

# Critical Issues in Dental Hygiene

## Development and Status of the Advanced Dental Hygiene Practitioner

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### Introduction

In March 2009, President Barack Obama initiated his first step to reform the United States health care system by hosting a task force representing many stakeholders in health care. Unfortunately, dentistry and dental hygiene were not involved.<sup>1</sup> While dental spending topped \$100 billion in 2008,<sup>2</sup> there are “profound and consequential oral health disparities within racial and ethnic minorities, rural populations, individuals with disabilities, the homeless, immigrants, migrant workers, the very young and the frail elderly.”<sup>3</sup> As we continue to educate our nation’s leaders on the importance of oral health as part of the health care reform agenda, it is dentistry and dental hygiene’s ongoing responsibility to work collaboratively to eliminate access to care deficiencies. The purpose of this paper is to explain the need for the advanced dental hygiene practitioner (ADHP) as proposed by the American Dental Hygienists’ Association (ADHA), and to report on the status of its implementation.

Oral diseases have social, psychological, physical and economic costs, both to individuals and society as a whole. When oral diseases are left untreated, a person’s overall health can be seriously affected and may even cause death, as illustrated by the case of young Deamonte Driver.<sup>4</sup> Without the ability to pay for dental care, few providers willing to serve public program enrollees, and the ever present cultural barriers that exist in diverse societies like the United States, many people do not receive needed preventive or restorative dental care. Some postpone treatment until they have nowhere else to go, other than a hospital emergency room (ER). A recent study of patient visits to 7 Twin Cities’

### Abstract

**Purpose:** Advanced dental hygiene practitioners (ADHPs), members of the oral health care team, bring care to persons disenfranchised from adequate dental services. ADHPs are licensed and provide the traditional educational, preventive and therapeutic dental hygiene services, plus diagnostic, prescriptive and minimally invasive restorative services. ADHPs work in collaboration with all members of the dental team, referring patients in need of services outside of their scope directly to dentists or other health care providers.

**Keywords:** Advanced Dental Hygiene Practitioner (ADHP), mid-level provider, Dental Therapist, Advanced Dental Therapist

This study supports the NDHRA priority area, **Health Services Research:** Investigate how alternative models of dental hygiene care delivery can reduce health care inequities

ERs found over 10,000 ER visits for oral problems at a cost of more than \$4.7 million.<sup>5</sup> In Spokane, Washington, an average of \$2.9 million was spent for dental care in local hospitals per year.<sup>6</sup> California emergency departments log more than 80,000 visits a year for preventable dental conditions, especially those living in rural areas and ages 18 to 34.<sup>7</sup> Unfortunately, the extent of care rendered for dental needs in an ER is likely to be pain medication and/or antibiotics, with advice to follow-up with a dentist. The patient does not receive a complete oral examination, treatment to eliminate the problem and follow-up. Often, patients will make repeated visits to an ER because there is no other dental home for affordable care (over 20% of the Twin Cities patients returned at least twice for their dental problems).<sup>5</sup>

In the 2003 National Oral Health Call to Action, the Surgeon General stated:

“The burden of oral infections and conditions that affect the mouth, face and jaws is so broad and

extensive that the dentists can't do it alone; the hygienists can't do it alone; surgeons can't do it alone; government agencies can't do it alone; and the average person can't do it alone. It will take all of us working together to continue to make progress in advancing the oral health of this country."<sup>8</sup>

Poor oral health can adversely affect all aspects of life. Annually, children miss 51 million hours of school due to dental problems, and they can't learn in school if they are in pain. Similarly, adults lose 164 million work hours annually due to visits to the dentist to treat periodontal illnesses or to repair teeth.<sup>1</sup> Regardless of age, persons with dental problems may also experience challenges with eating, nutrition, speaking and self image.

Health care policy, practice and education must evolve concomitantly to meet societal needs and expanding demands. The United States population is expected to grow by 20% by 2020, with most of that growth in minority populations.<sup>9</sup> Because of community water fluoridation, fluoride dentifrices and preventive dental care, people age 65 or older have retained more of their teeth. However, for some, their need to maintain optimal oral health is often complicated by multiple chronic conditions such as cardiovascular diseases, diabetes, stroke, respiratory illness, obesity and cancer. Creation of integrated health care systems that identify and remove barriers to quality, cost effective care and efficient use of existing manpower resources are necessary. For example, the ADHA Master File Survey of Dental Hygienists' in the United States in 2007 found over 150,000 licensed dental hygienists in the United States, with 130,000 actively practicing. Twenty-five percent hold licenses in more than 1 state.<sup>10</sup> By 2016, a 30% increase in licensed dental hygienists is anticipated.<sup>11</sup> This increase significantly exceeds the expected 9% increase of licensed dentists.<sup>12</sup> The December 2009 Washington State's Oral Health Workforce document shows an expected general population growth of 24% between now and 2025, with an 80% growth for seniors during this time frame. It also estimated that 50% of current dentists may retire within 15 years.<sup>13</sup>

## **Background for the ADHP**

In 2004, the ADHA recognized the need to develop a mid-level practitioner, following the Surgeon General's Call to Action Report. The ADHA termed this practitioner an "advanced dental hygiene practitioner," similar in concept to the advanced nurse practitioner, and the ADHA House of Delegates recommended a task force to develop the model. After several years of work by a task force, advisory committee and public commentary, the ADHP

Competency Document was published by ADHA in 2008.<sup>14</sup> This document builds on the strong foundation and accreditation standards of existing dental hygiene education, established clinical practice standards, and the dental hygienists' unique orientation toward primary care and collaboration with dentistry. With specially designed master's level education, an ADHP, as a licensed provider of primary care within a defined scope of practice, will be able to serve the public directly and safely and is well-placed to help dentistry fill the void in care that currently exists. ADHPs will focus on providing preventive, therapeutic and referral services within community clinic settings, school clinics, long-term care facilities, hospitals and primary care clinics.<sup>15</sup> In the collaborative role, the ADHP would consult with dentists when necessary and guide the patient into treatment that requires the expertise of a licensed dentist.<sup>16</sup> While dental hygienists are considered the preventive and nonsurgical periodontal care experts, many states have also incorporated basic restorative services into their legal scopes of practice. Twenty-nine states allow for direct access to dental hygienists, 15 states directly reimburse registered dental hygienists under Medicaid and 20 states allow dental hygienists to perform some type of restorative dentistry, indicating that many states are well positioned to move towards the ADHP.<sup>17</sup> Given that the 2007 National Health and Nutrition Examination Survey reports that the highest prevalence of untreated decay is in adults ages 20 to 64,<sup>15</sup> basic restorative as well as preventive and periodontal therapy by an ADHP will be necessary to help dentistry expand access to care.

## **The ADHP at the Master's Degree Level**

Because Americans define the baccalaureate degree as a college education, it is important to move dental hygiene closer to the norm of other health professionals with comparable responsibility. To earn respect, societal trust and professional accountability within the multidisciplinary health care system, the ADHP must present educational credentials similar to other mid-level providers, i.e. the nurse practitioner, physical therapist and occupational therapist.<sup>14,16</sup> Dentally underserved and unserved populations are likely to have the most complex health histories and suffer chronic medical and dental conditions. The formal education necessary to effectively and safely provide care to persons with advanced medical and dental conditions is beyond that currently in the already crowded curricula of associates or baccalaureate dental hygiene degree programs. In addition, these accredited programs do not prepare graduates for

Table I: Resources on the Minnesota Advanced Dental Hygiene Practitioner Effort

Full text of Senate File 2083
<a href="https://www.revisor.mn.gov/bin/bldbill.php?bill=ccrsf2083.html&amp;session=ls86">https://www.revisor.mn.gov/bin/bldbill.php?bill=ccrsf2083.html&amp;session=ls86</a>
Metropolitan State/Normandale Advanced Dental Therapy Program
<a href="http://www.metrostate.edu/msweb/explore/cnhs/index.html">http://www.metrostate.edu/msweb/explore/cnhs/index.html</a>
ADHP Competencies
<a href="http://www.adha.org/downloads/competencies.pdf">http://www.adha.org/downloads/competencies.pdf</a>
OHP Workgroup Report/Recommendations
<a href="http://www.health.state.mn.us/healthreform/oralhealth/">http://www.health.state.mn.us/healthreform/oralhealth/</a>
Minnesota Public Radio Story
<a href="http://minnesota.publicradio.org/display/web/2009/05/12/dental_practitioner_compromise">http://minnesota.publicradio.org/display/web/2009/05/12/dental_practitioner_compromise</a>

mid-level provider competencies, such as the ability to triage dental patients, manage cases and reimbursement mechanisms, work independently but collaboratively in isolated settings, measure outcomes of their care in relation to quality, safety and productivity using qualitative and quantitative research skills.<sup>18</sup> A graduate degree is necessary to develop advanced practitioner competencies, which also carry the burden of additional legal liabilities.<sup>16</sup>

### Implementation Status of the ADHP in Minnesota

Minnesota faces a serious health care crisis because many Minnesotans are unable to obtain treatment for dental disease, especially those who are low-income, disabled, elderly, disadvantaged or living in isolated rural areas. Over half of Minnesota's counties are designated dentist shortage areas, and most counties have seen a steady decline in dental care access for low-income people on state public programs.<sup>19</sup> Although the problem of access is multifaceted, an estimated 60% of Minnesota's dentists may retire in the next 15 to 20 years.<sup>20</sup> The dental workforce in rural areas has a larger percentage of dentists over the age of 55, magnifying the loss of dentists expected to retire in the near future. The geographic distribution of Minnesota dental hygienists more closely matches the distribution of population than does the distribution of dentists, both of which are more concentrated in urban areas.<sup>21</sup>

Since 2001, with the passage of statutory language known as "Limited Authorization for Dental Hygienists,"<sup>22</sup> Minnesota's collaborative practice dental hygienists are uniquely qualified and positioned to meet the oral health needs of the underserved. Minnesota has demonstrated success and easy matriculation of dental hygienists in providing dental hygiene services by establishing collabora-

Table II: Minnesota's Dental Hygiene Advanced Practitioner Timeline

- 2000–2003 – Heightened awareness to enhance the oral health workforce capacity
- 2004 – First Draft of the ADHP Competencies by the American Dental Hygienists' Association
- 2005 – Normandale Community College and Metropolitan State's partnership
- 2006 – MnSCU New Programs' application
- 2007 – Master's program advisory committee formed
- 2008 – ADHP competencies approved
- 2009 – Advance dental therapist master's program begins

tive practices and becoming certified in performing basic restorative services. Therefore, it was a natural progression for Minnesota dental hygienists and institutions of higher education to lead the nation in development and implementation of an ADHP program at the master's degree level.

In 2005, a partnership formed between Metropolitan State University and Normandale Community College that allowed these institutions to take a pivotal leadership role in advancing the concept of a new mid-level dental hygiene practitioner model. The new programs proposed were a baccalaureate degree completion program, a post-baccalaureate certificate program and an oral health care practitioner master's of science program based on the ADHP Competencies Document. The Minnesota State Colleges and Universities new programs received final approval in November 2006. During the application process, letters of support documented the need for the development of these new programs. Alliances made with community partners paved the way for building valuable, sustainable relationships with influential community leaders and organizations that also saw the value in an ADHP. Community partners voiced a common theme that

Table III: Minnesota’s Dental Therapist and Advanced Dental Therapist Legal Scopes of Practice

Dental Therapist		Advanced Dental Therapist
Under general supervision:	Under indirect supervision:	Under general supervision as defined in the written collaborative management agreement:
<ul style="list-style-type: none"> <li>• Oral health instruction</li> <li>• Nutritional counseling and dietary analysis</li> <li>• Preliminary charting of the oral cavity</li> <li>• Taking radiographs</li> <li>• Mechanical polishing</li> <li>• Application of topical preventive or prophylactic agents</li> <li>• Pulp vitality testing</li> <li>• Application of desensitizing medication</li> <li>• Resin fabrication of athletic mouthguards</li> <li>• Placement of temporary restorations</li> <li>• Fabrication of soft occlusal guards</li> <li>• Tissue conditioning and soft reline</li> <li>• Atraumatic restorative therapy</li> <li>• Dressing changes</li> <li>• Avulsed tooth reimplantation</li> <li>• Administration of local anesthetic</li> <li>• Administration of nitrous oxide</li> </ul>	<ul style="list-style-type: none"> <li>• Emergency palliative treatment of dental pain</li> <li>• Placement and removal of space maintainers</li> <li>• Cavity preparation</li> <li>• Restoration of primary and permanent teeth</li> <li>• Placement of temporary crowns</li> <li>• Preparation and placement of preformed crowns</li> <li>• Pulpotomies on primary teeth</li> <li>• Indirect and direct pulp capping on primary and permanent teeth</li> <li>• Stabilization of reimplanted teeth</li> <li>• Extractions of primary teeth</li> <li>• Suture removal</li> <li>• Brush biopsies</li> <li>• Repair of defective prosthetic devices</li> <li>• Recementing of permanent crowns</li> </ul>	<ul style="list-style-type: none"> <li>• All services and procedures described for the Dental Therapist</li> <li>• Oral evaluation and assessment of dental disease</li> <li>• Formulation of an individualized treatment plan authorized by the collaborating dentist</li> <li>• Nonsurgical extractions of permanent teeth (limitations)</li> <li>• Refer patients to receive any needed services that exceed the scope of practice</li> <li>• Provide, dispense, and administer analgesic, anti-inflammatory, and antibiotic medications</li> </ul>

the current dental workforce simply cannot meet the oral health needs of Minnesotans, especially for vulnerable people (Table I).

The formation of a strong strategic partnership between the Minnesota Health Care Safety Net Coalition, the Minnesota Dental Hygienists’ Association and the Minnesota State Colleges and Universities resulted in significant legislation moving forward in 2008 and 2009 that would legitimize the ADHP (Table II). Through the efforts of these 3 organizations, nearly 60 other organizations signed on to advocate for legislation that would establish the ADHP in Minnesota. Countless hours were invested keeping lines of communication open, formulating testimony, delegating responsibilities and sharing negotiation tactics during mounting opposition from the opponents of this legislation that sought to improve access to dental care for thousands of Minnesotans.

In a last minute compromise, the Minnesota legislature established 2 levels of dental therapists, a basic level that requires at least a bachelor’s degree and an advanced level that requires at least a master’s degree (Table III).<sup>23</sup> The law established

the requirements for licensure of dental therapists and certification of advanced dental therapists, but did not dictate to educational institutions what their admission requirements should be or how to structure their programs. Different educational institutions may establish different types of programs, as long as the programs appropriately educate students to the necessary level of competency. Flexibility in accommodating a range of educational backgrounds will add to the diversity, opportunities and innovation in the dental workforce.

Metropolitan State University established a master’s program that combines both the basic level of dental therapist training and the additional education needed to be an advanced dental therapist. Students in this program will become licensed as a basic dental therapist as part of a longer curriculum that will lead to advanced practice certification. Metropolitan State University has also chosen to limit program admission to existing, experienced, baccalaureate-prepared licensed dental hygienists. Increasing the likelihood of employability, graduates will be eligible for licensure and certified as advanced dental therapists after completing clinical hours being specified by the Board of Dentistry,

so that they can practice both dental therapy and dental hygiene and expand dental services where needed.

### **Implementation Status of the ADHP in Washington State**

Eastern Washington University (EWU) expects to pilot an ADHP program for those who live on and near tribal lands. EWU's close proximity and relationships with multiple tribes places it strategically and affords the ability to perform portions of the training in rural tribal clinics. EWU Department of Dental Hygiene offers a master's degree in dental hygiene as an entirely web-based program reaching students within their own communities and promoting their acceptance into local health care networks. An additional ADHP emphasis area has been approved and is ready for implementation, should funding occur. The curriculum reflects that of the ADHA's, and is a 2 year curriculum with the entire first year web-based, making it more accessible for working or rural dental hygienists via distance education technology.

The 1999 Oral Health Survey of American Indian and Alaska Native Dental Patients found that American Indians have inadequate access to preventive and restorative dental care. It also found a tremendous backlog of dental treatment needs among American Indian patients.<sup>24</sup> One third of American Indian children report missing school because of dental pain. Moreover, 25% of American Indian children avoid laughing or smiling, while 20% report difficulty sleeping because of dental problems.<sup>24</sup> In general, American Indians have twice as much untreated dental caries as white people, and have diabetes at a rate 190% higher than the general United States population.<sup>24</sup> Washington dental clinics serving primarily American Indians are overwhelmed with demands for restorative dental care and thus have fewer resources for preventive care.<sup>25</sup> A dentist hired by a regional tribal wellness center's dental clinic conducted oral examinations on 3 high school students during the fall of 2008. In these 3 American Indian students alone, the dentist found \$15,000 worth of untreated dental problems. In addition, the center searched for over 10 months before finding a part-time dental director for its dental clinic (Pokotas, personal communication, March 2009). While the clinic needs a full-time dentist, this goal has not yet been achieved. Although not documented in the literature, other tribal dental clinic directors in Eastern Washington have experienced similar problems with untreated needs as well as a shortage of dental care providers.

Licensed Washington dental hygienists are already well prepared to provide quality basic restorative services, as this has been legal for decades. With additional education, ADHPs will also be educated in case management, health care policy and working with diverse populations and collaboratively with other health care professionals. The limited professional workforce available to staff community health centers remains a critical concern in Washington. Statistics document that only 2% of the nation's dentists work in health centers, with rural health centers particularly vulnerable.<sup>26</sup> Health centers are ideal settings for ADHPs to practice, and ADHPs should be cost effective for the health centers.

Washington ADHPs will receive training in rural areas and treat diverse populations close to where they live and work. ADHPs will develop research and scientific backgrounds to allow them to make evidence-based decisions and provide oral health care within their defined scope of practice. While tribal partnerships will be vital, the ADHP will also collaborate with the entire health care team, oral health coalitions, public health districts and various community-based safety-net organizations. EWU faculty and dentists do not view this program as re-defining the scope of dental hygiene practice. Rather, it builds on the already successful role of traditional and expanded function dental hygienists. The choice to pursue the ADHP master's degree would be up to the dental hygienist, much as a dentist chooses to specialize.

### **Documented Effectiveness of Practitioners Similar to the ADHP**

Globally, the idea of a mid-level practitioner is not a new concept. New Zealand led the world in 1921 with the preparation and implementation of dental nurses (now known as dental therapists).<sup>28</sup> While many countries have termed their practitioners "dental therapists," the roles and responsibilities assigned to them are similar to those proposed by ADHA for the ADHP. In addition, while most dental therapists began by treating only children, their value soon expanded to include adult care as well. These 52 countries' dental therapists share goals with the ADHPs, i.e., improved dental care access, cost reduction and oral health for all.<sup>27</sup> Similarly, the effectiveness and safety of dental therapists have been documented in other countries by the extent to which they perform quality care and satisfy patients.<sup>27</sup> Furthermore, New Zealand dental therapists have been highly valued by the public for over 80 years.<sup>27</sup> Care must be taken to avoid preparing new dental workforce personnel that are not employable or that would be poorly un-

derstood by the public and other health professionals. Recognition and employability are clear advantages favoring the ADHP over other models that have been proposed.

Working collaboratively with a dentist does not mean substituting the ADHP for a dentist – both have defined and different scopes of practice. Like any mid-level practitioner, the intent of the ADHP is to increase efficiency in the oral care delivery system and availability of primary care and referral for persons not served in the existing system. Collaboration with other health care and dental providers is key for providing access to quality care, with improved health indicators, cost containment and patient satisfaction as additional desirable outcomes.

In multiple settings, quality of care provided by mid-level practitioners has been more than satisfactory. For example, in Australia, more restorations placed by dentists were defective than those placed by dental therapists. Also, diagnosis and treatment planning decisions were comparable between the 2 provider entities.<sup>27</sup> A study of Canadian dental therapists revealed that the quality of their restorations was better, on average, than those by dentists, and stainless steel crowns were comparable in quality. Canada has also documented that the use of dental therapists is cost-effective.<sup>27</sup>

In the United States, dental health aide therapists (DHATs) in Alaska have been performing preventive and restorative therapies on inhabitants of rural Alaskan villages since 2005. DHATs work using a tele-medicine cart connected via secured internet to the hub clinics and their supervising dentists.<sup>28</sup> A quality assessment of DHATs and chart audits found DHATs to be performing safely, performing functioning within the scope of training and meeting the standard of care of the dental profession.<sup>29</sup> Currently, DHATs are only allowed to practice in clinics of the Native Alaska Tribal Health consortium in Alaska. In both California and Iowa, the quality of care rendered and the safety of care provided by expanded function dental hygienists in nontraditional settings has been documented.<sup>30,31</sup>

## Conclusion

Oral health is essential for whole body health. Limitations to professional dental hygiene services and other primary dental services compromise the health of people who have been disenfranchised by the current system of dental care delivery. The 2009 U.S. Oral Health Workforce Summary states

more than one third of the United States population lacks dental coverage. In the early 2000s, there were less than 2,000 dental health professional shortage areas. In 2008, there were over 4,000 dental health professional shortage areas.<sup>32</sup> If the evidence and mechanism for implementation are known, society cannot ignore the people who look to dental professionals for leadership, expertise and humanity.

As learned in Minnesota, a strong professional organization and support of other stakeholders can be a powerful influence on public policy, increasing interest of third party stakeholders in oral health policy issues. Dictated by codes of ethics, advocacy requires active involvement and ongoing commitment to the health of all people. Through ADHA and its partners, a collaborative network will continue a unified voice on behalf of the uninsured and underinsured individuals until access to oral health care and other health care policy changes occur. The end point of advocacy is the health and welfare of the public.<sup>33</sup>

Any new model of care will create anxiety and opposition from those who are satisfied with, and benefit from, the existing model. ADHPs supplement rather than compete with dentists, as they will be treating patients unlikely to seek care in a private dental practice.<sup>28</sup> As learned in medicine, no single program or oral health provider can do it all. To resolve the access to care crises, a team must include dentists, dental hygienists, educators, nutritionists, nurses, physicians and other health care professionals who work together to identify and meet the needs of populations. As leaders, rather than continuing to promote the status quo, we must design and test new ways to improve oral health outcomes in a manner that does not discriminate. The ADHP, building upon the already established roles of licensed dental hygienists, can collaborate with dentists and other health professionals to reduce existing health disparities. Moving beyond traditional modes of practice will enable improved quality of life for all.

It is likely that the ADHP provider will save critical health care dollars by making care accessible for those who currently receive no care or, when in pain, seek costly emergency room care. Further cost savings are obvious when considering the preventive, educational and primary care procedures provided by ADHPs that could lead to fewer complex dental problems, reductions in the use of sick days and increased workforce productivity. More importantly, preventive oral health care for children can lead to improved nutrition, positive self image and greater success in school.

In the age of health reform, the dental hygiene profession, in conjunction with dentistry, is well poised to deliver cost-effective, quality, primary care that will aid the United States taxpayer now and in the future. In addition to Minnesota and Washington, other states and higher educational institutions are planning ADHP graduate programs, e.g., Connecticut, New Hampshire, Idaho and New Mexico.

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## Acknowledgments

Minnesota Safety Net Coalition, Minnesota Dental Hygienists' Association, MnSCU Governmental Affairs and American Dental Hygienists' Association.

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