

# Training New Dental Health Providers in the U.S.

## Executive Summary

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Actions taken by government and the dental professions to increase the availability of dental care for underserved populations evidence an accelerating interest in developing new midlevel providers in the U.S.

Over recent years, many states have significantly expanded their scopes of practice for conventional dental hygienists and dental assistants, thereby allowing both to perform an increasing range of dental services. New unconventional dental providers called “dental therapists” were independently established under federal authority in Alaskan Native areas in 2003 and under state authority in Minnesota in 2009. These new primary care dental providers deliver services that were previously delivered in the U.S. only by dentists. Congress and the U.S. Department of Health and Human Services have similarly paved the way for new midlevels in dentistry by mandating studies from the Government Accountability Office and the Institute of Medicine. At the same time, professional associations representing dentists and hygienists have each promoted their own conceptual models for new midlevel practitioners. At this time, U.S. policymakers are looking to other countries’ experiences for lessons learned about alternative providers and for models that may be appropriate in the U.S.

Given these dynamic developments, fundamental questions arise about the appropriate training, scope of practice, and linkages among various existing and proposed dental providers. This paper clarifies the roles and training of existing and proposed dental providers, examines

international experience with alternative dental providers, and explores a range of policy issues related to instituting dental therapists in the U.S.

## Taxonomy of Dental Providers

Conventional dental providers in the U.S. are Dentists, both generalists and specialists; Dental Hygienists, who provide preventive services customarily in association with dentists; and Dental Assistants, whose roles in delivering direct patient care vary considerably across states.

New midlevel dental providers include the Alaska Dental Health Aide Therapists, who are already deployed, and the Minnesota Dental Therapists, whose training programs are now being instituted. Their scopes of practice include many preventive services, basic dental repair services that are focused on children’s needs, and tooth extractions.

Additional new providers being proposed by dental organizations include the American Dental Association’s Community Dental Health Coordinator, who is envisioned to provide limited preventive and palliative care and extensive care coordination services, and the American Dental Hygienists’ Association’s Advanced Dental Hygiene Practitioner, who is envisioned as a highly trained analog to the nurse practitioner.

Conventional midlevel dental providers in other advanced and developing countries are the Dental Therapists, who typically provide extensive care for children and limited care for adults, and Dental Hygienist-Therapists, who are dually trained to provide preventive dental hygiene services for children and adults and dental repair services primarily for children.

Dental therapists, first instituted in New Zealand in 1921 to serve children through a universal school-based dental delivery system, are today deployed in more than 50 countries. Countries with advanced dental care systems, including Great Britain, The Netherlands, Australia, New Zealand, and—to a more limited degree—Canada, have institutionalized these primary care providers. Unsuccessful efforts to establish dental therapists in the U.S. date back to 1949 in Massachusetts, 1969 at Howard University, 1972 at the University of Kentucky, and, most extensively, from 1972 to 1974 at the Harvard-affiliated Forsyth Dental Center in Boston. This “Forsyth Experiment” verified the quality, patient acceptance, cost effectiveness, and productivity of dental therapists, but program advocates were unsuccessful in maintaining legislative authority to sustain the program. It was not until this decade when therapists were deployed under federal authority in Alaska and sanctioned in Minnesota that dental therapy was officially instituted in the U.S.

## Coordination across Providers

States have established a variety of delegation and supervision arrangements to ensure care quality, patient safety, and coordination among providers. These range from “direct” and “indirect” supervision, which require the dentist’s physical presence or physical availability, to “prescriptive” and “collaborative” arrangements, which support quasi-independent practice by midlevel caregivers. Teledentistry and advancements in health information technology are today blurring and expanding these traditional relationships.

Both patient and procedural complexity often require that treatment be delivered by a dentist as the most advanced dental practitioner. Patients with complex medical, developmental, or behavioral conditions require a dentist’s care regardless of the complexity of their treatment needs. Similarly, even the most basic procedures may present complexity that requires management by providers with advanced training. When such complexity arises unexpectedly, whether requiring a midlevel provider to engage a dentist or a dentist to engage a dental specialist, treatment is temporized and the patient referred. All who provide direct patient care must be competent and prepared to provide emergency medical services should a need arise during the provision of care.

## Dental Procedures and their Delegation

To understand the roles and responsibilities of various provider types requires familiarity with the range of dental procedures. The vast majority of dental procedures address one of two diagnoses: tooth decay and periodontal disease. Dental providers are additionally responsible for identifying and treating or referring a wide range of oral pathologies including oral cancer, infections, developmental disturbances, and traumatic injuries. Dental procedures are classified as “diagnostic,” “preventive,” “basic restorative,” and “advanced restorative.”

In the U.S. today, clinical diagnosis remains the sole purview of dentists whose extensive training in biomedical, socio-behavioral, and clinical sciences establishes uniquely expert competencies. Midlevel providers commonly obtain information (e.g. history, radiographs, photographs, initial dental and periodontal charting, and dental impressions) used by dentists in establishing diagnoses and plans of treatment. Visual identification of cavities and other common oral pathologies has long been within the purview of dental hygienists in the U.S. and dental therapists in other countries.

State practice acts widely distribute authority to deliver preventive services across dentists, hygienists, and assistants including cleaning of teeth, placement of dental sealants, and application of topical preventive agents. Some states additionally authorize the independent or quasi-independent practice of dental hygiene, particularly in safety-net settings.

Basic restorative care was once the sole responsibility of dentists. It is now shared in many states with Expanded Function Dental Assistants (EFDAs) and Expanded Function Dental Hygienists (EFHAs) who can deliver most elements of basic restorative care except “irreversible procedures” which involve soft tissue surgery, “drilling” teeth, and extracting teeth. Advanced restorative care—including crowns, bridges, dentures, root canal treatments, advanced periodontal procedures, complicated extractions, and biopsies—remains the exclusive responsibility of dentists, facilitated by dental assistants.

New to the U.S. is the authority granted to dental therapists in Alaska and Minnesota to deliver select irreversible procedures including “drilling” and extraction of teeth. This significant change allows therapists to be deployed independently through a prescriptive or collaborative arrangement with a supervising dentist. The proportion of procedures now delivered exclusively by dentists that could potentially be delegated to dental therapists is substantial: 75% for general dentists and 79% for pediatric dentists, according to American Dental Association survey data. However, British studies suggest that less care is routinely delegated to dental therapists, due in part to patient and procedural complexity.

Chart 1 summarizes the categories of procedures that are now delegatable to various midlevel dental providers in the U.S. and internationally.



Provider Type	Advanced Restorative Care	Diagnosis & Treatment Planning	Basic Restorative Care	Preventive Care including Cleaning Below Gum Line	Preventive Care including Coronal Polishing
<b>Dentist</b>					
Dentist	x	x	x	x	x
<b>Combination Dental Therapists/Dental Hygienists</b>					
Advanced Dental Hygiene Practitioner (proposed)		x	x		x
MN Advanced Dental Therapist		limited	x		x
Dental Hygienist-Therapist, international		variable	x	x	x
<b>Dental Therapists</b>					
Dental Therapist, international		variable	x		x
AK DHAT		limited	x		x
MN Basic Dental Therapist			x		x
<b>Dental Hygienists</b>					
Dental Hygienists				x	x
Expanded Function Dental Hygienists			partial	x	x
<b>Dental Assistants</b>					
Expanded Function Dental Assistants			partial		x
Dental Assistant					variable
<b>Community Dental Health Coordinator</b>					
Community Dental Health Coordinator					x

## Training of Dental Providers: U.S. and International

U.S. dentists are educated in post-baccalaureate doctoral programs at more than 50 dental schools accredited by the American Dental Association’s Council on Dental Accreditation (CODA). Most graduates enter directly into practice (60%). Others pursue additional training in general or specialty dentistry. While dental education programs are almost universally four years in duration, clock hours of instruction and distribution of teaching across the three domains of study—biomedical, socio-behavioral, and clinical—vary considerably. Dental hygienists also are educated in CODA-accredited institutions, most typically in associate degree programs. A minority of hygienists obtain more advanced degrees. Dental assistants are most often trained on-the-job or in proprietary short-course programs.

The two new dental therapy programs differ considerably from one another, with the Alaska program most consistent with international norms. The Alaska program trains high school graduates in a two-year program that is highly experiential. Unlike CODA-approved programs that assess competencies based on graduation and examination, the Alaska approach determines competencies based on demonstrated knowledge and skills. In contrast the Minnesota dental therapy approach requires variable lengths of collegiate education up to the masters level. Unlike the Alaska and international approaches, the Minnesota approach is more academic than experiential, provides background appropriate to care of medically complex patients, may be less community focused, and requires more time to complete. Like many newer midlevel programs in other countries, it combines dental hygiene with dental therapy, but does so over a total educational period of 40 months to six rather than three years. Programs in Great Britain, The Netherlands, Australia, and New Zealand now prioritize this dual training while the single midlevel

program in Canada continues to feature the two-year dental therapy-only approach.

Education requirements proposed for the new midlevels advanced by the ADA and ADHA differ from that of dental therapists. Training for the ADA's community dental health coordinator is being piloted at the University of Oklahoma and the University of California Los Angeles, where high school graduates learn both community health worker skills and preventive and palliative dental procedures in a one-year program. Training for the ADHA's advanced dental hygiene practitioner is envisioned as a one to two year master's degree program that prepares graduates in dental hygiene, dental therapy, dental systems management, research, and policy domains.

## Goals of Establishing Dental Therapy in the U.S.

The primary goal of instituting dental therapists and hygienist-therapists in the U.S. is to expand the availability of basic dental services to socially disadvantaged subpopulations that are now inadequately served. A second goal is to establish a diverse cadre of caregivers whose social, experiential, and language attributes are a better match for targeted underserved populations than those of current dentists. Entry level education as dental therapists or hygienist-therapists may also promote a career ladder for underrepresented minorities in dentistry.

Further, assuming that care provided by these midlevels is less costly than care provided by more extensively trained dentists, their implementation may reduce cost barriers, increase the cost-efficiency of dental care systems (including private dental offices), and reduce costs of those public programs that pay at market rates. Widespread availability of dental therapists also holds promise to expand workforce in the dental safety-net of community health centers, school-based programs, and special population programs. Potentially most valuable to dentistry as an advanced healthcare profession is the opportunity to maximize the dentists' expertise in managing the most complex patients and most complex treatments while delegating some routine and basic care to new providers.

## Policy Issues Inherent in Establishing Dental Therapists

The most critical need inherent in meeting these goals is the requirement that state legislators and regulators determine an appropriate scope of practice and training requirement for dental therapists and hygienist-therapists. Many of the goals articulated above will be unattainable if the scope of practice is too broad and the associated training requirements too extensive. Similarly, if supervision standards are too stringent, opportunities to deploy therapists to areas of greatest need will be curtailed.

Decisions about scope, training, and supervision will influence important policy determinations regarding curricula and training philosophy, program locations, designation of qualified training institutions, length and cost of training, and accessibility by desired applicants. These decisions in turn will influence critical determinations regarding certification and licensure of graduates as well as decisions about accreditation. While all dentists, dental hygienists, and the new Minnesota dental therapists are educated in CODA-accredited institutions, analogous medical midlevels (physicians' assistants and nurse practitioners) are independently accredited by agencies that are unaffiliated with either allopathic or osteopathic medical schools. Selection of an accrediting agent for dental therapists and hygienist-therapists that is similarly independent of dental school accreditation may significantly influence how dental therapists may function in the U.S.

## Criteria for Developing Dental Therapist and Hygienist-Therapist Training Programs

Based on a review of international programs and initial U.S. experience, the following findings may be considered in developing new training programs for dental therapists:

- In advanced dental delivery systems that utilize dental therapists, length of training is two years for dental therapy alone and three years for combined dental therapy and dental hygiene. Dental therapists' training fits within a larger career-ladder structure.
- Supervisory arrangements afford dental therapists sufficient latitude to practice collaboratively with dentists while ensuring that patients and procedures requiring a dentist's expertise are provided by a dentist.
- Trainees are recruited from the general population, with preference for those from underserved populations or committed to care of the underserved.
- Therapists are deployed to areas or populations of greatest need.
- The cost of dental therapy and dental therapy/hygiene education is lower than the cost of educating a dentist because they are trained in less time.
- Curricula stress clinical and socio-behavioral studies that allow for technical proficiency and engagement of underserved populations over biomedical training.
- Training experiences focus on attainment of clinical competency over didactic knowledge and often engage trainees in community-based experiences.
- Social, legal and financial incentives promote training and deployment of therapists in ways that increase access to basic dental care.
- Oversight and accrediting agencies establish standards specific to dental therapy and dental therapy/hygiene education within the context of comprehensive systems of care.

## Conclusion

Training new midlevel dental providers in the U.S. holds significant promise to expand the availability of basic dental care within larger systems of quality dental care delivery. Doing so can be well informed by longstanding international experience as well as by recent U.S. experience. While introduction of these well-tested providers will present challenges to both the dental professions and to governmental policymakers, thoughtful and collaborative determinations of scope of practice, supervision, deployment, and appropriate educational preparation can help meet the goal of safe, quality, accessible dental care for all. Additionally, implementation of dental therapists and dental hygiene-therapists in the U.S. can further advance the dentist as the most sophisticated and expert member of the dental team and as a more central member of the larger healthcare system.

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