

Analysis and Policy Recommendations Concerning Mid-level Dental Providers

Access to oral health care for children is an important concern that has received considerable attention since publication of the US Surgeon General's report, *Oral Health in America: A Report of the Surgeon General*, in 2000.¹ The Surgeon General's report concluded that for certain large groups of disadvantaged children there is a "silent epidemic" of dental disease, and that the US public health infrastructure for oral health is insufficient to address the needs of disadvantaged groups. That report also identified dental caries (tooth decay) as the most common chronic disease of children in the United States, noting that 80 percent of tooth decay is found in 20-25 percent of children, large portions of whom live in poverty or low-income households and lack access to an ongoing source of quality dental care (ie, a dental home). Addressing the disparities between these disadvantaged children and the tens of millions of US children who enjoy access to quality oral health care and unprecedented levels of oral health is a major focus of the advocacy efforts of the American Academy of Pediatric Dentistry (AAPD).

AAPD is a recognized leader in advancing policies and programs geared toward achieving optimal oral health for all children. Notable activities in the area of policy include annual publication of oral health policies and clinical guidelines²; support of Title VII authorization and funding by Congress to expand pediatric and general dentistry residency training programs; revision of the Centers for Medicare and Medicaid Services (CMS) *Guide to Children's Dental Care in Medicaid*³; adoption (in 2001) and promotion of a formal oral health policy on the "dental home" for children⁴; and ongoing federal and state advocacy efforts to improve the performance of public programs whose purpose is to provide access to dental services for disadvantaged children [eg, Medicaid, Children's Health Insurance Program (CHIP)].

Prominent program-related activities include a major national initiative supported through an ongoing partnership with the Office of Head Start to provide quality dental homes for the roughly one million preschool children enrolled annually in Head Start and Early Head programs throughout the US.⁵ Additional activities include leadership in advancing oral health care for young children and children with special health care needs and sponsorship of various professional education programs aimed at increasing general dentists' ability to provide quality dental care for children.

Medicaid is a major federal program designed to provide access to care for children with the greatest need for diagnostic, prevention and treatment services. Medicaid Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) provisions require that a broad range of dental services necessary for the diagnosis, prevention, and treatment of disease-related or developmental conditions be provided to eligible children on

an ongoing periodic basis from birth through late adolescence.³ However, numerous studies – including several by the US Congress and Department of Health and Human Services – and recurring federal legal actions have documented that State Medicaid programs generally do not devote sufficient resources to provide adequate access to dental care for Medicaid children. With few exceptions, Medicaid reimbursement rates for dental providers have remained appallingly low, below market-based levels, and often less than the overhead costs of most private practices. This leads general and pediatric dentists in many states to opt out of Medicaid, thereby restricting much-needed care for this sizeable segment of the population. AAPD recognizes that Medicaid programs generally have failed to provide adequate dental care for American children who are most in need of dental services, and that these programs must be improved to address the oral health care needs of America's most vulnerable children.

Growing concern and attention to access to care issues have prompted a variety of proposals that call for workforce strategies involving greater use and, in some cases, the development of new so-called 'mid-level providers.' Examples include various types of dental therapists, an advanced dental hygiene practitioner, and a community dental health coordinator. These examples are in addition to the more established expanded function dental auxiliary/assistant (EFDA) mid-level model currently employed in many states and government-sponsored programs throughout the US.

In light of these circumstances, the AAPD created a Task Force on Workforce Issues in 2008 to examine various mid-level dental provider models. This Position Statement builds on the Task Force's findings⁶ and offers AAPD's policy recommendations regarding the use of mid-level providers in dental care for children.

Review of Existing Mid-Level Models

Three of the models reviewed are very similar in design and function and are closely related in history and development: the New Zealand Dental Nurse/Therapist, the Canadian Dental Therapist, and the Alaskan Dental Health Aide Therapist. Of these 3, only the Alaskan Dental Health Aide Therapist model has been employed in the US since 2005 under circumstances described below. Expanded Function Dental Assistants have been employed in the US for over 30 years, and are currently used in more than 20 states throughout the US and in programs operated by the Armed Forces and several other federal agencies.

New Zealand Dental Nurse/Therapist. The New Zealand Dental Nurse/Therapist (NZDN/T) model dates from 1921 when a group of 30 'dental nurses' began a two-year training

program sponsored by the New Zealand federal government to address high levels of dental disease in children.⁶⁻⁸ Students/federal employees were educated to perform oral examinations, develop treatment plans, provide preventive services, administer local anesthesia, prepare and restore primary and young permanent teeth, and extract primary teeth. Initially, the primary target for the NZDN/T services was pre-adolescent school-age children, with care delivered under the general supervision of a Ministry of Health dentist. Today, they operate under the supervision of a principal dental officer of the district health board and provide dental services for a high percentage of New Zealand children. Therapist training is limited to 2 university-based program. The term 'dental nurse' was changed to 'dental therapist' in the mid-1990s.

At the time of the program's inception, New Zealand had only a few modest-sized towns and cities. The remainder of New Zealand's population was clustered sparingly in very small communities throughout the country, the vast majority of which were not large enough to support a resident dental practitioner. Thus, demographics were a large factor in the inability of many New Zealanders to receive adequate oral health care.

New Zealand's approximately 660 dental therapists work as part of a team, one member of which must be a dentist. For the most part, they work in particular geographic areas and visit a number of schools equipped with dental facilities on a regular basis; however recent changes now allow therapists to work in private practices. The New Zealand dental therapists provide low-to-moderate levels of oral health care and health promotion, and refer patients to dentists (or other health care providers) for services which are beyond the therapists' skill set.⁹ Use of dental therapists in New Zealand is being restructured based on recent views which revealed that the School Dental Service models are not adequately addressing oral health disparities and community needs.¹⁰

Canadian Dental Therapist. The New Zealand model was used as a template for a Canadian Dental Therapy Program which began in 1972.^{6,11} Training occurs at the National School of Dental Therapy which produces 15-20 graduates per year. The Canadian Dental Therapist (CDT) was introduced to address the shortage of dentists in remote northern regions of Canada. The three northern territories of Canada – the Yukon, Northwest Territories, and Nunavut – have a total landmass of 3,683,456 square kilometers, approximately 5.6 times the size of Texas. The total population in the 3 northern territories is approximately 330,000, which comprises about 1% of the total Canadian population.

These regions and the northern parts of 7 of Canada's 13 provinces are inhabited mainly by indigenous people, such as First Nations and Inuit. Providing access to oral health care in these isolated communities is a major challenge which Canadian officials chose to address through development of the CDT program. The CDT is almost identical to the NZDN/T with respect to training and services provided.

Upon completion of a two-year training program, Canada's approximately 300 dental therapists now may work in various practice settings in most provinces and territories of

Canada. Some of these settings include: private practice dental offices; federal, provincial, territorial and First Nations government programs; and local health boards.

In all the above settings, dental therapists work in conjunction with licensed dentists under general supervision. In many settings, dental therapists work within broader systems of care comprising other oral health care professionals as well as with nurses, physicians and other community-based health care service providers. In First Nation communities, the dental therapist, while functioning as part of the overall health care team, also functions as an important resource for school staff and other social programs within the community. The use of a broadly defined scope of practice allows dental therapists to provide a wide range of basic dental services, many of which are irreversible, in the community. While dental therapists most often provide services to school-age children, dental therapists can and do provide services to any age group. Therefore anyone in the community who requires basic dental care can be treated by dental therapists under the general supervision of a licensed dentist. More extensive dental procedures are referred to community-based dentists or to providers outside the community.¹¹

Dental therapists employed by the First Nations and Inuit Health Branch fall under the professional and general supervision of the Regional Dental Officer position. Professional supervision provides a formal relationship that is the vehicle for liability coverage by the federal government. General supervision ensures that basic dental care services are available in First Nation communities, even if no dentist resides in the community.¹¹

Alaskan Dental Health Aide Therapist. Geographically, the state of Alaska is by far the largest US state in terms of size with a land mass equal to one-fifth the combined size of the lower 48 states. Alaska ranks 47th among states with respect to population (approximately 680,000) and has approximately 475 dentists within the state. About 85,000 Alaska Natives live in approximately 200 small villages of 300-400 people, accessible only by small aircraft, boat, snow-machine, or dog sled. This population has overwhelming, unmet oral health needs. Absent access to dental homes, the children in these areas have been unable to obtain routine access to even emergent dental care.^{6,12}

Developed as a model similar to the NZDN/T and the CDT, the Alaskan Dental Health Aide Therapist (DHAT) Program began working in Alaskan villages in 2005.¹² The program was developed as an attempt to improve access to dental care in remote outlying areas within tribal lands. Alaska's DHATs provide oral health care in the context of the Community Health Aide (CHA) program, a program authorized by federal statute, in which tribes provide primary health care throughout Alaska. Using a primary care team approach, students learn to work with other health professionals – physicians, physician assistants, nurse practitioners, and nurses – and integrate their work into existing community-based medical prevention programs. DHATs must meet specified training requirements, undergo a protracted preceptorship, and have

their skills reevaluated every 2 years. Continuing education is required for continued certification. DHATs are recruited from villages that they will return to serve. As of 2008, there were approximately a dozen DHATs working in Alaska.

Dentists are responsible for writing standing orders, being the point of contact for DHATs, and evaluating DHATs' skills through direct observation. DHATs must demonstrate their ability to perform each procedure for their scope of practice before being allowed to practice under a dentist's general supervision. Supervising dentists must be employed by a recognized tribal health organization and be familiar with the DHAT certification standards.¹²

A number of studies have addressed the technical quality of restorative procedures performed by dental therapists. In general, these studies have found that, within the scope of services and circumstances to which therapists are limited, the technical quality of restorations placed by therapists is comparable to that produced by dentists. However, there appears to be no evidence-based material addressing comparisons between dentists and dental therapists on the broader set of competencies, knowledge and skills (eg, diagnosis, general health assessment, treatment planning, and behavior management) required in the delivery of comprehensive dental care to children, including children with special health care needs, under a broad range of circumstances.

Expanded Function Dental Auxiliaries/Assistants. Expanded Function Dental Auxiliaries/Assistants (EFDAs) are allied health professionals who, under the direct supervision of a licensed dentist, can perform various reversible restorative procedures and other specified services. EFDAs generally include those who were previously trained and have experience as dental assistants, certified dental assistants, or dental hygienists.

The utilization of EFDAs in the US has been permitted under numerous state dental practice acts since the 1970's. EFDAs also are used by the Armed Forces and programs sponsored by several other federal agencies and have a long history in Europe and Canada.^{6,13} The scope of permissible EFDA practices varies from state to state. In the private sector, the specific functions permitted and training required for EFDAs are determined by each state legislature and corresponding dental practice act. The utilization of EFDAs and the procedures they are allowed to perform vary widely across the country. Likewise, educational programs for training EFDAs vary from state to state. American Dental Association (ADA) surveys from 1972 to 2008 show a trend towards more states allowing greater delegation of procedures.¹⁴ Numerous studies have demonstrated that EFDAs enhance dental practice productivity and efficiency without compromising technical quality of care.¹⁵⁻¹⁷

Summary of Existing Mid-Level Models

The 4 existing models noted above represent mid-level dental providers who work as part of teams of dental professionals and deliver a limited scope of services under varying levels of dentist supervision. Studies have demonstrated that the technical quality of restorative care provided under these conditions generally is comparable to that provided directly by

dentists. However, it is essential that policymakers recognize that evaluations which demonstrate comparable levels of technical quality merely indicate that individuals know how to provide certain services, not that those providers have the knowledge and experience necessary to determine whether and when various procedures should be performed or not performed or to manage individuals' overall oral health care.

The Canadian and Alaskan therapist models were designed primarily to provide basic dental services to disadvantaged, underserved populations in remote locations. These mid-level providers are employed primarily by various governmental or tribal agencies following a minimum of 2 years of training, which generally is highly subsidized by government payments. The New Zealand model originally was designed and staffed similar to the Alaskan and Canadian models, but subsequently has been expanded to serve a wide range of school-age children. However, studies conducted in the US and New Zealand have raised questions concerning the efficiency and cost-effectiveness of school-based programs.^{10,18} With the exception of the EFDA model, the performance of these models has not been thoroughly evaluated in diverse US settings, nor has the cost-effectiveness of existing models been rigorously evaluated. Moreover, evidence from several developed countries that have initiated dental therapist programs suggests that when afforded an opportunity, therapists often gravitate toward private practice settings in less-remote areas, thereby diminishing the impact of these mid-level providers in terms of the care for the underserved, the very purpose for which they were initially created.

Review of Proposed Mid-Level Models

Advanced Dental Hygiene Practitioner. Efforts to institute a new type of dental services provider, labeled as the Advanced Dental Hygiene Practitioner (ADHP), have been proposed by the American Dental Hygienists' Association (ADHA).¹⁹ As proposed, this new model would have the authority to practice without the supervision of a dentist, and would mirror many of the same services performed by dentists, including rendering diagnoses and providing irreversible procedures (eg, restorations, extractions). Efforts to promote this mid-level provider have, as their foundation, the assumptive argument that access to dental services (or lack thereof) in underserved populations is primarily the result of a lack of dental providers, and the speculative assertion that the introduction of the ADHP would mitigate the assumed workforce shortage or provider maldistribution.⁶

In its 2008 Position Statement on the ADHP, the Academy of General Dentistry (AGD) noted that, "Unlike alternative allied dental models, such as Alaska's Dental Health Aide Therapists (DHAT) and the ADA's proposed community dental health coordinator (CDHC), an ADHP may work without direct, indirect, or general supervision by a dentist, and without any standing orders or dentist review. That is, the ADHP may fall completely outside the scope of the dental team concept."²⁰ The AGD has expressed a number of concerns with the ADHP model, citing challenges of providing the care that patients require in a timely manner

when working without a dentist or outside the traditional dental team; economic challenges of maintaining an independent practice without a dentist, especially in remote areas and when treating a high proportion of economically disadvantaged individuals; challenges related to managing complications and compromised systemic health conditions in disadvantaged patients (who typically have more severe levels of dental disease and multiple co-morbidities) in light of the ADHP's limited education and training; difficulty in establishing referrals to and working relationships with dentists, especially for patients seen in remote areas; establishing a lower standard of education and care for the treatment of disadvantaged populations; and lack of evidence that independent dental hygiene practice is economically viable or substantially expands access to care for disadvantaged populations.

The AAPD Task Force on Workforce Issues shared many of these concerns and remains highly skeptical about the viability and potential impact of the ADHP model on access to care for disadvantaged populations.⁶ This concern is based in part on Colorado's experience with independent dental hygiene practice. Specifically, prior analysis suggests that unsupervised dental hygiene practice has not had a notable effect on access to care in Colorado.²¹ The impact of existing independent practices was limited in 2 important ways: 1) there were very few practices; and 2) they were located in areas served by dental offices with dental hygienists functioning in traditional capacities. Comparisons suggest that the economic viability of the unsupervised hygienist business model is questionable because their fees, on average, are not different from traditional dental practices, which have the advantage of providing a full range of dental services.¹⁹ This may explain why independent hygienist practices have not expanded substantially in the state where they are permitted. The prior analysis also demonstrates the assumption that unsupervised hygiene practices would locate in underserved communities has not been realized.

Minnesota Dental Therapist Model(s). In 2009, the State of Minnesota adopted legislation to begin training 2 proposed types or levels of mid-level providers: dental therapists and advanced dental therapists. According to published reports, the new Minnesota mid-level models resemble existing dental therapist models described above in terms of scope of services and requirements to function as part of dental teams under the supervision of dentists.²² Dental therapists will require on-site supervision by licensed dentists and will not be able to extract permanent teeth. Advanced dental therapists will need at least 2,000 hours of practice as a dental therapist and additional education, testing, and certification beyond that of a dental therapist in order to treat patients without a dentist on-site. Advanced therapists will be allowed to assess patients, but must receive approval for treatment plans from supervising dentists before performing restorative and surgical procedures, and will be able to perform some additional procedures, such as non-surgical extraction of periodontally involved permanent teeth, when authorized by supervising dentists. Neither

dental therapists nor advanced dental therapists will be able to prescribe medications. In Minnesota, the discipline of dental therapy will remain distinct and separate from dental hygiene. A comprehensive outcomes assessment will be conducted to study the impact and quality of care provided by dental therapists.²³

Community Dental Health Coordinator. In 2006, the House of Delegates of the ADA established the Workforce Models National Coordinating and Development Committee to develop workforce models focusing on the treatment needs of the entire population. Subsequently, the ADA House of Delegates directed the development of 2 new workforce positions to support the dental profession and expanded scope of practice for members of the current workforce. This directive has led to the creation of the Community Dental Health Coordinator (CDHC) and Oral Preventive Assistant (OPA) model training programs to extend oral health care to underserved communities. Only the CDHC model is addressed within the context of this paper, as the OPA model falls short of generally accepted notions of mid-level dental providers.²⁴

The ADA's plans call for CDHCs to be specifically trained to help organize community programs and function in remote locations and other underserved areas. CDHCs will be trained to promote oral health and provide preventive services including screenings, fluoride treatments, sealants, temporary fillings and simple teeth cleanings until patients can receive more comprehensive services from a dentist or dental hygienist. CDHCs working in facilities without the continuous presence of a dentist could perform limited palliative services for conditions requiring urgent care prior to subsequent diagnosis and treatment by a dentist. Perhaps most notably, the CDHC will be in a position to link patients who would not or could not otherwise access care with health providers by coordinating the logistics of appointments and helping patients become eligible for dental programs.²⁴

Promoters of this model assert that CDHCs will: be of particular value to public programs, but also could be useful in larger private practices; enable the existing workforce to expand its reach deep into underserved communities; and influence local health and community organizations to adopt initiatives to promote oral health. CDHCs will work under a dentist's supervision – not necessarily in dental offices, but under 'remote supervision' as a member of a dental team. Schools, community health centers, churches, senior citizen centers and Head Start programs are all health and community settings in which a CDHC may work. Much like Alaskan DHATs, CDHCs will be recruited from the communities where they will work to bridge the gap between local cultures and dental health care systems, navigate community members through the delivery system and help diverse populations overcome barriers that prevent them from accessing dental health services.

Summary of Proposed Mid-Level Models

The proposed mid-level models summarized above present radically different approaches to expanding care for under-served

populations. The ADHP model proposes to create a new independent practitioner with substantially less education and training than is presently required for the practice of dentistry to essentially practice dentistry in disadvantaged populations. The CDHC model, on the other hand, proposes to train a new type of mid-level provider who will work with dentists and other health care professionals as part of teams with expanded capabilities to address the full range of oral health needs of underserved communities. The Minnesota dental therapist model is being developed along the lines of other dental therapist models.

AAPD Values and Principles Concerning Oral Health-care for All Children and the Dental Home

AAPD believes that all children deserve access to quality oral health care. Addressing disparities in children's oral health and oral health care is the major focus of AAPD's advocacy efforts. The core values of AAPD include the following elements:

- Health and health care equity.
- Child and adolescent welfare and safety.
- An effective, efficient and competent dental workforce.
- Effective, efficient public programs.
- Oral health promotion, disease prevention and medically necessary dental services.
- Science, education, research and evidence-based care.

AAPD believes that the dental home concept is essential for ensuring optimal oral health for all children. Establishing a dental home means that each child's oral health care is delivered in a comprehensive, continuously accessible, coordinated and family-centered way by or under the supervision of a licensed dentist.⁴ The concept of the dental home reflects AAPD's oral health policies and clinical guidelines², which promote optimal oral health for all children. The dental home concept, which includes the age 1 dental visit, underlies the dental profession's efforts to assist children and their parents and caretakers in establishing the foundation for a lifetime of good oral health. Each child's dental home should include the capacity to arrange referrals to other dentists when a child's primary care dentist cannot provide all needed care.

Policy Recommendations

Existing and proposed mid-level dental provider models that are conceptually compatible with AAPD core values, oral health policies and clinical guidelines, and definition of the dental home include: EFDAs (Expanded Function Dental Auxiliaries), Dental Therapists working under the supervision of dentists, and CDHCs (Community Dental Health Coordinators). Use of EFDAs has been thoroughly evaluated, and is a part of accepted practice in over 20 states and several federal programs. Therefore:

1. **AAPD supports greater use of EFDAs based on extensive evaluations of their effectiveness and efficiency in a wide range of private and public settings as part of dental teams.**

On the other hand, additional evaluation of the performance, safety and efficiency of other models that are consistent with AAPD's core values and definition of a dental home (ie, dental therapist and CDHC models) is warranted. Therefore:

2. **AAPD recommends further evaluation of Dental Therapist and Community Dental Health Coordinator (CDHC) models prior to policy decisions regarding their use.**

AAPD has serious reservations about the premise, potential viability, and presumed impact of the Advanced Dental Hygiene Practitioner (ADHP) model, which are shared by other organizations that have embraced the dental home concept. Therefore:

3. **AAPD joins others in rejecting the ADHP model on the basis of its incompatibility with the principle that dental care should be provided directly by or under the supervision of a dentist.**

Existing and proposed mid-level dental providers that do not meet the criteria for a dental home may serve as valuable members of the dental care delivery team under arrangements that have been demonstrated to expand access to care without compromising quality or safety. Therefore:

4. **AAPD supports the use of mid-level dental providers who perform or assist in the delivery of specified reversible procedures and certain surgical procedures under the general supervision of a dentist, provided that such arrangements have been thoroughly evaluated and demonstrated to be safe, effective, and efficient and to not compromise quality of care in similar settings.**

Conclusion

AAPD believes that all children deserve access to quality dental care. Some may offer proposals based on what has been characterized as the "something is better than nothing" approach to care. However, AAPD believes that the oral health needs of all children are best met through ongoing, comprehensive dental care provided through the collaborative efforts of dental teams comprised of adequately trained oral health professionals under the direction of competent dentists – in short, in quality dental homes. AAPD looks forward to working with all who embrace this concept and seek to achieve this goal for all children.

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