A report from THE PEW CHARITABLE TRUSTS | Nov 2013

Growing the Dental Workforce

The Critical Role of Community Colleges and Workforce Investment Boards

The Pew Charitable Trusts

Susan K. Urahn, executive vice president
Alexis Schuler, senior director

Shelly Gehshan
Laura K. Hale
Jane Koppelman

Dr. Paul Glassman

External reviewers

The report benefited from the insights and expertise of seven external reviewers: Patricia Auerbach, workforce project analyst, Informational Technology Support Center, National Association of State Workforce Agencies; Ruth Ballweg, associate professor and section chief, MEDEX Northwest Physician Assistant Section, Department of Family Medicine, School of Medicine, University of Washington; Colleen M. Brickle, dean of health sciences, Normandale Community College; Dr. Steven Krauss, assistant professor, Department of Dentistry, Albert Einstein College of Medicine of Yeshiva University; Roxanne Fulcher, director of health professions policy, American Association of Community Colleges; Ron Painter, chief executive officer, National Association of Workforce Boards; and Rebecca L. Stolberg, chair, Department of Dental Hygiene, Eastern Washington University. Although they have reviewed the report, neither they nor their organizations necessarily endorse its findings or conclusions.

Acknowledgments

We would like to thank Michael Caudell-Feagan for his guidance and feedback, and former staff members Sachini Bandara and Zach Snyder for their significant contributions. We also thank our colleagues Jennifer V. Doctors, Mary McNamara, Nate Myszka, Jennifer Peltak, Fred Schecker, and Kodi Seaton for providing valuable input and production assistance on this report.

For further information, please visit:

pewstates.org/dental

Contact: Mary McNamara, communications manager
Email: mmcnamara@pewtrusts.org
Project website: pewstates.org/dental

Contents

Overview

Each year in the United States, tens of millions of people—disproportionately those with low incomes—go without dental care. Left untreated, the pain and infection associated with tooth decay can result in serious health problems, poor performance in school and at work, and grim job prospects.[1] A shortage of dental providers is a major contributor to this problem. Not only are there not enough dentists in many areas of the country, but there also are too few who accept Medicaid.[2]

To deal with these issues, a number of states are considering expanding the scope of practice for existing dental health professionals, such as hygienists and dental assistants, or adding another type of provider, like a dental therapist, to the dental team. These practitioners, who undergo a more narrow training and command lower salaries than dentists, can provide high-quality, cost-effective, routine care, particularly in parts of the country where dentists are scarce.[3]

Two states, Alaska and Minnesota, and more than 50 countries, already use dental therapists. But building a sufficient corps of midlevel providers in the United States will require new training programs and recruitment mechanisms. This is where the nation's community colleges and workforce investment boards—organizations that channel federal, state, and local funds to local workforce development programs—can play a critical role.

This report examines how community colleges and workforce investment boards can help to expand the dental team and improve access to care for millions who currently go without, and it assesses the benefits that can accrue to these institutions. For example:

- Community colleges are uniquely positioned to develop midlevel providers as a career option and to effectively train a geographically and culturally diverse workforce, representative of the communities most in need of greater access to dental care.
- Workforce investment boards can provide critical support to change state laws to expand the dental workforce, to develop job opportunities among dental practices in underserved communities, to recruit candidates for training programs, and to connect graduates with employers.

This paper also offers guidance on how these institutions can cultivate political and organizational support for new training programs, as well as how the institutions can leverage existing resources to begin educating midlevel dental practitioners.

The access problem

Getting regular dental care is a serious challenge for millions of Americans, particularly low-income children and families. The problem of accessing care is fueled by a number of factors, including lack of insurance coverage, high cost, and difficulty finding a dentist. About 1 in 4 children (roughly 19 million) lack dental coverage.[*]

The federal Affordable Care Act, or ACA, scheduled for implementation in 2014, is expected to provide millions more children with dental insurance. But they will be entering a delivery system that already cannot provide care to all who have coverage—whether through a private company or public insurance like Medicaid—in large part because of the lack of enough dental care providers in many areas. These shortages, and their consequences, are well-documented:

- The distribution of dentists across the country is uneven. According the U.S. Department of Health and Human Services, more than 45 million Americans live in areas—many of them rural or inner cities—identified by the federal government as having dentist shortages. Estimates suggest that more than 6,000 additional dentists would be needed to end these shortages.[†]
- In 2009, 25 of the 39 states that submitted data reported that fewer than half of the dentists in their states accepted Medicaid patients.[‡] Further, in 2011, more than 14 million low-income children on Medicaid went without dental care.[§] These data indicate that although low-income children are more likely to have dental coverage than their higher-income peers, they are less likely to receive dental care and twice as likely to have untreated cavities as children with private insurance.[**]
- Compounding these problems, the American Dental Association projects that, despite the addition of dental schools, the ratio of dentists to population will shrink in the coming years.[††]

Together, these factors create both urgency and an opportunity to improve dental care delivery by expanding the team of dental professionals available to care for patients.

[*] The 19 million figure represents the most recent data, from 2009. See Kaiser Family Foundation, *Children and Oral Health: Assessing Needs, Coverage, and Access* (June 2012), http://www.kff.org/medicaid/upload/7681-04.pdf.

[†] U.S. Department of Health and Human Services, Health Resources and Services Administration, *Designated HPSA Statistics Report, Table 4*, data as of Jan. 9, 2013.

[‡] U.S. Government Accountability Office, *Efforts Under Way to Improve Children's Access to Dental Services, but Sustained Attention Needed to Address Ongoing Concerns* (2010), http://www.gao.gov/new.items/d1196.pdf.

[§] This figure counts children ages 1 to 18 eligible for the Early and Periodic Screening, Diagnosis, and Treatment Benefit. See U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, *Annual EPSDT Participation Report, Form CMS-416 (National) Fiscal Year: 2011* (April 1, 2013) (analysis by The Pew Charitable Trusts); and U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, "Early and Periodic Screening, Diagnosis and Treatment," http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Benefits/Early-Periodic-Screening-Diagnosis-and-Treatment.html.

[**] U.S. Government Accountability Office, *State and Federal Actions Have Been Taken to Improve Children's Access to Medicaid, but Gaps Remain* (September 2009), http://www.gao.gov/new.items/d09723.pdf.

[††] American Dental Association, Health Policy Resources Center, *2011 American Dental Association Workforce Model: 2009-2030* (Chicago: American Dental Association, 2011), 11.

Types and roles of midlevel providers

The field of medicine has developed a wide variety of providers to extend care to more patients, including different types of nurses, nurse-practitioners, physician assistants, phlebotomists, emergency medical technicians, X-ray technicians, medical assistants, and many others. Dentistry in the United States is just beginning to follow this path, given the strong evidence showing that midlevel dental providers deliver high-quality care, increase access, and strengthen the productivity and financial stability of dental practices.[4]

In 2011, a major report by the Institute of Medicine called for deploying additional dental workforce models to improve the availability of care.[5] The institute found no safety or quality concerns and recommended more research into how midlevel providers could be used to expand access. The report concluded that improving access would require multiple solutions using an array of providers across a variety of settings.

While there are several types of midlevel providers, this brief describes three that states have explored in recent years: the public health hygienist, the dental therapist (of which the dental health aide therapist and advanced dental therapist are variations), and the advanced dental hygiene practitioner. The first two work under the supervision of a dentist, and the third can work independently or under a collaborative agreement with a dentist. All three must refer cases beyond their scope of practice to dentists or other appropriate medical providers.

Table 1 shows a comparison of education and salary considerations for some existing and proposed dental providers.

Public health hygienists

These practitioners provide hygiene services in public health settings such as schools, nursing homes, community centers, and federally qualified health centers. Most states allow dental hygienists to provide preventive services in these types of public settings without a dentist present; but in a few states, specially trained public health hygienists can also provide limited routine restorative care such as temporary fillings. It is this extra service that fills a critical gap by stabilizing patients with untreated decay until they can see a dentist.

Dental therapists

The dental therapy profession was introduced in 1921 and is practiced in 53 countries. In 2005, a version of these practitioners called dental health aide therapists, or DHATs, began operating in Alaska's tribal regions in an effort to deliver care to some of the state's most underserved rural areas. Employed by the Indian Health Service and educated in a two-year, post-high school training program that focuses on limited, routine procedures and the science behind them, DHATs provide education, preventive care, and routine restorative services such as filling cavities. Working in satellite clinics, often in schools, and under the supervision of dentists at a hub clinic, Alaska's dental therapists can identify and treat tooth decay early, before problems worsen. DHATs make regular, quality dental care available to about 35,000 Native Alaskans in rural areas who did not have it before.[6]

Two other versions of this provider—a dental therapist and an advanced dental therapist—were authorized in Minnesota in 2009. These practitioners have higher educational requirements than DHATs working in Alaska and are employed in a variety of settings, including nonprofit dental clinics, community health centers, and private dental practices.

Table 1

Midlevel Dental Provider Models Comprise a Range of Educational Requirements and Are Paid Along a Broad Salary Continuum

Educational requirements, scope of practice, and compensation levels, 2009–13

	Public health dental hygienist	Dental health aide therapist—Alaska	Dental therapist—Minnesota	Advanced dental therapist—Minnesota	Advanced dental hygiene practitioner (proposed)
Degree conferred	**Associate's degree or more**	**Diploma/Certificate**	**Bachelor's degree**	**Master's degree**	**Master's degree**
Prior education needed	High school	High school	High school and 10 prerequisite courses	Bachelor of arts or science in dental hygiene (Normandale Community College-Metropolitan State University); bachelor's degree in any field plus 10 prerequisite courses (University of Minnesota)	Bachelor's degree in dental hygiene
Scope	Full preventive services*	Some preventive services, routine restorative services	Some preventive services,† routine restorative services	Routine restorative, full preventive services	Routine restorative, full preventive services
Duration	24 months	24 months	28 months	26 months (Normandale Community College-Metropolitan State University), 28 months (University of Minnesota)	24 months
Total tuition	$22,365 (resident), $29,989 (nonresident)	$50,645 (paid for by employer)	$42,210 (resident); $64,085 (nonresident)	$19,140 (resident and nonresident, Normandale Community College-Metropolitan State University); $52,528 (resident) and $80,465 (nonresident) (University of Minnesota)	$20,839 (resident); $48,139 (nonresident)
Annual estimated salary‡	$72,176§	$70,000	$72,800‖	$93,600#	N/A

* Full preventive services includes prophylaxis and root planing.

† This includes coronal polishing and sealant and fluoride varnish application.

‡ Based on 2,080 hours.

§ Hourly rate of $34.70 reported by dentists in 2009 survey.

‖ Hourly wage for a dental therapist at Children's Dental Services in Minnesota is $35.

\# Hourly wage for an advanced dental therapist at Children's Dental Services in Minnesota is $45.

Sources: Amanda Nagy, community program specialist, University of Minnesota School of Dentistry, phone interview, Sept. 19, 2013; American Dental Association, *2010–11 Survey of Allied Dental Education* (April 2012), http://www.ada.org/sections/professionalResources/pdfs/survey_allied.pdf; American Dental Association, "Frequently Asked Questions," http://www.ada.org/1444.aspx; Eastern Washington University, "Dental Hygiene," http://www.ewu.edu/CSHE/Programs/Dental-Hygiene/DH-Degrees/Masters-Degree-in-DH.xml; Jeffrey Bartleson, program manager, Children's Dental Services, a nonprofit dental clinic in Minneapolis, MN, phone interview, May 14, 2013; Mary Williard, D.D.S., director, DHAT Training Program, Alaska Native Tribal Health Consortium, email message to Pew children's dental policy research director, Sept. 17, 2013; Metropolitan State University, "Advanced Dental Therapy (MSADT)," http://www.metrostate.edu/msweb/explore/gradstudies/masters/msadt; Metropolitan State University, "Tuition and Fees," http://www.metrostate.edu/msweb/pathway/tuition/costs.html; University of Minnesota, "Bachelor of Science in Dental Therapy Program," http://www.dentistry.umn.edu/programs-admissions/dental-therapy/bachelor-program/index.htm; University of Minnesota, "Master of Dental Therapy," http://www.dentistry.umn.edu/programs-admissions/advanced-programs/dental-therapy/index.htm.

Advanced dental hygiene practitioners

This provider model, essentially a hygienist who attains a master's degree in dental therapy, was developed by the American Dental Hygienists' Association and is not currently operating in any state. These practitioners, however, could offer traditional hygiene services, conduct case management, assess risk, and provide preventive care, as well as routine restorative services such as filling cavities. They could work independently in a variety of settings and would refer patients in need of more advanced services to dentists or other health care providers.

Advancing and training midlevel providers

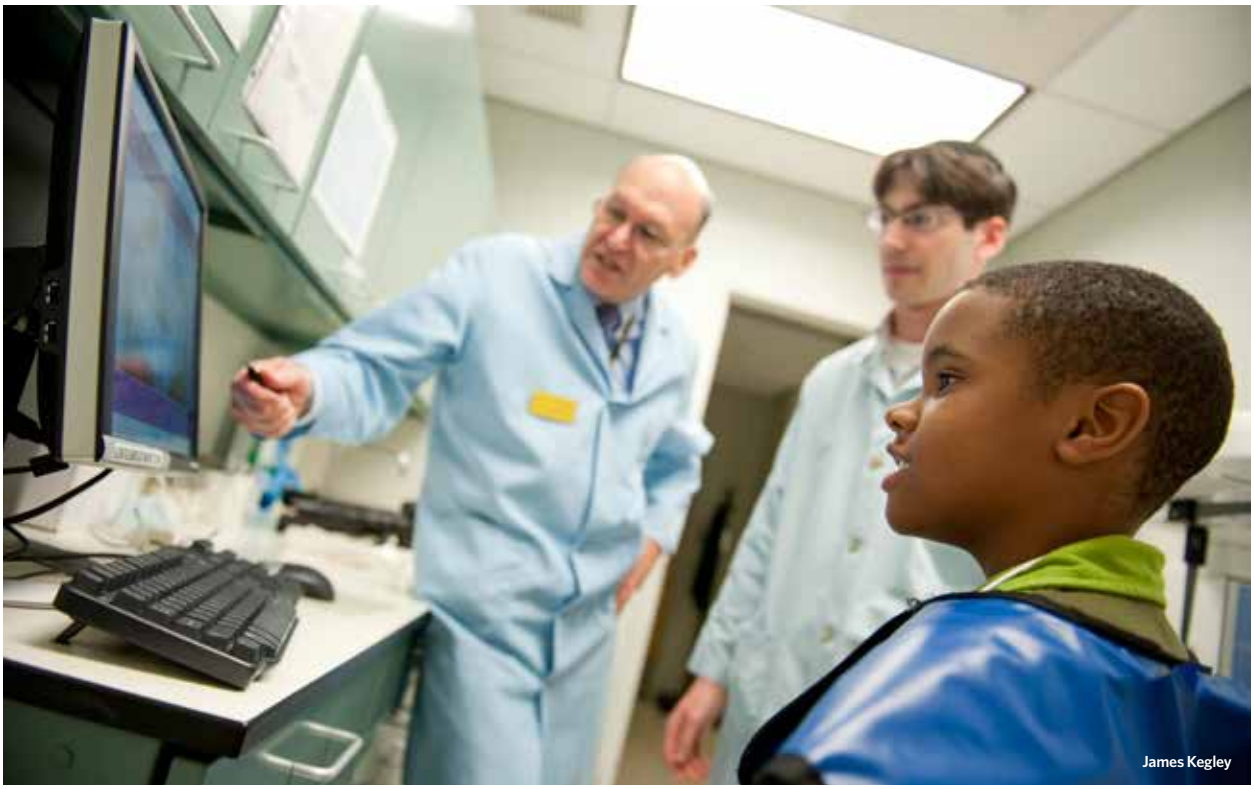
Despite their proven effectiveness in Alaska, Minnesota, and around the globe, adoption of midlevel dental providers in the United States has proceeded slowly. This is the result, most notably, of opposition from some dentists and dental associations to the inclusion of a dental therapist-type provider on the dental team. They claim that licensing dental therapists would lower the quality of care. But a comprehensive literature review of more than 1,100 studies, as well as the Institute of Medicine study, found no quality concerns with these providers.[7]

Further, research suggests that, due to their significantly lower salaries—$35 an hour for dental therapists, compared with $75 per hour for dentists at one nonprofit practice in Minnesota[8]—and given appropriate policies and payment rules, midlevel practitioners can actually benefit dental practices financially, while providing care to millions of people who live where dentists are scarce. In fact, studies show that these practitioners are allowing dentists to focus on more complex, higher revenue-producing procedures, such as root canals and bridges, and in other cases, are making it profitable for private practice dentists to care for more underserved patients.[9]

In addition, these positions can provide good jobs with comparatively short training periods in communities with high rates of unemployment and with significant low-income populations. The average salary of a dental health aide therapist in Alaska, for example, is $70,000. (See Table 1.) The training period is two years.

To date, most efforts to add midlevel practitioners to the U.S. dental care system have been led by advocates for underserved populations and provider associations such as public hospitals and primary care associations and have occurred primarily within the oral health community. A broader coalition that includes community colleges and workforce development leaders could more effectively meet the needs of local communities by coordinating advocacy strategies for strengthening the growth of this occupational field, as well as creating more educational pathways to train additional dental providers. In Minnesota, for example, community colleges played a pivotal role in developing, advancing, and implementing the state's 2009 law that established licensing for two types of dental therapists. Their leadership provides an opportunity to share lessons with other community colleges, state workforce development boards, and partners in other states where many thousands of citizens struggle to get dental care.

By developing affordable education programs and recruitment pathways for these providers, community colleges and workforce development leaders will be essential to growth in this occupation. In doing so, they also can improve their communities' oral health and create more well-paying jobs within the health care workforce and in underserved areas.


James Kegley

Community colleges: An effective partner in expanding the dental team

Community colleges, which provide quality, affordable education, and training to students, are an integral part of U.S. communities and a logical place for training additional dental providers. In its 2011 report, the Institute of Medicine recommended that dental education programs target recruitment efforts and support for students from precisely those underserved communities that the colleges serve, including rural, low-income, and other areas such as inner cities. Community, junior, and technical colleges across the country already offer more than 240 of the nation's 332 entry-level dental hygiene programs.[10]

Many health professionals are job-ready after completing their education at community colleges; additional types of dental providers should be no exception. Because community colleges already play this key role for medical staff and for existing allied dental providers, such as hygienists, assistants, and laboratory technicians, they are natural candidates to train midlevel dental providers.

Community colleges are particularly well-placed to educate midlevel providers in rural areas and inner cities that have dentist shortages, creating a more geographically and culturally diverse dental workforce. For instance, four-year colleges tend to be located in cities, while community colleges are more evenly distributed between cities, rural areas, and suburbs.[11] In addition, students from low- and moderate-income families enroll in community colleges at higher rates than their peers from more well-to-do families.[12]

Further, medical personnel generally work in the area where they train.[13] Because community colleges are spread more evenly across the country, students may have more opportunity to receive education and training in the communities where they are raised and to practice there, especially if development of training programs is

paired with efforts to cultivate local employment opportunities for graduates. Underserved populations would likely benefit greatly from having dental providers who are from the communities they serve. Research shows that minority providers in particular are more likely than their white peers to treat economically disadvantaged populations, which bodes well for expanding dental care access in such communities.[14]

In many areas of the country, community colleges serve as an economic catalyst that provides employers with a well-educated and -trained workforce. And they have a history of taking active steps to address the needs of the areas they serve. Delgado Community College in Louisiana, for example, successfully developed a master's degree program to address a local shortage of well-trained nurses. Oregon and Washington community colleges have helped to introduce expanded function dental assistants to their states.

Workforce investment boards: A key partner

State and local workforce investment boards, or WIBs—government entities that help communities create employment opportunities to fill demonstrated needs, recruit candidates to undergo training, and connect graduates with employers to fill jobs—are also vitally important to advancing the addition of midlevel providers to dental teams in their states. Staffed with experts on workforce and health care training issues, these organizations can pinpoint workforce supply-and-demand needs in different regions, identify what types of providers would be most useful, and direct candidates into new training programs. Local workforce boards frequently lead initiatives creating career ladders to help low-wage workers progress to higher-skilled and better-paying jobs, with many such systems in place in nursing, banking, and other industries across the country. Similar ladders could be developed for dental providers.

WIBs include representatives from diverse groups: education, labor, private business and employers, community-based organizations, and state and local governments. With these broad local networks, the boards are uniquely able to leverage the political capital needed to change state laws to expand the scope of practice for dental hygienists and authorize other types of midlevel dental providers.

In addition, workforce boards are strategically positioned to be able to create recruitment pipelines, not only to fill the training programs for midlevel providers, but also to place graduates where they are needed. And in many areas, workforce boards also have vital experience, having facilitated change in other health provider fields.

One case in point: Hospitals in the Hempstead region of New York were having problems filling jobs and retaining staff and were interested in increasing the skills of existing workers.[17] The local WIB served as the hub to bring together numerous organizations that were working separately to address this challenge, creating collaborations among the local hospital, the state Department of Labor, job placement programs, local labor agencies, and local educators. Through this process, the board helped the partners identify and address gaps in workers' skills by creating certification programs.

The Minnesota story

In May 2009, the Minnesota Legislature became the first in the United States to approve the licensing of additional types of providers, specifically dental therapists and advanced dental therapists. A dental therapist is licensed to do preventive care and perform such restorative duties as filling cavities and extracting baby teeth. An advanced dental therapist, or ADT, can perform the added functions of developing treatment plans and doing nonsurgical extractions of permanent teeth. Of particular note, ADTs can work under the remote supervision of a dentist—meaning the dentist does not have to be in the same facility.[15]

Educators from Minnesota community colleges were key leaders in the coalition that proposed and lobbied for this legislation. Dr. Colleen Brickle, an oral health educator and dean of Normandale Community College, spent a yearlong sabbatical researching dental workforce issues. Her studies identified the lack of access to oral health care and the need for more dental providers in the state.

In 2005, as the coalition moved to create legislation and build support, it was clear, according to Dr. Brickle, that a training infrastructure needed to be in place to secure passage of the bill. Educators determined that the best way to train advanced dental therapists was through a partnership between Normandale Community College, which already had a training program for dental hygienists, and Metropolitan State University. Because ADT training was ultimately determined to be on a graduate level, students receive a master's degree, conferred by the university, but are primarily taught at Normandale. Both institutions are part of the Minnesota State Colleges and Universities system, or MNSCU.

Dr. Brickle then spearheaded the effort to complete an application to MNSCU to create a new training program for these providers. Metropolitan State University accepted the application in 2006, and educators were instructed to provide further detail on training procedures. With the help of an advisory group that included dentists and dental training experts, the university gave final approval to the program in April 2009, in time for passage of legislation a month later.

For coalition members, the effort was a test of endurance. The proposal initially attracted strong opposition from the Minnesota Dental Association, which engaged in both lobbying and—in its own words—an "aggressive statewide advertising campaign" to defeat the legislation.[16] But the groundwork laid by educators establishing the need for expansions of the workforce, and the existence of a clear plan to train the additional providers, effectively countered the association's opposition.

The work is ongoing. Minnesota dental therapy education programs are in the process of establishing accreditation procedures. Options include a new independent accrediting agency; seeking recognition as a committee within the Commission on Accreditation of Allied Health Education Programs; or working with the Commission on Dental Accreditation to create an accreditation program. In August 2011, the commission voted to grant the University of Minnesota School of Dentistry's request to establish accreditation standards for dental therapy education programs. In 2012, Metropolitan State University and the Minnesota Board of Dentistry asked the panel to develop accreditation standards for the advanced dental therapist, as well.

By entering the coalition early and establishing a training strategy while legislation was being crafted, educators were key in shaping the final law, and they have been able to sustain support when new challenges, such as accreditation, arise.

Key steps for moving forward

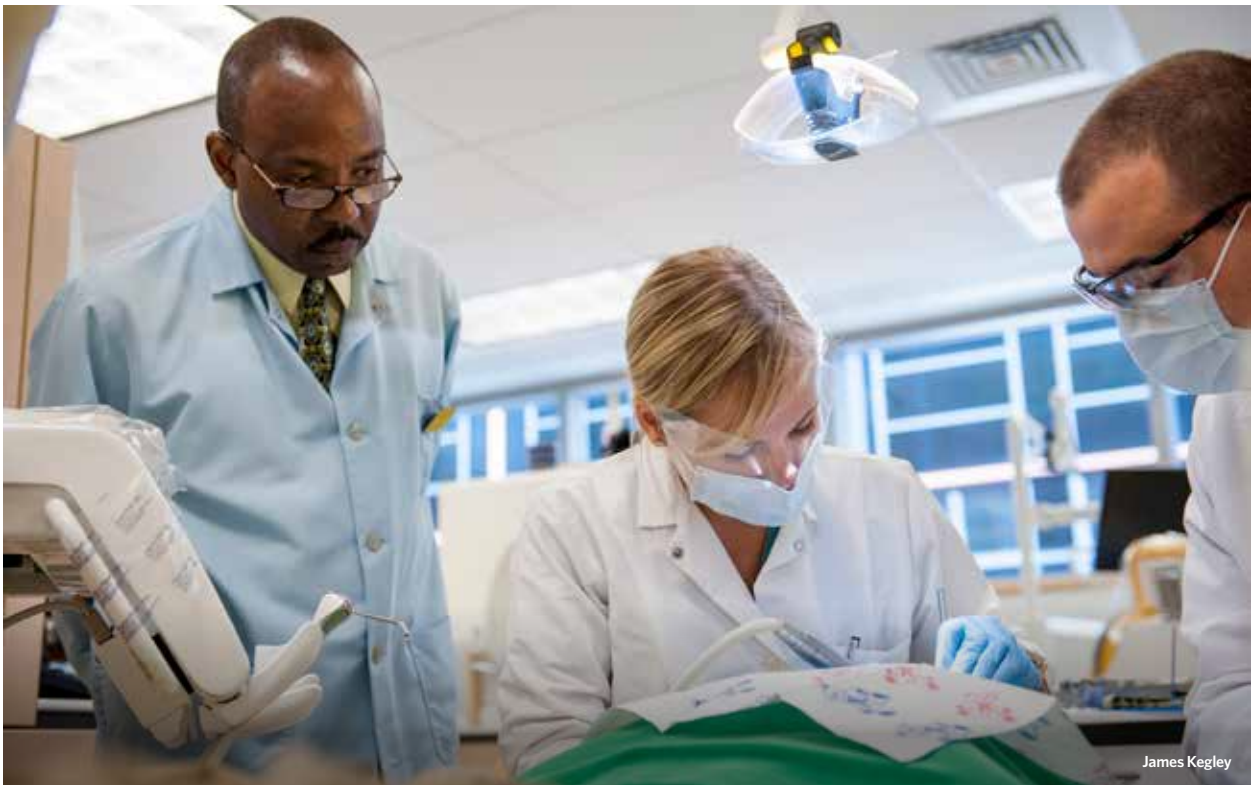
Community colleges and workforce investment boards interested in expanding the midlevel dental provider workforce will face a series of implementation issues, including assessing community interest in the career and related demand for training, developing educational programs, recruiting interested candidates to the field, and creating job referral networks for graduates. Pew recommends the following steps to get the process started:

Community colleges

- **Establish a base of support.** Elicit buy-in and commitment from campus leadership. Seek advice from educators in states, such as Minnesota and Alaska, that already train midlevel dental providers. Identify potential collaborations, partnerships, grants, and gifts to support the program. Ensure that partnering organizations have well-aligned missions and value statements.
- **Research demand for the program.** Identify state and community needs, including workforce trends, and create an appropriate program. Document the need for and student interest in the program, factoring the cost to students and available job market for graduates into the decision-making process.
- **Develop curriculum.** Identify core competencies for new providers; develop specific coursework and curricula, including degree requirements, course outlines, and credit information; create admissions processes and clear pathways for degree attainment; collaborate and share lessons across colleges to promote uniform training requirements, program quality, and outcomes.
- **Maximize resources for program development.** Identify faculty, clinical instructors, and locations for training; form partnerships to share training sites; create systems to ensure quality control of training; tap existing institutional resources for training; and build on existing programs, if appropriate.
- **Facilitate accreditation and licensing.** Determine which board is most appropriate for accreditation; work with state dental boards to ensure that licensing requirements are met and training matches the scope of practice determined in state legislation.
- **Enable coursework transfer.** Develop policies to ensure that student coursework can be transferred from one college to another, especially if the program builds upon a professional's previous education; partner with other educational institutions to create smooth transfer procedures.

State and local workforce investment boards

- **Analyze regional demand and interest in midlevel dental providers.** Assess community and employer needs and the capacity of the area's workforce to meet them. For instance, is the existing dental workforce adequate, and if not, where do gaps exist? Is there a surplus of professionals, such as hygienists and assistants, who could be given additional training to fill gaps? What type of training programs and curricula best meet the needs of employers and underserved communities?
- **Identify influential board members.** Pinpoint those who are particularly community-minded and politically connected and who can reach out to policymakers and the community to promote expansion of the dental team. According to a report by the National Association of Workforce Boards, staff members should identify issues, priorities, and resources, but "the expertise and leadership of the Board are the tools that will really make the difference: as a catalyst for change, a coordinating body of local service innovations, and as a communicator to the community."[18]


James Kegley

- **Build a coalition.** Tap diverse community and business networks to advocate for state laws establishing midlevel dental providers on the basis of shared priorities—developing new occupations that can offer sustainable wages and serving critical public needs—specifically expanding access to dental care for the underserved.
- **Develop a recruitment pipeline and job referral network.** For those seeking vocational assessment and counseling from WIBs, guide potential interested candidates to midlevel dental provider training programs; build relationships with local dental practices and clinics to create a recruitment pipeline for graduates.

Conclusion

Expanding the dental team with additional providers can help states address their persistent—and growing—problems of inadequate access to dental care in certain areas, particularly rural communities and inner cities, and among low-income populations. These providers can extend the reach of private dental offices and clinics while providing care to patients currently left out of the system.

Strong coalitions are key to creating legislation that can introduce these additional providers, and, given their invaluable expertise in education and recruitment, community colleges and workforce investment boards should play strong roles on these coalitions. By establishing themselves as partners early in the process, these stakeholders cannot only shape the development of new providers in their states but also influence the uptake of midlevel dental practitioners nationwide.

Resources for choosing a new provider

General information

The Pew Charitable Trusts: http://www.pewstates.org/dental.

Current training programs

Normandale Community College–Metropolitan State University advanced dental therapist training program: http://www.metrostate.edu.

DENTEX (DHAT training program): http://depts.washington.edu/dentexak.

University of Minnesota dental therapist program: http://www.dentistry.umn.edu/programs-admissions/dental-therapy.

Eastern Washington University dental hygiene program: http://www.ewu.edu/cshe/programs/dental-hygiene.xml.

Sources for state data

U.S. Department of Health and Human Services: Find dentist shortage areas in your state, http://hpsafind.hrsa.gov/HPSASearch.aspx.

National Oral Health Surveillance System: http://www.cdc.gov/nohss.

Early and Periodic Screening, Diagnostic, and Treatment: Find data on dental access for Medicaid-enrolled kids in your state: http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Benefits/Early-Periodic-Screening-Diagnosis-and-Treatment.html.

Association of State and Territorial Dental Directors: http://www.astdd.org.

Kaiser Family Foundation, "State Health Facts": http://kff.org/statedata.

U.S. Census Bureau, http://www.census.gov.

Endnotes

1 U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health. *Oral Health in America: A Report of the Surgeon General- Executive Summary* (2000), accessed Sept. 3, 2013, http://www2.nidcr.nih.gov/sgr/sgrohweb/welcome.htm.

2 U.S. Department of Health and Human Services, Health Resources and Services Administration, Designated HPSA Statistics Report, Table 4, data as of Jan. 9, 2013. U.S. Government Accountability Office, *Efforts Under Way to Improve Children's Access to Dental Services, but Sustained Attention Needed to Address Ongoing Concerns* (2010), accessed Dec. 10, 2012, http://www.gao.gov/new.items/d1196.pdf.

3 David A. Nash et al, "Dental Therapists: A Global Perspective," *International Dental Journal* 58 (2008): 61-70.

4 Ibid; Institute of Medicine and National Research Council, *Improving Access to Oral Health Care for Vulnerable and Underserved Populations* (Washington: National Academies Press, 2011), http://www.nap.edu/openbook.php?record_id=13116; and F.M. Kim, "Economic Viability of Dental Therapists," Community Catalyst (May 2013), http://www.communitycatalyst.org/doc_store/publications/economic-viability-dental-therapists.pdf.

5 Institute of Medicine and National Research Council, *Improving Access*.

6 Alaska Native Tribal Health Consortium, "Alaska Dental Health Aide Therapist Initiative" (2013), http://www.anthc.org/chs/chap/dhs.

7 Nash et al., "Dental Therapists"; Institute of Medicine and National Research Council, *Improving Access*.

8 Jeffrey Bartelson, program manager, Children's Dental Services, Minneapolis, MN, phone interview, May 14, 2013.

9 Analysis of Main Street Dental Care in Montevideo, MN, which employs a dental therapist, conducted for The Pew Charitable Trusts by Group Health Cooperative (2013).

10 American Dental Hygienists' Association, *Dental Hygiene Education: Curricula, Program, Enrollment, and Graduate Information* (Oct. 7, 2013), http://www.adha.org/resources-docs/72611_Dental_Hygiene_Education_Fact_Sheet.pdf.

11 National Center for Education Statistics, *Community Colleges: Special Supplement to the Condition of Education 2008* (August 2008), http://nces.ed.gov/pubs2008/2008033.pdf.

12 Robert Haveman and Timothy Smeeding, "The Role of Higher Education in Social Mobility," *The Future of Children,* 16, no. 2 (fall 2006), https://www.princeton.edu/futureofchildren/publications/journals/article/index.xml?journalid=35&articleid=90&sectionid=552.

13 Randall Bovbjerg, Barbara A. Ormond, and Nancy Pindus, "The Nursing Workforce Challenge: Public Policy for a Dynamic and Complex Market," the Urban Institute (August 2009), http://www.urban.org/uploadedpdf/411933_professionalnurse.pdf.

14 R.M. Andersen et al., "Who Will Serve? Assessing Recruitment of Underrepresented Minority and Low-Income Dental Students to Increase Access to Dental Care," *Journal of Dental Education* 74, no. 6 (June 2010): 579–592, http://www.jdentaled.org/content/74/6/579.long.

15 Minnesota Board of Dentistry, "Advanced Dental Therapist Scope of Practice," last modified June 24, 2010, http://www.dentalboard.state.mn.us/Portals/3/Licensing/Dental%20Therapist/ADTSCOPE.pdf.

16 Patricia Glasrud et al., *A History of Minnesota's Dental Therapist Legislation*, Minnesota Dental Association (2009), http://www.mndental.org/_asset/wcd3cz/Dental-Worker-1-10-11-3-_2_.pdf.

17 National Association of Workforce Boards. "HempsteadWorks Health Skills Partnership" (2013), http://www.workforceinvestmentworks.com/innovation_story.asp?id=24&st=NY&type=0.

18 National Association of Workforce Boards, "Putting Your WIB on the Political Map: Tips on Marketing, Communications, and Public Relations" (May 2000), http://www.nawb.org/documents/Putting%20Your%20WIB%20on%20the%20Political%20Map.pdf.