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W.K. KELLOGG
FOUNDATION

Help Wanted:

A POLICY MAKER'S GUIDE TO NEW DENTAL PROVIDERS



MAY 2009

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ACKNOWLEDGMENTS

Additional staff from the Pew Center on the States and NASHP reviewed drafts of the report and offered comments that helped shape and focus the report. In particular, we would like to thank Dr. Bill Maas, senior advisor to the Centers for Disease Control and Prevention and policy advisor to Pew's Advancing Children's Dental Health Initiative, Andy Snyder, senior associate and Molly Lyons, administrative assistant at Pew's Advancing Children's Dental Health Initiative, Alan Weil, executive director of NASHP, and Neva Kaye, senior program director at NASHP.

The authors are grateful to a number of external reviewers who provided information and reviewed sections and drafts of this paper: Dr. Allan Formicola, professor of dentistry, College of Dental Medicine and the Center for Family and Community Medicine at Columbia University; Dr. Jay Friedman, Los Angeles, California; Beth Mertz, program director, Center for the Health Professions, UCSF; former Washington state Senator Pat Thibaudeau; Dr. Ron Nagel, dental consultant, Alaska Native Tribal Health Consortium; Dr. David Nash, professor of pediatric dentistry at the University of Kentucky; and Dr. Mary Williard, clinical site director, Alaska Native Tribal Health Consortium.

We are indebted to the W.K. Kellogg Foundation and Dr. Al Yee, program director, for support and guidance in producing this paper.

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Executive Summary

Access to oral health care is an increasingly serious problem for many people in the United States, particularly among low-income families, racial and ethnic minorities and in rural areas and inner cities. The tragic death of 12-year-old Deamonte Driver in 2007¹, which resulted from untreated tooth decay, gave the nation a sobering reminder of the grim consequences that can result from a lack of access to dental care. The bleak economy means that states are going to be looking for new and creative ways to deliver services and stretch public dollars. Based on the successes around the world, innovative proposals for new providers have emerged in the United States. Many states, including California, Maine, Minnesota, Missouri, and Washington are exploring the option of adding a new type of dental provider to the existing oral health care team.

With funding from the W.K. Kellogg Foundation, the National Academy for State Health Policy and the Pew Center on the States conducted a comprehensive literature review and interviews with leading experts in several states to learn about existing proposals for new dental providers. This guide is intended to provide policy makers with objective information and the tools they need as they consider new workforce models. In most cases the dental team consists of dentists, registered dental hygienists and dental assistants. Dentists refer complex cases to dental specialists such as pediatric dentists. The dental team lacks a provider similar to a nurse practitioner or physician assistant. This report explores three proposed provider types:

- **Dental Therapists**—are primary dental care providers focused on delivering basic preventive and restorative care to children, and in some places, adults. Introduced in 1921 in New Zealand, the dental therapist has become commonplace in 53 countries. Dental therapists complete a two-year training program that resembles the last two years of dental school. In Alaska’s tribal regions, they were introduced in an effort to deliver care to some of the most isolated regions. Called dental health aide therapists in Alaska, they practice in satellite clinics under the supervision of dentists at a hub clinic.
- **Community Dental Health Coordinators**—are proposed as educators and community health workers who would work under the supervision of dentists to support the proper use of dental services by low-income populations. They would complete a 12-month training program and a six-month internship. These providers would help patients navigate the health care system, find dentists who accept their insurance, and help make sure patients return for their follow-up visits. This type of provider has been proposed by the American Dental Association.
- **Advanced Dental Hygiene Practitioners**—are proposed as case managers and primary dental care providers who could assess risk, educate, provide preventive services and basic restorations, refer patients for more complex services and do follow-up. The American Dental Hygienists’ Association (ADHP) has developed a master’s degree program to train

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these new providers. ADHP intends to recruit existing dental hygienists who would like to further their education and expand their scope of practice. The practitioners would work collaboratively with dentists and refer patients with complex needs to dentists.

A number of factors have spurred interest in developing new types of dental providers:

- Unacceptably high rates of untreated dental problems among specific populations, such as low-income families, young children and racial and ethnic minorities.
- States grappling with persistent shortages of private dentists and of dentists who participate in Medicaid and CHIP programs. Some states have an overall shortage of dentists and all have too few who practice in rural and underserved urban areas.
- Growing awareness that there is no nationwide safety net for people who cannot afford private dentists. Community health centers and other safety nets reach about only 10 percent of people who lack access to dental care.
- Growing recognition that new providers can competently and safely deliver high-quality basic preventive and restorative dental services. The experience in other countries, and the body of research establishing the safety and quality of services delivered by dental therapists in other countries, has sparked interest in creating similar models in the United States.

Policy makers seeking to introduce new workforce models need to collect important information to determine what type of provider would best fit the state and how that provider

would be integrated into the existing dental workforce. Specifically, policy makers need to:

- Collect baseline data about the extent to which people have untreated oral health problems or difficulty accessing routine dental care. It is important to determine and decide which populations, institutions, or communities would benefit from a new type of provider.
- Assess the current dental workforce and educational infrastructure. For example, states should determine who is licensed to provide dental care in the state, where provider shortages exist, and how many providers serve patients with special needs. Finally, does the state have educational institutions that can develop a program to train new providers or do new institutions need to be created?
- Identify potential funding streams. For a new provider model to be sustainable, it needs to be supported by reimbursement policies linked to the populations served (children, nursing home residents, minorities, etc.) and the settings where care will be delivered.
- Assess who is likely to support and oppose the new provider type, and why. Involve all stakeholders to build a base of support. Workforce decisions are difficult for policy makers because the focus can easily become less on improving access for the underserved than on protecting existing provider turf.

Experiences from states show that developing new dental provider models requires careful planning. Implementation steps include:

- Create a strong, broad-based partnership of stakeholders with a neutral leader who keeps members focused on the central, mobilizing

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objective—improving access to oral health to the underserved—and away from perceived limits or threats to any professional group’s practice or authority.

- Obtain legislative approval (required in most states for a new dental provider).
- Plan to handle regulatory issues as they are needed for credentialing or licensing new provider types; licensing exams and renewal; and continuing education requirements. States must determine whether an existing board or a new committee established specifically for the new provider will be responsible for the new provider’s regulation.
- Develop an appropriate educational framework so that students can provide care that meets set standards and obtain the license or credential required to practice.
- Consider whether the ways in which oral health care is delivered will need to be changed for the new provider to be successful.

State experience also shows that several tools can facilitate progress in implementing new types of dental providers. States can create an entity that

permits new workforce models to be piloted, as in California, to gather evidence about what works before seeking legislative authority. They can develop objective regulatory and review processes to ensure that workforce changes are based on evidence and in the best interests of the public, as in Colorado. They can also establish a process or administrative department to do workforce planning either across all health professions (as in Iowa) or specific to oral health professions (as in Minnesota). Planning can help policy makers assess needs and make informed decisions related to workforce changes.

New provider types may offer a way for states to help ensure that vital and routine dental care is accessible to constituents regardless of age, race, ethnicity, income, geographic location or insurance status. The sections that follow summarize research and interviews with leading experts about ways in which states can develop new providers who can expand the dental team. They also provide guidance for states about the steps (such as gathering data, building consensus and crafting a training program) needed to develop new types of providers who can provide basic primary dental care to underserved populations.

Introduction

In 2000, the landmark report, “Oral Health in America: A Report of the Surgeon General,” introduced much of the country to the widespread significant disparities in oral health and access to oral health care among Americans. The report helped bring the issue of good oral health—which has often been given short shrift by policy makers, researchers, grant makers and the public—into sharper focus as one that is critical to overall health. While the oral health of most people has improved markedly in recent decades, there remains a significant portion of the population with persistent unmet needs. Who can provide dental care for those who lack it has been a tough issue. This paper is a guide for policy makers who are considering developing new dental providers to help meet the urgent needs in their states.

Here are some stark realities about dental health care in America:

- Dental care is the single greatest unmet need for health services among children. Girls, minorities and children from households headed by a single parent or a parent with less than a high school education were more likely to experience an unmet dental need.²
- While dental caries—the disease that causes cavities—is nearly universal, the biggest burden is borne by a small segment of the population. Nearly 80 percent of dental caries occurs among 25 percent of children, many of whom are from lower income families.³
- Racial and ethnic minorities have more serious problems than whites accessing dental care and have poorer oral health as a result. A survey of families in 2003 and 2004 found that 21 percent of Latino children and 11 percent of African American and Native American children were in need of dental care. Fully 18 percent of Latino children and 16 percent of multi-racial children had never seen a dentist.⁴
- Native Americans and Alaska Native populations have oral health problems on a much greater scale than the rest of the U.S. American Indian and Alaska Native children ages two to four have five times the rate of decay as all children.⁵
- Even though states are required to provide dental care to Medicaid-enrolled low-income children, only one in three of these children utilized services in 2006.⁶
- While the oral health of all adolescents ages 12 to 19 has improved in recent years, the prevalence of dental caries has changed very little for very low-income adolescents and Mexican Americans in this age group.
- The most recent reports indicate that dental decay among young children, ages two to five, is rising, not falling. The presence of dental caries rose from 24 percent to 28 percent between two survey periods, 1988-1994 and 1999-2004.⁷

Dental problems may represent the biggest unmet health care need among adults as well, as reported

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by two Harvard researchers in their book *Uninsured in America*: “[Researchers] talked to as many kinds of people as they could find, collecting stories of untreated depression and struggling single mothers and chronically injured laborers—and the most common complaint they heard was about teeth. . . . People without health insurance have bad teeth because, if you’re paying for everything out of your own pocket, going to the dentist for a checkup seems like a luxury. It isn’t, of course.”⁸ The use of dental care rises by income: while 56 percent of adults from a high-income family had at least one dental visit during the year, only 27 percent of adults from low-income families had at least one dental visit during the year.⁹

Two key underlying factors give rise to these unmet needs: the relatively low level of public financing to subsidize payments for care and the lack of an adequate safety net system for the roughly one-third of the population not served by the private dental care system. While poor children are guaranteed dental coverage through Medicaid, states are not required to provide dental benefits for adults also covered by Medicaid.

As state budgets wax and wane, this leads to on-again, off-again dental coverage for the adult population. Only 16 states provide dental coverage in all service categories for adult Medicaid enrollees. An additional 16 states offer coverage for emergency services only, and six states offer no dental coverage at all. In tighter fiscal climates, states often opt to limit or eliminate adult dental benefits.¹⁰ Until 2009, “near-poor” children insured under the Children’s Health Insurance Program (CHIP) were not guaranteed dental benefits, although almost all states had provided them.¹¹ In addition, the number of adults and families with private dental insurance,

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As the costs of health benefits have risen, costs may be passed on to employees, who may opt out of coverage. Of those who work in private industry, only 46 percent have access to dental coverage, with only 36 percent choosing to participate.¹² Of those who work in state and local government, 55 percent have access to coverage, while only 47 percent choose to participate.¹³ To make matters worse, Medicare does not include dental benefits, so the over-65 population must purchase insurance individual market policies, pay out of pocket or forego care. Some individuals with private dental coverage must carry high deductibles and co-payments and low annual benefit caps. For example, the median national charge in 2005 for a root canal and a basic crown on a bicuspid tooth was \$1,326. Kansas state employees would have a co-payment of \$485.¹⁴

Access to Dental Care

People who do not have dental insurance or cannot pay out of pocket for dental services have limited choices. The safety net for dental care is unlike that for medical care in its reach and

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scope. The foundation of the dental safety net is community health centers, which delivered dental care to 2.3 million patients in 2005. This is an increase of 87 percent over 2000 and reflects a decision by President Bush's administration to ensure that all new centers offered dental services and to provide grants to add dental services to existing clinics.

Currently, 73 percent of centers provide dental care.¹⁵ While the safety net also includes clinics operated by dental and hygiene schools, hospitals and public schools, most communities do not have such resources. The safety net has the capacity to serve only about 10 percent of the 82 million low-income underserved people who need them.¹⁶ People who can't pay for care and don't live near a safety net site have few options for dental care. Hospital emergency rooms, often a last resort for uninsured patients, generally provide only treatment for pain and infection, not the underlying dental problem.

While expanding the safety net would improve access, public insurance programs primarily rely on private practitioners to deliver care. The majority of dentists, however, do not participate in Medicaid and CHIP programs. Dentists are much less likely than physicians to accept Medicaid. According to a 2001 report, only 22.7 percent of dentists in 42 states billed more than \$10,000 per year (perhaps 5 percent of average net income of private practice dentists) to provide dental care to Medicaid patients.¹⁷ In 2000-2001, 85 percent of physicians accepted Medicaid, despite the fact

that both groups register the same complaints about low reimbursements, administrative hassles and problematic patient behaviors such as missed appointments, and noncompliance with treatment regimens.¹⁸ Part of the difference is attributable to dentists' business model; dentistry is largely a cottage industry, composed of thousands of independent businesses that have high overhead and limited administrative staff to help with insurance claims.

About 93 percent of the nation's dentists are in private practice and 70 percent of general dentists are in solo practice.¹⁹ The fact that about half of all payments are out of pocket, also makes them vulnerable to downturns in the economy. When times are tough, people are more likely to delay or cancel preventive visits, which constitute about half of all visits, and patients are less likely to seek cosmetic procedures, which are lucrative for dentists. During an economic downturn, private dentists may be more likely to accept Medicaid and CHIP-insured patients if the alternative is an empty dental chair.

The current dental workforce does not generally meet the needs of several special populations, such as young children, the elderly, people with developmental or physical disabilities and pregnant women. The small number of dental specialists compounded with the limited training dentists receive with these special populations further diminishes access for these patients.

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Among the several factors that could exacerbate current access problems are expanding public dental coverage under the current inadequate Medicaid financing structure and demographic shifts. State and national health care reform that offers new dental benefits for those who don't have them has the potential to improve access but would also put pressure on the current delivery system.

DEMAND AND SUPPLY

Massachusetts embarked on an ambitious reform effort in 2006 that illustrates the challenge of improving access without ensuring adequate supply. Dental benefits in the Massachusetts Medicaid program were restored to 540,000 low-income adults who had lost benefits in 2002. Eligibility expansions provided an additional 140,000 more with coverage. These two measures caused waiting lists at health centers to swell to three months or more. Since only 17 percent of the state's dentists accepted patients insured by Medicaid, advocates feared waiting lists would continue to grow as reforms progressed.²⁰ Growing waiting lists further underscore the rising unmet need for dental care.

Demand for Dental Care

Demand for dental care is likely to rise as baby boomers reach retirement age. Better health and nutrition, the growth of community water fluoridation and more consistent dental care means that when this group of people retires, they will have more of their natural teeth, and demand more care for them, than generations in the past. Fifty years ago, the geriatric population had fewer teeth and was more in need of dentures. Now, even though one-quarter of the

34 million people over 65 have lost all their teeth, more older Americans have more teeth and need more complex treatment, including fillings and crowns, implants and periodontal treatment.²¹ This is likely to drive up demand for dental care at the same time that supply is shrinking. The fact that Medicare provides almost no dental benefits will make it more difficult for many to access and afford care, but the demand on the delivery system nonetheless will likely increase.

Meanwhile, the demographic and societal shifts increasing the demand for dental care are also reducing the supply of dental providers. By the year 2014, the number of dentists reaching retirement age will exceed the number of newly trained dentists entering the workforce, and the ratio of dentists to population (a common measure of supply) will begin to decline. In fact, about half the states experienced a decline in the ratio of dentists to population in the 1990s.²²

Shortages in the Dental Workforce

The number of general dentists practicing in the United States relative to the population has continued to decline since the 1990s.²³ Enrollment at dental schools plummeted from 6,301 in 1978 to 4,612 in 2004, resulting in fewer new dentists being educated.²⁴ In addition, although dentists used to be primarily white men, the portion of dental graduates who are women is rising, from less than 3 percent in 1982 to nearly 40 percent in 2003. This has implications for the supply of dental care, since female dentists are twice as likely as male dentists to work part time (27.4 percent compared with 12.1 percent) and to do so for more years of their careers as they balance work and family responsibilities.²⁵

Given these factors, it is clear to many researchers and policy makers that a significant workforce

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shortage exists.²⁶ There is even stronger agreement about the uneven distribution of dentists, with too few in rural and inner-city areas of the country and too few who care for low-income people, young children, the elderly, people with disabilities and immigrants. In fact, anyone who cannot physically travel to a dental office to receive care can be considered underserved, since the primary model of dental care is ambulatory-only.

The American Dental Association (ADA) released a major report in 2005 on the current and projected dental workforce. The report does not cite an overall shortage of dentists but acknowledges the maldistribution of dentists and the difficulties many segments of society have in accessing care. However, the bottom line from the ADA's perspective is that "individuals with unmet needs who are unable or unwilling to pay the provider's fee generally do not effectively demand care from the private practice sector." While this seems to put the responsibility for accessing care on the most disadvantaged segments of society, ADA goes on to clarify that "public programs for dental services must have the necessary resources to translate unmet need into effective demand."^{27, 28}

Workforce Solutions and Reform Efforts

While the pace of efforts to reform state health care systems has slowed, states continue to try to provide coverage or services to more of their

uninsured citizens. As the economy recovers from its recent shocks to the banking and credit markets and state revenues improve, states are likely to renew their efforts to expand coverage. In addition, President Barack Obama has health care reform at the top of his agenda, and members of Congress are readying reform plans for the new session in 2009. Given the increased visibility of oral health access issues in the wake of the death of Deamonte Driver in February 2007, and the widespread support for solutions, the advocacy community is likely to push for inclusion of dental care in health reform.²⁹

If reforms ultimately are to include dental coverage, policy makers must understand that simply expanding public insurance coverage will not necessarily improve access for people who currently lack it unless significant attention is paid to increasing the supply of providers and how the delivery system is structured. A recent study on the effect of raising Medicaid reimbursement rates for dental care in six states concluded that raising rates is necessary but not sufficient to improve access. Increasing rates, outreach to dentists and administrative improvements really do pay off. However, "despite meaningful gains in provider participation and access achieved by

If reforms ultimately are to include dental coverage, policy makers must understand that simply expanding public insurance coverage will not necessarily improve access for people who currently lack it unless significant attention is paid to increasing the supply of providers and how the delivery system is structured.

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these “front-runner” states, the portion of children receiving services is still far below the experience of privately insured children. Data from 2004 show that 58 percent of privately insured children received dental services, while in these six states after substantial effort and investment only 32 percent to 43 percent of children covered under Medicaid received dental care. This points to the need to explore other solutions as well.”³⁰

Workforce Solutions

Many states have been considering raising rates and restructuring Medicaid dental reimbursements. In light of the current recession and daunting state budget deficits, those efforts are likely to face a longer timetable. Some state workforce efforts have been effective but small in scale, such as state loan repayment programs to aid rural recruitment or retention, purchasing slots at out-of-state or foreign dental schools for state residents, and increasing diversity in dental school enrollments. Some are more innovative, such as using physicians and nurses to deliver preventive oral health services to children. In addition, revamping dental school curricula to emphasize community service and establishing rotations for dental students in community-based settings are methods that have also been implemented. Others are longer term, such as opening a new dental school.

A few states are now considering alternate workforce solutions. Among them are groundbreaking efforts to develop and train new types of dental providers to bolster the capacity of the safety net and expand the dental team. Impetus to develop new types of providers comes from persistent shortages of private dentists who care for underserved populations and growing recognition in the United States that

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basic dental services can be competently and safely delivered by other providers.

Creating a new type of provider is a challenging endeavor for state policy makers. Not since the advent of nurse practitioners and physician assistants in the 1970s, before most current public officials were in office, have policy makers been faced with such a daunting task. The process is long, complex, and political. It involves weighing conflicting arguments put forward by professional groups about the procedures that a new provider would be trained to perform and what level of supervision may be needed. This is particularly difficult for policy makers, since the great majority do not have a scientific or clinical background. However, the need is great and interest is growing, so a number of states are moving forward and looking for resources to assist them.

This paper is designed to be a tool for state policy makers who are considering developing a new type of dental provider in their state. It explains steps states can take to lay the groundwork and decide what model to pursue, provides an objective source of information about models being proposed, and offers examples of tools that states can use to make progress on these difficult decisions.

Building a Foundation: Research Needed to Develop a New Provider type

Deciding on a new provider model requires a careful evaluation of the state landscape. Several states have undergone a formal planning process funded by public or private funds, often as a result of a legislative directive to inform the work of a health care workforce or oral health task force. There are many good sources of data that can help policy makers gauge the extent of the problem and determine priorities. States can take a number of steps to arrive at a plan for a new provider model that fits their needs, including:

- needs assessment and baseline data
- inventory of the current infrastructure
- health system analysis
- survey of financial resources
- appraisal of political landscape

Needs Assessment and Baseline Data

Documenting the nature and extent of unmet need in a state can provide firm ground for making the case for change. As one policy maker phrased it, “Access is not a turf battle.” Good data from neutral sources that describes the most critical access issues may help defuse controversy and focus states’ energies on meeting their residents’ needs. Demographic information should describe the population at risk and document the nature and extent of the oral health problem. Access may be described in terms of:

- *Who?* Who does not have access to dental care? Who has the highest prevalence of oral health disease?
- *What?* What is the age of the population at risk? What are other characteristics of the population at risk? Are they migrants, pregnant, disabled, minorities or institutionalized? What percentage of the population is insured or eligible for receiving public assistance? What percentage of the population has had an annual dental exam?
- *Where?* Where does the at-risk population live? What counties or cities are particularly underserved? Where in the state is the population expected to grow the most?

Answering these questions may help determine which populations, institutions or communities the new workforce model may be targeted to serve. Data to answer many of these questions are readily available and will help policy makers focus their efforts. (See Appendix A.)

Inventory of Current Infrastructure

Understanding the state’s current dental workforce and educational infrastructure helps provide a context for determining what new provider model to develop. The workforce inventory provides a snapshot of the numbers and kinds of dental providers currently employed in the state and illuminate which existing

RESOURCES

A number of entities within a state can provide data or research help:

- State Dental Directors (found in 43 states)³¹ will have information regarding oral health, including disparities and may also have information about oral health assets, such as professional schools.³²
- U.S. Department of Health and Human Services, Health Resources and Services Administration provides local data on medically underserved areas (MUAs) and Health Professional Shortage Areas (HPSA).³³
- State Oral Health Coalitions (for a listing, see Appendix B) may have data on high priority areas in states. In states without an Oral Health Coalition, there might be other coalitions or advocacy groups that work on children's issues or poverty programs that can help.
- State Health Policy Institutes are found in many states often in academic settings or nonprofit settings. These institutes may be a source of data or expertise. For a partial listing, see National Network of Public Health Institutes.³⁴
- Nonpartisan legislative reference bureau or legislative health staff may have data on the Medicaid-eligible population and the uninsured and often conduct their own research.
- State Departments of Education have data on school-aged children.
- State chapters of the National Association of School Nurses³⁵ have data on school-aged children.
- State chapters of the American Academy of Pediatrics or American Academy of Family Practitioners may have data about evidence of need.

providers may be best suited for expanded roles. A survey of the educational infrastructure will enable the policy maker to evaluate whether the existing educational institutions can be expanded to train new providers or if new institutions need to be created.

Dental Workforce Inventory

As mentioned previously, in just five years, the number of dentists reaching retirement age will exceed the number of newly trained dentists entering the workforce, and the ratio of dentists to population (a common measure of supply) will further decline. These facts are important to consider when analyzing the workforce inventory and may help make the case to develop a new provider model. There are many other questions to consider that may help build support for change:

- *Who?* Who is currently providing care? Who are potential candidates to be trained for a new workforce model?
- *What?* What are the provider characteristics—numbers, age, specialty training and ability to care for particular groups of patients with special needs? What percentages of dental providers are enrolled as Medicaid providers? What kinds of providers does the current educational pipeline produce? What safety net programs have the capacity to provide care, or increase their service capacity, but have a shortage of providers? What models of care delivery exist and are they integrated or independent?
- *Where?* Where are dental providers currently practicing? Is there a maldistribution of providers? Where in the existing system is there

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unused capacity that can be leveraged? Where do the potential candidates for a new provider reside? Where are the state's dental health professional shortage areas? What services exist in those areas and how many providers are needed to serve people who live there?³⁶

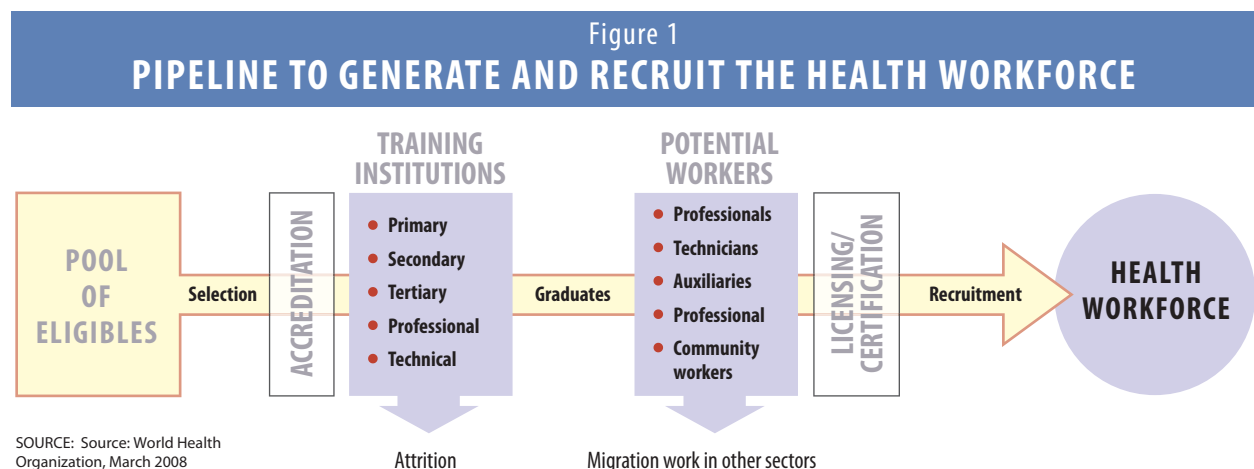
Educational Inventory

Inventory assessment should include analyzing the educational pipeline. The World Health Organization (WHO) recommends an assessment, from recruitment and selection of students to deployment of new graduates, to ensure that the pipeline is functional and effective and that education and training programs are adapted to the changing needs of the population.³⁷ The World Health Organization has developed a model (see Figure 1) to help policy makers think through this process and suggests that the following factors be considered when developing a new workforce model:

- the pool of eligible candidates for an education and training program (the size and characteristics of the population that meets entrance requirements for basic or advanced education in the field of health)
- recruitment and selection of students

- the capacity of education and training institutions at all levels (including human resources capacity)
- output of education and training program
- quality assurance controls (e.g., accreditation of educational institutions and certification or licensing of new graduates)
- recruitment of newly educated health workers into jobs
- assessing efficiency in the process, including information on attrition among students and teachers³⁸

This framework is helpful when factoring in geographical or other kinds of considerations. For instance, if the purpose of the provider model is to address rural access issues, then the pipeline input should support the goal. The candidate pool should draw from rural residents; the training institutions should be rural-based; accreditation or licensing opportunities may need to be rural-based too—these factors increase the likelihood that the new providers will actually work and remain working in rural areas. In one study, state officials ranked state strategies to recruit health professions students from



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underserved areas and support health professions in underserved areas as having the greatest impact on recruitment and retention of providers in these locales.³⁹

Delivery Systems Analysis

The first two steps—needs assessment and infrastructure inventory—are crucial to identifying which expansion efforts are feasible, but there are other essential steps that need to be taken to ensure that this new model can be sustained in the current delivery system.

Questions that need to be considered are:

- Can the current delivery system accommodate a new workforce model? Does minor or significant transformation need to occur?
- Is there a network or set of institutions that could make good use of new providers?

To answer these questions, it is necessary to identify where these new providers will be deployed in a state's delivery system—for instance, school-based clinics, community health

RESOURCES

There are many sources of state data that could help states with their infrastructure inventory. (See Appendix A.) In addition to State Dental Directors and Oral Health Coalitions (mentioned in the previous section), the following state entities may provide additional information to support the infrastructure inventory:

- State dental, hygiene, public health schools and community colleges have information regarding the capacity of education and training programs. Deans and research chairs are a good place to start.
- State Dental Boards have records of currently licensed dental providers by category and occasionally conduct surveys; state professional associations may have this data as well.
- State Departments of Labor may have or provide research on the current dental workforce including projections of anticipated shortages. Also some states collect data on the number of active and inactive dental providers and the reasons for their inactivity; this information can provide valuable insight about potential new providers.
- State Departments of Education may be helpful in identifying potential new provider candidates and providing data on school-based health centers or clinics that could, or already do, provide dental services.
- State workforce taskforces are found in many states and collect data. There may be other nonprofit groups that collect data.
- State Primary Care Offices (PCO) usually located in the health department collects data on dental health professional shortages areas (HPSA). PCOs will have information on dental provider vacancies at federally qualified health centers (FQHCs) and school-based health centers (SBHCs).⁴⁰
- State Primary Care Associations⁴¹ can supply data on the safety net (how many clinics offer dental services, number of dental providers employed and vacancy rates).
- State Health Departments can provide data and/or research on vacancies at clinics run by public health departments.

BUILDING A FOUNDATION

centers or nursing homes. Will they be licensed to practice anywhere or be limited to designated provider shortage areas? If they are intended to practice in shortage areas, are there clinics or other sites where they can work? Once the institutions are identified, understanding the “rules, customs, certification processes, payment and patient tracking systems” will provide insight to any changes that need to occur to accommodate the new set of services being delivered by the new provider model.⁴² For instance, how will new provider reimbursements be integrated into existing billing systems? Getting familiar with the administrative and professional staff of each of the institutions would also identify likely supporters and non-supporters and issues that need to be addressed in advance.

Helping the new providers relate to the existing dental and medical community by establishing or cultivating relationships early will help increase the likelihood of success.

Helping the new providers relate to the existing dental and medical community by establishing or cultivating relationships early will help increase the likelihood of success. Issues to be considered are:

- Will new providers require any supervision from dentists or physicians?
 - Do they need to have a network of dentists and physicians to refer patients to?
 - Are they intended to work in a private dental office as part of a dental team, or staff a clinic at a school or other facility?
- What can be done to facilitate linkages between dentists, other providers and new providers?
- In addition, more advanced practitioners may need tools to help set up a new practice, establish a business plan and provide services in a community.⁴³ New providers also will require professional and continuing educational opportunities. Other questions to consider:
- *Who?* Who can you identify in some of these community institutions who would be willing to collaborate on developing a system to employ new oral health providers?
 - *What?* What kinds of incentives can be used to ensure participation from dentists for supervision and referrals? What is the capacity for developing telemedicine services to assist with collaboration, supervision and referral?
 - *Where?* Where are the state’s service gaps? How will new providers be deployed to address these gaps?
- In addition to the data sources listed above, associations of dental hygienists and dentists, as well as licensing boards, may provide resources to help answer some of these questions.

Financial Resources Survey

For the new provider model to be sustainable, it needs to be supported by reimbursement policies that are linked to the populations served (such as children, nursing home residents, minorities, etc.) and the settings where care will be delivered. Identifying potential funding streams is a necessary part of this step.

- *Who?* Who is covered by Medicaid and CHIP? Can these current funding streams be used to

support a new provider model? Can they be used to reimburse for the prevention, treatment and case management services that complex populations will require?

- *What?* What kinds of dental services are covered by Medicaid, CHIP and private dental insurance? Are Medicaid managed care plans covering dental services (either by subcontract or in a separate carve-out program)? What kinds of services are being covered in these plans? What would it take to reimburse services delivered by a new provider in these programs? Will these plans reimburse for tele-dentistry, which is consultation by a dentist to a provider or another dentist that is conducted through the Internet, satellite video or exchange of digital images?

Political Landscape Assessment

The most challenging aspect of developing a new type of dental provider is developing a solid, broad base of support and ensuring that the plans will meet the state's needs. To move forward on a new provider model, it's important for policy makers to assess who is likely to support and oppose the plan, and why. Ideally, all interested parties work together to reach consensus on the best plan and then policy makers draft and introduce legislation that reflects the plan.

For policy makers to improve access for the underserved by altering the workforce, political battles among provider groups over turf must be avoided or resolved. Often, claims that scope of practice or supervision changes, or new workforce models, will lower quality and endanger patients are not rooted in scientific evidence but in fear of losing control or income. But change is inevitable. It is also essential and to be expected in the health professions. Change can be positive, as

RESOURCES

State Medicaid and CHIP agencies (in some states these programs are separate; in other states, combined) would be the best source of information to answer these financing questions. Demographics and the Economy, Health Costs & Budgets, Health Coverage & Uninsured, Medicaid & CHIP, and Medicare state facts can be found on the Kaiser state health facts Web site:
<http://www.statehealthfacts.org/>.

noted by a Californian dentist in an article to his peers, "One must remember that in all change there is opportunity. The greatest threat from change comes when we try too hard to resist it."⁴⁴ As science advances and educational and clinical techniques are developed, so also do the competencies of providers. As the nation's population, service delivery and financing systems change, inevitably the mix and character of providers must be responsive to the changes. Likewise, the legal and regulatory structure for practice must also be responsive.

To move forward on a new provider model, it's important for policy makers to assess who is likely to support and oppose the plan, and why.

An appraisal of the political landscape should take into consideration the following questions:

- *Who?* Who are your allies? Include the state dental association, individual influential dentists

“One must remember that in all change there is opportunity. The greatest threat from change comes when we try too hard to resist it.”

and groups of dentists (pediatric dentists, public health dentists, special needs dentists, general dentists), oral health or other interested coalitions, dental and hygiene school leadership, foundations, the state medical association, the state association of pediatricians, safety net clinics and hospitals, legislative champions, consumer groups, education and parents' groups, Head Start programs and others. Are there nontraditional groups that can be drawn in to support the proposal, such as business leaders, or faith-based groups? Essential to this process is lining up dentists on your side. Dentistry, like other professions, is diverse and allies for a variety of sound proposals can always be found. Who are your allies and opponents in the legislature and governor's and lieutenant governor's office?

- *What?* What steps are required to get a new workforce model approved; for instance, does it require a change in law or can it be accomplished through regulations? Is there flexibility in the current regulations to accommodate pilot projects, new service delivery models, or new types of providers? States regulate dental practice through state boards of dentistry or dental examiners; a few have separate dental hygiene committees who make recommendations.⁴⁵ Creating a new provider type is likely to require legislation, but smaller modifications to existing provider types may be accomplished through regulation in some states. States with dental schools and

hygiene programs may be able to pilot new workforce models (since they have de facto exemptions to dental practice acts for students). However, educational programs can be developed at any institution of higher learning. For example, community colleges offer many health professions training programs.

What legislation is currently being considered or has recently passed that might help advance a new workforce model? For instance, Iowa has recently passed legislation that will require a dental home for every child who is 12 years old or younger covered by Medicaid by December 31, 2010.⁴⁶ Does your state have leverage to promote a new workforce model? Are budget difficulties an opportunity to explore using alternative providers or new delivery systems that are often less costly? For example, nurse practitioners and physician assistants are reimbursed by Medicare at 75 percent of physician's fees for the same procedure. Tight budget times may be an opportunity to consider dental procedures that can be competently, and more cheaply, provided by new providers with fewer years of training. Tight budgets are also an opportunity to explore utilizing new providers, or existing providers with added training and less supervision, to deliver preventive services in community settings. More prevention among high risk, low-income populations would save money down the line in restorative care.

- *Where?* Where in your state does the new model have the greatest amount of support? Is there a region or county in your state that may be a fertile ground to test this new model?

Options for New Dental Providers

Once a state has done its homework, completed a needs assessment, and identified resources and sources of support, the state is ready for the next step. Ideally, the process a state follows in preparing to meet workforce challenges includes development of a specific plan. Most states pursue a range of workforce strategies, involving current providers (dentists, hygienists and assistants) and possibly new providers.⁴⁷ The choices are many and can be confusing.

Dentistry is unlike medicine in that there are fewer types of providers. In medicine, there are many more ancillary providers: medical assistants, nursing assistants, licensed practical nurses, registered nurses, nurse practitioners, physician assistants, and many types of therapists, to name just a few. They range from people with little or no formal training who perform only a few functions (such as community health workers) to those who have many years of training and can perform a great number of services such as nurse practitioners. They are quite different from each other, by design. A registered nurse has a different function and scope than a physician. The same can be said for a nurse practitioner. These personnel are not considered inferior or second-tier physicians but rather as auxiliary providers with a different function in the delivery system.

Most countries have more types of providers in dentistry than does the United States. Appendix B shows clinical capacity of current providers—which in most private dental offices consist of dental assistants, dental hygienists and dentists—

alongside that of the three types of new providers being discussed by policy makers. They are arranged, roughly speaking, from providers who receive less training and could do fewer procedures to those with more training and a broader scope of practice.

Examining New Dental Providers

Three principal models for new dental care providers are currently being discussed and promoted in the oral health community: dental therapists (DTs), community dental health

Dentistry is unlike medicine in that there are fewer types of providers... Most countries have more types of providers in dentistry than does the United States.

coordinators (CDHCs) and advanced dental hygiene practitioners (ADHPs). (See Table 1 for a comparison of basic characteristics.) The dental therapist is new in the United States but has been used extensively world-wide since the model was first introduced in New Zealand.⁴⁸ The CDHCs clinical functions are in the range of a registered dental assistant. The ADHP is a much more sophisticated provider, combining dental hygiene with dental therapy. Developing one or more of these new provider types, particularly the ADHP or dental therapist, would move dentistry closer to medicine in the number of choices consumers have for who they can use to provide care.

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The intent for states and provider groups in developing new models is not to supplant dentists but to complement them and create new providers who can competently and safely provide some of the care that underserved patients need. All three are designed to function and provide at least some services outside of the traditional private dental practice—which will

put the focus on patient-centered care, delivered where people live, work and learn. Exploring the characteristics of each proposed model will assist states in deciding how they might be useful in meeting the oral health care needs of underserved populations. It is ultimately up to the states to decide whether and how any of these three models—or other new ones

TABLE 1
NEW DENTAL PROVIDERS — HOW DO THEY COMPARE?

	PROPOSED COMMUNITY DENTAL HEALTH COORDINATOR	DENTAL THERAPIST	PROPOSED ADVANCED DENTAL HYGIENE PRACTITIONER
History	First proposed by the American Dental Association in 2006 First 12 CDHC candidates began training in 2009	Introduced in 1921 in New Zealand Now used in 53 countries and Alaska.	Developed by the American Dental Hygienists' Association to be a new licensed dental provider
Post-secondary education	Twelve months of training program followed by a six-month internship	Two years of training followed by clinical training in practice sites (Other countries are moving toward a three-year program that combines dental therapy and dental hygiene)	A 2-year master's degree for people with a 4-year degree in dental hygiene
Regulation	Certification	Certification Recertification required every two years	Licensure
Supervision	Direct supervision by a dentist for clinical services; general supervision for education	General supervision under standing orders by a dentist	General supervision under standing orders by a dentist or collaborative agreement with a dentist
Practice settings	Private practices, WIC offices, Head Start programs, community clinics, schools, churches, nursing homes, federally qualified health centers	Private practices, community-based clinics, rural settings, Indian Health Service (IHS) clinics in Alaska, schools, nursing homes	Private practices, community-based clinics, rural settings, IHS, schools, nursing homes
Scope of services	Assist patients in locating providers who accept the patients' insurance, perform education, preventive services, and limited restorations	Perform basic preventive, diagnostic and restorative services	Perform basic preventive, diagnostic and restorative services

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developed by a state—fit into their oral health care delivery system.

Dental Therapists

Introduced in 1921 to serve New Zealand's primary schools, the dental therapist is a proven model that has been integrated into the health care system in 53 countries.⁴⁹ Although they do not practice in the rest of the United States, dental health aid therapists (DHAT) were introduced in 2003 by the Alaska Native Tribal Health Consortium to deliver care to very isolated, rural tribal areas.⁵⁰ They are the most highly trained providers in a federally authorized community health aide program. Dental therapists can provide basic preventive and restorative oral health care services. Internationally, they have been used primarily to treat children, and most research focuses on the care they provide to children. In Alaska, students are recruited from the areas in which they will work, so they are not only more likely to remain in those communities but could provide culturally competent care.

The DHAT program in Alaska resulted from an urgent need to address the access problems that affected many rural residents. Alaska natives are especially burdened with dental disease. Alaskan native children ages two to five have five times the amount of tooth decay than other children in the U.S.⁵¹ Dental therapists receive training that is focused on working with children; the curriculum contains more hours of education and experience treating children than dentists receive.⁵² With funding from private foundations, the dental therapist program began in Alaska in 2003 and is beginning to grow. The hope is that dental therapists will help improve the oral health of children early on in life, possibly resulting in better overall health and lower costs down the road.

Introduced in 1921 to serve New Zealand's primary schools, the dental therapist is a proven model that has been integrated into the health care system in 53 countries.

Training Alaskans to Provide Care

When the program was first established, six native Alaskans were sent to New Zealand to train at the University of Otago, where dental therapists have been trained for over 85 years.⁵³ Since then, training was moved to a program called DENTEX, which is run by ANTHC in partnership with the University of Washington.⁵⁴ Students train for a period of two years in a program which resembles the last two years of dental school. (In some countries, there is a movement to integrate dental hygiene and dental therapy into one three-year training program. This expanded training produces graduates who can provide more comprehensive hygiene and dental services.) The first year is completed in Anchorage, and the second in Bethel. Upon completion of the program, students must complete a preceptorship during which they provide oral health care services under direct supervision for three months or 400 hours, whichever is longer, in rural and hub clinics.

Before the DHAT program was established, the residents in Alaska's rural tribal areas experienced sporadic and infrequent access to oral health care. As of December 2008, 10 dental therapists are providing care to thousands of residents in 20 villages, many of whom might have never received care otherwise.⁵⁵ An evaluation of the DHAT program's first four graduates, conducted by the University of Washington, found that dental therapists were providing high-quality care and

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recommended that the program be expanded.⁵⁶ A more formal evaluation, guided by an advisory board, is being conducted by the Research Triangle Institute, with funding from the W.K. Kellogg Foundation, the Rasmuson Foundation, and the Bethel Community Services Foundation. Preliminary results are expected in late 2009.

Scope of Practice

The scope of practice for dental therapists focuses on basic educational, preventive, restorative, and administrative services, such as record-keeping. These include providing dental screenings and assessments, taking x-rays and making diagnoses, applying sealants and topical fluorides, and performing simple extractions and restorations.⁵⁷ Dental therapists refer to a dentist any patient who requires complex restorations, difficult extractions, advanced periodontal care, advanced behavioral management, or specialized surgical procedures. The purpose of allowing the dental therapist to perform simple oral procedures is to increase access to care for underserved patients, while reserving the more complex and specialized care for dentists. There

and did not take on procedures or cases that were beyond their training. The second more recent study found that the diagnoses, treatment and postoperative complications from care provided by dental therapists were equivalent to that provided by dentists.⁵⁸ For a summary of these and other related studies, see Appendix C.

As shown in the table in Appendix B, dental therapists can perform more restorative procedures than the proposed Advanced Dental Hygiene Practitioner (ADHP) and the Community Dental Health Coordinator (CDHC) models. Dental therapists are trained to perform basic restorations and extractions, clean teeth to improve health of the gums, and place stainless steel crowns. Dental therapists perform these services, as well as dispense medications, under standing orders from a supervising dentist. This system allows for flexibility in that individual dental therapists will have different standing orders reflecting their individual scope of practice. The standing orders are written by their supervising dentist after a period of direct supervision. In Alaska, dental therapists work using a telemedicine cart connected via secured internet to the hub clinics and their supervising dentists. Photos, documents and x-rays can be sent to their supervising dentist if and when a consult is needed.

Because the training period for dental therapists is only two years, they can be trained at less expense and deployed more quickly than other types of dental providers.

are many international studies establishing quality of care for dental therapists. Also, two early studies in the U.S. have found the care provided by dental therapists in Alaska to be safe and high quality. One study found that dental therapists stayed within their scope of practice

Pros and Cons

Because the training period for dental therapists is only two years, they can be trained at less expense and deployed more quickly than other types of dental providers. Also, the model has already been implemented successfully in many countries throughout the world, so there is a great deal of information about how dental therapists can operate most effectively. Dental

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therapists could help expand access by working in underserved rural and urban areas, in both private practices and community settings, as they do around the world. They could help provide continuity of care for underserved patients who live in areas where there aren't sufficient dentists.

Although dental therapists can provide the basic care most people need and handle most emergencies, they are able to perform only a small portion of the range of services that dentists are trained to provide. However, dental therapists could also prove to be useful in private practice settings where dentists could delegate simpler procedures, allowing the dentists to focus on the more complex or discretionary ones. An obstacle that states may face when implementing the dental therapist model is opposition from some organized dental provider groups, who oppose allowing non-dentists to perform restorative procedures (e.g., preparing and filling a cavity) and extracting teeth.

Community Dental Health Coordinator (CDHC)

Developed by the American Dental Association (ADA) in 2006 in reaction to the advent of dental therapists in Alaska, the CDHC is a newly proposed provider position that is expected to complement the services already delivered by existing providers, such as dental hygienists, dentists and dental assistants.⁵⁹ The CDHC is modeled after community health workers—who began as lay health workers and are now sometimes paid and certified. They perform a variety of functions, including helping patients get needed care. CDHCs would function mostly as a facilitator in communities, by helping patients get assistance as they navigate the health care system. While CDHCs would be able to perform a few clinical procedures, their main

objective is to promote utilization of proper oral health care services and educate patients about their own dental care. Since Medicaid patients often experience trouble locating a dentist, CDHCs could assist in finding a provider who will accept their insurance.

CDHCs would function mostly as facilitators in communities, by helping patients get assistance as they navigate the health care system.

The proposed CDHC training program is a 12-month curriculum, followed by a 6-month internship, which prepares students to provide basic oral health services. Potential CDHC candidates would be high school graduates, social workers, dental assistants, or school nurses, who would be recruited from the communities they would serve. Recruiting from communities would allow CDHCs to tap into their valuable understanding of the local culture and help overcome any language or cultural barriers that might impede access to care. Upon completion of the training program, CDHCs will be certified, not licensed. Certification is voluntary, while state law establishes requirements for licensure. The plan is for them to work under the direct supervision of a dentist when performing clinical procedures and under general supervision when providing education and community support. The plan for certification, not licensure, is controversial for a health worker performing some of the clinical procedures as outlined in the CDHC plan. Certification does not carry with it the legal oversight, continuing education requirements and the disciplinary power of licensure granted by a government entity.⁶⁰

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Pilot Projects

CDHCs are intended to help underserved patients locate providers who accept Medicaid or CHIP. In addition to a dental office, they could work in a variety of public settings, such as community clinics, schools, churches, nursing homes and federally qualified health centers. In these settings, CDHCs may perform evaluations and assessments, determine services needed, and refer patients to dentists when necessary. As Appendix B shows, CDHCs are similar to expanded function dental assistants, in that they can do more than dental assistants but less than hygienists. In dental offices, their scope would include basic office assisting, as well as preventive services as applying dental sealants, fluorides and superficial scaling and polishing of teeth. They would also be trained to do temporary restorations using hand instruments (not rotary drills),⁶¹ apply topical fluorides, and administer topical anesthetics.

Currently, the ADA is planning to conduct three CDHC pilot training programs. Two pilots are already funded and underway. The first is training six students at the University of California at Los Angeles who are intended to work in Indian Health Service sites. The second is training six students at the University of Oklahoma School of Dentistry to work at Indian Health Service sites and health centers. A third pilot project begun in Michigan is on hold pending state approval.⁶² CDHCs will receive some training online, administered by Rio Salado College in Arizona. The program was designed by the ADA and is not accredited.⁶³ The ADA plans to evaluate the pilot programs after a three-year period and has chosen a firm to plan the evaluation. The expected salary for a person who completes the training program is unknown at this time, but it may approximate that of a registered or expanded function dental assistant.

Scope of Practice

As shown in Table 2, the proposed CDHC model would be similar in training and scope to an expanded function dental assistant, but with a somewhat different focus and much smaller number of clinical services. The most controversial aspect of the CDHC proposal is the plan to train them to perform temporary restorations even though they will not have extensive clinical training and would not be licensed. It is not clear why this procedure would be needed in their skill set since the plan is for all clinical procedures to be performed under direct supervision. If a dentist will be present and able to do permanent restorations, temporary restorations by a CDHC would presumably not be needed. The proposed model also allows CDHCs to apply fluoride varnish to prevent decay, a safe and simple procedure that can also be performed by non-dental providers. Pediatricians and family physicians already provide this service to low-income populations.⁶⁴

Pros and Cons

The ADA hopes that coupling the on-the-ground expertise of community health workers with a few basic clinical skills will help address the needs of underserved populations and strengthen the capabilities of the dental team overall.⁶⁵ However, the limited services CDHCs could provide would be likely to limit their utility in most settings, since reimbursement for clinical procedures is the way providers are supported. This means that scarce grant funds or public funding would be needed to support their salaries. The limited scope would also render this model impractical to expand the capacity of a safety net oral health care provider. CDHCs could not do much to expand the ability of safety net providers to treat the serious cases of advanced decay that low-income and underserved populations unfortunately have all too frequently.

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TABLE 2
KEY CHARACTERISTICS OF PROPOSED AND CURRENT PROVIDER MODELS

	PROPOSED COMMUNITY DENTAL HEALTH COORDINATOR	DENTAL THERAPIST	PROPOSED ADVANCED DENTAL HYGIENE PRACTITIONER
Unique features	Educators, community health workers focused on supporting the proper use of dental services by low-income populations.	Primary care providers focused on delivering basic preventive and restorative care to isolated and underserved populations.	Case managers and primary care providers who could assess risk, educate, provide preventive services and basic restorations.
Potential political/implementation challenges	<ul style="list-style-type: none"> • Training to do temporary restorations with a hand instrument is controversial for an unlicensed practitioner. • Although the CDHC model is designed to increase access to care by helping patients find dental providers, it does not address the fact that most dentists do not accept Medicaid patients. 	<ul style="list-style-type: none"> • Trained to perform restorative procedures under general supervision, which is controversial among segments of organized dentistry in the U.S. 	<ul style="list-style-type: none"> • Trained to perform restorative procedures under general supervision, which is controversial among some members of organized dentistry. • Training may be excessive and expensive, given the limited expansions gained in scope of practice. • Salaries would be higher than that of dental therapists for a similar scope of practice. • It may be difficult to persuade dentists to collaborate with and accept referrals from ADHPs.
Potential limitations of the scope of service	<ul style="list-style-type: none"> • Includes a mix of skills and services that may not be realistic. • Very limited clinical services would make them difficult to support through reimbursements and of limited use in most practice settings. • To perform clinical procedures, CDHCs must be under a dentist's supervision and so could not help in the many areas where there are no dentists. 		<ul style="list-style-type: none"> • Recruiting from current pool of hygienists would limit cultural competence since most are white women.
Advantages	<ul style="list-style-type: none"> • Could be useful in prevention programs. • Supported by the American Dental Association. • Candidates would be drawn from the communities they will serve, increasing their ability to provide culturally competent care and overcome barriers. 	<ul style="list-style-type: none"> • A proven model, with a solid research base on quality of care from Alaska and other countries. • Ability to practice under general supervision makes them useful in many areas without dentists. • Two-year education makes them cheaper to train, reimburse, and employ. • Can mirror, and be sensitive to, the population served. 	<ul style="list-style-type: none"> • The public is familiar with dental hygienists and might feel comfortable receiving care from them. • A higher education level may help gain the confidence of dentists that they can perform restorative functions. • ADHPs could perform case management for underserved patients and help staff safety net clinics, which lack sufficient dentists.

OPTIONS FOR NEW DENTAL PROVIDERS

The proposed CDHC model is an attempt to help address the problem of access to dental care among low-income populations by assisting patients in locating providers and providing preventive services. However, for many Medicaid patients, the problems are not that providers are difficult to locate, or that they don't know how to locate them, but that few providers are willing to see them. In addition, there are already networks of community health workers and case managers available to assist low-income patients in navigating the health care system, so it is unclear what CDHCs would add. Plus, since their limited scope of clinical procedures would be performed under direct supervision, this would mean that CDHCs would not do anything to overcome the geographic maldistribution of dentists.

Advanced Dental Hygiene Practitioner (ADHP)

The Advanced Dental Hygiene Practitioner is a proposal for a new licensed oral health care provider that has been developed by the American Dental Hygienists' Association (ADHA). As proposed, ADHPs would be able to provide preventive, diagnostic and basic restorative services to patients, with an emphasis on treating underserved populations.⁶⁶ They would practice primarily in settings such as schools, nursing homes, community health centers and dental clinics, as well as private dental offices. A major focus of the proposal is to expand the oral health care safety net.

The ADHP would be dental hygienists with a master's degree who receive the additional training of a dental therapist. In their function and relationship to dentists, the ADHP would be comparable to a nurse practitioner or physician assistant. These mid-level providers have been

successfully integrated into the medical care system for decades, expanding primary care and increasing efficiency by managing and providing care to many patients with common ailments, while physicians see the more complex patients. Since the late 1970s, providers such as nurse practitioners, nurse anesthetists and physician assistants have worked under varying levels of supervision in many settings, including medical offices, community and rural health centers, and hospitals.⁶⁷ The ADHA plan proposes that ADHPs would work under general supervision with standing orders from a dentist, the way nurse practitioners and physician assistants work with physicians; or they would work in a collaborative practice (see Glossary of Workforce Terms, below) with a dentist who could provide case review and see patients with complex needs.

Developing New Training Programs

The ADHA has developed a curriculum for a new master's program to train and attract existing registered dental hygienists who wish to progress in their careers.⁶⁸ Some states or schools are considering a consolidated, quicker curriculum (called direct entry) to train ADHPs out of high school. The core competencies of the new ADHP master's degree were recently approved by the Minnesota State Colleges and Universities and a program is scheduled to start in 2009 at Metropolitan State University.⁶⁹

The total years of schooling required equals four to six years of post-secondary education, making the ADHP training the longest and most expensive of the three proposed models. Upon completion of the master's program, ADHPs will be licensed. While the salaries for ADHPs are not yet known, the length of education means they are likely to be more expensive to hire than

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hygienists. If a state elects to require a master's program, then the demographic makeup of the ADHP workforce would likely mirror the current cohort of registered dental hygienists. The great majority of hygienists are white women.⁷⁰ A direct entry course might attract a wider variety of people, with greater cultural, racial and ethnic variation, into the profession.

Pros and Cons

As with other new providers, there are a number of issues that should be considered. For example, state Medicaid programs will need to decide whether they could be reimbursed separately from dentists or clinics and could enroll as Medicaid providers. If ADHPs do receive Medicaid reimbursement, they could play a key role in increasing access to oral health care services for low-income populations and special needs patients. Since ADHPs' educational costs are lower than for dentists, they also might charge less for services than dentists, making them a more cost-effective way to deliver care. Dentists could also employ them in private practice, allowing the dentists to treat more patients, including Medicaid and CHIP recipients.

As outlined by the ADHA, the ADHP model would expand on the duties already performed by registered dental hygienists by adding the skills of a dental therapist. ADHPs would be able to perform simple extractions, apply temporary or permanent fillings and sealants, repair dentures and prescribe antimicrobials and pain medication. Appendix B shows the services that the ADHP would be able to perform.

In comparison with the other two workforce models discussed in this paper, the proposed ADHP requires more training, which would most

likely make them more expensive to hire and pay. Special efforts may be needed to gain the support of dentists who are willing to enter into collaborative agreements and accept referrals from ADHPs. Although currently there is a large pool of registered dental hygienists who could

...the ADHP model would expand on the duties already performed by registered dental hygienists by adding the skills of a dental therapist.

be trained to be ADHPs, one survey found that many of them would not want to practice independently in underserved areas.⁷¹ Nonetheless, new training might be a way to keep more of them interested and practicing, since currently many hygienists leave the field. ADHPs could perform case management for underserved patients, while coordinating care across different providers, much like nurse practitioners. They could also help staff safety net clinics in areas where there are shortages of practicing dentists. In addition, the licensure requirement and the widely known and trusted identity as hygienists might help give the public confidence in their ability to provide quality of care.

Rounding Out the Dental Team

Most dental care in the United States is delivered in private practices by general dentists. This model works well for about two-thirds of the public: ambulatory patients without special needs, privately insured patients and those with the ability to pay for care. For years the general dentist model has served as the primary mechanism for the delivery of oral health care in

Dentists frequently delegate procedures, particularly when it is economically advantageous to do so.

the United States. In conjunction with access to fluoridated drinking water and innovation in preventive and restorative materials and techniques within the dental community, Americans have seen significant increases in their overall oral health over the past several decades. However, despite the great successes of the private practice model coupled with public health approaches, many barriers still exist which pose great threats to the ability of many populations to receive access to care.

Dentists are business owners and leaders of their dental teams, but they don't deliver all dental services. They rely on dental assistants and dental hygienists, laboratory technicians, and referrals to specialists or other dentists. Dentists are highly educated and highly skilled professionals—surgeons really—who are trained to handle a wide variety of clinical procedures. Some assume dentists can do anything that their patients require and can do it better than any non-dentist could. However, that breadth of training, coupled with the fact that only 18 percent of dental graduates complete a specialty residency for further training, means not all practicing dentists are equally familiar with or comfortable practicing all areas of dentistry they learned. For example, while dental school teaches students how to do root canals, periodontal surgery and orthodontics, few general dentists perform them, preferring instead to refer patients who need these services to specialists.

Dentists frequently delegate procedures, particularly when it is economically advantageous to do so. For example, while dentists receive training in how to clean teeth, 77 percent of general practitioners, and 88 percent of periodontists prefer to hire one or more hygienists to clean patients' teeth.⁷² On average, about 43 percent of the visits to a dentist's office are for hygiene services—meaning they are a significant source of revenue as well as a core part of the services offered.⁷³ This shows that when dentists are comfortable with an auxiliary provider, they are certainly willing to delegate procedures to them and incorporate them into their business model. It is important for policy makers and workforce planners to consider dentists' preferences for referring patients and hiring staff to perform some services, as well as the depth and breadth of their training, when considering new workforce models.

Resistance to New Providers

Opposition to new models of care is often based on economic fears. However these fears are not grounded in experience. New providers are likely to supplement rather than compete with dentists. If working in safety net settings and community health centers, new providers will be treating patients that are unlikely to seek care in a private dental practice. If employed in private practices, new providers—like hygienists and other dental auxiliaries—are likely to increase the productivity and incomes of dentists.

Dentists also express concerns about training new providers to do restorative care and setting appropriate supervision levels. Both the dental therapy and ADHP models would train people to do basic restorations and extractions, which currently only dentists can provide. While some

OPTIONS FOR NEW DENTAL PROVIDERS

dentists in the United States believe this is a controversial issue, dental therapists have performed restorations and extractions safely and effectively with little or no supervision in other countries for many decades. Dentists would also prefer to impose indirect or direct supervision—rather than general supervision or collaborative practice—for more advanced procedures. (The ADA policy on Allied Dental Education and Personnel asserts that “General supervision is not acceptable to the ADA because it fails to protect the health of the public.”⁷⁴

However, this policy, updated in 2008, lags behind reality in that almost all states have had general supervision of dental hygienists in one or more settings for many years.⁷⁵)

While protecting public health and safety is often stated as a reason to oppose new workforce models, research from the United States and other countries have demonstrated that new providers can be taught to do these procedures safely, with quality of care equal to that provided

While protecting public health and safety is often stated as a reason to oppose new workforce models, research from the United States and other countries has demonstrated that new providers can be taught to do these procedures safely, with quality of care equal to that provided by dentists.

by dentists (see Appendix C for research summaries). State regulation of the health professions must ensure both access to care and the quality of the care provided; and setting the supervision level too restrictively will undermine these goals.

State policy makers, working with a wide variety of groups, have a number of steps they can take and tools at their disposal to craft a plan to meet workforce gaps.

GLOSSARY OF WORKFORCE TERMS

Supervision: ⁷⁶

Direct: A dentist is on-site while a provider is practicing, authorizes a particular service before the provider performs it, and checks the patient afterward.

Indirect: A dentist is on-site while a provider is practicing and authorizes treatment plans but does not necessarily need to check patients before and after services are performed.

General: The provider does not need a supervisor to be on-site, but a dentist or physician must authorize procedures (either by prescription or standing order or protocol) and periodically evaluate the provider's performance.

None: The provider can practice independently, without authorization or evaluation from another provider.

Authorization:

Prescription: A written order, signed by a dentist, that directs a provider to perform specific procedures for a particular patient. (For example, prescriptions are typically used by dentists issuing orders to dental hygienists in school-based sealant programs.)

Standing order: An order (usually in writing) that directs a provider to perform specific procedures for all patients who meet specific criteria, and describes steps to be followed (for example, consultation with or referral to a dentist) when a patient does not meet those criteria. Referred to as an "agency protocol" when used by public health agencies.

Collaborative practice agreement: A written, signed agreement between two providers (for example, a dentist and a hygienist in independent practice) that states their responsibilities to each other. It may include procedures that the provider is authorized to perform, evaluation criteria, situations when consultation with the collaborating dentist is required, and provisions requiring the collaborating dentist to accept referrals.

Referral: An order from a provider directing a patient to see a dentist (or dental specialist) for consultation or further treatment. A collaborative practice agreement may include referral requirements.

Tele-dentistry: Consultation by a dentist (either to a provider or another dentist) that is conducted through the use of internet or satellite video or the exchange of digital images.

Direct access: A level of authority where a provider may treat a patient without the patient having first been seen by a dentist for diagnosis and treatment planning.

Implementation Steps for Developing New Provider Models

Developing new dental provider models requires careful planning, and the experiences of several states can provide valuable lessons. Implementation requires building consensus, gaining legislative approval, handling regulatory issues, establishing the educational framework (curriculum and accreditation) and planning for the system-level changes needed to make the new model functional.

Consensus Building

The first step to developing a new provider model is creating a strong, broad-based partnership of stakeholders. Building and sustaining this support takes time. Some groups, such as coalitions, develop organically over time, while others, such as task forces, may result from a legislative mandate. In either case, key stakeholders must commit the time and the effort needed to ensure a successful process. Stakeholders to consider include:

- dental, dental hygiene and medical professional associations (such as the American Academy of Pediatrics or the American Academy of Family Physicians)
- dentists, dental hygienists and physicians who serve a high volume of underserved patients
- state colleges which can provide research, that are experienced in developing programs for minorities or persons in rural areas, and universities with public health programs

- local and national experts
- oral health coalitions (a list is included in Appendix D), and advocacy groups
- state legislative champions
- organizations that serve vulnerable populations, e.g., primary care associations, federally qualified health centers and other safety net clinics
- state policy makers from Medicaid, professional practice boards and licensing and certification agencies whose involvement will be required after legislation is passed

Having a leader who is respected by all will help allay concerns some stakeholders may have about a perceived bias at the outset.

Selecting a skillful leader for the consensus group is a critical and challenging step, because the leader must keep stakeholders focused on the central, mobilizing objective—improving access to oral health to the underserved—and away from perceived limits or threats to any professional group’s practice or authority.⁷⁷ Having a leader who is respected by all will help allay concerns some stakeholders may have about a perceived bias at the outset. States have

IMPLEMENTATION STEPS FOR DEVELOPING NEW PROVIDER MODELS

found it helpful to involve and develop leadership roles for dentists who are open to new ideas and models to meet the central objective, such as dentists who serve Medicaid patients or practice in safety net settings.⁷⁸ States also have found that transparency—shared processes and time allowed for public and stakeholder input—helps build trust. (See the example of Ohio in the next section.)

Legislation

Most states require legislative approval for a new dental provider model. Although some states may be able to implement new models by changing regulations or administrative policies, legislation is likely to be needed if the model calls for a new provider type.⁷⁹ States' legislative options include the following:

- working with the state Board of Dentistry to permit implementation of a new provider under existing regulations, where possible⁸⁰
- amending the dental practice act to explicitly authorize the new provider
- enacting new legislation to establish the new provider model (establishing scope of practice and supervision level)

Minnesota has enacted legislation to create a new type of provider, as described in the next section. Passing legislation is not the end of the process but rather one of the many steps vital to developing workforce models.⁸¹

Regulation

After legislation has been passed, state regulatory agencies (e.g., health professions' boards) write and enforce the regulations that implement the law.⁸² Most states regulate dental practice through a dental board; a few states have separate dental

hygiene committees that make recommendations to the dental board.⁸³ To implement a new provider model, states must determine whether an existing board or a new board or committee established specifically for the new provider will be responsible for its regulation. Regulatory policies are needed for credentialing or licensing new provider types; licensing exams and renewal; and continuing education requirements.

Continued input and involvement from the consensus stakeholder group is needed in the regulatory process to make sure that regulations follow the intent of the law and are meant to expand access to care (see "Independent, Evidence-Based Regulation and Review Policies" in the next section).

Education

For new providers to obtain the licensing or credentialing required, an appropriate educational framework needs to be developed to educate students. A curriculum must be developed, and funding may be required for program courses, faculty and equipment. Additionally, faculty to teach the new curriculum need to be trained. Since many proposals are for new providers with a particular position in the health care system—working in collaboration with or under standing orders from a dentist—consideration should be given to joint education and training. Physicians are trained to work with other providers, so when they graduate they know how to relate to them. This will be an important step for dentists and new providers as well.

An educational institution within the state (or region) will need to create a program that incorporates the curriculum to educate these new providers. The state also has to keep abreast

IMPLEMENTATION STEPS FOR DEVELOPING NEW PROVIDER MODELS

of curriculum development activities by national organizations that may affect their plans for similar providers. Since developing a curriculum and educational program takes time, this step often happens concurrently with consensus building and legislative initiatives. Additionally, the institution will need to be accredited. The Commission on Dental Accreditation is the entity that accredits dental education programs. It is technically independent of the American Dental Association, but organized dentistry does exert some influence over its functions. If the Commission declines, then it is the state's responsibility to provide accreditation.

It also has been suggested that the creation of a new provider type does not necessarily require a major change to the current educational infrastructure, as it may be possible to expand or integrate existing dental hygiene programs to offer dental therapy training.⁸⁴

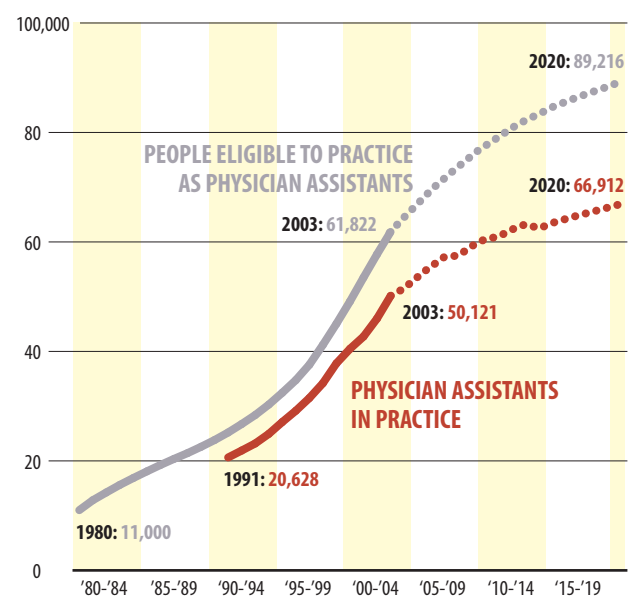
System-Level Changes

Last, states must consider the system-level changes related to delivery of care and supervision that will be needed for a new workforce model to be successful. States must determine where new providers will work and what types of assistance they may need. If the goal is for new providers to work in safety net settings such as clinics, or in nursing homes or schools, then leaders of those systems should be involved in the planning. Clinical rotations to those sites can be built into the curriculum, and funding and reimbursement plans can be made. If the goal is for new providers to work independently or in collaborative relationships with dentists, the new providers may need help with business plans, marketing their services to patients and institutions, negotiating contracts,

developing collaborative agreements with dentists. Since the majority of dentists are in private practice, states need to reach out to them to hear their needs and concerns about working with new providers; if collaborative relationships are required, states may consider adding case review or consulting fees into reimbursement rates to compensate dentists for their time.

Kansas uses a "Dental Hub" concept, which delineates a care delivery system and supervision roles for underserved locations.⁸⁵ Within this model, a dentist is at a "hub" in a central location of a region; dental hygienists who provide hygiene services without direct dental supervision in certain community settings are the "spokes" that provide care to other areas and settings in that region. States also may want to consider whether offering incentives to dentists would make them more likely to collaborate with new providers or agree to supervise them off-site.

Figure 2
GROWTH OF PHYSICIAN ASSISTANT WORKFORCE



SOURCE: The Robert Graham Center, "The Physician Workforce of the United States: A Family Medicine Perspective," October 2004, Washington, DC, p. 52.

LESSONS FROM OTHER MEDICAL PROFESSIONS: PHYSICIAN ASSISTANTS AND NURSE PRACTITIONERS

The history of the implementation of physician assistants and nurse practitioners offers lessons that may help inform the development and deployment of new dental workforce models. Physician assistants (PAs) and nurse practitioners (NPs) developed in the mid-1960s during a time of physician shortages in rural areas and in primary care. The federal government stimulated the development of these professions with legislation supporting program development and training in the late 1960s and early 1970s to expand access to primary care.⁸⁶

It took at least 10 years for both PAs and NPs to move from idea to reality, and longer for them to be present in all states. With work and careful planning, both professions grew so that they are now essential and well-integrated into the health care system. The first U.S. PA program began at Duke University Medical Center in North Carolina in 1965.⁸⁷ PA programs began as two-year programs and targeted military corpsmen and medics for training in the civilian health care workforce.⁸⁸ PAs are licensed or credentialed to practice medicine with the supervision of a physician.⁸⁹ Over the years, the PA profession has become increasingly diverse, with many specialties and master's level programs.⁹⁰ The evolution of the PA profession followed five key phases:⁹¹

- Introduction of the PA concept
- Implementation, including the development of formal training programs, adoption of legislation and endorsement by the American Medical Association
- Evaluation of and research on the profession
- Incorporation of the profession across the country, with growth in numbers of PAs and an expansion of PA roles
- Maturation of the profession, as evidenced by increased acceptance and reduction in barriers to implementation

NPs are registered nurses who receive graduate education and training in an NP program (most states require a master's degree) to provide a range of preventive and acute health services.⁹² (Training programs now include specialties such as geriatrics and anesthetics). NPs originated with a master's degree program at the University of Colorado's School of Nursing in 1965. The first programs focused on preparing students to serve children in pediatric practices. Educational and certification requirements, as well as scopes of practice vary by state. Most states require NPs to practice in collaboration with a physician. However, some states allow NPs to practice independently and others require NPs to be supervised by a physician. Most states require a master's degree, and passage of a national certification exam, for state licensure.

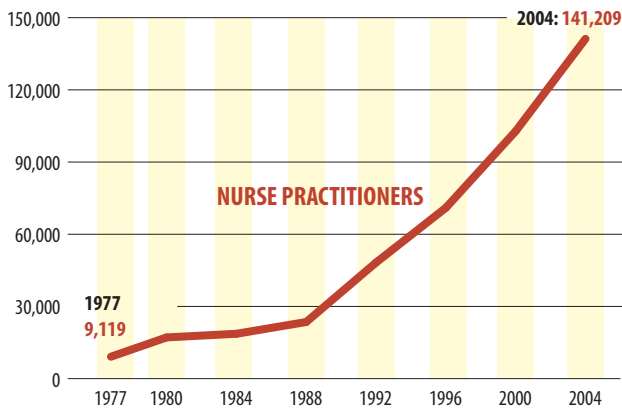
There is a great deal of ambiguity among state laws regarding physician involvement, practice and prescriptive protocols, and NP privileges.⁹³ For example, some laws require NPs to practice under

Continued from page 32

physician supervision but do not specify what type of supervision must occur, e.g., meetings, chart review, etc.⁹⁴ This may be purposeful, allowing physicians and their collaborating nurse practitioners and physician assistants to work out arrangements that ensure patient safety and increased productivity. The NP experience shows that clarity and specificity within state laws and uniformity across state statutes have significant implications for the application of new workforce models.

The NP model has faced opposition from both nursing and medicine over the years.⁹⁵ Nurses objected to the nurse practitioner model because it departed too much from traditional care-giving and was too close to the medical model of diagnosis and treatment; physicians worried that nurses with expanded, unsupervised roles would provide poor care. In response, NPs have documented the quality and cost-effectiveness of their services by conducting research and publishing findings in journals such as JAMA. One important difference between PA and NPs is that there continue to be tensions related to NP independence and autonomy.⁹⁶ There is disagreement as to whether NPs were intended to be “physician extenders” as PAs were, or whether they developed out of a desire among nurses to have independent practices.⁹⁷ In any case, both provider types are so well integrated, well respected, and essential that it is hard to imagine the modern health care system without them.⁹⁸

Figure 3
**NURSE PRACTITIONER
WORKFORCE GROWTH**



SOURCE: "The Registered Nurse Population: National Sample Survey of Registered Nurses," U.S. Department of Health & Human Services, Health Resources & Services Administration"

Tools for Workforce Development

State experience reveals several tools that states can use to facilitate progress in implementing new workforce models. States can:

- create an entity that permits new workforce models to be piloted, as in California
- develop regulation and review processes to ensure that workforce changes are based on evidence and in the best interests of the public, as in Colorado
- carry out workforce planning either across all health professions (as in Iowa) or specific to oral health professions (as in Ohio and Minnesota) to help policy makers assess needs and inform decisions related to workforce changes

Piloting New Workforce Models: California

There are many barriers facing the development and implementation of a new provider model. California has established a program that breaks down some of those barriers by allowing organizations to demonstrate and evaluate new provider models before requesting changes in professional practice laws. The Health Workforce Pilot Projects Program (HWPP) was established by the legislature in 1972 in response to serious workforce shortages so that the state could develop and test new roles of health care workers.⁹⁹ The HWPP provides the legal framework to study the potential expansion of a profession's scope of practice. It enables examination of the strengths and weaknesses of new providers including how the new provider

fits in the current delivery system. It was hoped that this program would help the state avoid spending the money and time on legislative battles over untested provider models. Rather, through these pilot programs, structured evaluations would be used to inform the legislative process.¹⁰⁰

Through the HWPP, the Registered Dental Hygienist in Alternative Practice (RDHAP) (see Appendix B for services provided by the RDHAP) was tested in 1980 to “teach new skills to existing categories of health care personnel and expand the role of dental auxiliaries, specifically dental hygienists.”¹⁰¹ Legislation adding a new category of provider who could provide independent services with the prescription of a dentist or physician and surgeon was signed into law in 1997.¹⁰² There are currently 231 RDHAPs licensed and practicing in California.¹⁰³

Independent, Evidence-Based Review Policies: Colorado¹⁰⁴

There is growing interest in implementing objective, independent processes to inform legislatures in making scope of practice changes. Since lobbyists and interest groups play a significant role in the legislative process and make arguments (sometimes conflicting) based on their values and interests, legislators often find it difficult to understand and weigh decisions on clinical issues. Therefore, many researchers and organizations have argued that scope of practice changes should be based on scientific evidence gathered independently from the political process.¹⁰⁵ Several states, including Iowa, New

TOOLS FOR WORKFORCE DEVELOPMENT

Mexico and Virginia, have established independent mechanisms that review proposals for changing health profession scopes of practice and then summarize that evidence for legislators or other policy makers.¹⁰⁶ These structures and processes differ by state, but review committees often include members of the public and representatives from a variety of health professions, including those directly affected by the proposed change and those who are not. Colorado offers another example of the implementation of independent, evidence-based review policies for dental practitioners.

In response to the effects of workforce shortages on access to care, the Governor of Colorado issued an executive order in 2008 commissioning the study of the evidence for and value of expanding the scopes of practice of advanced

practice nurses, physician assistants and dental hygienists.¹⁰⁷ The Colorado Health Institute (CHI) systematically reviewed regulatory policies and practice-based research in the state, which culminated in a study of the evidence base regarding scopes of practice of the three health care professionals, their practice settings and the quality of care they provide.

The report concluded that unsupervised dental hygienists can “competently” provide oral health care preventive services “within their scope of training, education and licensure in Colorado” and can do so with quality of care “at least comparable” to that of dentists.¹⁰⁸ The report found that, as in other states, current Colorado statute restricts dental hygienists from making a diagnosis that falls within the full scope of their license. The report also found that some dental

SELF-REGULATION

Related to independent review is the concept of self-regulation. While the medical, nursing and dental professions largely self-regulate, dental hygiene is typically regulated by boards of dentistry or dental examiners. It has been noted that there is an “inherent conflict of allowing one professional board to govern members of a different profession.”¹¹⁰ Dental boards are predominately made up of dentists, some of whom are directly affected by, and arguably have a vested interest in preventing, changes in dental hygienist scope of practice. For example, in 2007, the State Board of Dentistry in South Carolina settled a case of “anticompetitive conduct” brought against it by the Federal Trade Commission (FTC).¹¹¹ The FTC alleged that the Board limited competition—and the number of vulnerable children receiving preventive dental care in schools—when it reinstated a requirement previously eliminated by the state legislature that dentists examine a child before a dental hygienist could provide preventive care in schools.

In an effort to avoid these situations, some states have moved toward self-regulation or expanded rule-making authority in regards to dental hygienists.¹¹² For example, in Washington State, rules for dental hygienists and dentists fall under different practice acts, and dental hygienists are regulated by a Dental Hygiene Advisory Committee rather than a dental board. That committee is made up of three dental hygienists and one public member appointed by the state.¹¹³ The dental hygienists must be licensed, have been actively practicing for at least five years, and be unaffiliated with any dental hygiene school; the public member cannot be related to dental hygiene.

Although it makes sense for states to implement workforce planning for all health care professions, few have done it.

payers in Colorado do not directly reimburse dental hygienists for services provided and authorized under their current scope of practice. The report calls for an evaluation of and recommendations for reimbursement policy options to “enhance the use of dental hygienists in areas where oral health access is lacking.”¹⁰⁹

Workforce Planning

Workforce planning is a tool states can use to better understand their overall workforce needs and resources. Although it makes sense for states to implement workforce planning for all health care professions, few have done it. Iowa is an exception. Some states, such as Minnesota, have opted to establish workforce planning specific to oral health. Following are examples of these states’ workforce planning processes.¹¹⁴

Health Care Workforce Planning: Iowa¹¹⁵

Iowa has designated a single state entity to address overall health care workforce planning across the state—the Bureau of Health Care Access within the Iowa Department of Public Health (IDPH). Bureau programs have provided grants to communities and educational institutions for tuition reimbursement, loan repayment, training and recruitment and mentoring programs for health professionals; programs also have funded online training and curriculum for health education programs and supported improvements to a state worker registry. Legislation in 2007 (House File 909) built

on these efforts and directed IDPH to project future workforce needs, coordinate efforts, make recommendations and develop new strategies. After participating in a multi-agency workgroup, conducting a literature review and convening a summit, IDPH issued a final report with workforce recommendations for health professions, including oral health. Short-term recommendations include establishing an Iowa Health Workforce Center to provide state-level coordination of recruitment and retention of health professionals.¹¹⁶ Iowa passed legislation in 2008 (House File 2539), which directs IDPH to take additional steps in workforce planning and development, such as seeing that relevant data is continuously collected and biennially delivering a strategic plan to the Governor and legislature.¹¹⁷

Oral Health Workforce Planning: Minnesota

In May 2008, Minnesota enacted the Omnibus Higher Education Policy Bill (SF 2942), which established the position of an Oral Health Practitioner, a provider similar to an ADHP.¹¹⁸ The legislation instructed the Commissioner of Health and the Board of Dentistry to convene an Oral Health Practitioner Work Group to make recommendations and propose legislation regarding the education, training, scope of practice, licensure and regulation of oral health practitioners.¹¹⁹ The work group’s co-conveners served important roles; the Department of Health provided logistical and project support, while the Board of Dentistry offered technical expertise. The work group met several times throughout the fall of 2008; these facilitated meetings were open to the public, and information, materials, and public feedback are available online.¹²⁰ The work group issued its report to the legislature in January 2009.¹²¹ The report and legislation developed by

the work group were the starting point for legislation introduced in the 2009 session. Legislation establishing a new provider was enacted and signed into law in May, 2009.

Conclusion

New providers may offer a way for states to help ensure that vital and routine dental care is accessible to constituents regardless of age, race, ethnicity, income, geographic location or insurance status. In the 1950s and 1970s, serious efforts were made to develop new dental providers in the United States. In the 1970s, two universities in Massachusetts and Kentucky developed programs to train hygienists to perform basic restorative care. Quality of care studies conducted at the time found the care they provided was equal to that provided by dentists. Those efforts were ended, at least in part, because the economic slump in the 1970s depressed demand for care, while at the same time larger cohorts of new dental graduates entering the market increased supply. Organized dentistry, which had originally supported the effort in both states, reversed their support when it became clear some of their members were struggling economically. While those earlier attempts did not succeed in permanently adding a new provider type, current efforts can learn from those earlier experiences. Many people involved in those experiments still recall the promise those new models held for expanding the dental team, improving the efficiency of dental practices and clinics, and providing high-quality services to

those who need them. The research conducted at the time, and other studies from Alaska and around the world, confirm that many components of dental care can be provided efficiently and well by allied health workers. Lessons from medicine tell us the same story.

Policy makers need to weigh carefully the concerns of all stakeholders, and any planning process should take those concerns into account. The current bleak budget climate means that states are going to be looking for new and creative ways to deliver services and stretch public dollars. The ever-rising cost of health care means that business leaders and governments at all levels are looking for more cost-effective ways to deliver high-quality care. Demographic shifts are reducing the number and availability of dentists even as baby boomers enter retirement and demand more care than previous generations. Dentists, as the most highly trained and educated dental providers, will always remain the leaders and experts in the field and the only providers who can perform the most complex and clinically difficult procedures. However, states are working hard to gather data, build consensus, develop systems of care, and train and educate new providers who can join the dental team, provide basic primary dental care to underserved populations, and expand the safety net. New thinking and action is needed to respond to the serious access problems facing all states. This paper gives objective information and tools to policy makers who are poised to address them.

Sources of State and National Data

- **National Oral Health Surveillance System (NOHSS)** tracks oral health standardized methods. One method, using the Basic Screening Survey (BSS), can be used by dentists, dental hygienists, or other health care workers to record the presence of untreated caries and treatment urgency for all age groups. Adult Indicators include: Dental Visit, Teeth Cleaning, Complete Tooth Loss, and Lost Six or More Teeth. Child Indicators include: Dental Sealants, Caries Experience, and Untreated Tooth Decay. Data presented by NOHSS is a collaborative effort between the Center for Disease Control and Prevention (CDC) and the Association of State and Territorial Dental Directors (ASTDD). <http://www.cdc.gov/nohss/about.htm>.
- **The Medical Expenditure Panel Survey (MEPS) Household Component (HC)** collects detailed information on dental events, including source of payment, total payment and charge, type of provider seen and procedures associated with each dental event. The Dental Visits Files are available as part of the event-level files. Information summarized to the person-level is available on the full year consolidated files under the Household Full Year Files. http://www.meps.ahrq.gov/mepsweb/data_stats/download_data_files_detail.jsp?cboPufNumber=HC-102B. Data tables: The dental services tables of the MEPS-HC Summary Data Tables contain expenditures and utilization data. http://www.meps.ahrq.gov/mepsweb/data_stats/MEPS_topics.jsp?topicid=10Z-1

Analytic tools: With the MEPSNet/HC query tool, you can also select the annual person-level dental data and generate your own tables.
- **The Synopses of State and Territorial Dental Public Health Programs** is an annual survey of state dental directors that provides data that includes demographics and workforce data across multiple years. Demographic data focuses on the number of school age children and the percent eligible for state assistance programs. Workforce data includes the number of dental hygienists and dentists in a state and the number of dentists enrolled as providers in Medicaid and CHIP. <http://apps.nccd.cdc.gov/synopses/>
- **U.S. Census Bureau** provides state-level data on the population by age, income, and poverty. <http://www.census.gov/prod/www/abs/popula.html>
- **National Center for Health Workforce Analysis State Health Workforce Profiles** Highlights from the 2000 Profiles (published 2004) compile 2000 data on levels of employment, projected growth, and key environmental factors that affect demand for health care including dentistry. <http://bhpr.hrsa.gov/healthworkforce/reports/profiles/>
- **Early and Periodic Screening, Diagnosis, and Treatment (EPSDT): CMS-416:** CMS requires states to report annually on the provision of EPSDT Dental Services through the CMS-416. For dental services, the CMS 416 captures, by

APPENDIX A

age group, the total number of eligible children receiving:

1. any dental services
2. any preventive dental services (each child is counted only once even if more than one preventive service is provided)
3. any dental treatment services (each child is counted only once even if more than one treatment service is provided) ¹²⁴

http://www.cms.hhs.gov/MedicaidEarlyPeriodicScrn/03_StateAgencyResponsibilities.asp

- **Elementary School Survey:** National Oral Health Surveillance System (NOHSS) state level profiles allow for state-to-state and year-to-year comparisons. It also reports data on the number of children eligible for free and reduced school lunch since access to dental care may be associated with income.¹²⁵ State data that meet criteria for inclusion in NOHSS are published on the NOHSS Web site.¹²⁶ The elementary school data includes percent of third-grade children with:

1. caries experience
 2. untreated caries
 3. dental sealants on at least one permanent first molar
- <http://apps.nccd.cdc.gov/nohss/statemap.asp>

- **Children with Special Health Care Needs:** Standardized indicators from the National Survey of Children's Health and the National Survey of Children with Special Health Care Needs can be researched at the state level.¹²⁷ These indicators can be searched by age, race and ethnicity, income and health status of children and adolescents by state and provide data on:

1. preventive dental care
2. other dental care

3. unmet needs for preventive dental care
 4. unmet needs for other dental care
 5. unmet needs for preventive dental care
 6. unmet needs for other dental care
 7. delayed or went without care that child needed
- <http://childhealthdata.org/content/Default.aspx>

- **2000 GAO report** described the number of dentists enrolled in Medicaid (that is, had a Medicaid provider number and was able to treat a Medicaid-enrolled child).
<http://www.gao.gov/archive/2000/he00149.pdf>.
- **DATA2010** is an interactive database system developed by the staff of the Division of Health Promotion Statistics at the National Center for Health Statistics and contains the most recent monitoring data for tracking Healthy People 2010. Data for the population-based objectives may be obtained for select populations, such as for racial, gender, educational attainment, or income groups. The objectives are organized into 28 focus areas, each representing an important public health area such as oral health.
- **State Health Facts** provides state data on the following categories: Demographics and the Economy; Health Costs & Budgets; Health Coverage & Uninsured; Health Status; HIV/AIDS; Managed Care & Health Insurance; Medicaid & CHIP; Medicare Minority Health Providers; & Service Use Women's Health.
<http://www.statehealthfacts.org/>

APPENDIX B

Appendix B - Part 1 CLINICAL CAPACITY OF CURRENT AND PROPOSED PROVIDERS¹

PROCEDURES		DENTAL ASSISTANT	EXPANDED ² FUNCTION DENTAL ASSISTANT	COMMUNITY DENTAL HEALTH COORDINATOR	REGISTERED DENTAL HYGIENIST	DENTAL ⁷ THERAPIST	ADVANCED DENTAL HYGIENE PRACTITIONER	GENERAL DENTIST
Diagnostic	Taking medical & dental history	•	•	•	•	•	•	•
	Dental screening and assesment		•	•	•	•	•	•
	Dental charting, preliminary exam		•	•	•	•	•	•
	Vital signs	•	•	•	•	•	•	•
	Diagnosis and make treatment plan					•	•	•
	Referral to dentists, other providers, specialists				•	•	•	•
Clinical Support	X-rays	•	•	•	•	•	•	•
Primary prevention	Oral hygiene instruction	•	•	•	•	•	•	•
	Dietary counseling		•	•	•	•	•	•
	Topical fluorides	•	•	•	•	•	•	•
	Dental sealants		•	•	•	•	•	•
Removal of stains and/or plaque from teeth	Coronal polishing (cleaning)		•	•	•	•	•	•
	Dental prophylaxis		• ³	•	•	•	•	•
	Nonsurgical therapeutic periodontal procedures			• ⁵	•	•	•	•
	Periodontal curettage/root planing				•	• (limited)	•	•
Preventive antimicrobial therapy	Apply antimicrobials				•	•	•	•
Anesthesia	Topical anesthetics		•	•	•	•	•	•
	Local anesthetics				• ⁶	•	•	•
	Nitrous oxide		•		• ⁶		•	•
	General anesthesia for surgery							• ⁸

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APPENDIX B

Appendix B - Part 2 CLINICAL CAPACITY OF CURRENT AND PROPOSED PROVIDERS

PROCEDURES		DENTAL ASSISTANT	EXPANDED ² FUNCTION DENTAL ASSISTANT	COMMUNITY DENTAL HEALTH COORDINATOR	REGISTERED DENTAL HYGIENIST	DENTAL ⁷ THERAPIST	ADVANCED DENTAL HYGIENE PRACTITIONER	GENERAL DENTIST
Cavity treatment	Atraumatic Restorative Technique (ART)			•		•		•
	Placement of temporary restorations		• ⁴	•	• ⁶	•	•	•
	Simple restorations (amalgam or resin)		• ⁴		• ⁶	•	•	•
	Light cure composites	•	•		•	•		•
	Simple extractions					•	•	•
	Complex extractions							•
	Prefabricated crowns					•		•
	Laboratory processed crowns		• ⁴			•		•
	Polpotomy					•	•	•
	Pulp capping					•	•	•
	Root canal therapy							•
Other services	Denture fabrication							•
	Denture repair and adjustment					•	•	•
	Impressions for models, crowns, and guards	•		•	•	•	•	•
	Other oral surgery							•
	Placement of orthodontic appliances		•					•
	Orthodontic adjustment		•					•
	Check for loose bands, wires	•	•		•	•	•	•
	Bleaching applications				•		•	•
	Periodontal dressings		•		•			•
Other periodontal surgery							•	
Prescriptive authority	Prescribe antimicrobials, infection control						•	•
	Prescribe controlled substances (pain medication)						•	•
	Dispense medications by doctor's order					•		•

NOTES:

1. Permitted functions and supervision level vary significantly across states, and are determined by state dental practice acts. There is a difference between clinical capacity and functions providers are permitted to perform in each state.
2. Because the scope of Expanded Function Dental Assistants varies greatly among states, this chart uses Ohio's Expanded Function Dental Auxiliary as the basis for comparison.
3. Expanded Function Dental Assistants perform parts of a prophylaxis: "toothbrush" cleanings using a rubber cup or brush.
4. Expanded Function Dental Assistants place temporary restorations, as well as perform parts of permanent amalgam and composite resin restorations, and preliminary selection and sizing of stainless steel crowns. They may not diagnose, prescribe, or cut hard or soft tissue.
5. The proposed scope for the Community Dental Health Coordinator includes periodontal scaling only for periodontal Type I (gingivitis) patients.
6. As of June 2007, the American Dental Hygiene Association reports that 32 states allow dental hygienists to place temporary restorations, 40 states allow them to administer local anesthesia, and 23 allow them to administer nitrous oxide. Nine states allow hygienists to place and finish amalgam restorations. See http://www.adha.org/governmental_affairs/downloads/fiftyone.pdf.
7. Dental Health Aide Therapists currently practicing for the Alaska Native Tribal Health Consortium complete a 2-year dental therapy training program operated by the University of Washington MEDEX program in Anchorage. Currently, no state licenses or trains dental therapists.
8. General dentists can administer general anesthesia with training but most rely on anesthesiologists.

Selected Research on Alternative Providers

Over the past several decades, research has shown that dental therapists, dental assistants and hygienists who have been trained to perform expanded functions can provide oral health care safely, effectively and efficiently.

- In the final phase of a three-phase study on the feasibility of delegating additional duties to chair-side dental auxiliaries, dentists, who worked as heads of dental teams with varying numbers of assistants, delegated about two-fifths of their work to these auxiliaries. The overall rating of the work performed by the assistants during this phase found that 82 percent of the procedures were assessed as meeting the required quality standards, compared to 81 percent of the dentists' work that was assessed as acceptable.
 - S. Lotzkar, D. W. Johnson, M. B. Thompson, "Experimental program in expanded functions for dental assistants: Phase 3 experiment with dental teams," *Journal of the American Dental Association* (1971): 82:1067-1081.
- An evaluation of the quality of service of various procedures provided by four trained dental therapists found that the quality of services they provided within their scope was equal to services provided by dentists. Some of these services included inserting temporary restorations and finishing permanent fillings.
 - P.E. Hammons, H. C. Jamison, and L. L. Wilson, "Quality of Service Provided by Dental Therapists in an Experimental Program at the University of Alabama," *Journal of the American Dental Association* 82, no. 5 (1971): 1060-1066.
- A two-year evaluation of the performance of expanded duty dental assistants compared to that of senior dental students indicated that the quality of the procedures performed by expanded duty dental assistants was consistently as good as those performed by the senior dental students. Furthermore, in certain procedures, the expanded duty dental assistants tended to be significantly superior. Expanded duty dental assistants outperformed dental students in doing prophylaxes, matrix removal and placement of Class I amalgam restorations.
 - L. J. Brearley, F. N. Rosenblum, "Two-year evaluation of auxiliaries trained in expanded duties," *Journal of the American Dental Association* (1972): 84:600-610.
- A four-year study of the effectiveness of expanded duty dental assistants found that they were able to provide procedures of acceptable quality, including Class II amalgam and Class III silicate restorations. No significant differences were found for the "acceptable" rating between dentists and auxiliaries for both procedures.

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- J. Abramowitz, L. E. Berg, "A four-year study of the utilization of dental assistants with expanded functions," *Journal of the American Dental Association* (1973): 87:623-635.
- A treatment quality evaluation of the Saskatchewan Dental Plan, which includes a dental nurse training program modeled after the New Zealand program, focused on the procedures of amalgam restorations, stainless steel crowns and diagnostic radiographs. Comparing the quality of amalgam restorations performed by dentists to those of dental nurses, just over 20 percent of restorations performed by dentists were rated unsatisfactory, and 15 percent were rated superior, while only 3 percent to 6 percent of the amalgam restorations performed by dental nurses were rated unsatisfactory and 45 percent to 50 percent were rated superior. In regards to stainless steel crowns, the dentists and dental nurses appeared to function at the same standard of quality.
 - E. R. Abrose, A. B. Hord, W. J. Simpson, *A Quality Evaluation of Specific Dental Services Provided by the Saskatchewan Dental Plan*. (Regina, Canada: Province of Saskatchewan Department of Health, 1976).
- A survey of general dentists in Britain concluded that dentists have a favorable attitude towards dental therapists. The survey noted a shift in the attitudes of dentists over time from previous studies to be more in favor of therapists.
 - J. L. Gallagher, D. A. Wright, "General dental practitioners' knowledge of and attitudes towards the employment of dental therapists in general practice," *British Dental Journal* 193 (2002): 37-41.
- Dental therapists have played a significant role in fighting the rate of caries among young children in New Zealand, which in 2003 was 53 percent for five year olds. One study found that school children in New Zealand were virtually free of untreated caries by the end of the academic year. This is in large part due to the availability of dental therapists to treat children in schools.
 - *Improving child oral health and reducing child oral health inequalities: report to the Minister from the Public Health Advisory Committee*. (Wellington, New Zealand: National Health Committee, 2003).
- A report issued in 2005 on the dental therapist program in Alaska examined the performance of three remote clinics located in the state's tribal regions. The report concluded that the model could help provide care for children who are not receiving oral health care. In addition, the report stated that dental therapists could help reduce disparities in the oral condition of children living in Alaska's tribal regions.
 - David Nash, Ron Nagel, "Confronting Oral Health Disparities Among American Indian/Alaska Native Children: The Pediatric Oral Health Therapist," *American Journal of Public Health* 95, no. 8 (2005): 1325-1329.
- A 2005 study of four trained dental therapists in Alaska's tribal regions found that dental therapists were able to provide preventive services and basic dental treatment with a high standard of care. The report also found that their patient management skills, in regards to young children, sometimes exceeded the abilities of dentists. Also, several dentists who

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were practicing in the same area as dental therapists stated that they had no reservations about therapists providing care in their absence. The report concluded that not only should the dental therapist program in Alaska continue but should expand to provide increased access to oral health care services.

- Louis Fiset, "A Report on Quality Assessment of Primary Care Provided by Dental Therapists to Alaska Natives." (Seattle, WA: University of Washington School of Dentistry, 2005).
- Dental hygienists, with focus on community health and preventive care, are suggested as the oral health professionals who are most prepared to address issues of access.
 - C. E. Miller, "Access to care for people with special needs: Role of alternative providers and practice settings," *Journal of the California Dental Association* (2005): 33, no.9:715-721.
- A study of dental therapists working in Canada found that "the quality of restorations placed by therapists was equal to but more often better than that of those placed by dentists." A quality evaluation of the Canadian program found that dental therapists were a great way to provide high-quality care at low cost.
 - R. G. Trueblood, "A quality evaluation of specific dental services provided by Canadian dental therapists." (Ottawa, Ontario: Medical Services Branch, Epidemiology and Community Health Specialties, Health and Welfare Canada, Undated.)
- A study published in November 2008 of five dental clinics in Alaska found "no significant evidence to indicate that irreversible dental treatment provided by DHATs differed from similar treatment provided by dentists." In addition, the same study found that dental therapists in Alaska treated patients with a mean age 7.1 years younger than that of patients treated by dentists.
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Endnotes

- 1 Deamonte Driver, a 12-year-old Maryland boy, died from a tooth abscess that spread to his brain. He spent six weeks in the hospital prior to his death, accumulating bills totaling over \$250,000. See "For Want of a Dentist," *The Washington Post*, February 28, 2007. Available at: <http://www.washingtonpost.com/wp-dyn/content/article/2007/02/27/AR2007022702116.html>
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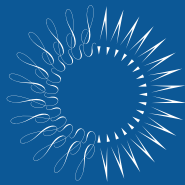
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