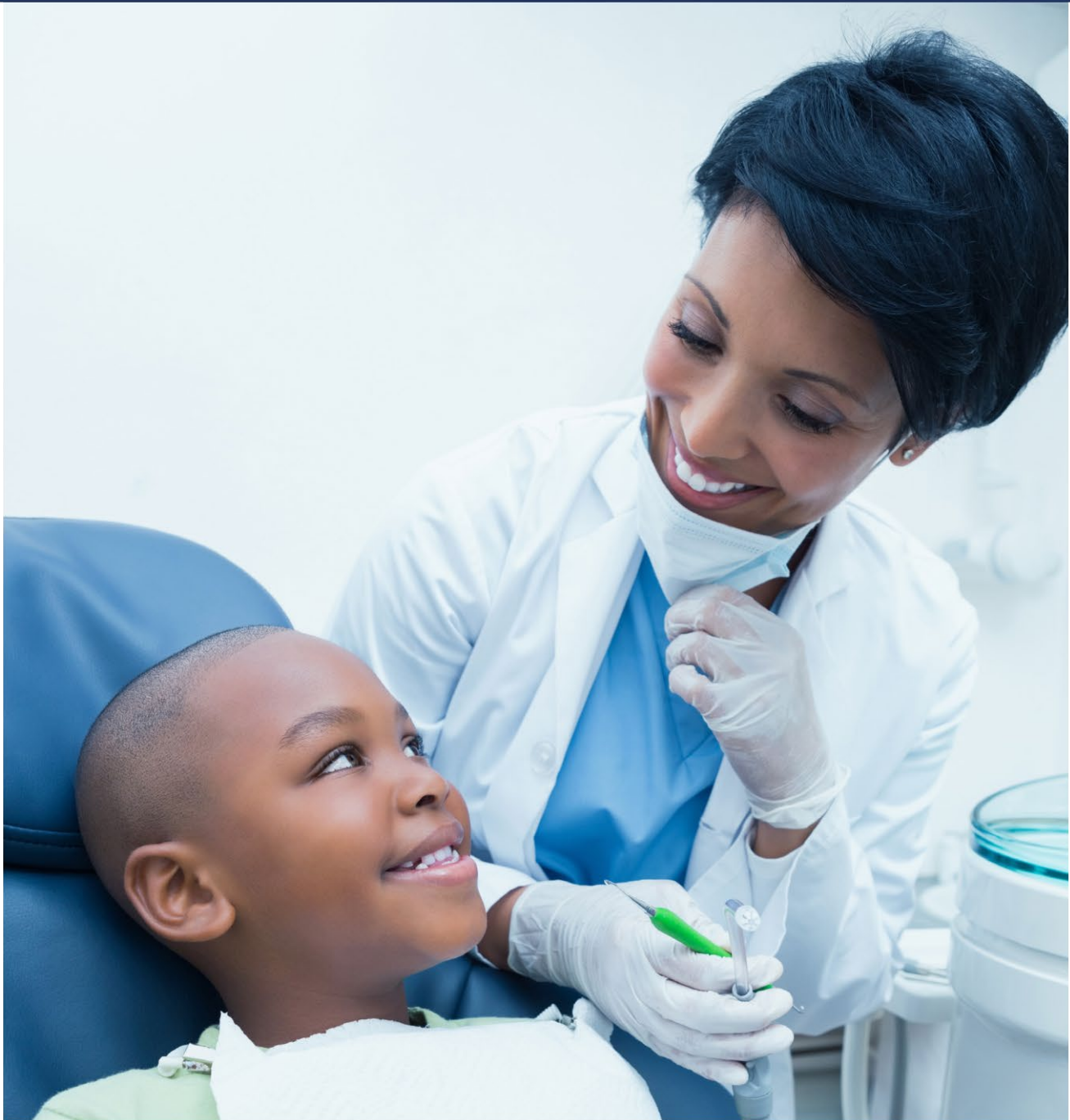


# Supporting Dental Therapy through Title VII Training Programs

A Meaningful Strategy for Implementing Equitable Oral Health Care



Advisory Committee on Training in  
Primary Care Medicine and Dentistry

19<sup>th</sup> Report

July 2022

**HRSA**  
Health Resources & Services Administration

# **Advisory Committee on Training in Primary Care Medicine and Dentistry (ACTPCMD)**

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**Supporting Dental Therapy through Title VII Training Programs:  
*A Meaningful Strategy for Implementing Equitable Oral Health Care***

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## **Nineteenth Annual Report to the Secretary of the United States Department of Health and Human Services and the Congress of the United States**

**July 2022**



The views expressed in this report are solely those of the Advisory Committee on Training in Primary Care Medicine and Dentistry and do not represent the perspectives of the Health Resources and Services Administration nor the United States Government.

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## **Authority**

The Advisory Committee on Training in Primary Care Medicine and Dentistry (ACTPCMD) is a Federal advisory committee under the auspices of the Health Resources and Services Administration (HRSA), an agency of the U.S. Department of Health and Human Services (HHS). HRSA is the primary Federal agency for improving access to health care by strengthening the health care workforce, building healthy communities, and achieving health equity. The ACTPCMD is authorized by sections 222 and 749 of the Public Health Service Act (PHSA) (42 U.S.C. §§ 271a, 749), as amended by section 5303 of the Patient Protection and Affordable Care Act (ACA).

The ACTPCMD was established under the authority of section 748 of the 1998 Health Professions Education Partnerships Act. The ACTPCMD provides advice and recommendations on policy and program development to the Secretary of the U.S. Department of Health and Human Services (Secretary) and is responsible for submitting an annual report to the Secretary and Congress concerning the activities authorized under sections 747 and 748 of the PHSA, as amended. Reports are submitted to the Committee on Health, Education, Labor, and Pensions of the Senate and the Committee on Energy and Commerce of the House of Representatives. In addition, the ACTPCMD develops, publishes, and implements performance measures and longitudinal evaluations, as well as recommends appropriations levels for programs authorized under Part C of Title VII of the PHSA, as amended.

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Sincerely,

*Sandra Snyder*

Sandra M. Snyder, DO  
Chair, ACTPCMD



## **Executive Summary**

Dental therapists began practicing in the US in 2005. Although dental therapy is still an emerging profession in this country, dental therapists have been practicing for more than 100 years in over 50 countries and territories worldwide.

Dental therapists practice as members of an oral health team providing a defined set of procedures under the supervision of a dentist. Unlike dental hygienists, dental therapists are trained to drill and restore teeth and, in some states, perform simple extractions. Also, dental therapists are able to address conditions that lead to pain, infection, and tooth damage—which is especially important in places that have traditionally experienced lack of access to dental care.

Workforce projections estimate that by 2030 there will not be enough general dentists to meet the projected demand. In fact, it is estimated that there may be a shortage of 3,350 general dentists by that time. Maldistribution—the uneven dispersal of dentists across the country—contributes to shortages of dentists in some facilities and geographic areas. Because of this, there are an estimated 67 million individuals living in dental shortage areas in the US.

Various studies have shown the association between oral health and overall health. For example, there is evidence associating gum disease to conditions such as diabetes, heart disease, rheumatoid arthritis, adverse pregnancy outcomes, and cancer. There is also a connection between tooth loss and an increased risk of cardiovascular disease and stroke.

Despite the recognized importance of oral health in overall health, not everyone in the US benefits equally from the existing oral health care system. The burden of disease impacts groups differently, creating health disparities among populations. In oral health, disparities exist based on the lack of access to dental care due to insurance type, social determinants of health, socioeconomic status, age, race/ethnicity, disability, sexual orientation, geography, and various other factors.

The dental therapy profession, if appropriately supported and nurtured at a national level, can be part of the solution to address these issues. For example, in Alaska dental therapists serve approximately 45,000 people in tribal communities. In that state, most dental therapy graduates are American Indian or Alaska Native individuals, creating a diverse workforce that provides culturally sensitive care and a career path for Native populations, where the retention rate of dental therapists has been 81% over an 11-year period.

Studies have shown that the use of dental therapists is associated with increased rates of preventive care, reduction in appointment wait times, and increased access. In addition, various studies have found that the technical quality of care provided by dental therapists within their

scope of competency is comparable to that of a dentist. Also, financial models show that dental therapists are a cost-effective way for dental practices to expand the number of people they serve while maintaining or increasing their bottom line.

Currently, 13 states and tribes have adopted laws allowing dental therapists to practice and an additional 8 states are considering similar bills. In all but one state, dental therapists are required by law to practice in a public health setting, a dental shortage area, on tribal lands, or in practices serving Medicaid/uninsured patients. This benefits the public health system, which has traditionally focused on serving the vulnerable and underserved.

With less than 150 dental therapists practicing nationwide, the profession is still in a nascent stage of development. Given the clear benefits that dental therapists offer to serving the vulnerable and underserved, the ACTPCMD recommends that HRSA provide funding to support additional training programs, incentivize potential candidates to enter the profession through scholarships and loan repayment programs, support an increase in the number of faculty that train dental therapists, and fund longitudinal tracking mechanisms. The Committee's full recommendations are presented below.

### **ACTPCMD Recommendations**

#### **Recommendation 1**

The ACTPCMD recommends that Congress update the authorizing legislation for the Public Health Service Act Section 748(a)(1) to explicitly include dental therapy programs and trainees.

#### **Recommendation 2**

The ACTPCMD recommends that Congress increase the funded appropriation for Title VII, Section 748 by \$6 million annually to be utilized for dental therapy training programs.

#### **Recommendation 3**

The ACTPCMD recommends that faculty of dental therapy training programs be eligible for the Dental Faculty Loan Repayment Program (DFLRP) authorized under Title VII, Section 748, of the Public Health Service Act and that the DFLRP receive a funding increase of \$1 million to be set aside for faculty of Dental Therapy programs.

**Recommendation 4**

The ACTPCMD recommends that the Secretary, HHS, include dental therapy as an eligible profession for scholarship and loan repayment through the National Health Service Corps (NHSC).

**Recommendation 5**

The ACTPCMD recommends HRSA implement a longitudinal tracking mechanism for dental therapy trainees, faculty, and graduates, including data on trainee and faculty diversity, retention in the profession, educational debt load, graduate practice location, and populations served.

## The Importance of Oral Health

People sometimes think about oral health as being separate from overall health. After all, in the US payment and health information systems for these services have historically been separate, with unique medical and dental payment programs. For these and other reasons, many fail to realize that oral health is an important component of overall health.

In 2000, David Satcher, MD, PhD, the former US Surgeon General, called attention to this issue in his seminal report *Oral Health in America*. He noted that the mouth is the “mirror of health or disease...” further stating that a person “cannot be healthy without oral health.”<sup>1</sup>

The Surgeon General’s report emphasized that oral health goes beyond simply having healthy teeth. The mouth is an entry point for infections that can affect other parts of the body as well as various diseases and conditions resulting from bacterial, viral, and fungal infections that can impact the health of the lip and oral mucosa.<sup>2</sup>

Although clear causation cannot be established, there is strong evidence associating periodontal disease to other conditions such as diabetes, heart disease, rheumatoid arthritis, adverse pregnancy outcomes, and cancer.<sup>3,4</sup> In 2017, a review examined the association between cancer and periodontal disease (also known as gum disease). The review, which included 46 studies involving cancer and periodontal disease, found a “positive association between gum disease and risk of lung, pancreatic, and head and neck cancers.”<sup>5</sup>

A separate 2017 meta-analysis examined the connection between tooth loss and risk of cardiovascular disease and stroke. The analysis included 17 cohort studies involving more than 800,000 participants. The study found tooth loss to be associated with a higher risk of cardiovascular disease. In fact, for every 2 teeth lost there was a 3% increment in coronary heart disease.<sup>6</sup>

Other studies have found an association between tooth loss and all-cause mortality. An analysis of 49 studies found that in most studies lower tooth count was associated with a higher risk of death. And most studies in the analysis reported that mortality *decreased* with every tooth present.<sup>7</sup>

The association between tooth loss and mortality is not exclusively found in those ages 65 and older. An analysis of data for 41,000 of adults *younger* than 65 found an increased risk of death for those with complete tooth loss, compared to those without. This shows that tooth loss is an important public health issue not only for older adults but across the lifespan.<sup>8</sup>

These and other studies, show that improving the overall health of the nation requires us to acknowledge the importance of good oral health as well as the unequal burden of oral disease

among populations.<sup>9</sup> Oral disease, to include tooth loss, is preventable and clinicians can play an important role in educating patients about early prevention, decreasing the risk for disease and tooth loss.<sup>10,11</sup>

Oral health is important for other reasons as it impacts many factors that affect overall well-being. Tissues of the mouth and head can be essential in conveying certain emotions that we take for granted, such as smiling.<sup>12</sup> They also allow us to kiss, chew, swallow, and speak. In other words, our teeth, mouth, and other nearby structures are essential for expressing our humanity.

Preventing oral disease saves money for families, businesses, and taxpayers. There is an important and lasting economic impact of poor oral health along with associated increases in health care costs, missed work/school days, and oral health inequities.

## **Dentist Shortage and Maldistribution**

Despite the importance of oral health, there may not be enough dentists in the US to serve everyone needing care. According to data obtained from HRSA's National Center for Health Workforce Analysis, there are approximately 155,000 general dentists actively practicing in the US.<sup>13</sup> The remainder (approx. 42,200) are specialized dentists focusing on pediatric dentistry, oral surgery, endodontics, orthodontics, periodontics, and other dental specialties.<sup>14</sup>

Despite these apparently large numbers, workforce projections from HRSA's Health Workforce Simulation Model estimate there will not be enough general dentists by 2030 to meet demand. In fact, it is estimated that there may be a shortage of 3,350 general dentists by that time.<sup>15</sup>

A second factor impacting access to oral health professionals is their distribution. Unfortunately, the distribution of dentists across the country is uneven. For instance, there are 104 dentists per 100,000 people in Washington, DC but only 41 per 100,000 in Alabama.<sup>16</sup> In addition, specific areas across the nation are more acutely impacted by a shortage of dentists.

HRSA designates Health Professional Shortage Areas (HPSAs) as geographic areas, populations, or facilities that have a shortage of primary, dental, or mental health care providers.<sup>17</sup> According to HRSA, there are 6,920 dental health HPSAs in the US—in other words, areas where few, if any, dentists practice.<sup>18</sup> Altogether, there are 67 million individuals living in both urban and rural dental shortage areas. In the rural space, roughly two in five rural Americans are practically without access to dental care.<sup>19</sup>

The reasons for the maldistribution and the existence of dental HPSAs are many. Dentists are some of the major health professionals with the highest educational debt.<sup>20</sup> The average dentist's

debt is \$239,895 for public dental schools and \$341,190 for private ones.<sup>21</sup> As a result, practicing in rural and/or high-poverty areas may imply lower payout-margins and therefore a longer period to discharge this debt.<sup>22</sup> Also, in the US almost two-thirds of dentists do not accept public insurance, in part due to low reimbursement rates and a higher administrative burden.<sup>23</sup>

Therefore, recruitment and retention of dentists serving those who are publicly insured in rural and urban low-income areas continues to be a challenge. This challenge has been partially mitigated by some programs, such as HRSA's National Health Service Corps (NHSC). Implemented for nearly 50 years, the NHSC provides loan repayment for general and pediatric dentists working at approved sites and scholarships for health professional education in exchange for service in underserved communities. Currently, more than 22,000 NHSC participants (1,938 dentists and dental hygienists) provide primary medical, dental, and behavioral and mental health care at nearly 19,000 NHSC-approved sites, serving more than 23.6 million people across the country.<sup>24</sup>

## **The Impact of Oral Health Disparities**

Nearly 20 years ago, the Surgeon General stated that “The great and enduring strength of American democracy lies in its commitment to the care and wellbeing of its citizens... [but] not all Americans are benefiting equally from improvements in health and health care.”<sup>25</sup>

Unfortunately, despite the recognized importance of oral health, not everyone in the US benefits equally from the existing health care system. The burden of disease can impact different groups differently, thus creating health disparities. Disparities can be defined as “a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage. Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health...”<sup>26</sup>

Vulnerable and underserved populations in the US are groups commonly experiencing health disparities. They can include racial/ethnic minorities, individuals with special health care needs, those living with disabilities, rural populations, older adults, homeless individuals, incarcerated people, those who are uninsured/underinsured, individuals with low-socioeconomic status, lesbian, gay, bisexual, transgender, and queer (LGBTQ) individuals, and other groups.<sup>27, 28, 29</sup>

The reasons for the existence of these disparities are complex and can involve numerous factors including clinician shortages, maldistribution, income level, structural racism, costs, insurance status, clinician training, the patient's sexual orientation, education, health status, geographical location, and other factors.<sup>30</sup> Nonetheless, health disparities should be recognized and continuously addressed.

In the area of oral health, disparities exist based on type of insurance, socioeconomic status, age, sexual orientation, geography, disability, and various other factors. For example, in low-income households, the percentage of children age 2 to 5 years with untreated cavities in their primary teeth is nearly three times higher than those from higher-income households.<sup>31</sup>

Nearly twice as many adults enrolled in Medicaid reported that they had not visited a dentist in the past few years compared with non-enrolled Medicaid adults (30% vs 16.1%, respectively).<sup>32</sup> In addition, adults living in rural areas were less likely to receive preventive services, more likely to seek dental care in the emergency room, and had higher rates of cavities than their nonrural counterparts.<sup>33</sup> Also, adults living in rural areas had twice the prevalence of tooth loss compared with nonrural populations.<sup>34</sup> Tooth loss is a concern because studies have shown that tooth loss is related to poor quality of life and increased adverse health effects including cardiovascular disease.<sup>35,36</sup>

Oral health disparities are also present based on race and ethnicity. Reports show the prevalence of periodontal disease is higher among non-Hispanic Blacks and Mexican-Americans than Whites.<sup>37</sup> American Indian and Alaska Native (AI/AN) children ages 3 to 5 are nearly three times more likely to have dental caries compared with White children of the same age.<sup>38</sup> With respect to sexual orientation, individuals identifying as LGBTQ+ were found to be at an elevated risk for discrimination on the part of health practices.<sup>39</sup>

## **Financial Costs and System Burden**

Estimates show that every 15 seconds someone visits an emergency room (ER) seeking treatment for a dental condition.<sup>40</sup> These visits occur for various reasons, including being uninsured or underinsured, difficulty in finding a provider accepting Medicaid, not knowing how to access the dental system, and not being able to find evening or weekend dental appointments.<sup>41,42</sup>

Unfortunately, dental treatment in the ER is often expensive.<sup>43,44</sup> Some estimates show that receiving ER dental care can be up to five times more expensive than receiving treatment at a dental office.<sup>45</sup> At a national level, these financial costs can be significant. For example, there were 2.1 million visits to the ER for nontraumatic dental conditions such as tooth decay, infections, swollen gums, and other similar conditions in 2012.<sup>46,47</sup> A study estimated the average cost per visit to be \$749 and the total cost \$1.6 billion for the year analyzed.<sup>48</sup>

For the 2.1 million ER dental visits described above, Medicaid paid for 61.8% of the pediatric visits for those 18 and under—a total of nearly \$94 million. In addition, Medicare paid for 85.6% of ER dental visits for those 65 and over, a total of nearly \$61 million. A study estimated

that 79% of these ER visits could have been diverted to a community setting, bringing considerable system savings.<sup>49</sup>

Unfortunately, dental treatment in the emergency setting is often palliative and does not always address the root cause, which may result in the patient returning to the ER.<sup>50</sup> An estimated 90% of ER dental patients receive only pain medication or antibiotics for their infections. Most of these patients are then referred to dentists to address the underlying disease. Nonetheless, studies of children in Florida and Texas show that less than half of those enrolled in Medicaid or the Children's Health Insurance Program (CHIP) followed up with a dentist after an ER visit.<sup>51</sup> Dental therapists increase the workforce focused on prevention to reduce the financial as well as intangible costs of oral disease.<sup>52</sup> These can be especially high for children needing to be seen in operating rooms for dental care.<sup>53,54</sup>

## **The Dental Therapy Profession**

Although dental therapy is a relatively new profession in the US, it has been in existence for more than a century worldwide. Dental therapists have practiced in more than 50 countries and territories. The profession originated in New Zealand in the 1920s and other countries that have adopted the profession since then include: Australia, South Africa, the United Kingdom, the Netherlands, Jamaica, Thailand, and many others.<sup>55</sup> There were some prior temporary efforts to establish professions similar to today's dental therapists in the US, but the first dental therapists began practicing in earnest in 2005.<sup>56</sup>

Dental therapists are members of the oral health team and provide "evaluative, preventive, restorative, and [sometimes] minor surgical dental care."<sup>57</sup> Essentially, they can provide a defined set of procedures under the supervision of a dentist.<sup>58</sup> For example, while general dentists can perform nearly 400 procedures, dental therapists can perform about 80-95 procedures, based on state licensure.<sup>59</sup>

The specific services provided by dental therapists can include those that can be performed by a dental hygienist such as oral health screenings, X-rays, applying fluoride/sealants, and teaching health promotion. However, in addition to the aforementioned services, dental therapists can drill and restore teeth and, in some states, perform simple extractions under the supervision of a dentist.<sup>60</sup> More importantly, dental therapists are able to address conditions that lead to pain, infection, and teeth damage, which is important in areas that have traditionally experienced lack of access to dental care.<sup>61</sup>

When patients require difficult extractions, advanced periodontal care, specialized surgical procedures, or complex restorations (such as adult crowns, bridges, implants, or dentures), dental therapists refer patients to dentists. The goal is to allow dental therapists to perform simpler



procedures to increase access and treat oral disease in its early stages, and reserve care that is more complex to be addressed by dentists.<sup>62</sup>

In 2015, the Commission on Dental Accreditation (CODA) authorized standards for accreditation of US dental therapy programs. To be accredited, a dental therapy curriculum must include a minimum of three years of full-time instruction (or equivalent) at the post-secondary level.<sup>63</sup>

## Quality of Care

Various studies over the past 60 years have found that the technical quality of care provided by dental therapists within the scope of their competencies was comparable to that of a dentist.<sup>64</sup>

In the US, an initial examination of Alaska's dental therapy model conducted in 2010 evaluated therapists on their clinical performance. Fillings were assessed by blinded reviewers, which determined the rates of deficiencies to be similar among dentists and dental therapists. *The report concluded that the dental therapists were "technically competent to perform these procedures within their scope of practice."* The same evaluation showed high patient satisfaction with dental therapists in the areas of explaining things clearly, listening carefully, and treating patients with respect.<sup>65</sup>

A subsequent retrospective study over a 10-year period examined the utilization and outcome of treatment by dental therapists in Alaska Native communities. The study compared communities which received dental therapy treatment to those that did not. A total of 22,645 individuals in 48 Alaskan communities were involved. The study found that increased dental therapy treatment days were significantly associated with increased rates of preventive care for both children and adults.<sup>66</sup> The study also found increased utilization in children.<sup>67</sup> Children who received dental therapy treatment at the start of the study had a preventive utilization rate of 7.4%, which steadily increased to 35.6% by the end of the 10-year period.<sup>68</sup>

In Minnesota, an early evaluation of dental therapists was published in 2014 by the Minnesota Department of Health and the Minnesota Board of Dentistry. The study surveyed 1,382 patients and found that *dental therapists improved access for underserved patients.*<sup>69</sup> In addition, nearly one-third of the patients in the study experienced a reduction in appointment wait times, with a more pronounced impact seen in rural areas.<sup>70</sup>

The ability of dental therapists to provide quality care in a safe manner has been evaluated for several decades. A systematic review of 23 studies from industrialized countries involving dental therapists or specially trained hygienists dating from 1950 through 2011 showed that all but 2 studies concluded that dental therapists performed irreversible dental procedures at an

“acceptable level” compared with dentists. *While the studies in the systematic review were performed using different methodologies, they concur in the fact that dental therapists can provide services with an acceptable level of technical competence.*<sup>71</sup> Support for evaluation of educational program outcomes, and the impact this important workforce has on patient care and health status, is essential to inform future efforts to advance an interprofessional workforce designed to increase access and quality outcomes.

## **Financial Benefits**

The financial benefits of growing the dental therapist workforce can not only impact individuals and communities, but also have a significant systemic financial impact. At the systems level, an increase in preventive care could result in a reduction in emergency room visits to treat nontraumatic dental conditions. At the individual practice level, it could help maintain or increase the bottom line and enable providers to work at the top of their scope of practice.<sup>72</sup>

A 2010 report by The Pew Charitable Trusts reviewed the impact of dental therapists on the productivity and profits of private dental practices.<sup>73</sup> This is important because it is estimated that 93% of dentists deliver care primarily in private practice in the US.<sup>74</sup> In the report, researchers modeled the impact of the addition of a dental therapist to three types of practices: 1) A pediatric practice, 2) A solo dental practice, and 3) A group dental practice. *In all three cases, modeling showed that the addition of one dental therapist increased profits as well as productivity.*<sup>75</sup>

In a solo pediatric practice serving only privately insured patients, modeling showed that adding a dental therapist increased net, pre-tax profits by 29% (or \$93,032) and productivity by 30%. In a solo dental practice, adding one dental therapist increased profits by 27% and productivity by 30%. In a group dental practice, adding one dental therapist increased profits by 12% and productivity by 10%.

In the pediatric and solo dental practices, this increase was also seen in modeling of practices serving Medicaid patients (assuming a 20% Medicaid patient enrollment at a reimbursement rate of 60%). In the pediatric and solo dental practices there was a profit increase of 7% and 6%, respectively, while serving publicly insured patients. *The report concluded that most dentists adding a dental therapist to their team could treat more Medicaid enrollees while preserving or increasing their bottom line.*<sup>76</sup>

A subsequent report supports these findings. The report examined the economic viability of working dental therapists over a one-year period. The combined salaries of the dental therapists were found to be 29% of the total revenue generated. In other words, the dental therapists’ salaries were paid with 29% of the income they generated, leaving the remaining 71% of the

income available for other uses. *This shows that dental therapists are indeed a cost-effective way for practices to expand the number of people they serve while maintaining or increasing the bottom line.*<sup>77</sup>

## **An Emerging Profession**

In the US, dental therapists began practicing in Alaskan communities in 2005. Since then, the following states and tribes have adopted laws allowing dental therapists to practice: Arizona, Connecticut, Idaho, Maine, Michigan, Minnesota, Montana, Nevada, New Mexico, Oregon, Vermont, and Washington. An additional eight states are considering bills authorizing dental therapists.<sup>78,79</sup>

While 13 states and tribes have passed laws authorizing dental therapists to practice, only 5 states/tribes currently have dental therapists practicing on the ground (Alaska, Minnesota, Maine, Oregon, and Washington). Dental therapy is still considered an emerging profession, with fewer than 150 dental therapists practicing across the US and fewer than 100 graduating annually.<sup>80,81</sup>

Most states that have passed laws authorizing dental therapists have limited the populations or settings where they can practice following graduation.<sup>82</sup> For example, except for Vermont, dental therapists are required to be employed by the Indian Health Service (IHS), practice on tribal lands, in a public health setting, a dental HPSA, or in a practice treating Medicaid or uninsured patients. Five states have limited dental therapists to practice in tribal lands only.<sup>83</sup>

Currently, all 13 states and tribes allow dental therapists to provide preventive care, and most of states allow for restorations and simple tooth extractions after consultation with a dentist. It is important to note that in all states that allow dental therapists to practice, dental therapists are required to work under the supervision of a dentist.<sup>84</sup>

## **Exemplary Programs**

### *Alaska*

Alaska is the largest state by area and also the least densely populated, with a population of approximately 733,000 people.<sup>85</sup> Those identifying as American Indians/Alaska Natives (AI/AN) constitute 21.9% of the state's population, and the state is home to 229 federally recognized Alaska Native villages.<sup>86,87</sup> Most of the Native population in Alaska lives in remote areas, accessible only by airplane, boat, or snowmobile. Prior to the introduction of dental therapists, services were traditionally provided by itinerant dentists under contract from IHS or tribal organizations.<sup>88</sup>

Traditionally, AI/AN children have had the poorest oral health of all population groups in the country.<sup>89</sup> In 2007, about 87% of Alaska Native children ages 4 to 5 years had dental caries,

compared with 35% of all US children in the same age group.<sup>90</sup> A total of 83% of AI/AN adults ages 40-64 have permanently lost *at least* one tooth, compared with 66% in the US population.<sup>91</sup>

To address these and other disparities, the Alaska Native Tribal Health Consortium in collaboration with Alaska's Tribal Health Organizations spearheaded a pilot program to introduce alternative dental practitioners called Dental Health Aid Therapists. In 2003, a cohort of students traveled to New Zealand to study dental therapy at the University of Otago and in 2005, 6 dental therapists began practicing in Alaska.<sup>92</sup> At the time no universities offered a dental therapy program in the US, although currently some US universities do.<sup>93</sup> Today, Alaskan dental therapists currently serve approximately 45,000 people in tribal communities.<sup>94</sup>

In Alaska dental therapists are recruited locally and return to their communities to provide services as trusted members of their community. Most dental therapy graduates are AN/AI individuals and approximately 78% of them practice in their village or region of origin.<sup>95,96,97</sup> The retention rate for dental therapists in the state has been 81% over an 11-year period.

In Alaska dental therapists provide diagnostic, preventive, and basic restorative dental care by working under the general supervision of a dentist. They can also perform simple extractions after consultation with a dentist.<sup>98,99</sup> Studies show that dental therapists in Alaska provide similar care, in terms of clinical quality, compared with a dentist.

Other studies have shown decreased patient wait times and increased preventive care in children and adults.<sup>100,101</sup> In addition, a qualitative study found that dental therapists are well accepted in Alaska villages.<sup>102</sup> Understanding of cultural norms and continuity of care were found to be key drivers for the satisfaction of village members.<sup>103</sup>

### *Minnesota*

In 2020, the state's estimated population was 5,706,494, with more than 20% (1,255,788) living in rural areas.<sup>104</sup> Minnesota's dentist workforce is aging and nearing retirement, with approximately half (45%) of all licensed dentists being 55 or older as of 2012.<sup>105</sup>

In 2009, the governor of Minnesota signed a law authorizing dental therapists to practice, and the first dental therapists began practicing in 2011.<sup>106,107</sup> Dental therapists in Minnesota can provide diagnostic, preventive, and basic restorative dental care as well as simple extractions. They must work under the general supervision of a dentist.<sup>108</sup>

In Minnesota, dental therapists can only practice in a public health setting, dental HPSAs, or facilities treating at least 50% of Medicaid or uninsured patients.<sup>109</sup> They are therefore focused on serving low-income and underserved patients.<sup>110</sup>

Since passage of the 2009 law, the University of Minnesota’s Dental School and a partnership between the Metropolitan State University and Normandale Community College have each developed a dental therapy program.<sup>111</sup> In 2018, the Minnesota Board of Dentistry listed 92 dental therapists with active licenses practicing in the state. The median age of these therapists was 33 years old. In a survey, 83% of the dental therapists responded that they planned to practice in Minnesota for 10 years or more.<sup>112</sup>

A review of the impact of dental therapists in Minnesota working in a variety of practices after 5 years found “*a positive impact on patient access, clinic productivity and clinic finances without a reduction in quality of care, safety, or patient satisfaction.*”<sup>113</sup> Another study found a strong correlation between dental therapist utilization and increasing access to care in both Minnesota and Alaska.<sup>114</sup>

Both the Alaska and Minnesota programs have demonstrated that dental therapists can provide competent dental care to vulnerable and underserved populations in a cost-effective manner. Evaluation of program outcomes will help identify best and promising practices.

## Summary

An existing lack of access to dental care and a predicted shortage of dentists in the future calls for solutions that can maximize the impact of preventive care and early intervention for dental disease. Dental therapists can play an important role in serving vulnerable and underserved populations, especially for those living in rural and other geographic areas that have a shortage of dental health care providers. Therefore, growing a dental therapy workforce supports the increase access to care and help improve the oral health of all Americans.

Within the scope of their practice, dental therapy programs in Alaska and Minnesota have already demonstrated improved patient access, decreased wait times, and the provision of quality care that is similar to that of a dentist. In addition, dental therapist support increased preventive care in their communities for both children and adults.

Given the numerous benefits that dental therapists offer to serve the vulnerable and underserved, it makes sense that this workforce be further developed. HRSA can make a valuable contribution to this effort by helping fund student and faculty dental therapy training programs and evaluate the effectiveness of those programs, as well as offer scholarships and loan repayment to those interested in pursuing the profession.

This can assist in increasing access to oral health care, reducing the burden of disease in vulnerable and underserved populations, reducing disparities, and supporting the improvement of oral health in all populations.

## List of Acronyms and Abbreviations

ACTPCMD	Advisory Committee on Training in Primary Care Medicine and Dentistry
AI/AN	American Indian / Alaska Native
BHW	Bureau of Health Workforce
DFLRP	Dental Faculty Loan Repayment Program
ER	Emergency Room
HHS	Department of Health and Human Services
HPSA	Health Professional Shortage Area
IHS	Indian Health Service
NHSC	National Health Service Corps
PHSA	Public Health Service Act

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