

NATIONAL ACADEMY  
*for* STATE HEALTH POLICY

# Improving Oral Health Care for Young Children

*Shelly Gehshan  
Matt Wyatt*

**April 2007**



# **Improving Oral Health Care for Young Children**

---

**Shelly Gehshan  
Matt Wyatt**

Copyright © April 2007

National Academy for State Health Policy

## Improving Oral Health Care for Young Children

Copyright © 2007 National Academy for State Health Policy.  
For reprint permission, please contact NASHP at (207) 874-6524.

Publication No.: 2007-203  
Available on the Web at: [www.nashp.org](http://www.nashp.org)

### *About the National Academy for State Health Policy*

The National Academy for State Health Policy is an independent academy of state health policymakers working together to identify emerging issues, develop policy solutions, and improve state health policy and practice.

NASHP provides a forum for constructive, nonpartisan work across branches and agencies of state government on critical health issues facing states. We are a non-profit, non-partisan, non-membership organization dedicated to helping states achieve excellence in health policy and practice. NASHP's funders include both public and private organizations that contract for our services.

To accomplish our mission we:

- Convene state leaders to solve problems and share solutions.
- Conduct policy analyses and research.
- Disseminate information on state policies and programs.
- Provide technical assistance to states.

The responsibility for health care and health care policy does not reside in a single state agency or department. NASHP provides a unique forum for productive interchange across all lines of authority, including executive offices and the legislative branch

We work across a broad range of health policy topics including:

- Medicaid.
- Long-term and chronic care.
- Public health issues, including obesity.
- Quality and patient safety.
- Insurance coverage and cost containment.
- The State Children's Health Insurance Program.

NASHP's strengths and capabilities include:

- Active participation by a large number of volunteer state officials.
- Developing consensus reports through active involvement in discussions among people with disparate political views.
- Planning and executing large and small conferences and meetings with substantial user input in defining the agenda.
- Distilling the literature in language useable and useful for practitioners.
- Identifying and describing emerging and promising practices.
- Developing leadership capacity within states by enabling communication within and across states.

**For more information about NASHP and its work, visit [www.nashp.org](http://www.nashp.org)**

*Portland, Maine Office:*  
50 Monument Square, Suite 502  
Portland, Maine 04101  
Phone: (207) 874-6524  
Fax: (207) 874-6527

*Washington, D.C. Office:*  
1233 20<sup>th</sup> St., N.W., Suite 303  
Washington, D.C. 20036  
Phone: (202) 903-0101  
Fax: (202) 903-2790

## TABLE OF CONTENTS

---

|  |    |
|--|----|
| Table of Contents .....  | v  |
| Acknowledgements.....  | vi |
| The Need for Dental Care for Young Children.....   | 1  |
| Financing Oral Health Care for Children.....   | 3  |
| Table 1 EPSDT Medicaid Dental Services for Children.....   | 3  |
| Workforce Available to Care for Young Children.....  | 7  |
| Figure 1 Dentists per 100,000 Population (2000):.....  | 8  |
| Figure 2. Hygienists Supervision Requirements Vary by State and Procedure .....                                      | 9  |
| Could New Dental Providers Help?.....  | 11 |
| Table 2 Provider Capacity for Working with Young Children.....   | 13 |
| Table 3 Proposed and Current Dental Providers.....   | 15 |
| Public Health Measures .....   | 17 |
| Fluoridation.....  | 17 |
| Table 4 The 15 Most Populous Non-Fluoridated Communities .....   | 18 |
| Figure 3 Percentage of State Population Served by Public Water Systems that Receive<br>Fluoridated Water- 2005 ..... | 18 |
| Dental Sealant Programs.....   | 19 |
| Health Education and Promotion.....  | 20 |
| Promising Models for Caring for Young Children.....  | 21 |
| Washington’s ABCD Program .....  | 21 |
| Michigan’s Healthy Kids Dental Program.....  | 22 |
| North Carolina’s Smart Smiles and Into the Mouth of Babes Programs .....   | 23 |
| Findings.....  | 25 |
| Appendix- Dental Benefits in Non-Medicaid SCHIP Plans August 2006.....   | 33 |
| Notes .....  | 35 |

## **ACKNOWLEDGEMENTS**

---

The authors are sincerely grateful for the time and expertise of the following people who reviewed and gave comments on drafts of this report: Dr. Jim Bramson, Dr. Al Guay, and Dr. Laura Neumann of the American Dental Association; Tim Lynch and Megan Fitzpatrick of the American Dental Hygienists' Association; Dr. David Nash of the University of Kentucky; Dr. Ron Nagel of the Indian Health Service; Meg Booth of the Children's Dental Health Project; Beth Mertz of the Center for Health Policy Studies at the University of California; and Andy Snyder of NASHP.

## THE NEED FOR DENTAL CARE FOR YOUNG CHILDREN

---

Since at least 1990, a strategic national effort has been underway to ensure that children start school ready to learn. Although school readiness is broadly defined to include a variety of health conditions, until recently little attention has been given to ensuring that the oral health needs of young children are met before they enter school. This is a serious omission, since dental problems are the most common unmet need among children.<sup>1</sup> Nearly 59 percent of children experience dental caries, far more than the number who have asthma (11 percent) or hay fever (8 percent).<sup>2</sup>

Although the oral health of the nation overall has improved dramatically in the last 50 years, a segment of society has been left behind. People with low incomes, minorities and immigrants, those with special health care needs, and people in rural areas have the greatest difficulty accessing care and maintaining good oral health. Needs are particularly stark among poor children: 20.7 percent of poor white children, 47.2 percent of poor Mexican-American children, and 43.6 percent of non-Hispanic black children have untreated dental caries.<sup>3</sup> Among pre-school children who are poor, nearly 30 percent have untreated cavities, compared to only 6 percent among children from families above 300 percent of the federal poverty level.<sup>4</sup> In fact, the Centers for Disease Control recently reported a 15.2 percent increase in caries among children ages 2 through 5 years.<sup>5</sup> Parents are fully aware of their children's problems: a recent federal survey of parents found that 53 percent of Latino, 39 percent of black, and 23 percent of white children have good, fair or poor oral health, rather than excellent or very good.<sup>6</sup> The consequences of untreated dental problems on school readiness are clear. Children with untreated dental problems experience pain and difficulty eating and sleeping, and can have trouble adjusting socially. Learning under these circumstances can be difficult.

Dental and public health organizations recommend that dental care for children begin within six months of the eruption of the child's first tooth, or no later than the first birthday. However, for high risk families, the American Academy of Pediatrics recommends that care begin much earlier by identifying and working proactively with pregnant women and establishing a dental home before children reach the age of one.<sup>7</sup> Serving more young children and pregnant women will present a host of challenges, as the current system of financing and delivering dental care is fragmented and inadequate even without expanding the target population. This paper focuses on those financing and workforce challenges, describes promising models of care, and discusses options for policymakers seeking to improve access to oral health care for young children.

□ □ □



# FINANCING ORAL HEALTH CARE FOR CHILDREN

Part of the challenge in serving high risk young children is that Medicaid dental programs don't work very well, despite many state efforts to improve them. Although the Early and Periodic Screening, Diagnosis and Treatment (EPSDT) program requires that Medicaid-enrolled children receive regular screenings – and any treatment needed – from medical, dental, and vision providers, only about 1 in 5 children do. There are too few dentists willing to accept Medicaid and many who do limit the number of Medicaid patients they see. Dentists are reluctant to become Medicaid providers because reimbursement rates are often below the cost of providing the service, paperwork and preauthorization burdens are onerous, and payment is slow. In addition, care-seeking behavior among Medicaid recipients is spotty and the no-show rate for dental appointments is high.<sup>8</sup>

These access barriers can affect care for millions, as nearly half of the 44.7 million Medicaid enrollees are children.<sup>9</sup> Since 2000, the portion of children who receive EPSDT dental services has edged upward (see Table 1), reflecting state efforts to improve dental access and a change in reporting mechanisms that counted more services provided. In 2004, about 30 percent of all children enrolled in Medicaid received some dental service. However, the great majority of children enrolled in Medicaid still do not receive dental services, and the portion under the age of six who receive any dental services is very small.

**Table 1 EPSDT Medicaid Dental Services for Children**

|   | <b>Services for all Eligible Children 2000</b> | <b>Services for Children Ages 0-5 2000</b> | <b>Services for all Children 2004</b> | <b>Services for Children Ages 0-5 2004</b> |
|---|--|--|---------------------------------------|--|
| <b>Received any dental service</b>        | 27%  | 16%  | 30%                                   | 19.4%                                      |
| <b>Received preventive dental service</b> | 21%  | 12.6%                                      | 21.7%                                 | 13.6%                                      |
| <b>Received dental treatment</b>          | 14%  | 6.8%                                       | 15.7%                                 | 7.7%                                       |

Source: Annual EPSDT Participation Report Form CMS 416 (National).

Access to dental benefits for children enrolled in Medicaid may change under the new Deficit Reduction Act of 2005 (DRA). The DRA makes the most sweeping changes in Medicaid since its enactment, giving states substantial flexibility to change benefit packages, impose cost sharing, and offer different plans in different regions of a state without prior federal permission. The Centers for Medicare and Medicaid Services (CMS) have clarified that EPSDT remains a requirement. However, states may use one of four possible benchmark packages instead of traditional Medicaid benefits, and add or “wrap-around” any that are not included in the new package. None of the proposed benchmark benefit packages include dental benefits. Using a wrap-around mechanism may be cumbersome for families and providers and it is not yet clear

whether this will further restrict access to dental benefits. The new law also requires a majority of people to document their citizenship during renewals or applications, which may reduce enrollment among eligible citizens and cause backlogs in eligibility processing. One study estimated that 3.2 to 4.6 million citizens will have difficulty producing a birth certificate or passport and may be denied coverage.<sup>10</sup>

### ***EPSDT COVERAGE***

Under the Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefit required for children in the Medicaid program, dental services must be provided at regular intervals that meet the reasonable standards set by each state. States are required to establish these periodicity schedules through consultation with state and local dental organizations. EPSDT covers any and all services that are determined to be medically necessary. Medical necessity is determined by the state and encompasses any procedure or service required to determine the existence of a suspected disease or illness. At a minimum, children treated under EPSDT must receive services that provide relief for pain and infection, restoration of teeth, and maintenance of dental care. Further, the emphasis and scope of EPSDT services are not to be limited to emergency use only but should include primary oral health prevention and education, such as: instruction in oral hygiene procedures, cleaning, and sealants for pit and fissure caries. Direct dental visits are also required under the EPSDT benefit; most notably, this requirement is only met through direct dental referrals and not by having an oral health examination or screening during the mandatory physical examination portion of the EPSDT services. Dental referrals are required for every child based on periodicity schedule determined by the state.

Dental coverage under the State Children's Health Insurance Program (SCHIP) is a somewhat different story. SCHIP targets children under 200 percent of the federal poverty level (or higher, depending on state Medicaid eligibility levels) who are not eligible for Medicaid. States have options for how they shape their programs, and at this point, 12 use their SCHIP funds to expand Medicaid, and the rest have established separate SCHIP plans, or enacted some combination of Medicaid and non-Medicaid programs. Unlike in Medicaid, dental benefits are optional in stand-alone SCHIP plans. That means that when states face a financial pinch, dental benefits are one of the first places they cut, either by paring down covered services, imposing a cap, or cutting benefits altogether. Once cut, states struggle to find funding to reestablish their dental programs. However, in some non-Medicaid SCHIP plans, dental benefits are administered through managed care, pay dentists higher rates, and are easier for patients to access.

Unlike Medicaid, which matches allowable administrative expenses at 50 percent, the SCHIP legislation caps administrative expenses, including outreach and health services initiatives (which can include public health), at 10 percent. Currently, three states use some administrative funds for public health efforts. These could be expanded or used to include public oral health, such as sealant programs or oral health education for at-risk children.

Currently, all 39 of the states with separate SCHIP plans or combination plans include dental coverage. (For a full description of SCHIP dental benefits, see the Appendix.) Fully one-third

of states with separate SCHIP plans provide benefits that mirror Medicaid (Delaware, Idaho, Indiana, Illinois, Kansas, Kentucky, Maine, Maryland, Minnesota, Nevada, Rhode Island, South Dakota, and Vermont). Most of the remainder provide basic services that are modeled after private insurance benefits. Seven states have an annual benefit cap that could make it difficult for children with poor oral health to get comprehensive care. For example, Montana's cap of \$350 and Michigan's cap of \$600 would be exceeded quickly if a child needed restorative care. Dentists treating children insured under SCHIP complain about caps as well, as they may be forced to donate care once the cap is reached, or give children less treatment than is medically appropriate because the plan won't pay for more. Eleven states require providers to collect copayments for dental services that are not preventative, which is another impediment for low income families.

□ □ □



## WORKFORCE AVAILABLE TO CARE FOR YOUNG CHILDREN

---

Apart from financing oral health care for at-risk young children is the critical question of who can provide such care? There is ample evidence for concern that there aren't enough practitioners to care for young children now, let alone if more seek care. General dentists are the most likely to treat families and children. However, most of the roughly 126,000 general dentists aren't trained to treat young children and so refer very young children, those with advanced disease, or with special needs, to pediatric dentists. Despite an increase in training programs in the 1990s, there is still a shortage of pediatric dentists (only about 3,800).<sup>11</sup> In 2001, less than 3 percent of all dentists were pediatric dentists; twelve states have fifteen or fewer.<sup>12</sup> Also, the portion of dentists that are in general practice is declining relative to the number of dentists in specialties, which may exacerbate difficulties getting care for young children. There are roughly four general dentists to every one specialist, but that ratio is expected to drop to three to one by early in the 21<sup>st</sup> century.<sup>13</sup> Dentists are at the top of the pyramid of professionals who can provide care for young children. They are the most expensive to train, but also can perform the most complex procedures.

The dental profession is divided about whether there is an overall shortage of dentists, but there is general agreement that there are too few who care for publicly funded and special needs patients.<sup>14</sup> Despite the controversy, the Bureau of Health Professions says that between 6,610 and 9,228 dentists or other practitioners are needed to serve 3,329 designated shortage areas, in which nearly 31 million underserved people live.<sup>15</sup> However, organized dentistry has resisted many attempts to expand the supply of dentists. This is because of the economics of dental practice, which is quite sensitive to oversupply and changes in the economy. About half of all payments for dental services are made out of pocket, rather than by insurance. In lean times, many people postpone care and dental practice incomes suffer. More than 92 percent of dentists are in private practices, and 79 percent are sole proprietors. Overhead is high, averaging above 60 cents of every dollar earned, which makes it more difficult economically for dentists to accept Medicaid or SCHIP rates that are lower than commercial insurance. The high cost of a dental education, and high levels of educational debt for graduating dentists, contribute to the low number who accept Medicaid and SCHIP patients.

The American Dental Association does not forecast a shortage of dentists, but many other organizations and reports, such as the Institute of Medicine and the U.S. Surgeon General's office, do.<sup>16</sup> More and more state health officials and policymakers now discuss their impending "cliff problem," meaning that in 2014 the number of dentists retiring will begin to exceed the number graduating and entering practice. Then, the ratio of population to dentists will steadily increase and even private pay or insured patients in some areas will have difficulty finding a dentist. As it is now, the ratio of dentists to population varies greatly, from a low of 39.2 per 100,000 people in Nevada to a high of 83.1 in New York. Nineteen states have fewer than 50 dentists per 100,000 people (see Figure 1). Almost everyone can agree that there is a geographic maldistribution of dentists, with too few in rural and underserved areas, but there are few policy tools to address it. The National Health Service Corps and about half of states have loan repayment programs that are used to attract and retain dentists (and other professionals) to serve in public clinics or community health centers in underserved areas. While these are effective strategies, they are generally small in scope due to funding limitations.<sup>17</sup>

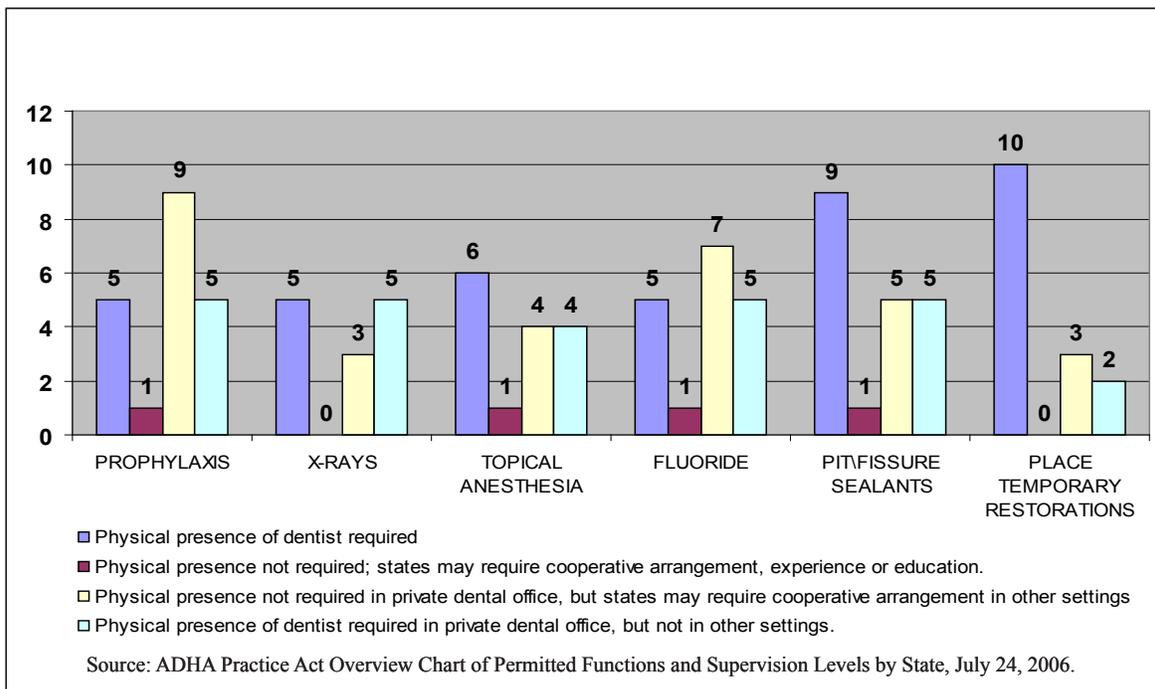


funded by the Robert Wood Johnson Foundation and the California Endowment is seeking to diversify the student body in 15 dental schools around the country and provide a model for other schools seeking to address this issue.

Supply of health professionals is not the only concern. The scope of practice and supervision issues for dental auxiliaries become particularly important in the context of expanding access to care for young children. According to Bright Futures, the federal guide to best practices, oral health care for young children needs to include risk assessment, screening, examinations, and anticipatory guidance for parents.<sup>21</sup> All of these things can be done by registered dental hygienists. If restorative treatment is needed, however, it must be provided by a dentist. Hygienists practicing regularly in public health settings such as schools, child care centers, or school-based clinics could make a huge impact in preventing caries, suppressing infection, and identifying and referring to dentists children who need restorative care.

State dental practice acts have been loosening gradually over the years. Now, hygienists can now practice in at least one setting under general supervision – a less restrictive arrangement than indirect or direct – in 45 states, compared to only 30 states in 1993. More importantly, in 20 states (see Figure 2), hygienists can treat a patient without initial consultation with a dentist (called direct access) – usually in a public health setting such as a school, clinic, dental van, nursing home, or Head Start program.<sup>22</sup> This is particularly important in expanding care needed for at-risk young children. However, in most states, scope of practice is unnecessarily restrictive and impedes the ability of hygienists to practice to the full extent of their training or in the types of settings that might benefit patients the most. For example, the physical presence of a dentist

**Figure 2. Hygienists Supervision Requirements Vary by State and Procedure**



on site is still required for hygienists to clean a patient's teeth in a private dental office in 10 states, primarily in the South. On the other end of the spectrum, hygienists can carve and/or finish amalgam restorations (fillings for cavities) in eight states, and in three of those the dentist is not required to be present. In many states, supervision levels are split, with more supervision required in dental offices and less in public health settings. When services are provided by a dentist that could be provided by a hygienist, or only when a dentist is present, the cost of providing care is higher than it needs to be and care is less easily available. Hygienists are a key first line of defense in prevention of dental caries, patient and family education, and screening for problems a dentist must address. Expanding their ability to provide preventive hygiene services in public health settings is a good upstream strategy to save states money in Medicaid and SCHIP programs that is now spent downstream on dental restorative services.

State scope of practice rules have been loosening gradually for dental assistants as well, so that in many states they can perform some services that were once only done by hygienists or dentists. Dental assistants with extra training have a variety of names in state dental practice acts, and in most states, they must complete a training program that leads to certification or registration. Washington state allows specially trained dental assistants to apply fluoride varnishes and sealants in schools under general supervision. Massachusetts, Michigan, New Mexico, and Nebraska also allow trained or certified assistants to apply fluoride varnishes and/or sealants under general supervision. Expansions that involve restorative work are controversial. Six states explicitly bar dental assistants from placing amalgam restorations, and 14 bar them from carving restorations. No states allow dental assistants to perform complete hygiene services. However, expanding the scope of practice and loosening supervision requirements for preventive services could assist in public health efforts targeted at young children in pre-school programs or day care centers.

Expanded Function Dental Assistants (EFDAs) are an example of a dental professional that states could use strategically to expand the workforce for young children. EFDAs (sometimes called registered dental assistants in expanded function) are licensed and in practice in 17 states. They work under the direct supervision of a dentist to prepare or finish up restorations, take x-rays, apply sealants and fluoride varnishes, and polish teeth.<sup>23</sup> They also can perform limited cleanings, called "toothbrush cleanings" with a rubber cup or brush, that are well-suited to young children. EFDAs can greatly expand the productivity of dentists and make serving Medicaid and SCHIP patients more profitable. Unfortunately, in many states, EFDAs are in short supply and dentists aren't accustomed to working with them. Pennsylvania has gone the farthest in integrating EFDAs into dental practices. An innovative program funded by the Robert Wood Johnson Foundation has allowed the state to expand training for and use of EFDAs.

In recent years, states have begun to enlist physicians and nurse practitioners in delivering oral health services to children, sometimes with reimbursement by Medicaid. Using pediatric providers makes perfect sense since they see infants, young children, and their caregivers many times in the first two years of life for well-child care and immunizations, whereas most families don't take young children to the dentist until they are three or older. It is not uncommon for at-risk young children to have advanced tooth decay by age 3. Pediatric providers, particularly those who see low-income, minority and other high-risk families, could make a sizable impact

in screening, oral health education, prevention and disease suppression, and identifying and referring to dentists those children who need restorative care.

There are a number of issues that need to be addressed when incorporating medical professionals into oral health care delivery. Not all state medical and dental practice acts permit it, additional training is generally necessary, referral mechanisms between medical and dental sites are needed, and reimbursement from Medicaid or other payers must be arranged.

Experts in pediatric dentistry have identified seven strategies for preventing caries in preschool children:

- education,
- diet,
- tooth brushing,
- fluoridated water or supplements,
- topical fluorides,
- antimicrobials (such as xylitol and chlorhexidine), and
- sealants.

Medical providers can provide most or all of these services for young children and their families.<sup>24</sup> In the 1990s, North Carolina began training physicians – primarily pediatricians, nurses, and physician assistants – to screen for decay, refer as appropriate to dentists for restorative treatment, educate parents about proper hygiene, and apply fluoride varnishes. Oregon is also using pediatricians to screen young children for dental caries.<sup>25</sup> In 32 states, dental practice acts allow physicians to provide preventive oral health services, and 13 states allow them to provide other services in certain settings (such as extract teeth).<sup>26</sup>

## **Could New Dental Providers Help?**

Currently, there are a number of proposals under development for new types of dental professionals who could add significantly to the workforce able to care for young children (see Table 2). Some are midlevel professionals who would function at a level above a dental hygienist but below that of a dentist. In medicine, physician assistants are midlevels with master's-level training who can perform 86 percent of the tasks in primary care practice. They are significantly cheaper to educate and employ than physicians.<sup>27</sup> New providers in dentistry could be added to the dental team, function independently in collaborative practice with a dentist, or practice under general supervision. They could include licensed midlevel providers with a master's degree, or graduates of bachelor's degree or two-year programs that practice after either certification or licensure.

In the 1950s and the 1970s, attempts were made to introduce a new type of midlevel to augment the care that dentists provide, serve as a dental extender the way physician assistants and nurse practitioners do, and improve access to care for underserved groups. The concept of and need for a midlevel is controversial and, thus far, opposition from organized dentistry has stymied

development. However, since access problems are acute, and shortages of dentists are occurring in more regions and states, momentum to develop a new type of dental midlevel professional has recurred. Any new practitioners, whether at the master's level or below, would be a long-term solution. It takes years for a state policy community to come to consensus, schools to develop a curriculum, legislatures to amend the state dental practice act to provide for licensing or certification, and payers to decide on reimbursement. The American Dental Association fears that allowing professionals other than dentists to provide restorative care could jeopardize patient safety or provide inferior care. However, all health practitioners operate under scopes of practice that are tightly defined by state practice acts, with stringent training, examination, licensing or certification requirements, and regulatory oversight by state boards. States can and do use their current legal and regulatory authorities to expand the scope of current professionals, establish new ones, and ensure that the safety of the public is safeguarded.

There is only one new type of dental professional currently practicing in the United States: dental therapists (called Dental Health Aide Therapists), who work on Indian reservations in Alaska. Dental therapists can be trained and sent to remote areas to practice because of the 150 sites in Alaska that are equipped for telemedicine and teledentistry. DHATs operate under general supervision of a dentist in a clinic using carts that take and send x-rays to a dentist electronically; the dentist and DHAT confer on treatment plans by phone. This is a promising model for all rural and frontier areas in the United States that have difficulty attracting, supporting, and retaining a dental practice.

The Indian Health Service (IHS) moved to train dental therapists after years of difficulty attracting dentists to live and serve in remote areas of Alaska, and mixed success using volunteer dentists from other states. Dental Health Aid Therapists are equivalent to the dental therapist model developed in New Zealand in 1921 and now in use in 40 countries, including Great Britain and Canada. They come from and return to the communities they serve, which ensures cultural and linguistic competence. There are no current plans to extend their use in the IHS in the lower 48 states or in areas other than tribal lands. Beginning in January, 2007, the University of Washington School of Medicine's MEDEX Northwest, a program that trains physician assistants for five western states, will begin training dental therapists in Anchorage using Washington dental school faculty and Alaska dentists for clinical rotations.

Dental therapists must complete a two-year curriculum at a dental school, but a bachelors or associates degree is not required first. In this respect, they are roughly equivalent to dental hygienists, except that they focus on both restorative and preventive care. Dental therapists receive 2,400 hours of curriculum training, of which about one-third is spent treating children. Their clinical scope of practice is much narrower than dentists, but includes both preventive and restorative services (see Table 2). Dental therapists are a potential solution to providing essential oral health services to young children in other underserved areas, since they can perform many of the functions of dental hygienists and dentists, but are cheaper and quicker to train.<sup>28</sup> A number of oral health experts have called for the development of a Pediatric Oral Health Therapist, modeled on the New Zealand dental therapist,<sup>29</sup> to practice in underserved areas.

**Table 2 Provider Capacity for Working with Young Children**

| Level of Care                | Procedures  | Expanded Function Dental Assistants | Dental Therapists <sup>30</sup> | Registered Dental Hygienist | Dentist          | Nurse Practitioner or Physician Assistant | Physician   |
|------------------------------|---|-------------------------------------|---------------------------------|-----------------------------|------------------|---|-------------|
| <b>Risk Assessment</b>       | Parent interview, visual screening  |                                     | X                               | X                           | X                | X   | X           |
| <b>Anticipatory Guidance</b> | Patient and parent education and counseling geared to level of risk                             |                                     | X                               | X                           | X                | X   | X           |
| <b>Primary Prevention</b>    | Oral hygiene instruction<br>Dietary counseling<br>Topical fluorides<br>Dental sealants          |                                     | X                               | X<br>X<br>X<br>X            | X<br>X<br>X<br>X | X<br>X<br>X                               | X<br>X<br>X |
| <b>Prophylaxis</b>           | Mechanical cleaning of teeth  | X <sup>31</sup>                     | X                               | X                           | X                |   |             |
| <b>Disease Suppression</b>   | Fluoride regimens, antimicrobials, plaque management  |                                     | X                               | X                           | X                | X <sup>32</sup>                           | X           |
| <b>Cavity treatment</b>      | Atraumatic Restorative Technique (ART)<br>Restorations<br>Extractions<br>Stainless steel crowns | X <sup>33</sup>                     | X<br>X<br>X<br>X                |                             | X<br>X<br>X<br>X |   |             |

**Source:** Compiled by the National Academy for State Health Policy  
**Note:** Permitted functions and supervision level vary by state dental and medical practice acts.

The American Dental Hygienists Association has been working for several years to develop a midlevel professional with a much broader range of duties than a dental therapist called the Advanced Dental Hygiene Practitioner (ADHP). This would be a masters-level professional who could function independently, in a community or public setting, and could manage cases, provide health education and full preventive services, and could also perform simple extractions and restorations (see Table 3). The ADHP would also be able to perform in a number of non-clinical capacities, establish collaborative relationships with other providers, work on policy and advocacy issues, and conduct research. The ADHA envisions this new professional working in a variety of settings in a collaborative relationship with a dentist, physician, or clinic manager. Since their scope of restorative services would be limited, they would establish referral relationships for patients who need more complex clinical services than they could deliver. The ADHA is currently developing a curriculum to train ADHPs.

Partly in an effort to assist in improving access, the American Dental Association convened a task force to examine workforce needs and models, and developed a carefully considered plan for a ladder of increasingly skilled professionals that includes a Community Dental Health Coordinator (CDHC). This new professional would have duties that are very similar to the Primary Dental Health Aide, a professional with less training than a dental therapist that currently is in use in Alaska for the Indian Health Service. CDHCs would provide both direct patient care (under direct or indirect supervision), preventive services (under general supervision), and public health services, although no restorative care. CDHCs would be able to provide some dental hygiene services, apply fluoride varnishes and sealants, but would also be trained to work on community water fluoridation and with an array of organizations and programs serving women and children.

Training would be 12-18 months, followed by a certification process. CDHCs could be very helpful in settings serving young children, such as pre-schools, Head Start programs, and day care centers. The primary advantage to the plan for a CDHC is that the proposed public health competencies could expand the pool of people who can mount oral health promotion campaigns, which are badly needed. However, the restrictions on restorative care and a slimmer package of preventive services makes this model somewhat less attractive than traditional dental hygienists or dental therapists to care for young children. They would be less helpful in rural, frontier or chronically underserved areas than a dental therapist or advanced dental hygiene practitioner because of the limited scope of clinical services. Since their range of clinical services is narrow, it isn't clear how CDHCs would be reimbursed except as salaried or grant-funded positions.

**Table 3 Proposed and Current Dental Providers**

|                                | <b>Community Dental Health Coordinator</b> <sup>34</sup>                                      | <b>Advanced Dental Hygiene Practitioner</b>   | <b>Dental Therapists</b>  |
|--------------------------------|---|---|---|
| <b>Developed by</b>            | American Dental Association   | American Dental Hygienists' Association   | Dental therapist model developed in New Zealand, in use in 40 countries. The Indian Health Service, Alaska Tribal Health Consortium, employs Dental Health Aide Therapists. |
| <b>Stage of development</b>    | Planning stage.   | Planning stage; curriculum being developed.   | 8 trained and practicing in IHS Alaska sites.   |
| <b>Education/training</b>      | 12-18 months.   | 2-year Masters program .  | 2-year program at dental school in New Zealand; training begins in Alaska in 2007.  |
| <b>Certification/licensure</b> | Certification.  | Licensure.  | Certified by IHS board.   |
| <b>Proposed settings</b>       | Community-based and public health roles; private offices.                                     | Hospitals, nursing homes, clinics, public health settings, or private offices.                            | IHS clinics.  |
| <b>Proposed supervision</b>    | Dual; education under general supervision; patient care under direct or indirect supervision. | Unsupervised or general supervision; in collaborative practice with dentist, physician or clinic manager. | General supervision; operates under standing orders; dentists review x-rays and treatment plans electronically.   |
| <b>Preventive capacity</b>     | Prevention education. Fluorides. Sealants.  | Comprehensive prevention services.  | Fluoride treatments. Sealants.  |
| <b>Treatment capacity</b>      | Gingival scaling. Coronal polishing.  | Manage care for referred periodontal patients; prophylaxis.   | x-rays. Gingival scaling. Prophylaxis.  |
| <b>Restorative capacity</b>    | None.   | Restorations. Simple extractions.   | Restorations. Stainless steel crowns. Extractions.  |

Source: American Dental Association Workforce Task Force Report, May, 2006; American Dental Hygienists Association Draft Curriculum, January, 2006; Alaska Department of Health and Social Services, Division of Public Health, January, 2005.

□ □ □



## PUBLIC HEALTH MEASURES

---

Perhaps the most troubling aspect of the problem with access to dental care is that most cases of dental caries could be prevented using simple, affordable preventive measures. Without prevention, dental caries can develop into painful conditions that are expensive to treat and that have profound effects on a child's everyday life. Public health measures aimed at oral health are very effective but underfunded.

Community-based public health strategies such as water fluoridation, dental sealants, and school-based prevention and promotion programs are cost effective ways to reduce the demand for dental care and prevent dental disease among high-risk groups. A promising new strategy being developed is using antimicrobial products, such as xylitol gum and chlorhexidine rinse, in conjunction with school oral health screenings. Xylitol is a natural sugar substitute with properties that greatly reduce caries-causing bacteria. Researchers and public health officials are considering ways to incorporate xylitol gum, candy, or other products into the diet of high risk children to reduce the rate of dental caries. It is also being studied in pregnant women and new mothers to eliminate bacteria they now pass to their newborns. One advantage to this strategy is that xylitol products can be administered by parents, caregivers, or volunteers with no health training, in many settings and without the cost or stress of seeking dental care.<sup>35</sup> More public health initiatives could decrease the prevalence of dental caries among school-aged children, reduce costs, and conserve scarce public dollars for conditions that aren't preventable.

### Fluoridation

Although the benefits of water fluoridation are well known and extensively documented, close to 35 percent of the population does not have adequate levels of fluoride in their drinking water.<sup>36</sup> As Table 4 shows, this includes fairly large and populous communities in many areas of the country.<sup>37</sup> Fluoridation is easy to administer and very cost effective. Estimated savings range from \$7 to \$42 for every dollar spent on water fluoridation.<sup>38</sup> The average cost is less than a dollar per person in communities with more than 50,000 residents. It is more costly to serve smaller, more rural communities.<sup>39</sup> Within the last decade alone, Americans have saved more than \$25.7 billion on dental services due to water fluoridation. According to the Centers for Disease Control and Prevention, water fluoridation can reduce the amount of decay in children's teeth by up to 60 percent. Even with the availability of fluoride in over-the-counter products, fluoridated water reduces tooth decay among children by 18 to 40 percent and among adults by 35 percent.<sup>40</sup> A recent CDC report suggested that over \$1.5 billion dollars could be saved annually, and the oral health of high-risk communities significantly improved, if the remaining public water supplies were fluoridated.<sup>41</sup>

**Table 4 The 15 Most Populous Non-Fluoridated Communities**

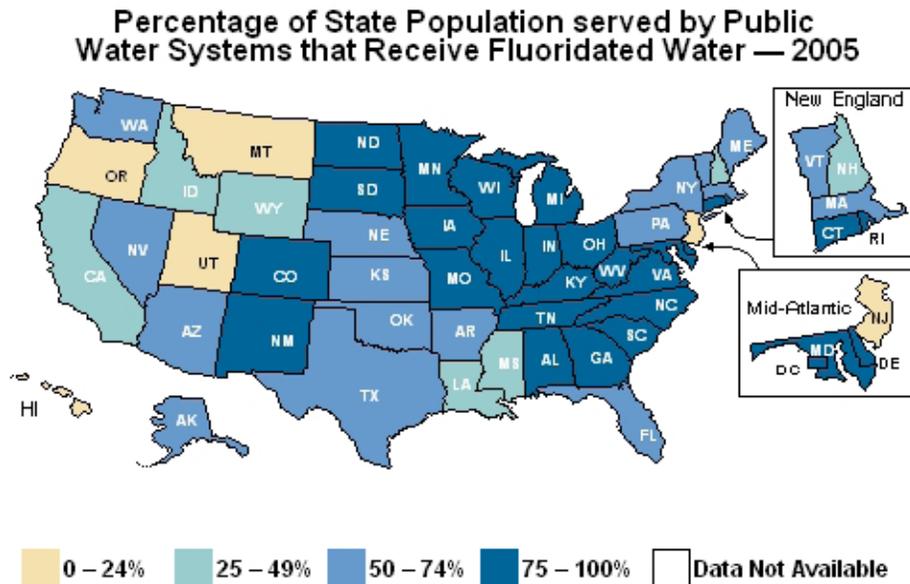
|  |                   |
|--|-------------------|
| <b>Long Island, New York</b>   | <b>1,239, 564</b> |
| San Jose, California   | 979,000           |
| South East Pennsylvania<br>(Philadelphia suburbs)  | 820,000           |
| Bergen and Hudson Counties, New Jersey   | 764,820           |
| Tucson, Arizona  | 675,000           |
| Fresno, California   | 485,000           |
| Eastern Municipal California<br>(Moreno Valley, Perris, Hemet, Murrieta,<br>Temecula, and San Jacinto) | 458,000           |
| Baton Rouge, Louisiana   | 385,272           |
| Colorado Springs, Colorado   | 360,890           |
| Newark, New Jersey   | 275,221           |
| Passaic Valley, New Jersey<br>(Clifton, Passaic, and Paterson)   | 275,000           |
| Reno, Nevada   | 270,000           |
| Riverside, California  | 259,738           |
| Jersey City, New Jersey  | 238,000           |
| Rockland County, New York  | 225,000           |

Source: Centers for Disease Prevention and Control

The push to fluoridate water systems is hampered by several variables, including lack of federal and state legislative mandates and funding, which leaves many local governments without the necessary funds to pay for a fluoridation system. Lack of mandates also means that each community must navigate its own decision-making and public comment process. Despite decades of research proving its safety, water fluoridation is still controversial and subject to persistent misinformation campaigns that make unsubstantiated claims that it causes a host of illnesses and conditions.

Even though the use of water fluoridation has grown in the past decade, there are still 4 states in which less than 25 percent of the population has access to fluoridated water<sup>42</sup> (see Figure 3). In terms of public health initiatives, fluoridating drinking water has the most far-reaching effects and has the highest return on investment, benefiting all members of a community regardless of socioeconomic status.

Figure 3



### Dental Sealant Programs

Dental sealants offer yet another cost-effective option for preventing or decreasing dental caries in children and adolescents. Sealants are clear plastic coatings that help prevent the cavities that form in the pits and fissures of molars, where nearly 90 percent of all caries in children occur. Sealants work by preventing food from becoming lodged in areas too small for toothbrushes to reach. The benefits of sealants are profound – children receiving only one application of a dental sealant had 60 percent fewer decayed pit and fissure areas for up to five years.<sup>43</sup>

Dental sealants are ideal for high-risk populations, especially those with conditions that increase dental caries, children who already suffer from caries, or those with incipient caries in molars. Although not as far-reaching or as easily administered as water fluoridation, dental sealants can be applied in a number of settings using portable dental equipment. This makes them easy to use in school and community-based settings. Most sealant programs target specific at-risk populations, including children receiving free or reduced cost lunch programs, those on Medicaid, and racial and ethnic minorities, who are less likely to have regular access to oral health care. Children who are racial and ethnic minorities are three times more likely to have untreated decay and only one-third as likely to receive sealants.<sup>44</sup> By administering dental sealants at school and in the community, public health officials can focus attention on underserved populations that could significantly benefit from the preventive power of sealants.

Although dental sealants are covered under EPSDT, the difficulty for Medicaid patients in being seen by a dentist means that far from all who need sealants receive them. This makes community

and school-based programs more important as a source of dental care and prevention. Realizing this, more than 34 states now have sealant programs in place to address vulnerable populations,<sup>45</sup> including many in schools. Ohio developed a sealant program in 1984 and has seen promising results; over 30 percent of 8 year olds in Ohio had sealants in 2000 – up from only 11 percent in 1988. Likewise, nearly 60 percent of Medicaid children with school-based sealant programs had sealants compared to 22 percent of children in schools without sealant programs. Similarly, Wisconsin established a community and school-based sealant program in 2000 that created 40 programs to administer sealants. During the first year of the program alone, more than 4,500 children received dental sealants. Increasing the number of high-risk and underserved children who participate in community and school-based sealant programs could have a considerable impact on oral health outcomes and lower health costs.

## Health Education and Promotion

One of the most important facets of any public health initiative is health education and promotion. Many low income people and immigrants do not understand the importance of seeking care or preventive services. It is also doubtful that most people, let alone low income people, are aware that dental caries is a transmissible disease caused by bacteria, and that simple behavior changes can limit the risk of decay. When asked which of these methods was most effective at preventing dental caries, (using fluorides, limiting sugary snacks, chewing sugarless gum, brushing and flossing, or visiting the dentists every six months) only seven percent of respondents in a National Health Interview Survey (NHIS) selected the right answer (using fluorides).<sup>46</sup> This would seem to suggest that a majority do not understand the importance of using fluorides. This is where community coalitions can have an impact in informing and educating citizens. Citizen coalitions played significant roles in getting fluoridated water systems implemented in San Antonio, Las Vegas, Sacramento, Salt Lake City, and Los Angeles.<sup>47</sup>

In the same NHIS survey, only 32 percent of respondents had ever even heard of dental sealants, let alone understood their role in prevention.<sup>48</sup> Public health efforts need to focus on bringing these issues to light. Outreach efforts could target Women, Infant and Children (WIC) centers to better reach the underserved. Teaching parents that fluoride treatments and dental sealants can have a significant impact on long-term oral health outcomes is essential in building a foundation for improving oral health. These statistics would indicate the need for further educational efforts by both public health professionals and oral health providers. Education and awareness are cost-effective and beneficial tools to improve oral health in our communities.

□ □ □

## PROMISING MODELS FOR CARING FOR YOUNG CHILDREN

---

Access to oral health care for Medicaid populations has long been an area of concern for public health officials and oral health providers alike. Although basic oral health care is covered by Medicaid, many variables continue to limit access for underserved populations, especially children. As this problem continues to evolve, so too will the need for innovative strategies and models that improve access to care and create awareness for low-income children with significant oral health needs. A detailed analysis of several successful models can serve as a reference for policy makers as the problem of oral health disparities becomes increasingly more prevalent.

### Washington's ABCD Program

Instituted in 1995, Washington state's Access to Baby and Child Dentistry (ABCD) program sought to improve access to dental care for low-income children from birth to 5 years of age. In order to achieve this goal, the ABCD program focused on four areas:

- community outreach,
- training and certification for oral health providers,
- improved dental benefits, and
- a more attractive reimbursement structure.

Stakeholders soon realized the need for a collaborative approach; this ultimately led to partnerships between local dental societies, state and local health departments, public health officials, and academic institutions.<sup>49</sup>

The community outreach portion of the program sought to create more awareness about the oral health needs of children. Targeting health fairs, centers for the Women, Infant and Children program, local welfare offices, churches, and Head Start programs, the ABCD program stressed the importance of preventive dental care and making and keeping scheduled appointments. By exposing children to dental care at younger ages, the program also helped reduce some of the fear often associated with dental care.

Dentists who participated in the program received specialized training and certification in pediatric dentistry at the University of Washington. This certification allowed them to receive enhanced Medicaid reimbursements for dental services provided to children. The training also served as a refresher course for many dentists who did not regularly work with younger children.

The enhanced benefits sought to build on the routine care already provided under the EPSDT program for Medicaid children. By covering up to three fluoride varnish treatments, restorative treatments, and glass ionomer fillings<sup>50</sup> (which contain fluoride to protect teeth and often do not require drilling, making them ideal for young children), enrollees in the ABCD program can receive more comprehensive preventive care. Another benefit is the opportunity to participate in

educational oral health sessions which provide families with information on the importance and necessity of preventive oral care.

Perhaps the most critical portion of the ABCD program was the adjustment made to fee-for-service reimbursement mechanisms. Add-on fees for participating providers raised reimbursement levels to the 75<sup>th</sup> percentile of usual and customary fees and provided a more powerful incentive to join.<sup>51</sup> By improving Medicaid reimbursement rates, Washington was able to attract more private sector dentists and increase the number treating Medicaid patients.

Evaluations of the ABCD program have demonstrated its overall effectiveness. A survey of participants after the first year found that parents with children in the ABCD program were 60 percent more likely to have scheduled a dental appointment for their children than those who were not involved.<sup>52</sup> Nearly 78 percent of parents with children in the program had scheduled a dental appointment for their children, whereas only 48 percent of parents with children not enrolled in the program sought dental care.<sup>53</sup> The same report found that the ABCD program significantly increased access to oral health care among Medicaid children, reduced fear of dental services, and improved the use of preventive fluoride treatments. Also, the program increased the number of providers treating Medicaid patients. In one Washington County, only 15 dentists reported seeing Medicaid children prior to the ABCD program; after two years, that number increased to 38.<sup>54</sup>

Building on the success of the ABCD program, Washington sought to expand provider networks even more by increasing access through a new ABCDE (Access to Baby and Child Dentistry Expanded) program. This program reached out to primary care providers such as pediatricians and family physicians, and encouraged them to provide preventive and basic oral health care during well-child check-ups. Under the program, primary care providers could be reimbursed through Medicaid for providing:

- Basic evaluations of a child's oral health;
- Instructions on proper oral hygiene techniques;
- Up to three fluoride varnish applications a year; and
- Dental referrals.<sup>55</sup>

## **Michigan's Healthy Kids Dental Program**

The Healthy Kids Dental (HKD) program was implemented in 22 Michigan counties on May 1, 2000. Although aimed at solving the same oral health problem that faced Washington and the rest of the country, the Michigan plan is unique in that it uses a private managed care dental provider. Michigan's HKD program was created when the Department of Community Health contracted with the state's largest oral health provider network, Delta Dental, to administer Medicaid dental benefits. The HKD program sought to increase the pediatric dental workforce by eliminating two of the largest obstacles cited by dentists as reasons for not accepting Medicaid patients: low reimbursement and the administrative burden of participating in Medicaid.<sup>56</sup>

The largest reason reported by dentists for not treating Medicaid patients was the inadequate reimbursement levels that would often not cover the costs associated with providing care.<sup>57</sup> In order to make Medicaid patients more appealing, the HKD program offered reimbursement levels identical to those found in Delta Dental's commercial plans. Under the program, reimbursement levels rose to nearly the 80<sup>th</sup> percentile.<sup>58</sup> With the higher reimbursement rates, the HKD program saw a dramatic increase in the number of providers willing to treat Medicaid patients. HKD also removed other obstacles frequently cited by dentists, since the process of verifying enrollment and submitting detailed claims to the Medicaid office is handled by Delta Dental. This has made the Medicaid program more efficient and provider-friendly, and accelerated the reimbursement process for oral health services.

Evaluations of Michigan's program by researchers at the University of Michigan found that the number of dentists treating Medicaid children increased by more than 24 percent after the implementation of the HDK program. Also noteworthy was the decrease in the distance traveled to receive dental care; the average distance decreased from 24.8 miles to 12.1 miles as a result of the increased number of providers. Intuitively, this would suggest that more children are being treated by dentists in their communities. The distance traveled to receive care is directly related to the number of providers, which increased by 236 dentists in the 22 counties participating in the HKD program.<sup>59</sup>

## **North Carolina's Smart Smiles and Into the Mouth of Babes Programs**

The presence of early childhood caries (ECC) has been a long-standing problem for North Carolina. When a public health report revealed that close to 40 percent of children statewide had dental caries by the time they had reached kindergarten, it was obvious that new initiatives needed to be developed to address it.<sup>60</sup> The Smart Smiles program was implemented in the Appalachian region of North Carolina in the mid 1990s. Realizing that low-income children often had better access to primary care than to dental care, the Smart Smiles program sought to engage primary care providers in the effort to reduce the oral health disparities in young children enrolled in Medicaid. Under the program, primary care providers screened children for oral health problems, applied fluoride varnishes, and educated parents and children about proper oral care techniques.

Following a successful pilot program, the Smart Smiles program was expanded to cover the entire state and renamed the Into the Mouth of Babes program. This program was aimed at the more than 200,000 children, age 0-3, covered by Medicaid who did not receive regular dental care.<sup>61</sup> By training primary care providers and their staff, the program created another venue in which oral health needs could be addressed.

In order to be eligible for reimbursement, providers that choose to participate in the program attend an educational course offered by the North Carolina Academy for Family Physicians. During the training sessions participants are taught to:

- Describe and discuss ECC problems and causes;

- Identify risk factors for ECC and conduct assessments for infants and toddlers at risk;
- Screen for abnormal oral health conditions;
- Discuss the benefits of fluoride treatments and apply varnishes to at-risk children;
- Educate parents and caregivers on proper oral health techniques and procedures for children; and
- File and submit Medicaid reimbursement forms.<sup>62</sup>

After the training, providers are eligible to bill Medicaid up to six times for oral care provided during the first three years of a child's life. A provider must address each issue listed above in order to qualify for Medicaid reimbursement. The care includes:

- 1) A risk assessment combined with an oral screening and referral if problems are detected;
- 2) Prevention services, including fluoride treatments to prevent future caries; and
- 3) Education for children and parents about the need for dental care and the steps necessary to maintain safe and effective oral health.

In the first year, 1,595 medical professionals completed the training program. Trainees included pediatricians, family practitioners, nurses, nurse practitioners, physician assistants, and a number of other public health and community health workers. As the oral health workforce grew, so too did access for the Medicaid population. After one year, only 16 of the 100 counties in North Carolina did not have a provider enrolled in the Into the Mouth of Babes Program.<sup>63</sup> The overall effect of the program was to increase the number of initial visits for children under the age of three. The educational portion of the program, and linking oral care with primary care, was successful in making caregivers aware of the importance of oral health. The number of follow-up visits signaled a commitment among parents and providers alike toward improving and maintaining children's oral health.

□ □ □

## FINDINGS

---

Policy makers at the federal, state, community, and organization level have many options to consider for improving oral health for young children. They can provide funding for services, focus on education of the dental workforce, ensure there is a workforce adequate to meet their needs, and enhance public health efforts.

### *Financing*

- States should consider reimbursing pediatric providers for oral health screening, prevention and education services, as several states now do with excellent results. This would provide early encounters with caregivers for families and children and open up opportunities to prevent dental caries.
- Congress should consider making dental services a mandatory benefit, and a required part of well child check-ups, in the reauthorization of the SCHIP in 2007. Since almost all states cover such benefits anyway, mandating dental benefits would allow states to build their programs and relationships with providers without interruption, and ensure that children get needed care.
- States should consider raising reimbursement rates for dental services in Medicaid and SCHIP to attract and retain dentists. At the very least, states should consider paying rates that are above what it costs to provide the service. Modestly higher rates have proven sufficient to persuade dentists to participate so that low-income, high-risk families have access to dental services.

### *Education*

- Federal and state governments should consider increasing funding for dental education, particularly for scholarships or loan repayment with a service obligation. The high cost of a dental education, and high debt levels among dental graduates, make it less feasible and likely that they will accept Medicaid and SCHIP when they establish practices.
- Dental and hygiene professional schools should consider ways to diversify their student body, and teach cultural and linguistic competence. Diversity and cultural competence make care more accessible to those who need treatment.
- State policy makers should study their long-term workforce needs with an eye to increasing the number of pediatric dentists, general dentists, and those dentists interested in treating publicly-funded patients. Not all states face shortages now, but forecasts are troubling across the board. Since it takes years to produce more dentists, policy makers and state agency officials should consider and plan for their future needs.
- Dental schools should consider including more training for general dentists in how to care for young children and children with special needs. If the shortage of pediatric dentists persists, and no progress is made on developing other dental providers who can fill the need, general dentists will need an increased capacity and comfort level in treating children. One component that should be added is more training in working with a variety of allied dental providers, such as EFDAs and hygienists with expanded duties, and with medical providers.

### *Workforce*

- States that haven't already done so should consider improving the productivity and reach of their existing workforce by loosening supervision requirements for hygienists so they can provide preventive services in public health settings such as schools, child care centers, clinics, and Head Start programs. Fully 20 states have already moved to do this. Allowing hygienists to see children in these settings would target resources where they are most needed and prevent problems before they are expensive to treat and difficult for children to bear.
- State policy makers should work with organized medicine and dentistry to revise medical and dental practice acts to remove barriers and explicitly permit medical professionals to provide preventive oral health services for young children and health education for their parents. Local dental societies in a few states have been instrumental in training physicians and nurse practitioners to do screening and education, and apply fluoride varnish and anti-microbials.
- States should consider establishing loan repayment programs for dentists to remedy maldistribution and assist in retaining practitioners in underserved areas. Nearly half the states already have such programs. Increases in funding could assist clinics that serve low income people in hiring dentists and hygienists.
- States should study and consider adopting new models for dental providers that show promise for meeting the needs of young children and other underserved people, including dental therapists, Expanded Function Dental Assistants (EFDAs), and – when plans are final – Advanced Dental Hygiene Practitioners (ADHPs) and Community Dental Health Coordinators (CDHCs). While each state's workforce needs are unique, all face demand in excess of supply in expanding dental care for young children. Dental therapists are used worldwide in treating children, but would be new to all states but Alaska. EFDAs would be a welcome addition to and expand the productivity of the dental team in states that don't now use them. ADHPs and CDHCs, while still in the planning stages, could offer significant advantages in certain settings and functions as well. Each state policy community at large (including policy makers, program administrators, educators, providers, payers, and advocates) bears the responsibility to come to consensus on how to meet the needs of at risk young children who are now underserved.

### *Public Health*

- States should consider spending unused SCHIP administrative funds for oral public health measures targeted at high-risk children. Three states currently have approval from the Centers for Medicare and Medicaid Services to spend some administrative SCHIP funds for public health.
- States should consider investing more funds in targeted prevention in communities with a high proportion of at-risk children. Prevention saves money in treatment, and helps children stay healthy and prepared for school. Screenings, fluoride varnish application, education, and sealants are effective but underfunded.
- States and communities should reconsider their efforts to ensure equal access to community water with optimal fluoride levels. Despite being one of the top ten public health accomplishments in the 20<sup>th</sup> century, fluoridated water is still under-utilized as a source of dental caries prevention. Rural communities without access to fluoridated water might consider fluoridating water in their schools.

## APPENDIX

### Dental Benefits in Non-Medicaid SCHIP Plans<sup>1</sup> August 2006

| State                          | Services Covered  |   |  | Cost Sharing <sup>2</sup>  |
|--------------------------------|---|---|--|--|
|                                | Preventive/Diagnostic   | Basic/Major   | Orthodontics   |  |
| <b>Alabama</b>                 | Routine services covered.   | Routine services covered.   | Only when congenital malformation of the teeth and jaws interfere with normal functioning.                       | 151%-200% FPL: \$5 copayment for basic and major services; total of \$1,000 maximum/year.                        |
| <b>Arizona</b>                 | Routine services covered; limits not specified.                   | Therapeutic and emergency; limits not specified.  | Dentures and dental devices if authorized.   | \$5 copayment for nonemergency use of ER.  |
| <b>Arkansas</b>                | Routine services; limits not specified.                           | Oral surgery; prior authorization required for more than 3 simple extractions and for surgical extractions. | Not Covered.   | \$10 copayment for office visits.  |
| <b>California</b>              | Exams, prophylaxis, fluoride, sealants.                           | Restorations, oral surgery, endodontics, periodontics, crowns and bridges, removable prosthetics.           | If child meets eligibility requirements of California Children's Services program for handicapping malocclusion. | \$5 copayment for nonpreventive services.  |
| <b>Colorado</b>                | Exams, x-rays, prophylaxis, fluoride, sealants, space maintainer. | Amalgam, Resin Filling, Root canal, removal of impacted tooth, restorative services.                        | Not Covered.   | No cost for preventive<br>\$5.00 Co-pay for basic and major.   |
| <b>Connecticut<sup>3</sup></b> | Exams, x-rays, fillings, fluoride.                                | Oral surgery, sealants, crown and bridge, root canal, extractions.  | \$725 allowance per orthodontia case.  | Above 235% FPL, \$5 for clinic services; copayments for crown and bridge, root canals, dentures and extractions. |
| <b>Delaware</b>                | Same as Medicaid.   | Same as Medicaid.   | Same as Medicaid.  | None.  |

|                            | Services Covered   |   |  |  |
|----------------------------|--|---|--|--|
| State                      | Preventive/Diagnostic  | Basic/Major   | Orthodontics   | Cost Sharing <sup>2</sup>  |
| <b>Florida<sup>4</sup></b> | Initial oral exam; periodic oral exam, 1/6 months; cleanings and prophylaxis; fluoride 1/6 months; sealants 1 per tooth/3 years; space maintainers; full mouth x-rays, 1/3 years; panoramic x-rays, 1/year; bitewings, 1/6 months. | Amalgam and composite fillings; stainless steel and regular crowns; extractions, biopsies, surgical treatment of disease, injuries, and deformities.  | Endodontics, including root canal therapy, on primary and permanent teeth; apioectomy, surgery involving root surface; upper, lower or complete set of dentures, 1/lifetime; braces if condition is disabling. | None.  |
| <b>Georgia<sup>5</sup></b> | 2 visits/year for dental exams and screens; 2 cleanings/ calendar year.  | 2 emergency exams during office hours, and 2 emergency after-hours exams; 1 filling/tooth per restoration; Maximum number of surfaces covered is 4; sealants on 1 <sup>st</sup> and 2 <sup>nd</sup> molars. | Prior authorization required.  | None.  |
| <b>Illinois</b>            | Dental benefits mirror Medicaid in amount, duration and scope.   | Limits not specified.   | Limits not specified.  | 133%-150% FPL, \$2/visit for outpatient services, \$2/visit for restorative dental services; for families with income between 133%-200% FPL, \$5/visit for restorative dental services; \$100 annual maximum copayment/family. |
| <b>Idaho</b>               | Same as Medicaid.  | Same as Medicaid.   | Only medically necessary covered.  | None.  |
| <b>Indiana<sup>6</sup></b> | Same as Medicaid.  | Same as Medicaid.   | Only medically necessary covered.  | None.  |

|                                  | Services Covered  |  |   |                                   |
|----------------------------------|---|--|---|-----------------------------------|
| State                            | Preventive/Diagnostic   | Basic/Major  | Orthodontics  | Cost Sharing <sup>2</sup>         |
| <b>Iowa</b>                      | HAWK-I- Wellmark Blue<br>Dental and Delta Dental Exams and cleanings 2x/12 months, fluoride and x-rays once every 12 months.  | Cavity repair, tooth extractions, gum and bone disease, cast restorations, dentures and bridges.   | Not covered.  | \$1000 maximum per calendar year. |
| <b>Kansas</b>                    | Same as Medicaid.   | Same as Medicaid.  | Covered for cases of severe abnormality caused by genetic deformity (cleft lip/cleft palate) or traumatic facial injury resulting in serious health impairment. | None.                             |
| <b>Kentucky</b>                  | Same as Medicaid.   | Same as Medicaid.  | Covered.  | None.                             |
| <b>Maine</b>                     | Same as Medicaid.   | Same as Medicaid.  | Same as Medicaid: prior authorization required.   | None.                             |
| <b>Maryland</b>                  | Same as Medicaid.   | Same as Medicaid.  | Same as Medicaid.   | None.                             |
| <b>Massachusetts<sup>7</sup></b> | Comprehensive exam: once per member per dentist; Periodic oral exam: twice per year; Prophys: twice per year; Fluoride TX: unlimited for ages < 21; Sealants: once per three years per tooth; Radiographs: FMX once every three calendar years; Bitewings: twice per calendar year. | Restorations, oral surgery, endodontics (no limitation on number performed per treatment period. Includes anteriors, bicuspid, and Molars). Crowns and Bridges, removable prosthetics. | Severe and handicapping malocclusions covered.  | None.                             |
| <b>Michigan</b>                  | 2 visits/year: exams; x-rays; prophylaxis; restorations.  | 1 <sup>st</sup> and 2 <sup>nd</sup> molar sealants; emergency visits; crowns; pulpotomies; extractions.  | Space maintainers.  | \$600 annual maximum coverage.    |
| <b>Minnesota</b>                 | Same as Medicaid.   | Same as Medicaid.  | Same as Medicaid.   | None.                             |

|                               | Services Covered   |  |  |  |
|-------------------------------|--|--|--|--|
| State                         | Preventive/Diagnostic  | Basic/Major  | Orthodontics   | Cost Sharing <sup>2</sup>  |
| <b>Mississippi</b>            | Covered as recommended by the American Dental Association schedule.  | Fillings; surgery for impacted teeth; emergencies; temporo-mandibular joint disorder (\$5,000 maximum); crowns and inlays covered only if medically necessary and with prior approval. | Orthodontics, dentures, occlusal reconstruction covered only if medically necessary and with prior approval.       | Above 150% FPL, \$5 for nonpreventive services.  |
| <b>Montana</b>                | Covered but subject to benefit cap of \$350 annual maximum.  | All treatment codes covered but subject to benefit cap. Accident related dental procedures are covered under the medical plan.   | Not covered under the dental plan. May be covered under the medical plan when pre-approved as medically necessary. | None.  |
| <b>Nevada<sup>8</sup></b>     | Same as Medicaid.  | Treatment and emergency assessments; more than 7 steel crowns in 1 visit require prior approval.   | Medically necessary; prior authorization required.   | None.  |
| <b>New Hampshire</b>          | Covered at 100% 2 exams and cleanings/ year; 1 fluoride; x-rays; 1 tooth as needed; bitewings annually; panoramic every 3 years. | Sealants; fillings and emergency treatment at 100% Fluoride treatments once/ year up to age 19.  | Space maintainers.   | \$600 annual maximum coverage for fillings, simple extractions, preventive and sealants. |
| <b>New Jersey<sup>9</sup></b> | Plans B and C, 100%; limits not specified; Plan D, covered for children under age 12 only; other limits not specified.           | Plans B and C, fillings; extractions; emergencies; Plan D, not covered.  | Plans B and C: orthodontics covered with no limitation; Plan D, not covered.                                       | 150%-200% FPL (Plan C), \$5 copayment for nonpreventive dental services.                 |
| <b>New York<sup>10</sup></b>  | Covered at 6-month intervals; fluoride where local water supply is not fluoridated.  | Sealants; crowns; extractions; emergency treatment; cleft palate stabilization.  | Endodontics; prosthodontics (including removable dentures and fixed bridges with limitations); space maintainers.  | None.  |

|                                   | Services Covered  |  |  |  |
|-----------------------------------|---|--|--|--|
| State                             | Preventive/Diagnostic   | Basic/Major  | Orthodontics   | Cost Sharing <sup>2</sup>  |
| <b>North Carolina</b>             | Exams, cleanings and scalings, fluoride treatments, fluoride varnish application, every 6 months; full mouth x-rays, 1/5 years; bitewing, 1/year. | Sealants; crowns, extractions (except impacted teeth); fillings; pulpotomies; tempero-mandibular joint disorder if result of accident.   | Orthognathic surgery for developmental problems if surgery is only remedy. | Above 150% FPL, \$5 copayment for nonpreventive dental services. |
| <b>North Dakota</b>               | Covered: exams, x-rays and prophylaxis have limits (limits not specified); fluoride applications.   | Emergency, restorative, crowns, extractions, pulpotomies, sealants, anesthesia, amalgam and resin restoration; accidental injury if within 12 months; and tempero-mandibular joint disorder surgical and nonsurgical with lifetime limits. | Space maintainers.   | None.  |
| <b>Oregon<sup>11</sup></b>        | Prophylaxis, x-rays and fluoride treatment.   | Sealants, restorations using amalgam and crowns.   | As medically necessary.  | None.  |
| <b>Pennsylvania</b>               | Exams every 6 months; full x-ray every 5 years; bitewings, 1/year; prophylaxis and fluoride every 6 months.                                       | Restorative: no limits on visits; crowns, resins, extractions, sealants, amalgams, wisdom tooth extraction and root canals, periodontics.  | Space maintainers.   | None.  |
| <b>Rhode Island <sup>12</sup></b> | Same as Medicaid.   | Same as Medicaid.  | Same as Medicaid.  | None.  |
| <b>South Dakota</b>               | Same as Medicaid; limits not specified.   | Same as Medicaid and restorative dental services when medically necessary.   | Same as Medicaid; limits not specified.                                    | None.  |
| <b>Tennessee<sup>13</sup></b>     | No dental benefit.  | None.  | None.  | None.  |

|                              | Services Covered   |  |   |   |
|------------------------------|--|--|---|---|
| State                        | Preventive/Diagnostic  | Basic/Major  | Orthodontics  | Cost Sharing <sup>2</sup>   |
| <b>Texas</b>                 | Preventative services provided up to \$175 for a 12-month period. Routine checkups, routine cleaning, X-rays and sealants are covered. | Therapeutic services provided as follows:<br>Tier I: up to 200,<br>Tier II: up to \$300,<br>Tier III: up to \$400. Therapeutic services include fillings, root canals, extractions<br>Emergency dental services are limited to: Procedures necessary to control bleeding, relieve pain, eliminate acute infection, and prevent loss of teeth;<br>Treatment of injuries to the teeth and supporting structures, and crowns. | None.   | None.   |
| <b>Utah</b>                  | 100% for exams, cleanings, fluoride, selected x-rays and selected sealants.  | Selected fillings, extractions, pulpomies and stainless steel crowns.  | Selected space maintainers.                               | <150% FPL — Plan A: \$3 copayment for basic/major and orthodontics<br>151%-200% FPL — Plan B: 20% coinsurance for basic/major and orthodontics. |
| <b>Vermont</b>               | Same as Medicaid; limits not specified.  | Same as Medicaid; limits not specified.  | Same as Medicaid; limits not specified.                   | None.   |
| <b>Virginia<sup>14</sup></b> | Initial and periodic exams; x-rays (every 6 months); prophylaxis (every 6 months); fluoride (every 6 months).                          | Amalgam and composite restorations (once/3 years); crowns and bridges (once/5years); bands; pulp capping; palliative care; root recovery; abscess care; extractions (once); some surgical services; sealants (once).   | Authorization required: medically necessary orthodontics. | None.   |

|                          | Services Covered  |  |  |                                  |
|--------------------------|---|--|--|----------------------------------|
| State                    | Preventive/Diagnostic   | Basic/Major  | Orthodontics   | Cost Sharing <sup>2</sup>        |
| Washington <sup>15</sup> | Exams; fluoride-topical application up to 3x/12month period; prophylaxis every 6 months; x-rays every 3 years.  | Emergency surgery and extractions; sealants every 3 years; crowns and bridges not covered.   | For severe malocclusion only; prior authorization required except for cleft lip/palate and craniofacial anomalies. | None.                            |
| West Virginia            | Routine semi-annual exams; all preventive.  | Therapeutic and emergency services covered.  | Only in cases of mandibular degeneration.  | None.                            |
| Wyoming                  | Kid Care CHIP:<br>Two Exams a year; Two Bitewing x-rays in one year;<br>One full mouth x-ray every 36 months;<br>One cleaning every 6 months;<br>One fluoride application every 12 months;<br>Sealants. | Simple extractions; Emergency relief of pain; amalgam restorations; sedation for children up to age 8; full mouth debridement; pulpotomy and root canals for older children; stainless steel crowns; gold or porcelain crowns for older children; partial dentures for older children. | Space maintainers, but nothing else.   | Maximum benefit of \$1,000/year. |

Sources: Data compiled from an email and telephone survey of plans conducted by the National Academy for State Health Policy in July and August, 2006.

Key:

- Preventive/Diagnostic = Includes routine dental work, x-rays, cleanings and check-ups.
- Basic/Major = Includes after-hours care, emergency visits, crowns and bridges, surgery and extractions.
- Orthodontics = A dental specialty, which includes corrections of irregularities of the teeth such as braces.
- Cost sharing = Copayments and other cost sharing required for receipt of services.

## Notes to the Appendix

<sup>1</sup> This table lists the dental benefits offered through the state-designed SCHIP programs in each state. Entries for states with two plans contain information only on the state-designed component of the plan. Medicaid expansion states and components are not included in this table.

<sup>2</sup> American Indian and Alaskan Native children are exempt from cost sharing.

<sup>3</sup> In Connecticut, supplemental dental coverage is available under HUSKY Plus.

<sup>4</sup> In March 2000, the Florida Legislature created a pilot project that provided limited dental benefits to Healthy Kids enrollees in several counties. The dental benefit was expanded the following year and beginning in February 2001, Healthy Kids began implementation of a comprehensive dental benefit package. This benefit package is the same as that offered to Medicaid recipients. During the 2002-2003 legislative session a \$750 maximum benefit cap was implemented. This cap is for services provided during a July 1-June 30 plan/fiscal year.

<sup>5</sup> In Georgia, dental services are excluded from coverage by MCO programs.

<sup>6</sup> Indiana's SCHIP dental benefits are the same as Medicaid; medically necessary dental services must be provided even if they are not covered under SCHIP.

<sup>7</sup> Please note: Due to a new state law, effective July 1<sup>st</sup>, 2006, MassHealth will cover dental services to eligible members aged 21 years or older (adults).

<sup>8</sup> In Nevada, dental services are administered through the MCOs provider networks for both urban Clark County (Las Vegas) and urban Washoe County (Reno). For the rest of the state of Nevada (mostly rural areas) dental is a fee-for-service benefit.

<sup>9</sup> The New Jersey SCHIP program has four components: a Medicaid expansion (Kidcare Plan A, a Medicaid expansion that covers children up to age 19 in families with incomes up to 133 percent of the FPL) and three separate state plans (Kidcare Plan B, which covers children in families between 133 percent and 150 percent of the FPL; Kidcare Plan C, which covers children in families between 150 percent and 200 percent of the FPL; and Kidcare Plan D, which covers children in families between 200 percent and 350 percent of the FPL through income disregards).

<sup>10</sup> New York does not cover fixed bridges unless required for replacement of a single upper anterior full complement of natural, functional and/or restored teeth. Bridges also are covered for cleft palate stabilization or when required by a neurological or physiological condition that precludes placement of a removable prosthesis.

<sup>11</sup> Oregon provides dental services through dental care organizations (DCOs). All services are covered that are medically necessary for the treatment of health conditions and listed under the Oregon Health Plan Prioritized List and funded by the legislature.

<sup>12</sup> Rhode Island's separate SCHIP plan covers unborn children up to 250 percent of the FPL. Dental benefits are provided through RiteSmiles, a managed dental care plan.

<sup>13</sup> Tennessee began its Cover Kids SCHIP program in April 2007. As of April 5, 2007, Cover Kids does not include dental benefits. See the Cover Kids website at [http://www.covertn.gov/cover\\_kids.html](http://www.covertn.gov/cover_kids.html). Accessed April 5, 2007.

<sup>14</sup> Virginia – Dental services are carved out of managed care and SCHIP coverage is consistent with Medicaid dental coverage. Age limit for SCHIP is 19 except for some pregnant mother coverage ages 19 and 20.

<sup>15</sup> In Washington, dental services are carved out of managed care and provided on a wrap-around, fee-for-service basis.

□ □ □

## Endnotes

- <sup>1</sup> P.W. Newacheck, D.C. Hughes, Y.Y. Hung, S. Wong, J.J. Stoddard, "The Unmet Health Needs of America's Children," *Pediatrics* 105(4 Pt 2) (April 2000): 989-97.
- <sup>2</sup> National Institute of Dental and Craniofacial Research, National Institutes of Health, *Oral Health in America: A Report of the Surgeon General* (Rockville, MD: U.S. Dept. of Health and Human Services, 2000).
- <sup>3</sup> Ibid.
- <sup>4</sup> C.M. Vargas, J.J. Crall, D.A. Schneider, "Sociodemographic Distribution of Dental Caries: NHANES III: 1988-1994," *Journal of the American Dental Association* 129, (1998): 1229-1238.
- <sup>5</sup> CDHP Issue Brief, *Early Childhood Caries Trends Upward* (Washington, DC, September 2005).
- <sup>6</sup> Health Resources and Services Administration, Maternal and Child Health Bureau. *The National Survey of Children's Health 2003*. (Rockville, MD: U.S. Department of Health and Human Services, 2005).
- <sup>7</sup> K.J. Hale, American Academy of Pediatrics Section on Pediatric Dentistry, "Oral Health Risk Assessment Timing and Establishment of the Dental Home," *Pediatrics* 111 (2003): 1113-1116.
- <sup>8</sup> S. Gehshan, P. Hauck, J. Scales, *Increasing Dentists' Participation in Medicaid and SCHIP* (Washington, DC: National Conference of State Legislatures, 2001).
- <sup>9</sup> Centers for Medicare and Medicaid Services, *CMS Financial Report FY 2005* (Washington, DC: U.S. Department of Health and Human Services), 6.
- <sup>10</sup> L. Ku, *Revised Medicaid Documentation Requirement Jeopardizes Coverage for 1 to 2 Million Citizens* (Washington, DC: Center on Budget and Policy Priorities, July 13, 2006).
- <sup>11</sup> American Dental Association, Survey Center, *Distribution of Dentists in the United States by Region and State* (Chicago, IL, 2001), 38.
- <sup>12</sup> Ibid.
- <sup>13</sup> American Dental Association, *The Future of Dentistry* (Chicago, IL, 2001), 37.
- <sup>14</sup> S. Gehsahn, T. Straw, *Access to Oral Health Services for Low Income People: Policy Barriers and Opportunities for Intervention for the Robert Wood Johnson Foundation* (Washington, DC, National Conference of State Legislatures, Oct. 2002).
- <sup>15</sup> Bureau of Health Professions, *Selected Statistics on Health Professional Shortage Areas*, as of March 31, 2006.
- <sup>16</sup> National Institute of Dental and Craniofacial Research, National Institutes of Health, *Oral Health in America: A Report of the Surgeon General* (Rockville, MD: U.S. Dept of Health and Human Services, 2000), 235.
- <sup>17</sup> National Conference of State Legislatures, *State Experience with Dental Loan Repayment Programs*, Washington, DC, 2005).
- <sup>18</sup> American Dental Association, *The Future of Dentistry* (Chicago, IL: 2001), 41-43.
- <sup>19</sup> E. Solomon, *The Future of Dentistry*, Part 1 of 4 part series, ETS Dental.
- <sup>20</sup> American Dental Association, *The Future of Dentistry*, 37.
- <sup>21</sup> P. Casamassimo, K. Holt, eds, *Bright Futures in Practice: Oral Health - Pocket Guide* (Washington, DC: National Maternal and Child Oral Health Resource Center, 2004).
- <sup>22</sup> American Dental Hygienists' Association, ADHA practice act overview chart of permitted functions and supervision levels by state, Updated July 24, 2006.
- <sup>23</sup> Dental Assisting National Board. Accessed 14 Dec 2006. <http://www.danb.org/main/statespecificinfo.asp>.
- <sup>24</sup> N. Tinanoff, M. Kanellis, and C. Vargas, *Dental Caries in Preschool Children: Epidemiology, Mechanisms, Prevention and Care Delivery* (The Children's Dental Health Project, 2003).
- <sup>25</sup> Bureau of Health Professions, *The Professional Practice Environment of Dental Hygienists in the Fifty States and the District of Columbia* (Rockville, MD: Health Resources and Services Administration, April 2004).
- <sup>26</sup> S. Rosenbaum, B. Kamoie, *Expanding Access to Pediatric Dental Care: Opportunities and Challenges Created by the Law* (Washington, DC), 8.
- <sup>27</sup> D.M. Grzybicki, P.J. Sullivan, J.M. Oppy, A.M. Bethke, S.S. Raab, "The Economic Benefit for Family/general Medicine Practices Employing Physician Assistants," *American Journal of Managed Care* 8(7) (July 2002): 613-620.
- <sup>28</sup> An evaluation of the work of the first dental therapists is available at: A. Fiset, DDS, *A Report on Quality Assessment of Primary Care Provided by Dental Therapists to Alaska Natives*, (Seattle, WA: University of Washington School of Dentistry, 2005)
- <sup>29</sup> D.A. Nash, R.J. Nagel, "Confronting Oral Health Disparities Among American Indian/Alaska Native Children: The Pediatric Oral Health Therapist," *American Journal of Public Health* vol.95, no. 8 (2005): 1325.
- <sup>30</sup> Dental Health Aide Therapists currently practicing at Indian Health Service sites in Alaska complete the 2-year dental therapy training program in New Zealand. Their training is due to shift to a program offered by the University of Washington School of Medicine. Currently, no state licenses or trains dental therapists.

- <sup>31</sup> Expanded Function Dental Assistants perform parts of a prophylaxis: “toothbrush” cleanings using a rubber cup or brush.
- <sup>32</sup> Nurse practitioners and physician assistants have limited prescriptive authority that varies by state. They often prescribe under standing orders from a physician, which could be expanded to include disease suppression treatments.
- <sup>33</sup> Expanded Function Dental Assistants place temporary restorations, placing and finishing amalgam and composite resin restorations. They may not diagnose or prescribe, cut hard or soft tissue, administer anesthesia.
- <sup>34</sup> Community Dental Health Coordinators have a proposed skill set that is very similar to the Primary Dental Health Aides (PDHA) who are practicing in Alaska for the Indian Health Service. Currently, there are 11 federally certified PDHAs in practice and 9 more finishing training.
- <sup>35</sup> J. Lynch, P. Milgrom, “Xylitol and Dental Caries: An Overview for Clinicians,” *Journal of the California Dental Association* (March 2003).
- <sup>36</sup> Ibid.
- <sup>37</sup> Centers for Disease Control Water Fluoridation Data (2006). Accessed August 2006. <http://www.cdc.gov/fluoridation/statistics.htm>.
- <sup>38</sup> National Institute of Dental and Craniofacial Research, National Institutes of Health, *Oral Health in America: A Report of the Surgeon General* (Rockville, MD: U.S. Department of Health and Human Services, 2000).
- <sup>39</sup> Ibid.
- <sup>40</sup> *Water Fluoridation, Nature’s Way to Prevent Tooth Decay* (The Centers for Disease Control and Prevention, Atlanta, Georgia, and the American Dental Association, Chicago, Illinois, 2006).
- <sup>41</sup> Centers for Disease Control and Prevention. Preventing Chronic Diseases: Investing Wisely in Health - Preventing Dental Caries. [http://www.cdc.gov/Oralhealth/factsheets/dental\\_caries.htm](http://www.cdc.gov/Oralhealth/factsheets/dental_caries.htm)
- <sup>42</sup> Ibid.
- <sup>43</sup> Ibid.
- <sup>44</sup> Ibid.
- <sup>45</sup> Ibid.
- <sup>46</sup> National Institute of Dental and Craniofacial Research, National Institutes of Health, *Oral Health in America: A Report of the Surgeon General* (Rockville, MD: U.S. Department of Health and Human Services, 2000).
- <sup>47</sup> Centers for Disease Control and Prevention. Preventing Chronic Diseases: Investing Wisely in Health—Preventing Dental Caries. [http://www.cdc.gov/Oralhealth/factsheets/dental\\_caries.htm](http://www.cdc.gov/Oralhealth/factsheets/dental_caries.htm)
- <sup>48</sup> National Institute of Dental and Craniofacial Research, National Institutes of Health, *Oral Health in America: A Report of the Surgeon General* (Rockville, MD: U.S. Department of Health and Human Services, 2000).
- <sup>49</sup> David Grembowski and Peter M. Milgrom. *Increasing Access to Dental Care for Medicaid Preschool Children: The Access to Baby and Child Dentistry (ABCD) Program*. (Washington, DC: U.S. Department of Health and Human Services Public Health Reports, September and October 2000).
- <sup>50</sup> Ibid.
- <sup>51</sup> Ibid.
- <sup>52</sup> Ibid.
- <sup>53</sup> Ibid.
- <sup>54</sup> Sonia I. Nagahama, Steven E. Fuhriman, Carree S. Moore, and Peter Milgrom, “Evaluation of a Dental Society-Based ABCD Program in Washington State,” *Journal of the American Dental Association* vol. 133 (September 2002).
- <sup>55</sup> Spokane Regional Health District. <http://www.srhd.org/health/dental/abcde.asp>.
- <sup>56</sup> Julie N. Mansour and Judith Cooksey. *The Michigan Healthy Kids Dental Medicaid Program: Background, Program Design, and Baseline Assessment*. (Illinois Center for Health Workforce Studies, December 2000).
- <sup>57</sup> Stephen A Ecklund, James L. Pittman, and Sarah Clark. “Michigan Medicaid’s Healthy Kids Dental Program: An assessment of the first 12 months,” *Journal of the American Dental Association*, vol.134 (November 2003).
- <sup>58</sup> Mansour and Judith Cooksey, op cit.
- <sup>59</sup> Ecklund, Pittman, and Clark, op cit.
- <sup>60</sup> R. Gary Rozier, Betty King Sutton, James W. Bawden, Kelly Haupt, Gary D. Slade, and Rebecca S. King, “Prevention of Early Childhood Caries in North Carolina Medical Practices: Implications for Research and Practice,” *Journal of Dental Education* 67, 8 (2003).
- <sup>61</sup> Ibid.
- <sup>62</sup> Ibid.
- <sup>63</sup> Ibid.