data
• 13 to 15 years	19.9%	21.9%	No data
13. Increase the proportion of the population served by community water systems with optimally fluoridated water.	72.4%	79.6%	70%[14]
14. Preventive dental screening and counseling			
• (Developmental) Increase the proportion of adults who received information from a dentist or dental hygienist focusing on reducing tobacco use or on smoking cessation in the past year			
• (Developmental) Increase the proportion of adults who received an oral and pharyngeal cancer screening from a dentist or dental hygienist in the past year			
• (Developmental) Increase the proportion of adults who were tested or referred for glycemic control from a dentist or dental hygienist in the past year.			

Exhibit 13 continues on page 12.

Exhibit 13. Healthy People 2020 Oral Health Goals and Nebraska's Status (continued)

Objective	Baseline	Target	Nebraska's Status
15. Systems that record cleft lip or palate and referrals • (Developmental) Increase the number of States and the District of Columbia that have a system for recording cleft lips and cleft palates. • (Developmental) Increase the number of States and the District of Columbia that have a system for referral for cleft lips and cleft palates to rehabilitative teams.			
16. Increase the number of States and the District of Columbia that have an oral and craniofacial health surveillance system.	32 States	50 states and the District of Columbia	Nebraska lacks such a system[13]
17. Health agencies with a dental professional directing their dental program			
• Increase the proportion of States (including the District of Columbia) and local health agencies that serve jurisdictions of 250,000 or more persons with a dental public health program directed by a dental professional with public health training.	23.4%	25.7%	3 such agencies exist in Nebraska[14]
• Increase the number of Indian Health Service Areas and Tribal health programs that serve jurisdictions of 30,000 or more persons with a dental public health program directed by a dental professional with public health training.	11 programs	12 programs	

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Conflict of Interest

None.

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