



The Role of Law and Policy in Increasing the Use of the Oral Health Care System and Services



Authors

Burton L. Edelstein, DDS, MPH, Professor of Dental Medicine and Health Policy & Management at Columbia University Irving Medical Center; former Senior Fellow in Public Policy, Children's Dental Health Project

Jane Perkins, JD, MPH, Legal Director, National Health Law Program; Senior Attorney, Network for Public Health Law

Clemencia M. Vargas, DDS, PhD, retired Associate Professor, Division of Pediatric Dentistry, University of Maryland, School of Dentistry, Baltimore, MD

Report Working Group

Carol Bassim, DMD, former Project Officer, Division of Oral Health (DOH), Indian Health Service (IHS)

Diane Brunson, RDH, MPH, Director of Public Health and Interprofessional Education, University of Colorado Denver School of Dental Medicine

Shelly Gehshan, MPP, Health Policy Consultant and Coach

Julie Frantsve-Hawley, RDH, PhD, former Executive Director, National Office, American Association of Public Health Dentistry (AAPHD)

Timothy J. Iafolla, DMD, MPH, Public Health Analyst, Office of Science Policy and Analysis, National Institute of Dental and Craniofacial Research, National Institute of Health (NIH)

Elizabeth Jackson, National Center for Health Statistics, Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS)

Nicole Johnson, MPH, Associate Director for Policy Partnerships and Strategic Communication, DOH, CDC

Renée W. Joskow DDS, MPH, FAGD, Chief Dental Officer, Health Resources and Services Administration (HRSA)

Frances Kim, DDS, MPH, DrPH, Executive Director, AAPHD

David Krol, MD, MPH, Medical Director, New Jersey Institute for Food, Nutrition, and Health, New Jersey Healthy Kids Initiative

Laurie Norris, JD, former Senior Policy Advisor, Centers for Medicare and Medicaid Services (CMS)

Kathleen O’Loughlin, DDS, MPH, Executive Director, American Dental Association (ADA)

Timothy L. Ricks, DMD, MPH, FICD, IHS Oral HPDP Consultant and Healthy People 2020 Oral Health Workgroup Member

Gina Thornton-Evans, DDS, MPH, Dental Officer, Surveillance, Investigations, and Research Team, DOH, CDC

Marko Vujicic, PhD, Chief Economist and Vice President, Health Policy Institute, ADA

Katherine Weno, DDS, JD, former Director, DOH, CDC; current Public Health Consultant

Cassandra Yarbrough, MPP, former Lead Public Policy Analyst, Health Policy Institute, ADA

Sirin Yaemsiri, PhD, former Data Analyst, CDC/National Center for Health Statistics (NCHS)

Project Staff

Angela K. McGowan, JD, MPH, Project Director, Office of Disease Prevention and Health Promotion (ODPHP), HHS

Tiffani M. Kigenyi, MPH, Public Health Analyst, ODPHP, HHS

Katheryne (K.T.) Kramer, JD, MHA, former Public Health Analyst, ODPHP, HHS (CDC Foundation Assignee)

Boatema A. Ntiri-Reid, JD, MPH, former Associate Service Fellow, ODPHP, HHS (CDC Assignee)

Other Acknowledgments

- Carter Blakey, Deputy Director, ODPHP, HHS
- Julia Charles, JD, former Legal Analyst/ORISE Fellow, Public Health Law Program, CDC
- Kathleen Ethier, PhD, former Director, Program Planning and Evaluation Office, CDC
- Rachel Ferencik, MPA, Senior Program Officer, CDC Foundation
- Abigail Ferrell, JD, MPA, Public Health Analyst, Public Health Law Program, CDC

- Sheri Gaskins, Technical Director, Division of Benefits and Coverage, Center for Medicaid and CHIP Services, CMS
- Healthy People 2020 Federal Interagency Workgroup's (FIW) Law and Health Policy Workgroup
- Healthy People 2020 Oral Health Workgroup
- Alexandra Hess, JD, former Intern, ODPHP, HHS
- Deborah Magsaysay, former Program Officer, CDC Foundation
- Giridhar Mallya, MD, MSHP, Senior Policy Officer, Robert Wood Johnson Foundation (RWJF)
- Linda McGehee, PhD, RN, Team Lead for Infectious Disease Programs, CDC Foundation
- Emmeline Ochiai, JD, MPH, Senior Public Health Advisor, ODPHP, HHS
- Matthew Penn, JD, MLIS, Director, Public Health Law Program, CDC
- Matthew Pierce, JD, MPH, Senior Program Officer, RWJF
- Montrece Ransom, JD, MPH, Team Lead, Training and Workforce Development, Public Health Law Program, CDC
- Donald Schwarz, MD, MBA, MPH, Vice President, Program, RWJF
- Sekou Sidibe, MPH, former Senior Program Officer, CDC Foundation
- Andrew Snyder, MPA, Health Insurance Specialist, CMS
- Claire Stinson, Communications Officer, CDC Foundation
- Eric Strunz, MPH, Program Officer, CDC Foundation
- Amy Tolchinsky, Communications Director, CDC Foundation
- Don Wright, MD, MPH, former Deputy Assistant Secretary for Health; Director, ODPHP, HHS
- Catherine H. Zilber, MSc, Associate Vice President for Infectious Disease Programs, CDC Foundation

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Preface

Legal and policy interventions play an important role in improving public health and creating a society in which all individuals live long, healthy lives. However, many people are unaware of the precise impact these tools can have on population health. Since 1980, each decade the Healthy People initiative has established a comprehensive set of 10-year national objectives. This report is based on the current decade's initiative, Healthy People 2020. These objectives have measurable targets providing a strategic framework to motivate, guide, and focus action to improve the Nation's health, along with communicating a vision for achieving health equity. The ability to reach Healthy People targets is vital to our nation—it means lives saved, illnesses avoided, and injuries averted; it means stronger and more resilient public health and health care systems. It also creates alignment across sectors and geography to create and sustain environments where all can achieve their full potential for health and well-being across the lifespan.

This report is part of the Healthy People 2020 Law and Health Policy Project (henceforth referred to as "the Project"), which seeks to increase awareness about the role law and policy play in improving health. The Project includes this series of reports, as well as other products and webinars, related to a diverse set of Healthy People 2020 (HP2020) national health objectives. Most of these will continue to be areas of focus in the next decade's national objectives, Healthy People 2030 (HP2030), and demonstrate how such approaches can improve health for individuals, families, and communities. Each report highlights the practical application of law and policy across a variety of settings and is intended for diverse audiences including community and tribal leaders, government officials, public health professionals, health care providers, lawyers, and social service providers.

The Project is a collaborative effort. Within the U.S. Department of Health and Human Services (HHS), the Office of Disease Prevention and Health Promotion (ODPHP) in the Office of the Assistant Secretary for Health leads the Project effort with guidance and support from the Centers for Disease Control and

Prevention (CDC). CDC Foundation with funding from the Robert Wood Johnson Foundation (RWJF) launched this project. The reports in this series discuss legal or policy strategies supported by empirical evidence that help achieve specific HP2020 targets or objectives. The legal and policy strategies discussed in this particular report include statutes and ordinances, regulations and executive actions, case law and policies having the effect of law; they also cover various governmental levels. The report concentrates on oral health and focuses where possible on state, tribal, and local settings, demonstrating how these approaches can improve health and prevent or treat caries, and other common oral health problems. The reports will be accompanied by web-based community and practice examples of laws and policies in action, or “Bright Spots,” that illustrate how communities can use law and policy to meet their health improvement goals and achieve Healthy People targets. Up to 4 co-authors work on each report with assistance from a working group of experts from varying disciplines and practice areas relevant to the report; all parties are selected based on their background and subject matter expertise. Other groups, including the Healthy People 2020 Federal Interagency Workgroup (FIW)—the lead entity guiding the HP2020 process—the HP2020 topic area workgroups, and other project partners, provided input and support for these reports during their development.

While this report focuses on HP2020 targets, the lessons and specific laws and policies discussed should be relevant to HP2030 goals, as well as to addressing future public health challenges. HP2030 will continue to build on the work of the current decade and will focus on creating a society in which all people can achieve their full potential for health and well-being across the lifespan. Law and policy will continue to be important tools to help achieve this vision.

Introduction

Legal and policy interventions can be effective in promoting oral health and preventing or treating tooth decay, gum (periodontal) disease, and other common oral health problems. The purpose of this report is to describe federal, state, and local laws, regulations, executive orders, and service programs, along with incentives for their enforcement or operation.

In many ways, overall health, function, and well-being begin with the mouth or oral health. The mouth is an intricate structure with exquisitely complex physiology. Some of the most common yet preventable oral health problems include diseases of the teeth (tooth decay) and supporting structures (gum disease), disorders of the jaws (temporomandibular disorders), glands (salivary gland disorder), and mouth lining (oral cancers and a host of other diseases). They all require the attention of a dentist or allied professional. The mouth is essential for many core life functions, such as breathing, tasting, digestion, and communication. It also plays a core role in immunity through saliva, and in perception of sensations given the high presence of nerves.¹

Yet these core life functions are too often compromised by oral health problems. For example, over 80% of the United States population has experienced at least one cavity by age 34, and in 2015 more than 40% of adults felt pain in their mouth in the last year.² In 2017, the nation spent \$129.1 billion a year on costs related to oral health care.³ Over 34 million school hours along with almost \$46 billion in productivity are lost annually as a result of unplanned or emergency dental care.^{4,5}

The importance of access to preventive care, disease management, and reparative care is reflected in HP2020's Oral Health objective OH-7:

"Increase the proportion of children, adolescents, and adults who used the oral health care system in the past year from 44.5% in 2007 to 49.0% (baseline age adjusted to the year 2000 standard population)."⁶

* This same objective is included in the set of proposed objectives for Healthy People 2030.

The value of this measure is evident in its selection as a HP2020 Leading Health Indicator of high priority for both health decision-makers and the public. Yet meeting this objective has been elusive: in 2016, the proportion of the overall population that used the oral health care system was only 43.3%.⁷ Since 2003, dental utilization has increased steadily for children, remained reasonably flat for older adults, but has declined significantly for working age adults.⁸

The HP2020 initiative reports that “Americans who do not have access to preventive programs or those with the least access to preventive services and oral health treatment have greater rates of oral diseases,” and that “a person’s ability or willingness to access oral health care is associated with factors such as education level, income, race, and ethnicity.” For example, this is evidenced by significant disparities in utilization: dental utilization increases with level of education⁹ and income¹⁰, and all racial and ethnic minorities¹¹ utilize services at rates lower than do white Americans.¹² Additionally, females of all ages utilize oral health care more than do males.¹³

This disparity of utilization is considered from the perspective of policy, law, and regulation in this science-based report. Laws and policies affect payment for selected oral health services, the workforce involved in providing those services, and the barriers that may exist in accessing the oral health services. While this report touches on a range of laws and policies that influence oral health services in the United States, it is not a comprehensive review, such as those issued from the U.S. Surgeon General, which touch on topics beyond oral health services, consider the value of oral health, and make recommendations about how to improve it. A Surgeon General’s report in 2000 explored the meaning of oral health and explained that it is crucial to the health and well-being of all Americans.¹⁴ It also stressed that oral health is achievable by all, although there are disparities in access and treatment in the United States. This was followed by a 2003 National Call to Action to Promote Oral Health,¹⁵ geared toward professional organization and individuals interesting in working with partners to improve oral health.

The second-ever Surgeon General's Report on Oral Health will be issued in the near future. Commissioned in 2018 with several hundred contributing writers, reviewers, and editors representing academia, organized dentistry, federal agencies, state oral health programs, and other key stakeholder groups, this report will show progress made since 2000 in oral health, challenges that still persist in achieving oral health, and key actions to improve the oral health of the country over the next few decades.¹⁶ It will describe: (1) oral health across the lifespan including children, adolescents, adults, and older adults; (2) the integration of oral health and primary care and workforce issues; (3) the relationships between oral health and substance abuse disorders, the opioid epidemic, high-risk behaviors, and mental health; (4) the effect of oral health on the community, overall well-being, and the economy; and (5) emerging technologies and promising science that will transform oral health in the future. This Surgeon General's report will take a comprehensive view of these important health issues; and the laws and policies covered in this Healthy People report, focused on increasing oral health services, should be a helpful complement, along with suggesting tools and resources to help those trying to advance oral health in the United States.

Oral health is a condition of well-being. The World Health Organization's definition of oral health is "a state of being free from chronic mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking, and psychosocial wellbeing."¹⁷ It is the specific status of well-being in which a person is free of diseases of the mouth, and has all oral structures including teeth, gums, mouth lining, salivary glands, and taste buds working well and comfortably. Oral health also benefits esthetic appearance and associated capacity to express a wide range of facial emotions. A healthy mouth and dental appearance contribute to self-esteem, social acceptance, and employability.

A number of factors influence oral health. In addition to good oral health care (the focus of this report), other determinants of oral health are day-to-day healthy behaviors, people's social and environmental conditions, and genetics. Similar to other leading

chronic conditions such as cancer, cardiovascular diseases, chronic respiratory diseases, and diabetes, oral health can benefit by addressing common health risk factors.¹⁸ For example, daily tooth brushing and flossing, following a healthy diet (including avoiding overconsumption of sugar), not using tobacco products or vaping, reducing excessive alcohol consumption, and using mouth guards and facemasks during sports to prevent or reduce injuries are all critical contributors to good oral health. Prevention of caries and oral health conditions is critical. Additionally, community setting and resources can influence oral health. For example, fluoridation of community water supplies¹⁹ and school-based dental sealant programs²⁰ are recommended evidence-based interventions to prevent tooth decay to benefit a community's residents. While laws and policies can be valuable to prevention efforts overall, water fluoridation is perhaps the most well recognized example for oral health. Laws and regulations set standards for the safety of fluoride in drinking water,²¹ or may mandate its addition into community water sources and control the levels added to water through state and local laws.²²

Oral health care, commonly called dental care, is one important contributor to oral health, but as just discussed, it is not the only one, or even the most impactful.²³ In addition to providing a variety of clinical dental services—emergency, preventive, reparative, and esthetic—oral health care engages patients in understanding and adopting salutary health behaviors.

This report focuses on oral health care and the things that make care possible: availability of financing to pay for care and a well-prepared workforce to deliver it. It also examines challenges that people face when trying to utilize available dental care. These challenges include cultural, language, transportation, and discrimination barriers that need to be addressed if oral health care is to be available to all.

This report acknowledges that:

- Access to care is significantly impacted by social advantage and disadvantage, including areas such as education, employment, culture, geography, and environment.
- Oral health depends as much or more on health promotion, positive oral hygiene behaviors, dietary practices, and determinants of health rather than on providing preventive care.
- Personal risk factors including exposures to tobacco, alcohol, and other drugs such as methamphetamines require regular screenings for oral cancers and other lesions.
- Environmental conditions such as access to protective factors like community water fluoridation have an important impact; socio-cultural environments are important for use of oral health care, health literacy, valuation of oral health, and social supports.
- Early, ongoing, proactive, and risk-based professionally delivered preventive services promote and complement day-to-day salutary health behaviors.

In suggesting opportunities for enhancing oral health care use, this report considers evidence that increased use of children's dental services has been impacted positively by expanded public financing for children through Medicaid, the Children's Health Insurance Program (CHIP), and the Patient Protection and Affordable Care Act (Affordable Care Act).^{24,25,26} In examining the oral health workforce, this report suggests that expanded functions, liberalized supervision, and additional types of care providers hold promise for increasing access among underserved populations. In examining barriers to care that is available, it assesses those barriers that too often impede use of services.

The factors that influence oral health care use—physical and financial access, adequacy of services when available, and removal of barriers to care—can be significantly addressed through targeted programs and legal policies. Clearly, achieving improvements

is a complex task and also impacted by broader determinants of health. This report supports pathways to addressing that complexity through evidence-based policy approaches.

Legal Background

Law and policy have widespread impacts on individual and community health. They establish the framework within which clinicians and community-based entities work, define standards of individual practice and interaction, establish health and safety expectations and protections, and create financing and accountability structures.

There is a significant body of evidence documenting the contribution of laws and policies toward the achievement of the HP2020 oral health goals. This interaction between law and oral health is long-standing. It dates from mid-20th century state and local laws about community water fluoridation. More recently, it has included federal policy and other governmental efforts to address the affordability, availability, and quality of oral health care and, ultimately, improve oral health status.²⁷

This report looks at federal laws (e.g., statutes, regulations) and sub-regulatory policies and guidelines intended to influence state, local, and tribal laws, and the implementation and enforcement of these laws through federal, state, and tribal courts.

Financing

Achieving the Healthy People dental care utilization objectives requires funding for oral health services. Financing and affordability are critical aspects of determining when and whether individuals use the oral health system.²⁸ Oral health care has traditionally been funded through an intricate web of out-of-pocket payments, publicly funded programs (particularly Medicaid), and private insurance, typically available through employment. Payments have tended to focus on treating dental diseases more than preventing and managing them; changing at least that part of the system might present an opportunity for improving the payment structure. As health reform in the United States progresses to an era of accountability, cost-effectiveness, and patient-centered care, public and private funding streams will

need to reassess how services are valued and paid for.²⁹ There can be no value-based financing if there are no established, tested, and validated oral health measures. Policy changes can help to support the implementation of the Dental Quality Alliance set of measures developed by the American Dental Association (ADA) with major oral health care stakeholders to “improve oral health, patient care, and safety through a consensus-building process.”³⁰

However, many questions still need to be addressed to achieve our goals: Are fee-for-service programs (where each service is billed for and paid for separately) still appropriate, or should providers be funded by alternative payment mechanisms through managed care or clinic-based systems? Should oral health care be integrated into primary care settings? Should coverage extend across all population and age groups? Or be targeted to only certain groups (such as children or pregnant women)? Can we reduce payments attributable to dental restorative services by going “upstream” to fund behavioral determinants of oral health, such as education-related oral health programs or those aimed at eliminating tobacco use, improving access to healthy foods, and reducing consumption of sugary beverages? Responding to these challenging questions is fundamental to reforming the oral health delivery system.

Workforce

Meeting Healthy People’s oral health care utilization objectives requires oral health care providers that are easily available and accessible. Having enough oral health providers with a range of competencies, skills, and qualifications—in addition to adequate physical and financial access for the users of oral health care—is critical to reduce disparities by increasing oral health care utilization between socially advantaged and disadvantaged groups. In the current era of accountability, cost-effectiveness, and patient-centered care, the oral health profession—like the medical profession—should examine its workforce’s characteristics and partnerships with a range of healing and helping professionals and lay health workers. Is the traditional makeup of the oral health workforce still appropriate? Do we simply need more dentists, or would a different mix of providers better achieve equity?

Can dentistry partner with social workers, health educators, nutritionists, community health workers, and other non-traditional providers to address social and behavioral oral health determinants? When considering the whole person, what are the appropriate roles of oral health personnel in overall health care, along with the appropriate roles of medical personnel in oral health care? Responding to these challenging questions is fundamental to revisiting, addressing, and reforming oral health services in ways that reduce disparities and improve oral health in a cost-effective way.

State and federal workforce policy significantly affects the resolution of these questions. These policies can address critical issues of education, training, and scope of practice (e.g., who is allowed to perform which services). They can also cover supervision of allied professionals, physical and remote access to care, clinical and educational infrastructure, inter-professional engagements, and liaisons with other professionals and lay health workers. While the workforce cannot on its own resolve oral health disparities, creative workforce policies and programs hold strong promise to contribute meaningfully to equity in oral health care.

Utilization

Even after financial barriers to oral health care access are addressed and when oral health providers are readily available, a large sector of the population still faces significant barriers in getting and using oral health care. Communities may face barriers to care if they do not have access to the required means of transportation. In other communities, race or national origin could limit the availability of oral health care, especially when language and cultural barriers inhibit communication between patients and dentists and their staff.

HHS considers increasing health care providers' cultural competency as one approach for reducing health disparities.³¹ Moreover, legal immigration status not only affects eligibility for dental insurance, but the immigration status of some members of a family may affect the chances that a child, otherwise eligible to be insured, is taken to receive health services.

Laws and policies seeking to reduce the effect of these structural, cultural, and legal barriers have been enacted, but they apply only to oral health providers receiving payment from federal funds, such as Medicaid. Just 12% of oral health care in the United States is paid by federal funds,³² reflecting the small percentage of dental providers who receive federal funds for treating patients and, hence, are subject to those laws and policies.

Financing of Oral Health Care

Financing is a critical aspect of determining when and whether individuals use the oral health care system. Over the years, the inconsistent patchwork of state and federal benefits has resulted in a web of public and private financing systems to cover the cost of oral health care. While most relevant to whether and how extensively oral health care services are covered, these public and private financing arrangements are also the source of innovative practices that increase the proportion of children, adolescents, and adults who use the oral health care system. Examples of programs that influence oral health care services through financing and delivery of care are provided in Table 1.

Table 1 – Programs influencing oral health through financing and direct delivery of care

Influencing Oral Health: Financing		
Program	Population	Services Covered
<p>Medicaid Child Coverage: Medicaid Early and Periodic Screening, Diagnostic, and Treatment (EPSDT): The pediatric benefit for children in income eligible families that includes comprehensive dental coverage</p>	<p>Income eligible children to age 21</p>	<p>Under the EPSDT benefit, states are required to provide comprehensive services and furnish all Medicaid coverable, services to correct or ameliorate the child's condition. "At a minimum, dental services include relief of pain and infections, restoration of teeth, and maintenance of dental health. Dental services may not be limited to emergency services. Each state is required to develop a dental periodicity schedule in consultation with recognized dental organizations involved in child health."³³</p>
<p>Medicaid adult coverage: A joint federal/state program which provides health coverage for individuals who meet income eligibility and status requirements</p>	<p>Individuals determined to be "adults" who meet the specific eligibility requirements for their state.</p> <p>In "expansion" states, coverage is extended to non-disabled, non-pregnant adults with incomes up to 133% of the Federal Poverty Level.</p>	<p>Dental coverage is a state option for groups a state chooses to cover. The state determines the types and extent of procedures covered. Generally, coverage is more limited for adults than for children.</p>

Influencing Oral Health: Financing		
Program	Population	Services Covered
<p>Children's Health Insurance Program (CHIP): A joint federal/state public insurance program which covers limited income children who meet eligibility requirements</p>	<p>Children under the age of 19 are eligible and covered by CHIP; states may choose to extend CHIP to age 21 for some (i.e., youth exiting foster care), or all enrollees</p>	<p>All services "necessary to prevent disease and promote oral health, restore oral structures to health and functions, and treat emergency functions."³⁴</p>
<p>Employer Sponsored Insurance offered electively by employers</p>	<p>Working age adults and, when elected by employers, their employees' dependent children</p>	<p>Highly variable dental benefits as determined by the employer. For plans governed by the Affordable Care Act, dental benefits for children are an "essential health benefit" with coverage similar to CHIP.</p>
<p>Private individual and small group insurance market</p>	<p>Working age adults and, when elected by employers, their employees' dependent children</p>	<p>Under the Affordable Care Act, dental benefits for children are an "essential health benefit" with coverage similar to CHIP.</p>

Influencing Oral Health: Financing		
Program	Population	Services Covered
<p>Ryan White HIV/AIDS Program (RWHAP): A discretionary federal grant program that funds provision of health care and support services, including oral health care, to low income individuals living with HIV</p>	<p>Low-income (as defined by the grantee) individuals who have a diagnosis of HIV/AIDS</p>	<p>RWHAP supports oral health services through all Program Parts (A-D, F Dental). The oral health care service category includes outpatient diagnostic, preventive, and therapeutic services delivered by dental health care professionals, including general dental practitioners, dental specialists, dental hygienists, and licensed dental assistants. Additionally, the RWHAP Dental Reimbursement Program (Part F) reimburses dental education institutions a percentage of any uncompensated costs delivered by dental trainees supervised by a licensed dentist for providing oral health services to people with HIV. The RWHAP Community-Based Dental Partnership Program links community-based organizations with dental schools to provide dental care by trainees supervised by a licensed dentist in community-based settings.</p>

Influencing Oral Health: Direct Delivery of Care		
Program	Population	Services Covered
Indian Health Service (IHS)	Enrolled members of federally recognized tribes	Comprehensive dental services
Department of Defense	Uniformed members of the armed forces and their families, national guard/ reserve members and their spouses, survivors, Medal of Honor recipients and their families. Services are provided directly to active duty personnel and are financed through TriCare insurance for dependents of active duty personnel.	Diagnostic and preventive services, restorative services, orthodontics, oral surgery, and other non-medical services
Bureau of Prisons (BOP)	Individuals incarcerated in federal prisons	Dental care is provided to inmates; access to care must be equitable, although short-term inmates may not be eligible for comprehensive care. "Dental care will be conservative, providing necessary treatment for the greatest number of inmates within available resources." ³⁵

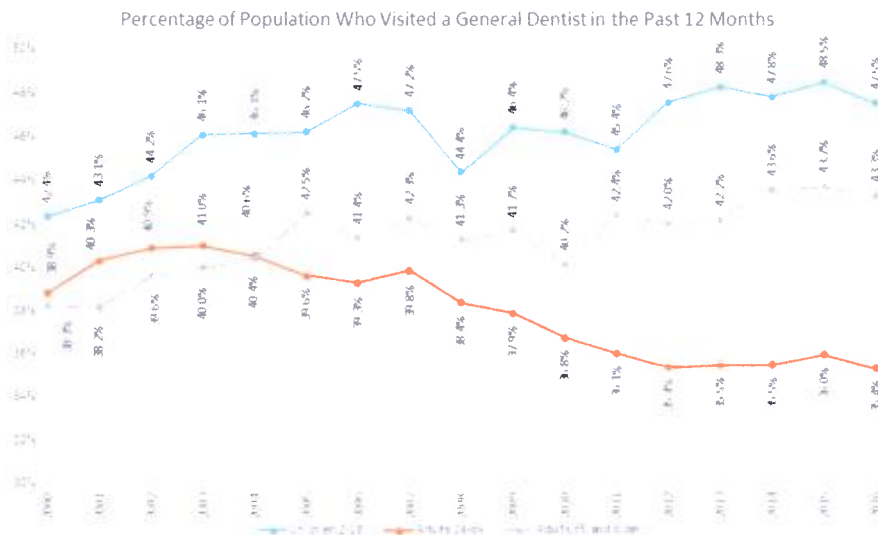
Influencing Oral Health: Direct Delivery of Care		
Program	Population	Services Covered
Department of Veterans Affairs	Eligibility for outpatient dental care is not the same as for most other VA medical benefits and is categorized into classes. Veterans eligible under Class I, IIC, or IV are eligible for any necessary dental care to maintain or restore oral health and masticatory function, including repeat care. Other classes have time and/or service limitations.	Outpatient dental treatment is available to eligible Veterans at VA dental clinics and may include the full spectrum of diagnostic, surgical, restorative, and preventive procedures. In many cases, however, the law permits only limited kinds of care.
Head Start Program	Children from birth to age 5 from families below poverty guidelines; children from homeless families and families receiving public assistance, and foster children	Programs must determine whether children are up-to-date with routine preventive care, including oral health care within 90 days, and if not, assist child and parents obtain such care.

Influencing Oral Health: Direct Delivery of Care		
Program	Population	Services Covered
<p>Federally qualified health centers (FQHCs) and "Look-alike" clinics: community-based health care providers that receive federal funds to provide primary care services in medically underserved areas.</p>	<p>Anyone may receive services at an FQHC, with the care provided on a sliding fee scale based on ability to pay.</p>	<p>All FQHCs must provide "preventive dental services" which include oral hygiene instruction, oral prophylaxis, and access to fluorides. FQHC grantees might also be required to provide "dental services other than those provided as primary health services" at some or all of their sites as a condition of certain grant funding or participation in oral health initiatives.³⁶</p>
<p>National Health Service Corps</p>	<p>Sites provide outpatient, ambulatory, primary health services, and dental services in Health Professional Shortage Areas (HPSAs). Services are provided to patients in a HPSA for free or on a sliding fee discount scale based on ability to pay. Sites must treat all patients fairly regardless of disease or diagnosis and must not discriminate.</p>	<p>NHSC-approved sites must provide comprehensive culturally sensitive and linguistically appropriate primary care (including for dental) for the population and community served. NHSC defines comprehensive primary care as a continuum of care including preventive, acute, and chronic primary health services in NHSC-approved disciplines.</p>

Influencing Oral Health: Direct Delivery of Care		
Program	Population	Services Covered
U.S. Public Health Service Commissioned Corps	Commissioned Corps dental officers provide care to vulnerable and underserved and disadvantaged populations in community health centers and in the Indian Health Service, and provide policy, public health, and research expertise in the Food and Drug Administration, Centers for Disease Control and Prevention, Health Resources and Services Administration, and the National Institutes of Health. Dental officers also provide care in the U.S. Coast Guard, Immigration and Customs Enforcement Health Service Corps, and the Federal Bureau of Prisons.	Comprehensive oral health care services and educational programs to underserved and disadvantaged patients; rapid deployment capability during man-made and natural disaster response, and public health emergencies; opportunities to become involved in organized community disease prevention and treatment programs that can make an impact on overall community disease rates

Along with the development of public and private financing systems, from 2000 to 2016, a notable change in patterns occurred of who is utilizing oral health care. See Figure 1 below. Overall utilization rates for children and older adults increased and then stabilized, while utilization rates for working age adults declined steadily starting in 2003 before generally stabilizing at a low level after 2012. The increased utilization by children, particularly starting in 2011, correlates with significant expansion of dental insurance coverage through both CHIP and the Affordable Care Act. The increase in dental utilization among older adults correlates with the increasing numbers of “boomers,” who are both retaining more of their teeth and who had historically been high dental-care utilizers when younger.³⁷ The decline in working-age adult utilization attributable to lack of affordability has occurred across all income groups except the poor, who may be accessing more dental care subsequent to the Medicaid expansion established by the Affordable Care Act.^{38,39} Data from the 2014 National Health Interview Survey demonstrate that “irrespective of age, income level, and type of insurance, more people reported financial barriers to receiving dental care, compared to any other type of health care,” with working age adults delaying dental care due to cost more than other age groups.⁴⁰

Figure 1



Source: ADA Health Policy Institute analysis of data from the Medical Expenditure Panel Survey, AHRQ. Data available from: https://www.mepsahrq.gov/mepsweb/data_stats/MEPS_top.cs.jsp.

Publicly Financed Oral Health Coverage

Medicaid

In terms of sheer number of lives covered, the Medicaid program dominates other forms of public coverage. As reported in December 2019, the Medicaid program was the largest public health insurer in the United States, covering over 86 million people during all or part of the year.⁴¹ Jointly funded and administered by the federal and state governments, Medicaid offers health insurance coverage to eligible low-income individuals. States do not have to participate in Medicaid, but all do. To participate, states must develop a state Medicaid plan and obtain approval of that plan from HHS.⁴²

Medicaid should not be confused with Medicare, which provides health insurance coverage to over 61 million older adults and certain individuals with disabilities, including kidney disease.⁴³ Medicare excludes coverage of most dental services, including "services in connection with the care, treatment, filling, removal, or replacement of teeth or structures directly supporting teeth, except that payment may be made under part A [hospital insurance] in the case of inpatient hospital services in connection with the provision of such dental services if the individual, because of his underlying medical condition and clinical status or because of the severity of the dental procedure, requires hospitalization in connection with the provision of such services."⁴⁴ Under this provision, the federal Centers for Medicare & Medicaid Services (CMS) currently allows Medicare to cover dental examinations, in some circumstances, prior to a kidney transplant or heart valve replacement. Medicare will also cover treatment services that are an integral part of a covered procedure, such as reconstruction of the jaw following an injury, or for extractions done in preparation for radiation treatment for neoplastic diseases involving the jaw.⁴⁵

The federal government will pay from 50% to 83% of each state's Medicaid expenditures on services for covered populations, with the amount of federal funding inversely related to the per capita income in the state.^{46,47,48,49} In addition to this significant federal financial support, states participating in Medicaid have a great deal of flexibility to administer their programs; however, there

are minimum requirements states must meet to receive federal funding. As discussed above, Medicare does not cover routine preventive and restorative dental services, and as a result many people will lose dental insurance upon retirement.^{50,51,52}

Prior to 2010, Medicaid was targeted to certain low-income population groups: children and their caretakers, people with disabilities, and older adults.⁵³ The Affordable Care Act extended mandatory Medicaid coverage to non-pregnant, childless, non-elderly adults with incomes below 133% of the federal poverty level (FPL). In 2012 in *National Federation of Independent Business v. Sebelius*,⁵⁴ the Supreme Court held the Secretary of HHS could not terminate federal funding to a state that did not implement the mandatory coverage of these non-elderly adults.⁵⁵ However, as of March 2019, 37 states and the District of Columbia have expanded their Medicaid programs to this group.⁵⁶ Specifically, this coverage is associated with more generous federal funding—100% of the costs of the adult coverage were federally funded from 2014 to 2016, with the federal match phasing down to 90% by 2020.^{57,58} It is estimated that as of December 2017, 9.8 million adults have gained dental benefits as a result of Medicaid expansion.^{59,60,61}

To maximize utilization by newly eligible individuals, research suggests that expansions in coverage need to be complemented with policies that increase the capacity of providers willing to treat Medicaid enrollees, including evaluation of alternative providers of oral health care and increasing Medicaid reimbursement rates for dental procedures.⁶² With delivery and payment systems continuing to evolve, it will be important to follow whether Medicaid provisions continue to cover expansion populations and specific oral health services.

Coverage of Oral Health Services for Adults

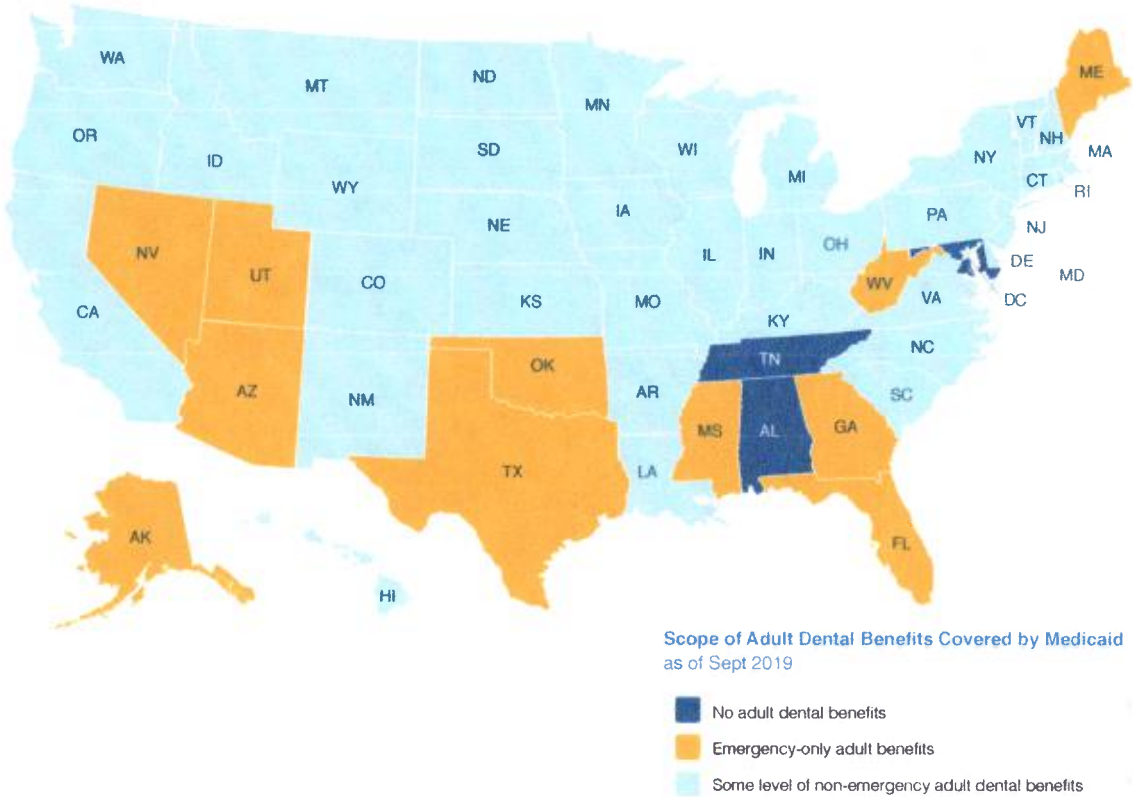
Healthy People objective OH-7, which focuses on oral health utilization, refers to receipt of dental services by all age groups, not only children.⁶³ An important element of that is availability of insurance to assist in payment of services. In 2015, the majority of children were covered by dental benefits (51.3% private insurance, 38.5% Medicaid or CHIP); 59.0% of adults ages 19–64 had private insurance and 7.4% were covered by Medicaid.⁶⁴

Private dental insurance, usually available only with jobs that offer comprehensive benefits, is the most common source of support to pay for oral health care. This type of coverage typically covers routine preventive care and some percentage of restorative care, subject to deductibles, copayments (e.g., 20% of basic restorative services and 50% for complex restorative services), and annual and lifetime caps on coverage that vary by specific insurance plan. As a result, insured adults can have significant out-of-pocket costs. For adults with low-paying jobs, or who are unemployed or self-employed, the only options are publicly funded dental insurance or paying entirely out of pocket.

Medicaid is the most common source of publicly funded insurance. As will be discussed, it offers children and youth a comprehensive scope of oral health services. However, as with the populations covered, the scope of Medicaid benefits for adults differs from state to state. This is particularly the case with oral health services, because states have the option to decide whether to include dental coverage as a Medicaid benefit for adults.

^{65,66} Following the Great Recession of 2008, a number of states eliminated or restricted these benefits. As illustrated in Figure 2 by 2019, 34 states and the District of Columbia offered adult dental benefits beyond emergency benefits, 12 states offered emergency-only dental benefits, and 4 states offered no adult dental benefits, although Delaware recently enacted legislation to provide adult dental coverage which will be implemented in 2020, and New Hampshire is also working toward expanding coverage beyond emergencies.^{67,68,69}

Figure 2



Source: Center for Health Care Strategies. Medicaid Adult Dental Benefits: An Overview. Fact Sheet. 2019 Sept. [cited: 2020 Apr 20]. Available from: https://www.chcs.org/media/Adult-Oral-Health-Fact-Sheet_091519.pdf

* NH and DE: As of 2019, following legislation, New Hampshire and Delaware were transitioning towards offering some non-emergency dental benefits.
** DC, PR, and VI: The District of Columbia, Puerto Rico, and the U.S. Virgin Islands also receive Medicaid funds through a block grant program.

The exclusion of adult oral health services from Medicaid coverage has adverse health consequences. For example, the lack of coverage has been associated with increased Medicaid spending to cover expensive and inefficient emergency room visits.⁷⁰ A number of states are thus exploring ways to improve oral health access within their Medicaid programs. In a survey of Medicaid directors, 5 states (Arizona, California, Illinois, Maryland, and Utah) reported expanding dental benefits during FY 2018–19.⁷¹ In addition, for the 37 states that use Managed Care Organizations (MCOs), adult dental benefits beyond those required by state plans were the most common additional service reported.^{72,73}

While a stand-alone dental benefit for adults is an optional Medicaid service, there are other pathways for increasing opportunities for low-income individuals, including adults, to obtain preventive oral health care and treatment. Over 1,300 federally qualified health centers (FQHCs) operate 12,000 service delivery sites in every state and U.S. territory.⁷⁴ Unlike stand-alone oral health services for adults, states must reimburse FQHC services in their Medicaid programs.⁷⁵ The Medicaid Act statute defines rural health clinic and FQHC services, in part, by cross-referencing provisions of the Medicare statute that define such services to include physicians' services, and physicians' services to include the services of doctors of dental surgery or dental medicine.⁷⁶ Based on its interpretation of these provisions, the Ninth Circuit Court of Appeals required the California Medicaid program to pay for FQHC services performed by dentists even after California eliminated coverage of adult dental care as a stand-alone Medicaid service.⁷⁷ This decision was binding only in states in the Ninth Circuit (Alaska, Arizona, California, Hawaii, Idaho, Montana, Nevada, Oregon, and Washington); however, the opinion could be persuasive legal reasoning in other circuits and lead states to take steps or change their policies to finance dental services in FQHCs and improve the availability of service sites for adults in need of oral health care.

Medicaid Coverage of Children

In contrast to coverage for adults, states must cover oral health services for Medicaid-eligible children under age 21. The Early and Periodic Screening, Diagnostic, and Treatment (EPSDT), Medicaid's child health benefit program, offers a comprehensive, legally required pathway to oral health treatment for low-income children and youth.⁷⁸

The states' EPSDT benefit provides Medicaid-eligible children who are enrolled in the program periodic oral health assessments on a schedule set by the state and in consultation with dental care experts, such as the American Academy of Pediatric Dentistry (AAPD). The AAPD recommends that a child be seen by a dentist beginning no later than the arrival of the first tooth or by age 1.^{79,80,81} Children who see a dentist by this age often have more preventive visits, receive treatment to help prevent caries, and overall, have lower than average dental-related costs than children who do not see a dentist until age 3.⁸² These schedules serve the important role of not only establishing pre-set intervals for providing oral health screening services, but also the content of the age-appropriate screen to include, for example, dental sealants, fluoride treatments, teeth cleaning, and periodic examinations. Further, the screening schedule cannot establish a hard limit on screening services; if a child needs more frequent preventive visits because, for example, the child is at high risk for developing caries, a process must be in place to ensure those visits are paid for as part of the EPSDT benefit.^{83,84} While state performance in providing preventive oral health care to Medicaid-enrolled children has improved over time (increasing nationwide from 37% in 2007 to 50.4% in 2016), performance still lags.⁸⁵ Ten states that have shown the most improvement in their performance have done so only following litigation or the threat of litigation to enforce the EPSDT provisions, suggesting that strong oversight of implementation is critical.^{86, 87} Also, 24 states and the District of Columbia have worked with CMS to submit "oral health action plans" and are using these plans to address oral health screening through their Medicaid programs.^{88,89}

In addition to assessment, the EPSDT benefit covers services needed to “correct or ameliorate” problems and for “relief of pain and infection, restoration of teeth, and maintenance of dental health.”⁹⁰ EPSDT must also cover necessary transportation and related services (such as lodging for an overnight attendant) when needed, as well as translation and interpreter services, for children with disabilities or who are limited in English proficiency.^{91,92,93}

Finally, the EPSDT benefit includes an outreach component that obligates the Medicaid agency to ensure that children and their caretakers are educated about the benefits of preventive care and EPSDT.⁹⁴ To ensure a broadly effective child health program, states must build associations with other child-serving agencies and other public health, education, and related programs.⁹⁵ For example, Iowa’s Medicaid agency partnered with entities funded through Title V (discussed below) to take steps to increase the delivery of oral health care. This includes interagency agreements to provide for more effective outreach and care coordination services, and that work to secure Medicaid reimbursement for oral health care provided by Title V dental hygienists.^{*96}

States are tapping into EPSDT’s broad scope to enhance the provision of preventive oral health services for Medicaid-enrolled children. Some examples highlighting these efforts include:

- Dental sealants
- Fluoride varnish
- Application of antimicrobials

Dental sealants create a barrier on the grooved surfaces of sound teeth when placed on permanent teeth prevent over 80% of cavities—where 9 in 10 cavities occur—for at least 2 years after placement.^{97,98} As of 2017, all state Medicaid programs reimbursed for applications of dental sealants on permanent first and second molars.⁹⁹ The Community Preventive Services Task

* Title V is a federal maternal and child health program that extends block grant funding to the states. See 42 U.S.C. §§701-710. Title V includes oral health performance measures; many state oral health programs, including sealant programs, have received Title V funding. Iowa’s I-Smile program is an example of how Title V funds can be leveraged for oral health programming while Medicaid is billed for coverable services, thus enhancing sustainability.

Force (CPSTF) strongly recommends school-based programs as an effective way to deliver sealants to children at high risk for tooth decay.¹⁰⁰ Moreover, studies indicate that sealant programs, targeted in schools attended by children at high risk of tooth decay, will offer a positive return on investment to the Medicaid program within 2 years, and a savings of \$11.70 per tooth sealed over four years.^{101,102} Focusing on delivery at school sites, Wisconsin's Seal-A-Smile program reduced Medicaid spending and prevented 6,741 fillings over a 4-year period and 10,718 fillings over 9 years.^{103,104} CDC estimates that providing dental sealants to the nearly 7 million low-income children who lack them could prevent more than 3 million caries and save up to \$300 million in dental treatment costs.¹⁰⁵ Recognizing the promising impact of preventive, school-based programs on oral health outcomes, in 2014, CMS clarified Medicaid coverage policies to make it easier for these programs to bill Medicaid for oral health services provided to Medicaid-enrolled children.¹⁰⁶ Emphasizing the importance of dental sealants to children's preventive care, as of 2015, CMS includes dental sealants for children ages 6 to 9 at elevated caries risk in the core set of child quality measures that states are encouraged to use for managed care and fee-for-service providers in both Medicaid and CHIP.¹⁰⁷

Similarly, fluoride varnish reinforces tooth enamel and prevents about 40% of cavities in primary teeth.¹⁰⁸ The U.S. Preventive Services Task Force (USPSTF) recommends fluoride varnish for all children under age 6, starting when the first tooth erupts.¹⁰⁹ As of 2017, state Medicaid programs in all 50 states and the District of Columbia reimburse medical providers for administering fluoride varnish to children, and 42 states allow primary care providers to delegate this service to clinical or non-clinical support staff.¹¹⁰ By going further—actually training medical providers to deliver oral health evaluation and risk assessment, education to caregivers, and application of fluoride varnish—North Carolina's Into the Mouths of Babies/Connecting the Docs program has reduced oral health treatment needs in children younger than 18 months by 49%.¹¹¹

Other treatments, including the application of silver diamine fluoride, are also emerging as a component of the child's preventive oral health visit.¹¹² Silver diamine fluoride is used to prevent and arrest

dental caries and to decrease dental hypersensitivity. With the development of a billing code (CDT D1354) in January 1, 2016, state Medicaid programs may reimburse for this service, and as of 2017, 18 states covered it to some extent.^{113,114,115}

Medicaid and Provider Participation

Medicaid beneficiaries have commonly experienced problems locating dentists who participate in the Medicaid program.^{116,117} In 2016, only 39% of dentists were enrolled as Medicaid providers, and the percentages of enrolled dentists in states varied from 15.4% in Maine to 85.5% in Iowa¹¹⁸ suggesting that distribution of participating dentists may be more important than numbers alone.¹¹⁹ Not all enrolled dentists, however, provide care to any Medicaid beneficiaries and even fewer provide substantive levels of care.¹²⁰ Complementing the private practice delivery system is the dental safety net comprised of community- and school-based health centers, training programs, Medicaid-focused dental practices, and a variety of free care clinics and programs; collectively they provide a disproportionately high volume of care to Medicaid beneficiaries when compared to private practice.¹²¹ Despite limitations in the dental delivery systems for Medicaid beneficiaries, the gap between dental utilization by privately and publicly insured children has been closing, and in 2018, 48% of children with Medicaid coverage obtained preventive dental services.¹²²

Efforts to increase the numbers of dentists actively providing substantive care to Medicaid beneficiaries typically address dentists' concerns that payment rates are too low when compared to commercial coverage; administration and claims paperwork is burdensome; and low-income patients are less reliable and compliant with care than privately insured patients. Thus, reforms have included increased fees, streamlined administration, and care coordination.¹²³ When taken together, these strategies have resulted in improved dentist participation and increased patient utilization rates.¹²⁴

For FY 2016, 14 states reported having adopted increases in dental payment rates, and no state reported reducing them.¹²⁵ Another approach to increasing utilization by Medicaid beneficiaries is to

increase the non-dentist workforce as described below. Such workforce efforts include changing laws and regulations that provide for direct access to preventive services delivered by dental hygienists,¹²⁶ expanding the dental workforce by authorizing dental therapists, and engaging primary care and emergency room physicians in dental care.

Medicaid Delivery Systems

Medicaid was conceived as a fee-for-service system, with providers being paid on a claims basis. However, states have shifted their Medicaid programs to managed care delivery systems, dominated by capitated (fixed cost), pre-paid delivery systems.^{127,128} Capitated managed care affects more than the form of payment. Notably, the participating managed care plans become legally obligated to provide the services listed in the managed care contract on a timely and adequate basis. These services can include oral health services. Thus, the provisions of the managed care contracts are important.

States employ a range of measures to monitor managed care plans, including performance improvement projects (PIPs) designed to enhance care quality in selected clinical or nonclinical focus areas. A 2016 CMS final rule extended provisions that had been in effect for comprehensive managed care plans to single-benefit managed care plans, including the Prepaid Ambulatory Health Plans (PAHP) that several states use to administer their dental benefits.¹²⁹ Those provisions include requirements for PIPs, engagement with External Quality Review Organizations (EQROs), and inclusion of PAHPs in the state's overall managed care quality strategy. Each Medicaid MCO must implement an ongoing program of PIPs as part of its overall efforts to achieve ongoing quality improvement.¹³⁰ States may allow the health plans to select their PIPs or stipulate specific topics for PIPs in their managed care contracts. By the 2017-18 reporting cycle there were 47 oral health PIPs across 13 states; of these, all but 2 states (Delaware and Massachusetts) include a focus on children and providing services such as preventive visits and dental sealants.¹³¹ CMS has developed a how-to manual for states and for health plans to assist with implementing oral health PIPs.¹³²

Finally, states can implement projects that bring experimentation and innovation to Medicaid, so long as those innovations are consistent with the objectives of the Medicaid Act (Title XIX of the Social Security Act).¹³³ Commonly called Section 1115 demonstration waivers after the section of the Social Security Act authorizing their use, these waivers can be used to improve oral health.

For example, Oregon is using 16 regional Coordinated Care Organizations (CCOs) that receive a global payment to provide the full range of needed services—including oral health services—to Medicaid enrollees in their region. The system includes incentive payments to CCOs based on performance and improvement targets. While it is too early to know whether this effort will ultimately be able to deliver high quality comprehensive care, early data show promise including reduced emergency department (ED) visits.^{134, 135}

In December 2015, California received Section 1115 approval to implement a Dental Transformation Initiative (DTI) offering a financial incentive to oral health providers to encourage the utilization by children (under 21 years) of the following: early childhood preventive dental screenings, caries risk assessments and treatment, continuity of care, and investigation of evaluations of nonsurgical caries management.¹³⁶ In a December 2012 waiver approval, CMS had encouraged the state to “implement a risk-based disease prevention approach to oral health care for children that recognizes childhood caries as a chronic disease, which should be managed (like asthma and diabetes) with comprehensive, coordinated treatment.”¹³⁷ By 2018, as a result of the DTI, California had seen some increases in Medical Preventive Dental Service Utilization, active dental service offices and providers, provider participation, and incentives paid for preventive services, caries risk assessment and disease management, and continuity of care.¹³⁸ Thirteen local dental pilot projects are also under way and have been exploring additional innovative ways to support the goals of the DTI. Oral health experts and federal funders in turn have encouraged the use of preventive approaches based on the individual child’s disease

risk and experience with tooth decay, paying attention to tooth decay prevention from a family-level behaviors perspective, and maximizing the use of non-dentist providers.^{139,140}

Children's Health Insurance Program

Enacted in 1997, the Children's Health Insurance Program (CHIP) is a federal-state cooperative program that provides funding for health coverage for uninsured children under age 19 whose family incomes are slightly above the Medicaid eligibility thresholds.¹⁴¹ More than 9.6 million children were enrolled in CHIP in federal FY 2018.¹⁴² States are not required to have CHIP; however, all do. States can implement CHIP through Medicaid (8 states and the District of Columbia), as a separate CHIP (2 states), or as a combination Medicaid/separate CHIP (40 states).¹⁴³

All states' CHIPs must cover services "necessary to prevent disease and promote oral health, restore oral structures to health and function, and treat emergency conditions."^{144,145} States implementing CHIP through Medicaid must provide EPSDT dental benefits. Separate CHIPs can provide dental services through coverage that is benchmarked to the Federal Employees Health Benefits Program, the state's employee health benefit plan, or the commercial dental plan with the largest non-Medicaid enrollment offered in the state. These private insurance options, in general, offer a more restricted scope of dental benefits. While there has been some thought that CHIP was no longer needed because of the availability of coverage through the Affordable Care Act (discussed below), CMS found that, as of November 2015, none of the Affordable Care Act plans offered benefits comparable to those offered by state CHIP programs.¹⁴⁶ Among other things, CMS reviewed benefits and concluded that benefit packages in CHIP are "generally more comprehensive" for dental services as compared to those offered by Qualified Health Plans (QHP).¹⁴⁷ In January 2018, Congress reauthorized CHIP through FY 2023.¹⁴⁸

Indian Health Service (IHS)

American Indians and Alaska Natives (AI/AN) suffer disproportionately from dental diseases, with 62% of AI/AN children ages 2 to 5 experiencing caries—an incidence rate

that is almost 4 times that of the white population in the United States.¹⁴⁹ Targeted attention to this population group is needed and has proven effective. For example, IHS conducted a 5-year Early Childhood Caries Collaborative from 2009 to 2014 using education materials and routine communication, along with an emphasis on early access to care, dental sealants, fluoride varnish, and interim therapeutic restorations. The number of children under age 5 with a dental visit increased 7%, placement of dental sealants increased 65%, and application of fluoride varnish increased 161.2%.¹⁵⁰ Ongoing demonstrations combining counseling and application of antimicrobials are showing great promise for preventing oral health problems in this population, as are innovative approaches such as the widespread use of dental therapists and teledentistry to serve remote villages in Alaska.^{151,152}

The Patient Protection and Affordable Care Act

The Affordable Care Act introduced a number of changes and included a number of options that, properly implemented, can improve access to oral health services.¹⁵³ Many of these affect the private insurance market. For example, the Act created health insurance exchanges, commonly called Marketplaces, that help individuals enroll in health insurance and offer them tax subsidies to help pay health insurance premiums and cost sharing if their incomes are between 100% and 400% of the FPL.¹⁵⁴ 16.4 million Americans obtained health insurance following the enactment of the Affordable Care Act.¹⁵⁵ However, this increase in coverage does not mean that individuals have comprehensive coverage or are automatically covered for their oral health needs, including preventive care.

Under the Affordable Care Act, most health plans offered in the individual and small group markets (both inside and outside of the Marketplace) must cover Essential Health Benefits (EHBs).^{*} The Act identifies 10 categories of services as EHBs; 2 of these are preventive and wellness services, along with pediatric services "including oral and vision care."¹⁵⁶

* EHBs also apply to Alternative Benefit Plans (ABPs), i.e. the benefits offered to those in the Medicaid Expansion, but HHS defined EHBs for ABPs separately. Therefore, this memo focuses on private market benefits.

Although the Affordable Care Act authorizes the Secretary of HHS to define the EHBs, to date HHS has allowed states to select a benchmark plan from among the commercial or federal/state employee insurance plans operating in the state. The states are then allowed to use that plan as the baseline for all plans to follow. Significantly, no state's benchmark plan summary includes a specific benefit category classified as pediatric services.¹⁵⁷ Since the health plans used as EHB benchmarks were developed for adults and did not consider children's health needs specifically, this approach has resulted in critical gaps of coverage for pediatric services.¹⁵⁸

In terms of pediatric oral services (for children under age 19), HHS established a separate supplementing methodology to decide coverage. If a benchmark plan does not include coverage of oral health services, it is supplemented by either the Federal Employees Dental and Vision Insurance Program's dental plan with the largest enrollment, or dental benefits available under the state's separate CHIP. However, based on 2017 approved benchmark plans, not all states are following the federal instructions and instead include only basic preventive oral health care, leaving families with no coverage for services such as fillings.¹⁵⁹

Marketplaces have 3 options for providing the pediatric dental benefit to consumers:

- Embedded—health plan includes pediatric dental benefits
- Bundled—pairing of 2 separate plans (health and dental) where the individual pays 1 premium that covers both plans
- Stand-alone—where the individual pays both a dental benefit and health insurance premium¹⁶⁰

By 2015, all but 3 states had medical plans that included embedded pediatric dental benefits, and in 4 states (up from 2 in 2014) medical plans included pediatric dental benefits.¹⁶¹ This inclusive approach is associated with lower costs and increased consumer protections, in comparison to stand-alone dental plans.^{162,163} Most notably, if the dental benefit is embedded in

the medical plan, then the cost of the coverage is included when determining the family's tax subsidy for the premium, and the dental plan deductible is included in the medical deductible. By contrast, the cost of stand-alone plans is not considered when calculating the tax subsidy. HHS rules provide that consumers do not have to purchase the pediatric dental coverage for their children if it is only offered through a stand-alone dental plan.¹⁶⁴ At least 1 state took steps to address this issue by requiring consumers to purchase the stand-alone pediatric dental plans. However, states have limited authority to address the issues related to tax subsidy premiums or deductibles.¹⁶⁵ This has led to some children not having pediatric dental coverage despite the fact that the Affordable Care Act requires it. For example, in 2014 when only stand-alone dental plans were offered in California, only 36% of children in the Marketplace were enrolled in dental coverage.¹⁶⁶

The Secretary of HHS defines covered preventive services to include evidence-based items and services that the USPSTF rates as an "A" or a "B."^{167,168,169,170} This includes coverage for fluoride varnish and fluoride supplementation for children.^{171,172}

Specifically missing from the EHBs are oral health services for adults. Routine non-pediatric dental services are an excluded benefit and may not be covered as an EHB.¹⁷³ In several states, though, stand-alone family dental plans are offered in the marketplace for purchase (but without the financial assistance offered through the Affordable Care Act).¹⁷⁴ Data from 2014 shows young adults (ages 26 to 34) to be the most likely age group to purchase a stand-alone dental plan.¹⁷⁵

The Affordable Care Act also includes demonstration and grant programs designed to improve oral health access, encourage innovation, and enhance monitoring, although to date none of these have been funded. Focusing on schools as a ready portal for delivering oral health services, the Act includes a federal grant program for the establishment and operation of school-based health centers (SBHCs). In making these grants, the Secretary of HHS can give preference to communities that have evidenced barriers to primary care and schools serving a large population of Medicaid- and CHIP-eligible children. While not requiring

oral health services on-site, the law does require any SBHC that receives federal funding to offer referrals and follow-up for oral health services.¹⁷⁶ Effective March 2010, the Affordable Care Act also authorized a 5-year national, public education campaign to focus on oral health prevention and education; and to target specific populations, such as children, individuals with disabilities, and Native Americans/Alaskans. The law also authorized the Secretary of HHS, through the CDC, to award demonstration grants on the effectiveness of research-based dental caries disease management activities (including school-based sealant programs). Finally, the Act authorized funds to increase participation in the National Oral Health Surveillance System and required the Secretary to ensure that surveillance includes the measurement of early childhood caries.¹⁷⁷ To date, these provisions have not been funded. As health care provisions change in the future, it will be important to follow whether coverage through the Affordable Care Act continues to be available.

Population-Based Oral Health

Programs and initiatives geared toward improving another important health outcome, may also have important impacts on improving access to, and funding for, oral health care services in the United States. Possibilities include those treating other serious diseases or funding educational opportunities for young children, for example the Ryan White HIV/AIDS program and the national Head Start program.

Ryan White HIV/AIDS Program (RWHAP)

RWHAP is the largest federal program focusing exclusively on individuals with human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS), providing federal grants to expand delivery of health services to this population. People with HIV, the virus that causes AIDS, are at special risk for oral health problems. Some of the most common oral problems for people with HIV include chronic dry mouth, gingivitis, bone loss around the teeth (periodontitis), canker sores, and dental caries.¹⁷⁸ Oral health care is considered a core medical service in Parts A-D of

RWHAP.¹⁷⁹ Additionally, the Community-Based Dental Partnership Program (CBDPP) funds collaborations between dental and dental hygiene education programs, along with community-based dentists and dental clinics. In FY 2019, CBDPP funded grantees located in 11 states, training dental students, postdoctoral residents, and dental hygiene students who provided oral health services to people with HIV. The Dental Reimbursement Program (DRP) also helps accredited dental and dental hygiene programs defray unreimbursed costs associated with serving people with HIV. In FY 2019, the DRP awarded grants in 19 states plus the District of Columbia, to train the group of students and residents listed above who provide oral health services to people with HIV.¹⁸⁰

Head Start

The Head Start Program funds local public and private entities to provide comprehensive health and developmental services to promote school readiness for young, low-income children. Head Start focuses on pre-school age children, while Early Head Start focuses on children from birth through age 2. In 2017–2018, 889,374 children participated in Head Start, and in 2016–2017, 151,979 children participated in Early Head Start.¹⁸¹ In addition to focusing on cognitive development, Head Start programs provide oral health services to low-income children, and health education to children and their caregivers. The programs operate according to performance standards that include a requirement that, within 90 days of a child's enrollment, the program must determine whether a child is up-to-date on age-appropriate preventive and primary oral health care. If a child is not up-to-date, the program must work with parents to ensure the child receives the appropriate oral health care as quickly as possible.¹⁸²

Government's Role in the Oral Health Workforce

Government attention to health disparities and inequitable access to basic health care services—including oral health care—is reflected in a wide range of federal and state efforts that address the health workforce. These include workforce training; financial incentives and payments; scopes of practice, supervision, and deployment; educational and clinical infrastructure; and telemedicine allowances.¹⁸³ A selected summary of applicable programs is listed below in Table 2.



Table 2 – Selected Programs important to the oral health workforce

Actor: Federal	
Entity	Program
HHS Health Resources and Services Administration (HRSA) Bureau of Health Workforce	<ul style="list-style-type: none"> • Grants to colleges and universities that train primary care dentists and dental hygienists • Loans and scholarships to encourage oral health providers to practice in underserved communities (e.g., National Health Service Corps) • Scholarships for the Disadvantaged Students Program to promote diversity among health workforce by providing awards to eligible health professions schools; for use in awarding scholarships to students from disadvantaged backgrounds • Designation and monitoring of health professional shortage areas • Area Health Education Centers (AHEC) that provide updated training to practitioners • Grants to states that support oral health workforce activities • Support for the Oral Health Workforce Research Center which provides studies to assist in future workforce planning
HHS HRSA HIV/AIDS Bureau	<ul style="list-style-type: none"> • RWHAP Part F Community-Based Dental Partnership Program and Dental Reimbursement Programs: funds for educational programs to train dental residents, dental students, and dental hygienists to provide oral health to people with HIV. • Funds for regional AIDS Education and Training Centers

Actor: Federal	
Entity	Program
HHS HRSA Bureau of Maternal and Child Health	<ul style="list-style-type: none"> Maternal and Child Home Visiting Program: opportunities to integrate oral health into early childhood interventions
Department of Education	<ul style="list-style-type: none"> Oversight for the content of dental education and qualifications for professional oral health workforce
HHS CDC Division of Oral Health	<ul style="list-style-type: none"> Awards to states (20 in FY 2018–22) to support oral health programs. Funds support key staff positions including State Dental Directors, epidemiologists, and program managers Administration of federal Dental Public Health Residency Program producing skilled dental public health specialists who can work collaboratively with public health and dental colleagues in various settings to achieve improved oral health for populations
Actor: State	
Entity	Program
Legislatures	<ul style="list-style-type: none"> Under police powers to protect the public, regulation of the practice of many occupations, including oral health providers along with professional and lay medical providers through practice acts. State decisions about which types of providers are authorized to practice and the parameters of their practice directly and indirectly influence the availability, distributions, supervision, and types of oral health care available.

Actor: State	
Entity	Program
Professional Boards	<ul style="list-style-type: none"> • Legislative delegation of various authority to implement practice acts to professional boards. The regulatory and policy decisions the boards make also impact oral health workforce availability and delivery system structures.
State Dental Directors	<ul style="list-style-type: none"> • Management of state oral health programs; oversight implementation of oral health promotion activities, such as school sealant programs and water fluoridation activities • Public health campaigns to raise awareness of and demand for oral health • Oral health data collection and analysis to identify needs and target solutions
State Medicaid Offices	<ul style="list-style-type: none"> • Development of Medicaid delivery systems and models that incorporate oral health into population health initiatives

However, within the United States governmental structure, it is the states rather than federal or local governments that hold primary authority to regulate workforce practices in ways that impact access to dental care. This authority is broad and has substantial relevance to access for underserved populations. Actions taken by states directly and indirectly influence the availability, distribution, and types and extent of oral health care available. States exercise this authority by granting licensure, defining scope of allowable services, determining delegation and supervision practices, and establishing parameters such as practice ownership, size, and configuration.^{184,185}

States vary significantly in the locus of decision-making on these critical access issues. A wide spectrum of control determines where responsibility lies for critical access issues for example, by law established through legislation and regulation, or by rules and procedures established by state dental boards. For this reason, the roles and the influence of each actor, particularly of dental boards, differ considerably across states. A secondary implication of this variability is the role of public input into decision-making since states have different procedures regarding public comment. Legislative processes in many states tend to be more open to public scrutiny and involvement than dental board regulatory and rules processes. Therefore, compared to dental boards, states that substantially depend on the legislative process may provide greater opportunity for input by communities of interest and their competing agendas—including citizen groups and advocates for the underserved, dental professional organizations, health systems, public health authorities, and others.¹⁸⁶

Complementing state action is federal involvement in the dental workforce. The federal government exerts its influence on the workforce less directly but nonetheless profoundly with regard to equitable access by supporting health professions training. HRSA's Bureau of Health Workforce (BHW) influences the design and implementation of training programs for dentists, physicians, hygienists, and nurses.¹⁸⁷ BHW funds training of primary care dentists (general, pediatric, and public health) with a focus on clinical care of underserved individuals, hygienists with promotion of expanded functions, and on dentists who address population-level preventive and systems interventions. A 2008 review reports that these efforts support "building general and pediatric dental training capacity, diversifying the dental workforce, providing outreach and service to underserved and vulnerable populations, stimulating innovations in dental education, and engaging collaborative and interdisciplinary training with medicine."¹⁸⁸ BHW also funds states through its Grants to States to Support Oral Health Workforce Activities program that expands provider availability in Dental Health Profession Shortage Areas, supports pipeline programs that foster the development of a diverse workforce able to meet current and emerging needs, and encourages the integration of oral health into primary care.¹⁸⁹

Another federal government agency, the U.S. Department of Education, influences the content of dental education and qualifications of dentists, hygienists, and dental therapists by selecting and empowering accrediting organizations (e.g., the ADA for all dentists). The federal government also employs dentists to provide care to specific underserved or vulnerable populations. The Indian Health Service, Federal Bureau of Prisons, Immigration Health Services Corps, and Department of Defense all engage in direct service delivery to at-risk populations. The government also stimulates demand for the dental workforce through programs that identify children and pregnant women with oral health needs. The Office of Head Start (OHS) and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) at the U.S. Department of Agriculture (USDA) address oral health needs of pregnant women and young children through education and health promotion, and frequently, through referrals to oral health care. In addition, HRSA's Maternal Child Health Bureau Maternal, Infant, and Early Childhood Home Visiting Program may include approaches to address oral health of socially vulnerable young children.¹⁹⁰ Each of these and other smaller programs can be leveraged to improve access to oral health care for underserved populations.¹⁹¹

Approaches to Expanding Oral Health Access Through State Authorities

A range of dental services can be provided by a variety of traditional dental providers—dentists, dental hygienists, dental assistants, and in some states, denturists (who provide direct-to-consumer denture services). They can also be provided by non-traditional providers—dental therapists, along with primary care and emergency medicine physicians, nurses, and pharmacists. If dental care is defined more broadly to encompass oral health supervision, chronic disease management, case management, and navigation—as well as intraoral dental procedures—additional providers may be considered essential to the oral health workforce.¹⁹² These include licensed helping professionals—social workers, health educators, behavioral nutritionists, and psychologists—as well as lay health workers such

as community health workers, Head Start health workers, WIC counselors, *Promotores* (community health workers focused on the Hispanic community), and nurses' aides. Through acts related to professional practices, states have many opportunities to authorize the range of providers delivering services that enhance both access to care and oral health promotion.

Traditional Oral Health Providers and Access to Care

U.S. Trained Dentists: While the number of dentists in the United States is robust, their uneven distribution influences equitable access. At the state level, the dentist to population ratio in 2018 ranged widely, with more than double the dentist numbers between highest and lowest ranked states—from 43 to 103 dentists per 100,000 state residents.¹⁹³ At the local level, geographic access is further influenced by where dentists elect to practice and what populations they choose to serve.¹⁹⁴ For Medicaid and CHIP beneficiaries, access to care is influenced by the numbers of dentists who participate in public insurance programs, accept new publicly-insured patients, make convenient appointment times available to them, and can be reached within reasonable travel times.¹⁹⁵

Despite fruitful efforts to diversify the dentist population led by government, foundations, and the profession, U.S. dentists fail to represent America's economic and racial/ethnic diversity, affecting awareness, sensitivity, and capacity to address socio-cultural and linguistic barriers to care.^{196,197,198,199} The lack of preparedness of dentists in the United States to care for the underserved continues to limit attainment of the Healthy People utilization goals. Data on recent dental school graduates is telling. Nationally, approximately a fifth of 2017 graduates report feeling "underprepared" or "somewhat underprepared" to care for groups that are commonly underserved including people with developmental disabilities (23.0%), physical and mental disabilities (21.8%), and older adults (18.0%).²⁰⁰ Approximately a tenth of these graduates similarly feel unready to care for children (14.8%), low-income individuals (13.8%), LGBT individuals (13.1%), rural residents (9.1%) and people living with HIV/AIDS (8.4%).²⁰¹ Many of these groups are eligible for Medicaid or CHIP, which provide financial access to

care. However, their ability to access care also depends on their geographic access to dentists who participate in public insurance programs.^{202, 203}

This reported feeling of unpreparedness likely contributes to many dentists' unwillingness to actively serve publicly-insured populations. Dentists also commonly report inadequate payment, high rates of missed appointments, and administrative complexity as reasons not to serve these populations, as well as negative attitudes toward public insurance and its beneficiaries.^{204, 205}

These attitudes are stated both explicitly and implicitly by dentists calling for poor patients to co-pay for oral health services and states to tighten Medicaid eligibility. To increase access, dentists suggest increasing reimbursement, facilitating compliance with appointment keeping, and simplifying claims administration while also expanding benefit coverage and instituting a tax incentive for dentists to participate. A Medicaid-supportive peer culture that promotes participation would also respond to some dentists' claim that having more of their peers engaged as Medicaid providers would enhance their likelihood of participating.

The widely utilized theory of planned behavior—a set of psychosocial constructs that examine behavioral intention—suggests that these attitudinal and social findings (rather than perceptions of low payments, uncompliant patients, and administrative complexity) may help explain low levels of participation. According to the theory, negative attitudes toward the program and its beneficiaries, lack of peer engagement and social support for participation, and a feeling of unpreparedness in caring for vulnerable subpopulations would contribute substantively to explaining lack of dentists' willingness.

To increase access to dental care, national and state-level efforts have been instituted to address the numbers, distribution, and composition of dental professionals and to increase dentists' participation in Medicaid and CHIP. Dental school class sizes have increased, and between 2008 and 2016, 10 new dental schools opened in 9 states including 2 states (Maine and Utah) that had no prior dental school;²⁰⁶ 1 new school (Kansas City University-Joplin) will accept its first students in 2022.²⁰⁷ Some states have

incentivized dentists to practice in underserved areas through loan repayment and forgiveness programs, along with offers of direct financial incentives through dental grants and loan repayment programs created and funded by the states themselves.^{208, 209} For example, in 2018, California used a portion of new revenue from a tobacco tax increase to create a student loan assistance program for recent graduate physicians and dentists who served Medicaid beneficiaries.²¹⁰ Federal pre-doctoral training grants also support efforts to recruit greater numbers of “underrepresented minorities into dentistry.”²¹¹

State outreach efforts that complement Medicaid administrative reforms have been mounted to expand dentists’ involvement in Medicaid. Contracting arrangements allow private practice dentists to affiliate with FQHCs to care for the underserved where FQHCs lack capacity.^{212, 213} Private endeavors similarly seek to increase oral health care for the underserved by connecting dentists with high-needs populations. Most face ongoing challenges of sustainability, and few ensure continuity or comprehensiveness of care.

The ADA’s annual Give Kids a Smile campaign is designed to introduce volunteer dentists to underserved children’s needs.²¹⁴ Since 2000, the Missions of Mercy programs have mounted massive free-care days in both rural and urban areas.²¹⁵ The Donated Dental Services program engages dentists in free comprehensive care for people with disabilities, advanced age, and medical fragility.²¹⁶ In addition, a myriad of local charitable programs that engage volunteer dentists exist across the nation. While well-intentioned and valuable, these programs and activities are more piecemeal in nature and do not address the systems-level drivers that impact the ability of individuals across the nation to access stable, routine oral health care and services.

Foreign Trained Dentists: In an effort to expand access to underserved populations, states have developed a wide range of pathways for foreign-trained dentists to become licensed, although most require re-education in schools sanctioned by the United States.²¹⁷ Among these are provisions that allow foreign-trained dentists to be: licensed as dental hygienists; licensed to

serve only in the dental safety net or in educational institutions; or licensed unconditionally after serving in the safety net. Since 2006, the California Dental Board has sought to both expand access and address cultural competence by licensing graduates of the University of De La Salle Bajío Dental School in Guadalajara, Mexico.²¹⁸ However, reporting that foreign physicians comprise a substantially greater portion of caregivers to underserved populations than do dentists, 1 study tested the hypothesis that increasing the numbers of foreign-trained dentists may increase both care in designated underserved areas and Medicaid participation,²¹⁹ finding that neither occurred. The study concluded that “legislation that makes it easier for foreign-trained dentists to obtain licensure is unlikely to address dental workforce shortages or improve access to dental care for vulnerable populations in the United States.” However, it is important to note that foreign-dentist licensure in Washington state,²²⁰ as in most states, requires at least 2 years of U.S. dental education; and that the state’s sole dental school had no programs to facilitate their training, making entry for these dentists costly and lengthy.

Dental Hygienists and Expanded Function Dental Hygienists:

Longstanding legal and regulatory controversies regarding dental hygienists relate to scope of services and supervision.²²¹ The historical role of the dental hygienist functioning within the confines of a dental office with a supervising dentist in attendance has given way in most states to more liberalized allowances for hygienists to provide preventive and health promotional services to patients without a dentist’s presence. These services can be provided in office, institutional, community, and home settings. Legislative provisions in 41 states allow some form of “direct access” to dental hygiene services, defined as “the ability of a dental hygienist to initiate treatment based on their assessment of a patient’s needs without the specific authorization of a dentist, treat the patient without the presence of a dentist, and maintain a provider-patient relationship.”²²² Two of these states, Colorado and Maine, allow for the independent practice of dental hygiene.^{223,224} Minnesota (2009), Maine (2014), and Vermont (2016), have additionally expanded hygienists’ scope of practice to include basic dental restorative and therapeutic services as dental

therapists.^{225,226,227} Minnesota has 2 tracks to become a dental therapist, 1 of which allows dental hygienists to train as therapists, while both Maine and Vermont require therapists to be dental hygienists.

Across states, the scope of services allowable by dental hygienists ranges widely. They include:

- Longstanding services (records collection and charting, tooth cleaning, fluoride and sealant application, and patient education)
- Expanded services (administration of local anesthesia and nitrous oxide analgesia in 45 and 33 states respectively)^{228,229}
- Providing a portion of restorative services during a visit with the dentist (11 to 22 states depending on the procedure)²³⁰
- Functioning as dental therapists^{231,232,233}

This mix-and-match of allowances and scopes of practice impacts both the deployment of hygienists to underserved populations and their capacity to fulfill those populations' oral health needs.

Overall, disparate state laws, regulations, rules, and practices that govern hygienists' roles and responsibilities vary so widely that they challenge whether their goals are delineating professional practice boundaries or ensuring the public's health and safety. They are the likely outcome of states' needs to balance competing interests of dentists, dental hygienists, and the needs of underserved populations. Yet, issues related to dental hygienists scopes of practice, required levels of supervision, and allowable services locations are at the very heart of providing care to underserved populations.

Dental Assistants and Expanded Function Dental Assistants: Dental assistants provide chair-side support to dentists, and in some states, direct patient services such as tooth polishing and dental sealant placement. As with dental hygienists, states that authorize expanded functions leverage dental assistants to improve access either directly for a limited range of services under a dentist's supervision or indirectly by enhancing the efficiency and productivity of the dentist. The Dental Assisting National Board provides a database of the broad array of allowable services, certifications, classifications, and supervision requirements across states.²³⁴

Denturists: Denturists provide direct access to removable dental prosthetics for people missing teeth. The National Denturist Association reports that 6 states allow and regulate denturists for provision of direct patient care, while 13 additional states are seeking legislation or regulatory change, or have seen some legislative action in this area.²³⁵

New Dental Providers Who May Contribute to Expanded Access and Improved Oral Health

Dental Therapists: Dental therapists provide preventive and restorative dental services, most often to children and adolescents. They may be trained directly as dental therapists or may be dental hygienists who have elected to additionally pursue training in dental therapy. Therapists' scope of practice overlaps with preventive services provided by hygienists and basic restorative and extraction services provided by dentists. Dental therapists are trained to do more procedures than dental hygienists but considerably fewer than dentists. Nonetheless, because dental therapists are trained to deliver common procedures, the majority of visits now conducted by dentists could be conducted by dental therapists authorized to diagnose, plan treatment, and deliver substantive restorative care.²³⁶ Long-established in other countries,²³⁷ dental therapists became part of the U.S. dental workforce in 2004. Dental therapists were first established in Alaska in 2004 through the Alaska Native Tribal Health Consortium's Dental Health Aide Program (direct training as Dental Therapists), and as of February 2019, were subsequently authorized for licensure in Alaska, Arizona, Maine, Michigan, Minnesota, Vermont, and Washington, and through a pilot program in Oregon.²³⁸

As with dental hygienists, state-specified scope of practice and supervision determinations impact the deployment of dental therapists. For example, dental health aide therapists practice in remote villages where they are linked through teledentistry to dentists for consultation as needed, while dental therapists in Maine can practice only within established dentists' offices with an on-site dentist. Dental therapists in Vermont are authorized to practice under "general supervision" defined as the "direct or

indirect oversight of a dental therapist by a dentist, which need not be on-site.”²³⁹ In Minnesota, dental therapists can be deployed in any location where the majority of their patients are deemed underserved (e.g., Medicaid beneficiaries). While entry-level dental therapists must provide care under direct supervision of a dentist, thereby constraining their deployment, advanced dental therapists can provide care under indirect supervision, thereby having greater opportunities to deployment in underserved areas.²⁴⁰

Roles for Non-dental Health Care Professionals: Nurses and physicians have become substantially engaged in oral health services that increasingly involve dental procedures as well as referrals to dentists. In a survey of over 100 programs that address early childhood oral health, 34.1% involved clinical primary care medical providers.²⁴¹ The National Interprofessional Initiative on Oral Health involves medical providers from “family medicine, pediatrics, nursing, physician assistants, obstetrics and gynecology, and internal medicine” in “systems change... focused on the education and training systems that support primary care clinicians” in oral health supervision.²⁴² Through this initiative, multiple medical associations representing these various fields have established oral health policies, guidelines, or trainings for their memberships. With a focus on young children, the Connecticut Health Foundation has developed a guide to “Crossing the Medical-Dental Divide”²⁴³ that offers a spectrum of engagements by medical personnel. Professional associations, private foundations, and the CMS Center for Medicare and Medicaid Innovation have all sponsored training programs to prepare physicians and nurses to counsel families of young children, screen children, apply fluoride varnish, and make referrals for ongoing oral health care. With a focus on adults with acute dental infections, the Maine Medical Center has incorporated dental extraction training into its emergency medicine residency.²⁴⁴ These are only a few examples of many valuable programs that include non-dental health care professionals in work to improve oral health.

Concentrating on pregnant women, a national consensus statement has been developed that encourages oral health care during pregnancy.²⁴⁵ It is generally assumed that state medical practice acts and medical boards allow medical care providers to deliver oral health services; however, physicians and nurses—like all health care providers—do so only to the extent consistent with their training and competence. For child Medicaid populations, CMS has since 2010 required states to report the numbers of Medicaid enrolled children who received a dental service from a “non-dentist provider,” defined as “any qualified health care practitioner or by a dental professional who is neither a dentist nor providing services under the supervision of a dentist.”²⁴⁶ These categories would include, for example, primary care physicians, nurses, and independent practice dental hygienists.

Roles for Other Professionals, Lay Health Workers, and Pharmacists: With growing recognition that oral health services need to encompass disease management as well as dental repair, there is an expanding focus in dentistry on facilitating patients’ adoption of oral health promoting behaviors. These behaviors include:

- Regular use of topical fluorides, especially through daily tooth brushing with fluoridated toothpaste
- Consumption of fluoridated water and use of fluoride supplements
- Improved oral hygiene through adoption of daily flossing
- Modifying diets that cause dental caries, such as consumption of sugar-sweetened beverages

As dentistry recognizes its limited capacity to instill these healthful habits and assist patients to adopt long-term protective oral health behaviors, there is greater interest in engaging other professions that focus on addressing health behaviors. These include health educators, social workers, behavioral nutritionists, and psychologists whose training prepares them for assisting individuals and families.²⁴⁷ HRSA’s post-doctoral training grant for pediatric dentists has supported development of 5 on-line teaching modules that encourage dental trainees to collaborate

with social workers, nurse practitioners, speech pathologists, community health workers, and occupational therapists in delivering comprehensive pediatric dental services.²⁴⁸

Similarly, dentistry has recognized the potential for community health workers and other non-licensed lay health workers (e.g., Head Start Health Workers, WIC Counselors, and Promotores) to contribute meaningfully to the oral health of, and use of dental services by, underserved populations. From 2006 to 2012, the ADA sponsored development of the dental-specific community health worker (CHW) called the Community Dental Health Coordinator (CDHC),²⁴⁹ a position aimed specifically at oral health promotion and enhanced access. CDHCs are trained to work with dentists to provide community-based services that “focus on patient education, disease prevention, and patient navigation.”²⁵⁰ Unlike most CHWs who do not provide direct clinical services, CDHCs are trained to scale and polish teeth, deliver fluoride applications, and seal teeth, in much the same way as dental assistants are allowed to perform these procedures in some states. CMS has sponsored 2 CHW endeavors through its Innovation Center with a goal of improving both oral health and access to dental care among chronically underserved populations.^{251,252} Delta Dental of South Dakota has fielded CHWs in Native American communities, while Columbia University has fielded CHWs in socially disadvantaged neighborhoods of New York City to work with families whose young children experience any level of early childhood tooth decay.

A 2013 change in federal regulatory language allows licensed health care practitioners to refer patients for preventive services to non-licensed health workers under a Medicaid State Plan Amendment. That change may accelerate adoption of CHWs and other lay health workers in oral health supervision, promotion, disease management, and patient navigation.^{253,254} Under this regulatory change, states need to file a State Plan Amendment with CMS describing the practitioner to whom delegated preventive services are authorized, the practitioner’s qualifications, the nature of the preventive services being delegated, and the reimbursement methodology to be implemented.

Because pharmacists are front-line health workers who frequently interact with and educate the public, their potential role in oral health promotion and delivery of hygienic and therapeutic supplies for underserved groups has gained some attention.^{255,256} Distributing toothbrushes and fluoridated toothpaste on a quarterly basis to children ages 12 months to 5 years has been shown to reduce caries experience at ages 5 to 6 by 16%,²⁵⁷ and holds promise as a pharmacist-delivered oral health intervention. Trials are now underway to understand the impact of such hygiene supply distribution with and without supplemental oral health education.²⁵⁸ As some states have granted limited authority to pharmacists to independently prescribe and dispense prescription tobacco cessation products, they could also have a new, expanded role in prescribing and dispensing prescription toothpastes to people with high caries experience.²⁵⁹ For example, the practice of pharmacy is defined in Idaho to include prescribing dietary fluoride supplements pursuant to the recommendations of the ADA for people proven to have drinking water sources with fluoride levels below recommended amounts.²⁶⁰ More generally, the American Pharmacists Association Foundation calls on pharmacists to address the high prevalence of early childhood tooth decay by acting as oral health educators, facilitators, and prevention agents.

The Role of States in Improving Access to Oral Health through Practice Acts and New Models of Care

Building on these findings, states have many options for enhancing access through workforce-related legislation, regulation, and procedures. They can develop paths to efficiently license foreign-trained dentists while retaining their responsibility to protect the public's safety. The ADA provides a guide to foreign dentists' licensure,²⁶¹ which reflects the many educational, examination, and credentialing barriers to foreign dentists seeking to practice in the United States. States can adjust their practice acts to expand level of training, scopes of practice, and credentialing of ancillary dental personnel. Similarly, they can relax supervision requirements and expand teledentistry and the authority to write prescriptions.

This would allow dental hygienists and dental therapists, where applicable, to reach underserved populations directly. They can also authorize and regulate new types of oral health providers by licensing dental therapists, expanding roles of pharmacists, and sanctioning specific responsibilities for community health workers and helping professionals. State Medicaid authorities can seek waivers and state plan amendments, along with incentivizing their managed care vendors to demonstrate workforce models and test them for effectiveness in expanding access to qualifying beneficiaries. States can also expand licensure by credential, and ease practice-based restrictions so that dentists can move more readily between jurisdictions.

Independent of licensure and Medicaid purchasing roles, states can enhance access by leveraging public health and health reform opportunities. Through public education campaigns that would increase awareness and demand for oral health, and through novel workforce models that can help meet that demand, states can assist high-needs populations in securing care. They can expand the dental workforce in safety-net facilities such as local, state, or non-profit community clinic FQHCs, and in dental training programs.

States can also bring administrative support to enhance the continuity, sustainability, reach, and effectiveness of charitable oral health care programs staffed by volunteer dental professionals. They can expand coordination, already authorized by Congress, between private practitioners and safety-net facilities by contracting dentists, or potentially other providers that a state may authorize to practice independently, to FQHCs. This is detailed in a manual endorsed by the ADA and the National Association of Community Health Centers that explains a CMS informational bulletin.²⁶² State Medicaid authorities, directly or through their managed care vendors, can incentivize hospitals and dental societies to institute referral programs that reduce inappropriate, excessive, repetitive, and costly utilization of emergency rooms for dental complaints. Through their public health authorities, states can assume a role in training primary

care medical providers and dental professionals to care for specific groups of underserved individuals. Such training holds promise to reduce psychosocial and cultural barriers to care and enhance clinical skills needed to treat clinically and socially complex patients.

As U.S. health reform focuses on comprehensive care systems like accountable care organizations (ACOs) and patient-centered medical homes (PCMHs) that address patients holistically through medical, social, and behavioral services, it faces a variety of options regarding integration of oral health and dental care services. A comprehensive oral health system could stand alongside or be fully integrated within an ACO or PCMH and would require multiple tiers. Public health practitioners would lead community outreach, education, and surveillance functions. Lay health workers and helping professionals would address risk-reduction and disease management strategies that reflect social and behavioral determinants of oral health. Oral health professionals would continue to provide oral preventative and therapeutic/corrective dental services. Working together through holistic teams, these various providers would collectively ensure comprehensive care, accountability, and value. Oregon's Medicaid authority is one example of a health care purchaser that has incorporated dental care, along with medical and behavioral care, within a global population health approach.²⁶³

Embedding oral health providers within these new delivery systems holds promise to maximize each provider's effectiveness while integrating oral with overall health care. Such direction can be accomplished legislatively or through federally financed demonstration programs including the State Innovation Models initiative and the Delivery System Reform Incentive Payment Program—programs designed to stimulate patient-centered, holistic, value-based health care reforms.^{264,265,266}

In addition to these licensing and public health opportunities to enhance dental workforce effectiveness, states can leverage a federal grant program designed specifically to expand access in rural and urban underserved areas. Proposed in 2001 as the

Dental Health Improvement Act,²⁶⁷ the program is implemented as the Grants to States to Support Oral Health Workforce Activities program by HRSA's BHW.^{268,269} Workforce improvements that may be funded through these grants include continuing dentist education both in person and through distance learning; establishing or expanding dental residencies in general, pediatric, and public health dentistry and dental hygiene; recruiting faculty to dental education institutions; and instituting programs to promote science education in high school and college that potentially lead to dental careers. Alternatively, funds can be used to incentivize dentists to serve in underserved areas by issuing grants and loans to expand dental practices; providing recruitment and retention bonuses for practice in underserved areas; offering student loan forgiveness and repayment programs; and providing placement support for students and trainees to practice in underserved areas. Beyond direct workforce strategies, grants to states may also be used to expand the safety net, including deployment of teledentistry and enhancing state infrastructure by supporting the Office of the State Dental Director and sponsoring community-based preventive services.

The Role of States in Improving Access to Oral Health Through Dental Public Health Authorities and State Oral Health Coalitions

The dental workforce extends beyond clinicians and their clinical associates to include dental public health personnel who support their state and local public health programs. State and territorial dental directors are responsible for advancing the oral health and oral health care of all state residents. Some states, whether due to funding issues—either competitive federal funding or state—and the difficulty of recruiting qualified leaders, do not have dental directors or the positions, or have filled the position with part-time staff or those who may not be qualified dental public health professionals.

Dental directors play a critical role in improving access to oral health.²⁷⁰ They institute community-based preventive strategies including fluoridation and dental sealant programs; promote

access to dental care in the dental safety net and private sector; promote oral health leadership; and facilitate active public-private partnerships to support good oral health. CDC funds the Association of State and Territorial Dental Directors (ASTDD) to maintain a synopsis of state oral health programs²⁷¹ and to collect data from state dental directors to populate Oral Health Data, an online data platform.²⁷² State dental directors work closely with their public health counterparts in state government and with statewide oral health coalitions to advance oral health and oral health care. The ASTDD's best practices in oral health coalitions and collaborative partnerships detail the value of these multi-stakeholder coalitions in providing guidance and recommended direction for state oral health programs, identifying needs and problems, supporting priority setting, and developing state oral health plans.²⁷³ The American Network of Oral Health Coalitions maintains a listing of state oral health coalitions (39 as of November 2019) that "promote lifelong oral health by shaping policy, promoting prevention, and educating the public."²⁷⁴ CDC provides links to all available state oral health plans and other resources, such as oral health coalitions.²⁷⁵ All oral health plans provide state-specific guidance in approaches to increase access to and utilization of dental services.

Challenges in Accessing Available Oral Health Care

Addressing barriers related to financing and availability of care is necessary, but not sufficient, to achieve dental care utilization. Families often encounter other types of barriers that impede their utilization of dental care services related to transportation, system navigation, scheduling, discrimination, and cultural competency including cultural sensitivity, plain language, and language interpretation services.²⁷⁶ Caregivers who have negative experiences when using or trying to use oral health care for themselves are likely to forgo care for their children.²⁷⁷

Transportation

Lack of adequate transportation that allows timely arrival to an appointment is a major barrier for low-income patients.^{278,279}

Transportation particularly affects low-income rural residents who cannot afford a private car in the absence of any type of public transportation. For example, a study of the distribution of dentists in Kansas found that the mostly rural areas in the western part of the state are close to being “dental deserts,” or areas with limited oral health care.²⁸⁰ In addition to the difficulty of finding a dentist, residents in these communities face transportation challenges when they do not own a private vehicle. As an administrative requirement, all states must ensure necessary transportation for Medicaid beneficiaries. As stated in 42 C.F.R. § 431.53, “[a] state plan must: (1) Specify that the Medicaid agency will ensure necessary transportation for beneficiaries to and from providers; and (2) Describe the methods that the agency will use to meet this requirement.”²⁸¹ States may also cover transportation and other travel-related expenses for adults as an optional medical service, for which they will receive federal reimbursement at the medical match rate.²⁸² Also, as part of the EPSDT benefit, states must cover transportation and related services when needed by an individual under age 21.²⁸³ Given the various avenues for covering transportation for Medicaid beneficiaries, coverage varies from state to state.²⁸⁴

Overall, transportation is provided following the policy that Medicaid payment should only be made for the least expensive mode of transportation that is appropriate for the beneficiary. Transportation services may be provided in a variety of methods, e.g. mileage reimbursement, volunteer drivers, taxis, commercial transportation and public transportation. Some states contract transportation services with brokers who provide services to the beneficiaries and are reimbursed on a capitation basis.²⁸⁵ For long distance travel to obtain health care, the state may provide coverage for meals and lodging for the beneficiary and their attendant, if necessary.²⁸⁶ As noted previously, transportation and related services are mandatory EPSDT services for children under age 21.



States should ensure Medicaid recipients have transportation access

Many low-income people aren't able to reach dental appointments on time because they don't have reliable transportation. **States are responsible for making sure that Medicaid recipients have necessary transportation**—for example, by reimbursing for mileage or other costs, contracting with taxis or transportation companies, or even reimbursing the cost of lodging and meals.

Immigration Status

Parental immigration status significantly affects the chances of a child seeing the dentist regularly. The family structure of the undocumented immigrant population is rapidly changing into a majority “mixed status” family structure in which the parents are undocumented immigrants and the children are U.S. citizens.²⁸⁷ Approximately 73% of children born to undocumented immigrants were born in the U.S., and 82% of children with undocumented parents are in mixed-status families.²⁸⁸

Except in cases of emergency, undocumented children with undocumented parents are not eligible to receive public insurance coverage, while documented children with undocumented parents are eligible but still do not reach the coverage rates of fully documented families.²⁸⁹ This disparity is likely due to the misperception that documented children are unable to access health insurance because of their parents' immigration status.²⁹⁰ The related provisions of the Affordable Care Act will have a negligible impact on insurance rates among documented

children of undocumented parents; therefore, as the overall rates of the uninsured decline, these children are becoming a larger proportion of the uninsured population.²⁹¹

U.S.-born children of undocumented parents face particular barriers to accessing oral health care, even if they are eligible for or covered by Medicaid. Fear of deportation is a constant awareness among undocumented immigrants; consequently they avoid activities that pose a risk of deportation for their families such as using health care services.^{292,293,294} Traveling to receive health services could be considered a high-risk activity that can result in deportation.²⁹⁵ The “deportability state of mind” is the most important barrier to health care among undocumented persons.²⁹⁶ Geographic location also affects access to oral health care for U.S. born children of undocumented immigrants. Health care utilization among undocumented immigrants is largely dependent on clustering of services in established immigrant communities; these services are usually absent in new immigrant communities.²⁹⁷ Therefore, U.S.-born children of undocumented immigrants residing in isolation are unlikely to have or to know about available resources.²⁹⁸ Another major deterrent to seeking health care is the stigma and prejudice that marginalized groups, including undocumented immigrants, face because they are considered undeserving of resources and over-burdening society.^{299,300} Parents respond to these social perceptions by avoiding service environments, and as a result, U.S.-born children of immigrants do not receive the appropriate health care to which they are entitled. Moreover, getting time off from work for health care of their children is difficult for all low-wage workers, but it is especially difficult for undocumented workers because they are likely to hold “under the table” jobs, which grant them even less power to negotiate time off and are unlikely to include a paid sick leave benefit.³⁰¹



Laws and policies can address barriers to oral health care for children of immigrants

U.S.-born children of undocumented immigrants may qualify for public insurance coverage—**but they face many other barriers to oral health care**, including:

- Families' fear of deportation
- Lack of services in new immigrant communities
- Avoiding services because of the stigma and bias they face
- Parents' inability to get time off work for appointments

Laws and policies can help address these barriers and make it easier for these children to get the care they need.

Cultural Competency

According to HHS, one of the most modifiable factors to reduce health disparities is the lack of health services that are culturally and linguistically appropriate to the needs of the population.³⁰²

Culture is defined as the “integrated patterns of human behavior that include the language, thoughts, communications, actions, customs, beliefs, values, and institutions of racial, ethnic, religious, or social groups.”^{303,304}

The National Standards for Culturally and Linguistically Appropriate Services in Health and Health Care (CLAS standards) were developed to improve health equity and quality of health services, and to reduce health care disparities.³⁰⁵ The CLAS standards offer guidelines for health care entities to deliver

culturally and linguistically adequate services.³⁰⁶ States and territories are slowly adopting the CLAS standards; as of 2016, 21 states had training legislation and state-sponsored implementation activities, 11 states had state-sponsored implementation activities, and 3 states were conducting legislative activity for CLAS training. The commonwealths and territories have their CLAS activities under review.^{307,308}

Cultural Sensitivity

The CLAS Standards have as their principal standard the characteristics of culturally sensitive health care to “[p]rovide effective, equitable, understandable, and respectful quality care and services that are responsive to diverse cultural health beliefs and practices, preferred languages, health literacy, and other communication needs.”³⁰⁹ All other standards aim to achieve this standard.³¹⁰

Culturally appropriate care can provide a welcoming environment for different groups of the population that will result in satisfactory experiences from cultural and linguistic perspectives,³¹¹ and helps communication between provider and patient. The HHS Office of Minority Health developed an online cultural competency training program to equip oral health providers with the knowledge, skills, and awareness to best deliver oral health services.³¹² Better communication helps patients understand the care they are receiving, empowering them to be active participants in the care process and make informed decisions about their care. A clear purpose of the CLAS Standards is to eliminate inequity and disparities related to cultural and linguistic characteristics. The Affordable Care Act mandates language access to those with limited English proficiency as an anti-discrimination provision in this health-setting regulation; more information about these laws is included in the discussion around language interpretation below.

Plain Language

The use of technical jargon becomes a barrier to care for individuals with low education or low literacy when it hinders the conversation between patient, family, and providers. The Plain Writing Act of 2010³¹³ was enacted to improve access to government services and information, mandating that federal communications must be written clearly using plain language.* Plain language is defined as language that is clear, concise, and well organized; as a result it can be readily understood by the proposed audience. Plain language communications should not include jargon, redundancy, ambiguity, or obscurity.

Language Interpretation

Immigration has been at the core of the history of the United States, and many immigrants come to this country speaking a language other than English.³¹⁴ As of 2011, 41.8% of U.S. residents who spoke a language other than English at home (close to 9% of all U.S. residents) reported that they did not speak English very well³¹⁵ and could be classified as having Limited English Proficiency (LEP).³¹⁶ Not only do these individuals face communication barriers when accessing health care services, including oral health care, but their health is at risk due to medical errors resulting from deficient communication between patient and provider. Therefore, to improve oral health care access and quality of care, dental providers can consider offering interpretation services to LEP patients and their families to achieve optimal communication. Title VI of the Civil Rights Act of 1964 prohibits national origin discrimination by recipients of federal financial

*** H.R. 946 (111th): Plain Writing Act of 2010 PUBLIC LAW 111-274—OCT. 13, 2010**
Key to Terms Used in Tables

- Well organized. Organized to meet the reader's needs. An overview of the requirements or process comes first, followed by the details. If there is a process involved, the regulation gives the outlines first in a list or table, followed by details in separate sections.
- Short sections. There are about five or six sections per page of CFR text.
- Minimizes subdivisions. No section goes below the "(A)" level, unless the material is presented as a table.
- Uses lists. Wherever possible, the rule uses lists rather than text to present information.
- Uses tables. Complex information is in the form of a table wherever possible.
- Short sentences. While sentences vary in length, no sentence is over 40 words long.

assistance, and Section 1557 of the Affordable Care Act prohibits such discrimination by health programs and activities receiving federal financial assistance. The failure to provide language assistance can result in such discrimination. Under Section 1557, health care providers receiving federal financial assistance must take reasonable steps to provide meaningful access to individuals with limited English proficiency. The Department has stated in Guidance that all recipients of federal financial assistance must provide meaningful access to LEP individuals.^{317,318} Interpreter services are not mandatory in Medicaid and CHIP benefits, although they are mandatory for children through EPSDT when necessary to help correct or ameliorate a problem as discussed previously. But Medicaid-participating providers must, as noted above, take reasonable steps to provide “meaningful access” to their services to LEP individuals. One way of providing meaningful access is by providing interpreter services. This includes providers who receive Medicaid, CHIP, NIH grants, CDC funds, and some Medicare funds.³¹⁹ For providers—such as dentists in private practice—who do not receive any federal funds, for either patient care or grants, state laws may require provision of language services as needed. As of 2005, 43 states had such laws.^{320,321,322} States are not required to reimburse providers for interpretation services, except for some EPSDT services; but those costs could be included in the reimbursement rate, or states can be billed for interpretation services as a care-related expenditure or as administration.³²³

Moreover, the CLAS Standards provide guidance on the importance of linguistically appropriate health care services and advise providers to:

- Offer language assistance to individuals who have LEP and/or other communication needs, at no cost to them, to facilitate timely access to all health care and services
- Inform all individuals of the availability of language assistance services clearly and in their preferred language, verbally and in writing

- Ensure the competence of individuals providing language assistance, recognizing that the use of untrained individuals and/or minors as interpreters should be avoided
- Provide easy-to-understand print and multimedia materials and signage in the languages commonly used by the populations in the service area³²⁴



States can implement national standards for culturally competent health care

Health services that aren't linguistically and culturally appropriate can contribute to health disparities. To improve health equity, **more states can adopt the National Standards for Culturally and Linguistically Appropriate Services in Health and Health Care (CLAS Standards)**, which aim to provide training and improve cultural sensitivity, plain language, and interpretation services.

Hours of Service

Even though convenient availability of appointment times is fundamental for dental care utilization,³²⁵ there is limited information on recommendations or requirements regarding availability of convenient times for oral health care. FQHCs are required to offer services at times and places that are convenient to meet the needs of their target populations, as well as providing care for medical emergencies after regular center hours.^{326,327} Also, managed care plans (e.g., MCOs, prepaid inpatient health plans (PIHPs), prepaid ambulatory Health Plans (PAHPs)) that provide

service to Medicaid-covered populations must comply with requirements to assure "timely access" as provided in 42 C.F.R. Section 438.206(c):

Timely access - Each [managed care plan] must do the following:

1. Meet and require providers to meet state standard for timely access to care and services, taking into account the urgency of the need for services.
2. Ensure that the network providers offer hours of operation that are no less than the hours of operation offered to commercial enrollees, or comparable to Medicaid fee-for-service if the provider services only Medicaid enrollees.
3. Make services included in the contract available 24 hours a day, 7 days a week, when medically necessary.
4. Establish mechanisms to ensure compliance by providers.
5. Monitor providers regularly to determine compliance.
6. Take corrective action if there is failure to comply...³²⁸



Laws and policies can require oral health care providers to offer convenient appointment times

For people to get the care they need, **oral health care providers must offer appointment times that work for the people they serve.** For example, federally qualified health centers are required to offer services at times and places that are convenient for their communities.

Discrimination Based on Race, Color or National Origin, Disability, Age, and Sex

Title VI of the Civil Rights Act of 1964 (Title VI) and Section 1557 of the Affordable Care Act are federal laws that protect individuals from discrimination based on race, color, or national origin in programs and activities that receive federal financial assistance. Title VI applies to all programs receiving such assistance, and Section 1557 to health programs and activities receiving such assistance.³²⁹ Oral health providers who receive federal financial assistance cannot deny services, provide different services or benefits, or otherwise discriminate against eligible individuals on the basis of race, color, or national origin.³³⁰ Under some circumstances, failure to provide necessary language assistance to individuals with LEP can be discriminatory.³³¹ Additional federal laws protect individuals from discrimination based on disability (including Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990), age (the Age Discrimination Act of 1975), and sex (Title IX of the Education Amendments of 1972); and many block grant statutes prohibit religious discrimination. In addition to prohibiting discrimination on the basis of race, color, and national origin in health programs and activities receiving federal financial assistance, Section 1557 also prohibits discrimination on the basis of age, sex, and disability in such programs.

The Office for Civil Rights (OCR) at HHS is charged with protecting these rights by educating individuals and providers about them and their related requirements, and investigating and enforcing these laws. These duties include ensuring that entities that receive federal financial assistance—such as oral health providers who receive federal financial assistance from HHS—comply with the civil rights laws mentioned above.³³²



Federal discrimination laws protect people when receiving oral health care

Title VI of the Civil Rights Act of 1964 **protects people from discrimination based on their race, color, or national origin in programs that receive federal funding**, including oral health care services and providers. Other federal laws protect people from discrimination based on disability, age, sex, and religion. The Department of Health and Human Services (HHS) Office for Civil Rights is responsible for enforcing these rights.

Summary

This section shows that achieving oral health care utilization goals depends on more than just providers who are available and willing to provide the care, and having the financial resources to compensate those providers. Entire communities can become dentally vulnerable when individuals do not receive oral health care for lack of transportation, appropriate means of communication, appropriate schedules, or fair, non-discriminatory treatment. The legal framework to facilitate oral health care utilization for vulnerable populations is in place, but it only applies to the providers who treat patients covered by federal funds. Most of the legal requirements do not apply to the vast majority of oral health practitioners in private practice who do not receive federal funds.

Recommendations For Additional Research

It is critical to continue to build the research base. This is to advance evidence-based financing and payment policies, to reduce challenges to accessing services, and to develop effective programs that strengthen the oral health profession.

Integrating Oral Health Research into Payment and Delivery Systems

Health services and policy research will be essential to ensuring that payment systems and emerging financing and payment mechanisms for both the public and private payers respond to emerging models of care in a way that aligns with national objectives to expand access to oral health and oral health care.³³³

Evaluating Models of Care

Developing and evaluating the effectiveness of different approaches to provide and pay for care are critical areas of inquiry for health policy research. A growing number of state demonstration and pilot programs are exploring ways to implement value-based purchasing and to include oral health care in Medicare and in Medicaid for adults—including older adults. Hence opportunities exist to gain new insights into whether and how these efforts improve access to oral health.

New patterns of care and provision of oral health by different provider types are also areas that could benefit from rigorous evaluation. The emergence of “corporate dentistry,” where larger practices with many providers in one location are replacing the solo practitioner model or consolidating multiple practices into integrated care systems,³³⁴ creates another area for research to determine the impact this will have on the availability of oral health care, as well as on dental care utilization overall and among sub-populations. Evaluation of changes in the composition and structure of the oral health workforce will also ensure that efforts to improve oral health access and utilization are supported. Such changes include the creation of new providers (i.e. dental therapists), expansion of the scope of practice for existing oral health providers, and integration of non-dental clinical care providers and others into oral health teams. New partnerships

can also develop, including new models between corporate dentistry and academic institutions that have the potential of improving access and being mutually beneficial if structured appropriately.³³⁵ Additionally, it might be possible to employ policy to create opportunities for state oral health coalitions to develop and rigorously evaluate clinical-community linkages to increase access to oral health care. Crucial to all of these efforts is the need for reliable and uniform data so different approaches can be compared meaningfully.

Caries Management

Despite considerable progress in understanding the caries process, along with preventing and treating it, caries remain the most common chronic infectious disease disproportionately affecting socially vulnerable populations. Research into this disease is likely to provide new strategies to improve the oral health of future generations.

Basic science research continues to increase our understanding of the caries process and its dynamics, affording new opportunities to control and suppress its occurrence and progression through microbiologic, salivary, and genetic approaches. Microbiologic advances are increasingly focused on dental biofilm ecologies.³³⁶ Salivary research focuses on caries activity within the larger oral environment.³³⁷ Genetic advances focus on complex interplays between host, flora, and environment,³³⁸ though this field is still in its initial stages. As the field advances, it will become increasingly necessary to refine clinical and public health guidelines as well as payment and delivery models that integrate the best science into oral health practice.

In addition, providing fluoridated toothpaste, toothbrushes, and supplies to low-income children could be a valuable tool to improve oral health. A study in the United Kingdom demonstrated reduction in caries prevalence among low-income children who received free fluoridated toothpaste from the age of 12 months.³³⁹

Integrating Oral Health Research in Public Health and Population Approaches

Population-level approaches to promote oral health remain essential to efforts to meet Healthy People objectives, and research is necessary to identify effective interventions that reduce existing disparities in oral health access and utilization.

Community-Wide and Place-Based Caries Prevention

Water fluoridation is considered one of the most significant public health interventions in the past century, helping to keep teeth strong and reducing caries by around 25% in children and adults. Fluoridation also has provided a population health approach to prevent caries and other oral health issues.³⁴⁰ Nonetheless, despite the fact that almost 75% of the U.S. population was served by community water systems with optimally fluoridated water in 2014,³⁴¹ caries continues to affect a significant percentage of children.³⁴² In addition, caries disproportionately impacts children with lower family incomes.³⁴³ Innovative family-level and community-based caries prevention measures are necessary even though research in this area is lacking. These measures could be pharmacologic or behavioral based interventions.

Expanding Health Literacy

Increasing research on effective messaging, along with strategies to improve individuals' ability to understand basic health information and make appropriate oral health decisions, will enable them to navigate the health care system more easily.

Additionally, HHS supports interpretation and translation services using Health Insurance Portability and Accountability Act (HIPAA)-compliant and cost accessible online platforms. These are also likely to reduce language barriers faced by some populations.

Emerging Trends and Issues

There are several emerging trends that impact success in meeting Healthy People oral health utilization objectives. Seven apparent trends in the policy, population, and science and technology environments will play a key role in making and sustaining progress, and to further achieve progress in reaching the Healthy People oral health access objectives.

1. Public policymaking environment: Federal and state health care policymaking can make big differences in accomplishing goals envisioned by Healthy People. Oral health care utilization increases when public policies and insurance programs reduce or eliminate financial barriers. These programs can also support the safety net. Oral health care expansion occurred after the following events: when dental benefits were explicitly included in EPSDT in 1989, in CHIP in 1997, and in the subsequent CHIP reauthorization in 2009 and 2018; and when the Affordable Care Act expanded Medicaid eligibility and incorporated oral health care for children within the list of “essential health benefits” for both public and private insurance. Governmental support for the oral health workforce and for safety-net health centers can increase access to care. Entitlement reforms and budget decisions made by federal, state, and tribal governments also affect oral health access and determine the robustness of the oral health workforce and safety-net programs.
2. United States health care environment: The need to address the high costs of health care, and particularly oral health care in the United States is being accelerated by publicity on the internet and in the press, public concern about medical bankruptcy, payers’ demands for accountability, and policymakers’ budgetary attention.³⁴⁴ The conflict between cost, access, and quality is being resolved by a growing understanding that better health outcomes are achievable at lower cost with greater patient satisfaction

(the "Triple Aim")³⁴⁵ through smarter delivery and financing approaches. Recent discussions of a quadruple aim add the need to improve work life and professional fulfillment of health care providers, including clinicians and staff, to this dialogue.³⁴⁶ Movements now underway in health care in the United States include:

- Practice aggregation
- Vertically integrated accountable care organizations (ACOs)
- Patient-centered medical homes (PCMHs)
- Holistic approaches to wellness
- Outcomes-assessed value-based purchasing
- Alternative payment mechanisms that reward quality, outcomes, and accountability
- Inter-professional care teams that address social as well as biological determinants of health
- Expansion of health teams to include lay health workers

Whether these movements will further promote dental utilization by including oral health services will determine how they influence the attainment of Healthy People oral health utilization goals.

3. Science and research environment:

- "Omics": The "omics revolution" (e.g., genomics, proteomics, metabolomics) that underpins "personalized medicine" may be applied as directly to prevention and treatment of oral diseases as to general health conditions.³⁴⁷ For example, tailoring care to personal biology holds strong promise to individualize recommendations for oral health access, utilization, frequency, and content. It would thereby replace the one-size-fits-all current recommendation of semiannual dental prevention visits.

- Medical management of oral diseases: Ever greater understanding of the pathologic process that results in caries, periodontal disease, oral cancer, and other oral diseases will also influence dental utilization. Based on these understandings, a socio-pharmaco-medical approach to chronic disease management will likely evolve to complement today's surgically-focused dental interventions. Such disease management can be expected to build on social, behavioral, and environmental determinants of oral health to develop new approaches to preventing, arresting, and treating oral diseases.
 - Oral health technology: Future utilization of oral health care will also likely be impacted by the ongoing development of new technologies that hold promise to bioengineer oral structures, deliver oral health care remotely, and modify the content of care. Of concern is that new health care technologies like these with their high initial costs tend to increase disparities in care between affluent and poor populations.
4. Oral health workforce environment: New models of who can provide oral health care are emerging as a trend to improve use of care by underserved populations. New providers include the dental therapist, dental health aide, advanced practice dental hygienist, and community health worker (including the community dental health coordinator). These efforts may potentially increase access to preventive and screening services. Expansion of loan repayment programs and licensure of foreign-trained dentists can be used to increase those practicing in rural and dental Health Professional Shortage Areas.
 5. Demography: Both the "Boomer" population explosion and the widening income and income-related racial disparities that characterize demography in the United States will challenge sustaining progress toward Healthy People oral health access and utilization goals. Adults born between 1946 and 1964—high past-utilizers of oral health care—

are now entering retirement age when they lose employer-sponsored dental coverage and have no dental coverage in Medicare. These forces will likely reduce oral health care utilization for older adults despite their historically high retention of teeth. Additionally, widening income disparities and a consistent percentage of children born into poverty or near-poverty suggest that publicly funded dental insurance for children along with a sufficiently effective oral health safety net will continue to be essential to ensure access.

6. Population health management: At its core, population health management suggests that health care can be managed in ways that improve the individual and overall health experience and outcomes of defined groups. These groups, which may be characterized by geography, income, employment, common conditions, or health risks, need oral health care with financing from government, employers, or the groups themselves. A population health management approach seeks to maximize efficiency by targeting care according to risk and need, promoting prevention and wellness, and considering the full range of health determinants. A population oral health management approach that subscribes to these same approaches holds strong potential to increase utilization among those with greatest needs, while providing only minimally sufficient utilization for those at low risk. An early example of this emerging trend is Oregon's Coordinated Care Organization approach to Medicaid reform that holds dental care organizations responsible for population oral health management.³⁴⁸
7. Utilization: If all financing is in place and workforce challenges are met, the actual use of oral health care is still largely dictated by the interaction between patient and dentist in the provider's office. Efforts should continue to ensure the National CLAS Standards are adopted and implemented by all 50 states and the District of Columbia.* Education about the CLAS Standards should

* HHS Office of Minority Health provides online resources and trainings to support efforts to improve culturally and linguistically appropriate services (<https://www.thinkculturalhealth.hhs.gov>).

be a component of the dental, dental hygiene, and dental assistant curricula. The great majority of states and the District of Columbia now require private dental practices to provide interpretation services, and the remaining states are encouraged to consider this option.

Conclusions

This report points out that improvements in oral health can be achieved by changing the funding and payment structure for oral health services (financing), increasing the number, capacities, and availabilities of the oral health workforce who can provide oral health care (workforce), facilitating the use of dental services (utilization), and employing the best available science.

Currently, financing can include private coverage for oral health services, Medicaid benefits for children and youth, state programs that cover adults, and payments for including oral health into a range of broad health care settings. Financing, payment, and delivery model changes that may enhance utilization include payer-generated performance incentives, alternative payment mechanisms that reward outcomes, and oral health integration into accountable and patient-centered care approaches.

Workforce changes at the state level could increase reciprocity for providing services across state lines, licensure of foreign-trained dentists with additional training, establishment of new oral health providers, wider use of and funding for teledentistry, and engagement of a health care team that brings together the resources of oral health professionals with other health workers. These would include physicians, nurse practitioners, nurses, physician assistants, pharmacists, social workers, health educators, and case managers, as well as lay providers such as community health workers.

Federal workforce programs administered by HRSA's BHW, Division of Medicine and Dentistry, remain essential levers to address access, particularly for underserved populations as they contribute to the following:

- Content of dental education
- Diversity of dental personnel
- Location of dental personnel in underserved areas
- Distributions and incentives for workforce (State Oral Health Workforce Grants)

Recognizing the need for the health care sector to deliver health, rather than treat symptoms, primary prevention and disease management (both behavioral and pharmacological) are becoming increasingly important components of primary oral health care. While good oral health is an important part of an individual's overall health, it often does not receive the same focus and attention as other health services—including medical, non-oral disease prevention, and mental health. Law and policy can counter this trend and help achieve the Healthy People objective to: [i]ncrease the proportion of children, adolescents, and adults who used the oral health care system in the past year. Both encourage increased use through increasing access to services, strengthening the workforce, and ensuring that all receive quality, targeted, and understandable oral health care.

Federal and state funding and requirements to cover oral health care in parity with other health care services have improved access to oral health care for United States children but not for adults. As a result, the oral health workforce is adapting to this increased demand; in addition, states have experimented with a number of policies and funding mechanisms to try to ensure that the right mix of providers is available. Yet identifying additional funding and a more readily available oral health workforce, while important, are not enough in themselves to ensure utilization of oral health care. Many individuals do not take advantage of offered services due to other barriers such as lack of transportation, a lack of trust in providers, or a fear of negative repercussions on their families due to their immigration status.

This report highlights many of the critical issues surrounding increasing access to oral health care in the United States, along with examples of how states, tribes, and communities have used legal and policy approaches to try to serve their populations better. As Healthy People transitions from HP2020 to new goals and targets for the next decade with HP2030, it is crucial to consider all potential levers and options to reach these goals and improve oral health. Law and policy will continue to play an important role in these efforts to ensure that the oral health of the population receives the attention that it needs, and that current barriers to receiving oral health care are addressed.

References

- ¹Haggard P, de Boer L. Oral somatosensory awareness. *Neuroscience & Biobehavioral Reviews*. 2014 Nov 1;47:469-84.
- ²U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Oral health basics [Internet]. Atlanta (GA): reviewed 2019 Jun 3, cited 2019 Jul 3. Available from: <https://www.cdc.gov/oralhealth/basics/index.html>.
- ³U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. National health expenditures 2017 highlights [Internet]. Baltimore (MD): modified 2018 Dec 11; cited 2019 Jul 3. Available from: <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/highlights.pdf>.
- ⁴Naavaal S, Kelekar U. School hours lost due to acute/unplanned dental care. *Health Behavior and Policy Review*. 2018 Mar 1;5(2):66-73.
- ⁵U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Oral health basics [Internet]. Atlanta (GA): reviewed 2019 Jun 3, cited 2019 Jul 3. Available from: <https://www.cdc.gov/oralhealth/basics/index.html>.
- ⁶U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Healthy People.gov. Healthy People 2020 topics & objectives, oral health: OH 7 [Internet]. Rockville (MD): cited 2019 Jul 3. Available from: <https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=5028;hdisp=1>.
- ⁷U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Healthy People.gov. Healthy People 2020 topics & objectives, oral health: OH 7 [Internet]. Rockville (MD): cited 2019 Jul 3. Available from: <https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=5028;hdisp=1>.
- ⁸American Dental Association, Health Policy Institute. Dental care in the U.S. infographic [Internet]; cited 2019 Jul 3. Available from: http://www.ada.org/~/media/ADA/Science%20and%20Research/HPI/Files/HPIgraphic_1117_2.pdf?a=en.
- ⁹U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Healthy People.gov. Healthy People 2020 data search: OH-7 Disparities overview by educational attainment [Internet]. Rockville (MD): cited 2019 Jul 3. Available from: <https://www.healthypeople.gov/2020/data/disparities/summary/Chart/5028/5.1>.
- ¹⁰U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Healthy People.gov. Healthy People 2020 data search: Children, adolescents, and adults who visited the dentist in the past year by family income [Internet]. Rockville (MD): cited 2019 Jul 3. Available from: [https://www.healthypeople.gov/2020/data/Chart/5028?category=6.1&by=Family%20income%20\(percent%20poverty%20threshold\)&fips=-1](https://www.healthypeople.gov/2020/data/Chart/5028?category=6.1&by=Family%20income%20(percent%20poverty%20threshold)&fips=-1).
- ¹¹U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Healthy People.gov. Healthy People 2020 data search: Children, adolescents, and adults who visited the dentist in the past year by race/ethnicity [Internet]. Rockville (MD): cited 2019 Jul 3. Available from: <https://www.healthypeople.gov/2020/data/Chart/5028?category=3&by=Race/Ethnicity&fips=-1>.
- ¹²U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Healthy People.gov. Healthy People 2020 topics & objectives, oral health: OH 7 [Internet]. Rockville (MD): cited 2019 Jul 3. Available from: <https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=5028;hdisp=1>.
- ¹³U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Healthy People.gov. Healthy People 2020 data search: Children, adolescents, and adults who visited the dentist in the past year by sex [Internet]. Rockville (MD): cited 2019 Jul 3. Available from: <https://www.healthypeople.gov/2020/data/Chart/5028?category=2&by=Sex&fips=-1>.
- ¹⁴U.S. Department of Health and Human Services, National Institutes of Health, Institute of Dental and Craniofacial Research. Oral health in America: A report of the Surgeon General. Rockville (MD). 2000. Available from: <https://www.nidcr.nih.gov/sites/default/files/2017-10/hck1ocv.%40www.surgeon.fullrpt.pdf>.
- ¹⁵U.S. Department of Health and Human Services, National Institutes of Health, Institute of Dental and Craniofacial Research, Office of the Surgeon General. National call to action to promote oral health; Preface from the Surgeon General. Rockville (MD): NIH Publication No. 03-5303; 2003.
- ¹⁶U.S. Department of Health and Human Services, National Institutes of Health, Institute of Dental and Craniofacial Research. Surgeon General commissions 2020 report on oral health [Internet]. Reviewed 2019 Mar. Available from: <https://www.nidcr.nih.gov/news-events/surgeon-general-commissions-2020-report-oral-health>.
- ¹⁷Petersen PE, WHO Oral Health Programme. The world oral health report 2003: Continuous improvement of oral health in the 21st century—the approach of the WHO Global Oral Health Programme [Internet]. Geneva (Switzerland). Available from: <https://apps.who.int/iris/handle/10665/68506>.
- ¹⁸World Health Organization. Oral health [Internet]. Geneva (Switzerland): cited 2020 May 7. Available from: https://www.who.int/health-topics/oral-health/#tab=tab_1.

- ¹⁹ U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Community Preventive Services Task Force. Oral health: Preventing dental caries, community water fluoridation [Internet]. Atlanta (GA). Available from: https://www.cdc.gov/fluoridation/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Ffluoridation%2Findex.htm.
- ²⁰ U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Community Preventive Services Task Force. Preventing dental caries: School-based dental sealant delivery programs [Internet]. Atlanta (GA): 2018 Feb 19. Available from: <https://www.thecommunityguide.org/findings/dental-caries-cavities-school-based-dental-sealant-delivery-programs>.
- ²¹ U.S. Department of Health and Human Services Federal Panel on Community Water Fluoridation. U.S. Public Health Service recommendation for fluoride concentration in drinking water for the prevention of dental caries. Public Health Rep. 2015 Jul-Aug;130(4):318-31.
- ²² Network for Public Health Law. Summary matrix of state laws & regulations addressing fluoridation in water [Internet]. 2018 Aug 13; cited 2020 May 7. Available from: <https://www.networkforphi.org/wp-content/uploads/2019/12/50-State-Survey-Summary-Matrix-of-State-Laws-Regulations-Addressing-Fluoridation-in-Water.pdf>.
- ²³ Newton JT, Bower EJ. The social determinants of oral health: new approaches to conceptualizing and researching complex causal networks. Community Dentistry and Oral Epidemiology. 2005 Feb;33(1), 25-34.
- ²⁴ Vujicic M, Nasseh K. A decade in dental care utilization among adults and children (2001-2010). Health Serv Res. 2014 Apr;49(2):460-80.
- ²⁵ Seidin TM, Hudson JL. Access to care and utilization among children: estimating the effects of public and private coverage. Medical Care. 2006 May 1;44(1)19-26.
- ²⁶ Shariff JA, Edelstein BL. Medicaid meets its equal access requirement for dental care, but oral health disparities remain. Health Affairs. 2016 Dec 1;35(12):2259-67.
- ²⁷ U.S. Department of Health, Education, and Welfare. Public health service drinking water standards, rev 1962. Washington (DC): Public Health Service; 1962. PHS Publication No. 956.
- ²⁸ Wall T, Nasseh K, Vujicic M. Most important barriers to oral health are financial, not supply related. Health Policy Institute Research Brief [Internet]. Chicago (IL): American Dental Association, 2014 Oct, cited 2019 Jul 3. Available from: <https://ocplayer.net/21792195-Research-brief-most-important-barriers-to-dental-care-are-financial-not-supply-related-key-messages-introduction.html>.
- ²⁹ Glassman P. Oral health quality improvement in the era of accountability [Internet]. San Francisco (CA): Pacific Center for Special Care. 2011 Dec, cited 2019 Jul 3; 37 p. Supported by the Kellogg Foundation and DentaQuest Institute. Available from: https://www.dentaquestinstitute.org/sites/default/files/reports/2011/12/Pacific_Center_for_Special_Care_Report.pdf.
- ³⁰ American Dental Association. About dental quality alliance [Internet]. Cited 2020 May 7. Available from: <https://www.ada.org/en/science-research/dental-quality-alliance/about-dqa>.
- ³¹ U.S. Department of Health and Human Services, Office of Minority Health. National standards for culturally and linguistically appropriate services (CLAS) in health and health care [Internet]. Rockville (MD): cited 2019 Jul 3. Available at: <https://www.thinkculturalhealth.hhs.gov/pdfs/enhancing-cultural-competence-standards.pdf>.
- ³² Wall T, Vujicic M. US dental spending up in 2015, Health Policy Institute Research Brief [Internet]. Chicago (IL): American Dental Association, 2016, cited 2019 Jul 3. Available from: http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_1216_2.pdf?ia=en..
- ³³ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Benefits: Early and periodic screening, diagnostic, and treatment [Internet]. Baltimore (MD): cited 2019 Nov 19. Available from: <https://www.medicare.gov/medicaid/benefits/epsdt/ncex.html>.
- ³⁴ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services, Medicaid.gov. Dental care [Internet]. Baltimore (MD): cited 2019 Jun 27. Available from: <https://www.medicare.gov/medicaid/benefits/dental/index.html>.
- ³⁵ U.S. Department of Justice, Federal Bureau of Prisons. Program statement: dental services. OPI: HSD/DEN.Number 6400.03. 2016 Jun 10. Available from: https://www.bop.gov/policy/progstat/6400_003.pdf.
- ³⁶ 42 C.F.R. § 56.102 (i).
- ³⁷ Douglass CW, Sheets CG. Patients' expectations for oral health care in the 21st century. J Am Dent Assoc. 2000;131(S1)3S-7S.
- ³⁸ Vujicic M, Buchmueller T, Klein R. Dental care presents the highest level of financial barriers, compared to other types of health care services. Health Affairs [Internet]. 2016 Dec 1;35(12):2176-82. Available at: <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2016.0800>.
- ³⁹ Nasseh K, Vujicic M. Dental care utilization steady among working-age adults and children, up slightly among the elderly. Health Policy Institute Research Brief [Internet]. Chicago (IL): American Dental Association, 2016, cited 2019 Nov 18. Available at http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_1016_1.pdf.

- ⁴⁰ Vujcic M, Buchmueller T, Klein R. Dental care presents the highest level of financial barriers, compared to other types of health care services. *Health Affairs* [Internet]. 2016 Dec 1;35(12):2176-82. Available at: <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2016.0800>.
- ⁴¹ Medicaid and CHIP Payment and Access Commission. MACStats: Medicaid and CHIP data book [Internet]. Washington (DC): MACPAC. 2019 Dec, cited 2020 May 28. 172 p. Available from: <https://www.macpac.gov/wp-content/uploads/2020/01/MACStats-Medicaid-and-CHIP-Data-Book-December-2019.pdf>.
- ⁴² 42 U.S.C. § 1396 (listing mandatory and optional components of state plans).
- ⁴³ Verma S, ed. 2020 Annual report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds [Internet]. Washington (DC): Centers for Medicare & Medicaid Services, 2020 Apr 22, cited 2020 May 5. Available from: <https://www.cms.gov/files/document/2020-medicare-trustees-report.pdf>.
- ⁴⁴ 42 U.S.C. § 1395y (a)(12).
- ⁴⁵ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Medicare benefit policy manual, Chapter 15, Section 150. CMS Pub 100-02. 2019 Jul 12. Cited 2020 Jun 11. Available from: <https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/bp102c15.pdf>.
- ⁴⁶ 42 U.S.C. § 1396b.
- ⁴⁷ U.S. Department of Health and Human Services. Federal financial participation in state assistance expenditures; federal matching shares for Medicaid, the Children's Health Insurance Program, and Aid to Needy Aged, Blind, or Disabled Persons for October 1, 2016 through September 30, 2017. *Fed Regist*. 2015 Nov 25;80(227):73779.
- ⁴⁸ U.S. Department of Health and Human Services. Federal financial participation in state assistance expenditures; federal matching shares for Medicaid, the Children's Health Insurance Program, and Aid to Needy Aged, Blind, or Disabled Persons for October 1, 2019 through September 30, 2020. *Fed Regist*. 2018 Nov 28; 83(229):61157.
- ⁴⁹ U.S. Department of Health and Human Services. Determination that TYLENOL WITH CODEINE (Acetaminophen With Codeine Phosphate) Oral Tablets, 325 Milligrams/7.5 Milligrams, 325 Milligrams/15 Milligrams, 325 Milligrams/30 Milligrams, and 325 Milligrams/60 Milligrams, were not withdrawn from sale for reasons of safety or effectiveness. *Fed Regist*. 2015 Nov 25;80(227):73770.
- ⁵⁰ 42 U.S.C. § 1395.
- ⁵¹ Santa Fe Group. 2016 salon: Expanding oral healthcare for America's seniors [Internet]. New York (NY): Santa Fe Group, 2016, cited 2019 Jul 3. Available from: <http://santafegroup.org/work/expanding-oral-healthcare-for-americas-seniors/>.
- ⁵² Andrews M. Seniors' teeth need dental care, but insurance coverage is rare. *NPR* [Internet]. 2016 Oct 27, cited 2019 Jul 3. Available from: <http://www.npr.org/sections/health-shots/2016/10/27/499189286/seniors-teeth-need-dental-care-but-insurance-coverage-is-rare>.
- ⁵³ 42 U.S.C. § 1396a(a)(10)(A).
- ⁵⁴ *National Federation of Independent Business v. Sebelius*, 132 S. Ct. 2566 (2012).
- ⁵⁵ The Patient Protection and Affordable Care Act of 2010, 42 U.S.C. § 1396a(a)(10)(A)(VIII).
- ⁵⁶ Kaiser Family Foundation. Status of state Medicaid expansion decisions: interactive map [Internet]. New York (NY): 2019 May 12, cited 2019 Jul 3. Available from: <https://www.kff.org/health-reform/side/current-status-of-the-medicaid-expansion-decision>.
- ⁵⁷ The Patient Protection and Affordable Care Act of 2010, 42 U.S.C. § 1396d(y)(1).
- ⁵⁸ Nasseh K, Vujcic M, O'Dell A. Affordable Care Act expands dental benefits for children but does not address critical access to dental care. Chicago: American Dental Association, Health Policy Institute; 2013 Apr. cited 2019 Jul 3. Available from: http://www.ada.org/~media/ADA/Science%20and%20Research/Files/HPRCBrief_0413_3.pdf.
- ⁵⁹ American Dental Association, Health Policy Institute. Medicaid expansion and dental benefits coverage. Chicago: American Dental Association. cited 2019 Oct 16. Available from: https://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIgraphic_1218_3.pdf?a=en.
- ⁶⁰ Vujcic M. The booming Medicaid market, *JADA*. 2015 Feb 1;146(2):136-8.
- ⁶¹ American Dental Association, Health Policy Institute. The oral health care system: a state-level analysis [Internet]. Chicago (IL): cited 2019 Jul 3. Available from: <http://www.ada.org/en/science-research/health-policy-institute/oral-health-care-system?source=ADAHPIAlert>.
- ⁶² Singhal A, Damiano P, Sabik L. Medicaid adult dental benefits increase use of dental care, but impact of expansion on dental services use was mixed. *Health Affairs*. 2017 Apr 1;36(4):723-32.
- ⁶³ U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Healthy People. gov. Healthy People 2020 topics & objectives, oral health: OH 7 [Internet]. Rockville (MD): cited 2019 Jul 3. Available from: <https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=5028;hisp=1>.

- ⁶⁴ American Dental Association, Health Policy Institute. Dental benefits coverage in the U.S [Internet]. Chicago (IL): cited 2019 Jul 24. Available from: https://www.ada.org/~/media/ADA/Science%20and%20Research/HPI/Files/HPIgraphic_1117_3.pdf?a=en.
- ⁶⁵ 42 U.S.C. § 1396d(a)(10).
- ⁶⁶ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services, Medicaid.gov. Dental care [Internet]. Baltimore (MD): cited 2019 Jun 27. Available from: <https://www.medicare.gov/medicaid/benefits/dental/index.html>.
- ⁶⁷ Center for Health Care Strategies. Medicaid adult dental benefits: an overview. Fact Sheet [Internet]. 2019 Sept, cited: 2020 Apr 20. Available from: https://www.chcs.org/media/Adult-Oral-Health-Fact-Sheet_091519.pdf.
- ⁶⁸ Delaware Health and Social Services, Delaware Medicaid & Medical Assistance. Medicaid adult dental benefit [Internet]. Cited 2020 Apr 20. Available from: <https://www.dhss.deaware.gov/dhss/omma/>.
- ⁶⁹ Medicaid Adult Dental Benefit, HB 4, §§ 224-227. 2019 Session (N.H. 2019).
- ⁷⁰ Snyder A, Kanchinadam K. A check-up on dental coverage and the ACA. Health Affairs blog [Internet]. Washington (DC): 2015 Mar 24, cited 2019 Jul 3. Available from: <http://healthaffairs.org/blog/2015/03/24/a-check-up-on-dental-coverage-and-the-aca/>.
- ⁷¹ Gifford K, Ellis E, Edwards BC, Lashbrook E, Hinton E, Antonisse L, Rudowitz R. States focus on quality and outcomes amid waiver changes: results from a 50-state Medicaid budget survey for state fiscal years 2018 and 2019 [Internet]. Washington (DC): Kaiser Family Foundation 2018 Oct 25, cited 2019 Sept 4. Available from: <https://www.kff.org/report-section/states-focus-on-quality-and-outcomes-amid-waiver-changes-managed-care-initiatives/>.
- ⁷² Gifford K, Ellis E, Edwards BC, Lashbrook E, Hinton E, Antonisse L, Rudowitz R. States focus on quality and outcomes amid waiver changes: results from a 50-state Medicaid budget survey for state fiscal years 2018 and 2019 [Internet]. Washington (DC): Kaiser Family Foundation 2018 Oct 5, cited 2019 Sept 4. Available from: <https://www.kff.org/report-section/states-focus-on-quality-and-outcomes-amid-waiver-changes-managed-care-initiatives/>.
- ⁷³ Snyder A, Kanchinadam K. Adult dental benefits in Medicaid: recent experiences from seven states [Internet]. Washington (DC): National Academy for State Health Policy. 2015 Jul 1-32, cited 2019 Jul 3. Available from: <http://nashp.org/wp-content/uploads/2015/07/Adult-Dental-Benefits-in-Medicaid-Recent-Experiences-from-Seven-States.pdf>.
- ⁷⁴ U.S. Department of Health and Human Services, Health Resources Services Administration. What is a health center? [Internet]. Rockville (MD): HRSA Health Center Program, 2018 Nov, cited 2019 Jul 3. Available from: <http://bphc.hrsa.gov/about/what-is-a-health-center/index.html>.
- ⁷⁵ 42 U.S.C. § 1396d(a)(2)(C).
- ⁷⁶ 42 U.S.C. § 1396d(a)(2)(C).
- ⁷⁷ *California Ass'n of Rural Health Centers v. Douglas*, 738 F.3d 1007, 1015-16 (9th Cir. 2013).
- ⁷⁸ 42 U.S.C. §§ 1396a(a)(10)(A), 1396a(a)(43), 1396d(a)(4)(B), 1936d(r), 42 U.S.C. §§ 1396o, and 1396o-1.
- ⁷⁹ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. EPSDT—A guide for states: Coverage in the Medicaid benefit for children and adolescents. Washington (DC): 2014 Jun 23-4. Available from: https://www.reg.cers.gov/medicaid/benefits/downloads/epsdt_coverage_guide.pdf.
- ⁸⁰ American Academy of Pediatric Dentistry, Council on Clinical Affairs. Guideline on periodicity of examination, preventive dental services, anticipatory guidance/counseling, and oral treatment for infants, children, and adolescents. *Pediatric Dentistry*. 2013;35(5):E148. (Reprinted in *Pediatric Dentistry*. 2017; 39(6): 188-196.)
- ⁸¹ Hagan JF, Shaw JS, Duncan PM, editors. *Bright futures: guidelines for health supervision of infants, children and adolescents*. 4th ed. Washington (DC): American Academy of Pediatrics, 2017 Feb 15.
- ⁸² Baker SD, Lee JY, Wright R. The Importance of the age one dental visit. Chicago (IL): Pediatric Oral Health Research and Policy Center, American Academy of Pediatric Dentistry; 2019.
- ⁸³ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Keep kids smiling: promoting oral health through the Medicaid benefit for children and adolescents [Internet]. Washington, DC: 2013, cited 2019 Nov 18. Available from: <https://www.medicare.gov/medicaid/benefits/downloads/keep-kids-smiling.pdf>.
- ⁸⁴ Borck R, Vine M, Crass J, Norris L, Rosenbach R. Improving oral health care and delivery in Medicaid and CHIP: a toolkit for states [Internet]. Washington (DC): Medicaid/CHIP Health Care Quality Measures Technical Assistance and Analytic Support Program, sponsored by Centers for Medicare & Medicaid Services; 2014 Jun, cited 2019 Nov 18. Available from: <https://www.medicare.gov/medicaid/benefits/downloads/oral-health-quality-improvement-toolkit-for-states.pdf>.
- ⁸⁵ Nasseh K, Vujicic M, O'Dell A. Affordable Care Act expands dental benefits for children but does not address critical access to dental care. Chicago (IL): American Dental Association, Health Policy Institute; 2013 Apr, cited 2019 Jul 3.

- ⁸⁶ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services, Centers for Medicaid and CHIP Services. CMCS informational bulletin: CMS oral health initiative and other dental-related items. Washington (DC): 2013 Apr 18, cited 2019 Nov 18. Available from: <https://www.medicare.gov/federal-policy-guidance/downloads/cib-04-18-13.pdf>.
- ⁸⁷ Perkins J. National Health Law Program, Medicaid EPSDT Case Docket. 2014 Jan 13, cited 2019 Nov 18. Available from: <https://healthlaw.org/resource/medicaid-epsdt-case-docket>.
- ⁸⁸ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services, Centers for Medicaid and CHIP Services. Informational bulletin: Update on CMS oral health initiative and other oral health related items [Internet]. Washington (DC): 2014 Jul 10, cited 2019 Jul 5. Available from: <https://www.medicare.gov/federal-policy-guidance/downloads/CIB-07-10-2014.pdf>.
- ⁸⁹ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services, Medicaid.gov. Dental care [Internet]. Baltimore (MD): cited 2019 Jul 10. Available from: <https://www.medicare.gov/medicaid/benefits/dental/index.html>.
- ⁹⁰ 42 U.S.C. §§ 1396d(r)(5), 1396d(r)(3).
- ⁹¹ Any other medical care or remedial care recognized under State law and specified by the Secretary, 42 C.F.R. § 440.170.
- ⁹² U.S. Department of Health and Human Services, Center for Medicare and Medicaid Services. Letter from Cindy Mann, Director, to state Medicaid directors and state health officials, Re: Increased federal matching funds for translation and interpretation services under Medicaid and CHIP [Internet]. SHO # 10-007, CHIPRA # 18, July 1, 2010. Baltimore (MD): 2010 Jul 1, cited 2019 Jul 5. Available from: <https://www.medicare.gov/federal-policy-guidance/downloads/SHO10007.pdf>.
- ⁹³ Children's Health Insurance Program Reauthorization Act of 2009, § 201(b).
- ⁹⁴ 42 U.S.C. § 1396a(a)(43).
- ⁹⁵ Utilization of providers and coordination with related programs, 42 C.F.R. § 441.61.
- ⁹⁶ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Keep kids smiling: promoting oral health through the Medicaid benefit for children and adolescents [Internet]. Washington, DC: 2013, cited 2019 Nov 18. Available from: <https://www.medicare.gov/medicaid/benefits/downloads/keep-kids-smiling.pdf>.
- ⁹⁷ Griffin SO, Wei L, Gooch BF, Weno K, Espinoza L. Vital signs: dental sealant use and untreated tooth decay among U.S. school-aged children [Internet]. Atlanta (GA): Centers for Disease Control and Prevention; 2017, cited 2019 Nov 18. Available from: <https://www.cdc.gov/mmwr/volumes/65/wr/mm6541e1.htm>.
- ⁹⁸ Griffin SO, Wei L, Gooch BF, Weno K, Espinoza L. Vital signs: dental sealant use and untreated tooth decay among US school-aged children. MMWR Morbid Mortal Wkly Rep [Internet]. 2016, cited 2020 Apr 22; 65:1141-1145. Available from: <https://www.cdc.gov/mmwr/volumes/65/wr/mm6541e1.htm>.
- ⁹⁹ Medicaid|Medicare|CHIP Services Dental Association. National profile of state Medicaid & CHIP oral health programs: 2017 profile. Cited 2019 Nov 18. Available from: <https://www.msdanationalprofile.com>.
- ¹⁰⁰ Gooch BF, Giffin SO, Gray SK, Kohn WG, Rozier RG, Siegal M, et al. Preventing dental caries through school-based sealant programs: updated recommendations and review of evidence. J Am Dental Assn [Internet]. 2009 Nov 1, cited 2019 Nov 18;140(11):1356-65. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/19884392>.
- ¹⁰¹ Gooch BF, Giffin SO, Gray SK, Kohn WG, Rozier RG, Siegal M, et al. Preventing dental caries through school-based sealant programs: updated recommendations and review of evidence. J Am Dental Assn [Internet]. 2009 Nov 1, cited 2019 Nov 18;140(11):1356-65. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/19884392>.
- ¹⁰² Griffin SO, Naavali S, Scherrer C, Patel M, Chattopadhyay S. Community Preventive Services Task Force. Evaluation of school-based dental sealant programs: an updated community guide systematic economic review. Am J Prev Med. 2017 Mar 1;52(3):407-15.
- ¹⁰³ Gooch BF, Giffin SO, Gray SK, Kohn WG, Rozier RG, Siegal M, et al. Preventing dental caries through school-based sealant programs: updated recommendations and review of evidence. J Am Dental Assn [Internet]. 2009 Nov 1, cited 2019 Nov 18;140(11):1356-65. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/19884392>.
- ¹⁰⁴ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Re: Letter from Cindy Mann, Director, to state Medicaid directors and state health officials; Medicaid payment for services provided without charge (free care) [Internet]. Baltimore (MD): 2014 Dec 15, cited 2019 Jul 5. Available from: <https://www.medicare.gov/federal-policy-guidance/downloads/smd-medicare-payment-for-services-provided-without-charge-free-care.pdf>.
- ¹⁰⁵ U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Dental sealants [Internet]. Atlanta (GA): reviewed 2019 May 3, cited 2019 Jul 5. Available from: <https://www.cdc.gov/oralhealth/dental-sealant-program/index.htm>.

- ¹⁰⁶ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Letter from Cindy Mann, Director, to state Medicaid directors and state health officials, Re: Medicaid payment for services provided without charge (free care) [Internet]. Baltimore (MD): 2014 Dec 15, cited 2019 Jul 5. Available from: <https://www.medicaid.gov/federal-policy-guidance/downloads/smq-medicaid-payment-for-services-provided-without-charge-free-care.pdf>.
- ¹⁰⁷ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. 2019 core set of children's health care quality measures for Medicaid and CHIP (Child Core Set) [Internet]. Baltimore (MD): cited 2019 Nov 18. Available from: <https://www.medicare.gov/medicaid/quality-of-care/downloads/performance-measurement/2019-child-core-set.pdf>.
- ¹⁰⁸ Gooch BF, Giffin SO, Gray SK, Kohn WG, Rozier RG, Siegal M, et al. Preventing dental caries through school-based sealant programs: updated recommendations and review of evidence. *J Am Dental Assn* [Internet]. 2009 Nov 1, cited 2019 Nov 18;140(11):1356-65. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/19884392>.
- ¹⁰⁹ U.S. Preventive Services Task Force. Final recommendation statement: dental caries in children from birth through age 5 years: screening [Internet]. 2014 May, reviewed 2019 May, cited 2019 Jul 5. Available from: <https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/dental-caries-in-children-from-birth-through-age-5-years-screening>.
- ¹¹⁰ American Academy of Pediatric Dentistry, Pediatric Oral Health Research and Policy Center. Are your kids covered?: Medicaid coverage for essential oral health benefits. 2017 Sept, cited 2019 Nov 18. Available from: <https://www.aapd.org/assets/1/7/AreYourKidsCoveredfinal.pdf>.
- ¹¹¹ North Carolina Department of Health and Human Services. Oral Health: Into the mouths of babes [Internet]. Raleigh (NC): updated 2019 May 22, cited 2019 Jul 3. Available from: <https://publichealth.nc.gov/oral-health/partners/IMR.htm>.
- ¹¹² Rosenblatt A, Stamford TC, Niederman R. Silver diamine fluoride: a caries "silver-fluoride bullet." *J Dental Research*. 2019 Feb;88(2):116-25.
- ¹¹³ Tomar SL. Silver diamine fluoride: a game changer in managing caries in high-risk populations? [Internet]. Webinar presented for Association of State and Territorial Dental Directors supported by Centers for Disease Control and Prevention, Division of Oral Health Cooperative Agreement NU58DP004919-04-00. 2017 Jan 13. Available from: <http://www.astdd.org/docs/sdf-webcast-sdges-01-13-17.pdf>.
- ¹¹⁴ Perkins J. EPSDT's role in improving child vision, hearing, and oral health. *J Law Med Ethics*. 2017 Mar;45(1_suppl):65-8.
- ¹¹⁵ Medicaid|Medicare|CHIP Services Dental Association. National profile of state Medicaid & CHIP oral health programs: 2017 profile. Cited 2020 Jul 06.
- ¹¹⁶ Medicaid and CHIP Payment and Access Commission. Medicaid access in brief: adults' use of oral health services [Internet]. Washington (DC): MACPAC. 2016 Nov, cited 2019 Jul 5; 8 p. Available from: <https://www.macpac.gov/wp-content/uploads/2016/11/Adults-Use-of-Oral-Health-Services.pdf>.
- ¹¹⁷ Warder CJ, Edelstein BL. Evaluating levels of dentist participation in Medicaid: a complicated endeavor. *The Journal of the American Dental Association*. 2017 Jan 1;148(1):26-32.
- ¹¹⁸ American Dental Association, Health Policy Institute. Infographic: Dentist participation in Medicaid or CHIP [Internet]. Cited 2019 Nov 19. Available from: https://www.ada.org/-/media/ADA/Science%20and%20Research/HPI/Files/HPIGraphic_0318_1.pdf?ja=en.
- ¹¹⁹ Vujcic M. Is the number of Medicaid providers really that important? *J Am Dent Assoc* 2016;147(3):221-3.
- ¹²⁰ Warder CJ, Edelstein BL. Evaluating levels of dentist participation in Medicaid. *J Am Dent Assoc* 2017;148(1):26-32.
- ¹²¹ Edelstein B. The dental safety net, its workforce, and policy recommendations for its enhancement. *J Public Health Dent* 2010;70:Suppl1: S32-9.
- ¹²² U.S. Department of Health and Human Services, Center for Medicare and Medicaid Services. Table PDENT-CH: Percentage of eligibles ages 1 to 20 who received preventive dental services, as submitted by states for the FFY 2018 Form CMS-416 Report (n = 51 states)(FY2018) [Internet]. Cited 2019 Nov 19. Available at: <https://www.medicare.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/child-core-set/index.htm#ChildCoreSet>.
- ¹²³ Frosh WJ. Strategies to enhance dentists' participation in Medicaid: a review of current practices [Internet]. St. Louis (MO): Missouri Foundation for Health. Spring 2017, cited 2019 Nov 19. Available at <https://mfh.org/wordpress/wp-content/uploads/2017/04/Policy-Strategies-to-Enhance-Dentists-Participation-in-Medicaid.pdf>.
- ¹²⁴ Borchgrevink A, Snyder A, Gehshan S. The effects of Medicaid reimbursement rates on access to dental care [Internet]. National Academy for State Health Policy, 2008. Available at https://nashp.org/wp-content/uploads/sites/default/files/CHCF_dental_rates.pdf.

- ¹²⁵ Smith VK, Gifford K, Ellis E, Rudowitz R, Snyder L, Hinton E. Medicaid reforms to expand coverage, control costs, and improve care: results from a 50-state Medicaid budget survey for state fiscal years 2015 and 2016 [Internet]. Washington (DC): Kaiser Family Foundation. 2015 Oct 15, cited 2019 Nov 20. Available from: <https://www.kff.org/medicaid/report/medicaid-reforms-to-expand-coverage-control-costs-and-improve-care-results-from-a-50-state-medicaid-budget-survey-for-state-fiscal-years-2015-and-2016>.
- ¹²⁶ Network for Public Health Law. Policy option to increase access to oral health care and improved oral health by expanding the oral health workforce [Internet]. St. Paul (MN): 2014 Oct, cited 2020 Jul 06. Available from: <https://www.networkforphl.org/wp-content/uploads/2020/01/Collaborative-Practice-Strategy-for-Increasing-Oral-Health-Care-Access-in-MN-Issue-Brief.pdf>.
- ¹²⁷ Center for Health Care Strategies, Inc. Medicaid accountable care organizations; state update [Internet]. Hamilton (NJ): 2018 Feb, cited 2019 Jul 5. Available from: <https://www.chcs.org/media/ACO-Fact-Sheet-02-27-2018-1.pdf>.
- ¹²⁸ Lloyd J, Houston R, McGinnis T. Medicaid accountable care organization programs: state profiles [Internet]. Hamilton (NJ): Center for Health Care Strategies; 2015 Oct, cited 2019 Jul 5. Available from: <https://www.chcs.org/resource/medicaid-accountable-care-organization-programs-state-profiles>.
- ¹²⁹ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services, Medicaid.gov. Medicaid and CHIP managed care final rule [Internet]. Cited 2019 Nov 19. Available from: <https://www.medicare.gov/medicaid/managed-care/guidance/final-rule/index.html>.
- ¹³⁰ Quality assessment and performance improvement program, 42 C.F.R. § 438.240(a)(1).
- ¹³¹ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services, Medicaid.gov. Quality of care external quality review [Internet]. Cited 2020 May 10. Available from: <https://www.medicare.gov/medicaid/quality-of-care/medicaid-managed-care/external-quality-review/index.htm>.
- ¹³² Mahadevan R, Chazin S, Centers for Health Care Strategies. Medicaid oral health performance improvement projects: a how-to manual for states [Internet]. Washington (DC): Centers for Medicare & Medicaid Services. 2015 Jul, cited 2019 Jul 5. Available from: <https://www.medicare.gov/medicaid/benefits/downloads/pip-manual-for-states.pdf>.
- ¹³³ The Social Security Act of 1935, Pub. L. 74-271, 42 U.S.C. § 1315.
- ¹³⁴ Center for Health Care Strategies, Inc. Medicaid accountable care organizations; state update [Internet]. Hamilton (NJ): 2018 Feb, cited 2019 Jul 5. Available from: <https://www.chcs.org/media/ACO-Fact-Sheet-02-27-2018-1.pdf>.
- ¹³⁵ Lloyd J, Houston R, McGinnis T. Medicaid accountable care organization programs: state profiles [Internet]. Hamilton (NJ): Center for Health Care Strategies; 2015 Oct, cited 2019 Jul 5. Available from: <https://www.chcs.org/resource/medicaid-accountable-care-organization-programs-state-profiles>.
- ¹³⁶ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Letter from Andrew M. Slavitt, Acting Admin, CMS, to Mari Cantwell, Chief Dep. Dir., Cal. Department of Health Care Servs. 2015 Dec 30, cited 2020 Jun 11. Available from: https://www.chcs.ca.gov/provgovpart/Documents/Letter_to_State-CA_Redacted.pdf.
- ¹³⁷ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Letter from Cindy Mann, Director, CMS, to Toby Douglas, Chief Dep. Dir. Cal. Dep't of Health Care Servs. 2012 Dec 31.
- ¹³⁸ California's Medi-Cal 2020 Demonstration (11-W-00103/9). Section 1115 waiver annual report. Demonstration year 13 (July 1, 2017-June 20, 2018) [Internet]. Cited 2019 Nov 19. Available from: <https://www.chcs.ca.gov/provgovpart/Pages/medi-cal-2020-progressreports.aspx>.
- ¹³⁹ Children's Dental Health Project. Meeting the triple aim for children's oral health: recommendations for patient-centered oral care in Medi-Cal. Washington (DC): Children's Dental Health Project; 2015 Mar.
- ¹⁴⁰ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Health care innovation awards round two project profiles [Internet]. Bethesda (MD): 2014, cited 2019 Jul 5. Available from: <https://innovation.cms.gov/Files/x/HCIATwoPrjProCombined.pdf>.
- ¹⁴¹ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services, Medicaid.gov. Children's health insurance program [Internet]. Baltimore (MD): Cited 2019 Nov 20. Available from: <https://www.medicare.gov/chip/chip-program-information.html>.
- ¹⁴² U.S. Department of Health and Human Services, Centers for Medicaid & Medicare Services. Federal fiscal year (FFY) 2018 Statistical Enrollment Data System (SEDS) reporting [Internet]. Cited 2020 Jul 06. Available at: <https://www.medicare.gov/sites/default/files/2019-12/ff-2018-childrens-enrollment-report.pdf>.
- ¹⁴³ Medicaid and CHIP Payment and Access Commission. Federal CHIP funding: when will states exhaust allotments? [Internet]. Washington (DC): MACPAC; 2017 Jul, cited 2020 Jul 06. Available from: <https://www.macpac.gov/publication/updated-when-will-states-exhaust-federal-chip-allotments/>.
- ¹⁴⁴ 42 U.S.C. § 1397cc(c).
- ¹⁴⁵ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Letter from Cindy Mann. Re: Dental coverage in CHIP [Internet]. Washington (DC): 2009 Oct 7, cited 2019 Jul 5. Available from:

- <https://downloads.cms.gov/cmsgov/archived-downloads/SMDL/downloads/SHO100709.pdf>.
- ¹⁴⁶ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Certification of comparability of pediatric coverage offered by qualified health plans [Internet]. Baltimore (MD): 2015 Nov 25, cited 2019 Jul 5. Available from: <https://www.medicaid.gov/chip/downloads/certification-of-comparability-of-pediatric-coverage-offered-by-qualified-health-plans.pdf>.
- ¹⁴⁷ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Certification of comparability of pediatric coverage offered by qualified health plans [Internet]. Baltimore (MD): 2015 Nov 25, cited 2019 Jul 5. Available from: <https://www.medicaid.gov/chip/downloads/certification-of-comparability-of-pediatric-coverage-offered-by-qualified-health-plans.pdf>.
- ¹⁴⁸ HEALTHY KIDS Act of 2018, H.R. 195, Pub L. No. 115-120 (2018).
- ¹⁴⁹ Ricks TL, Phipps KR, Bruerd B. The Indian Health Service early childhood caries collaborative: a five-year summary. *Pediatric Dentistry*. 2015 May 15;37(3):275-80.
- ¹⁵⁰ Ricks TL, Phipps KR, Bruerd B. The Indian Health Service early childhood caries collaborative: a five-year summary. *Pediatric Dentistry*. 2015 May 15;37(3):275-80.
- ¹⁵¹ Norris L. Center for Medicare and Medicaid Services. Email exchange with authors [Internet]. 2015 Dec 12, 10:54am. Available from: <https://www.aca.org/en/education-careers/events/symposium-on-early-childhood-caries-in-american-indian-and-alaska-native-children>.
- ¹⁵² Chi DL, Lenaker D, Mancl L, Dunbar M, Babb M. Dental therapists linked to improved dental outcomes for Alaska Native communities in the Yukon-Kuskokwim Delta. *J Public Health Dent*. 2018 Mar;78(2):175-182. doi: 10.1111/jphd.12263. Epub 2018 Jan 29. PubMed PMID: 29377127; PubMed Central PMCID: PMC6019600.
- ¹⁵³ Metcalf SS, Birenz SS, Kunzek C, Wang H, Schrimshaw EW, Marshall SE, Northridge ME. The impact of Medicaid expansion on oral health equity for older adults: a systems perspective. *J California Dental Assn*. 2015 July;43(7):369.
- ¹⁵⁴ The Patient Protection and Affordable Care Act of 2010, 42 U.S.C. § 18001 et seq. (2017).
- ¹⁵⁵ U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation. Health insurance coverage and the Affordable Care Act: ASPE issue brief [Internet]. Washington (DC): 2015 May 5, cited 2019 Jul 5. Available from: https://aspe.hhs.gov/system/files/pdf/139211/b_uninsured_change.pdf.
- ¹⁵⁶ The Patient Protection and Affordable Care Act of 2010, 42 U.S.C. §§ 18022 (b)(1)(A)-(J).
- ¹⁵⁷ Grace AM, Noonan KG, Cheng TL, Miller D, Verga B, Rubin D, Rosenbaum S. The ACA's pediatric essential health benefit has resulted in a state-by-state patchwork of coverage with exclusions. *Health Affairs*. 2014 Dec 1;33(12):2136-43.
- ¹⁵⁸ Bly A, Lerche J, Rustagi K. Comparison of benefits and cost sharing in children's health insurance programs to qualified health plans. Sandy Springs (GA): Wakely Consulting Group; 2014 Jul.
- ¹⁵⁹ Nasseh K, Yarbrough C, Vujicic M. Including child dental benefits in medical plans in California had a limited impact on premiums [Internet]. Chicago (IL): American Dental Association, Health Policy Institute; 2015 May, cited 2019 Jul 5. Available from: http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_0515_1.pdf?a=en.
- ¹⁶⁰ Lilienfeld M. Lessons from CA: pediatric dental coverage in the Exchange [Internet]. National Health Law Program; 2014 Mar 31, cited 2019 Jul 5. Available from: <https://healthlaw.org/resource/lessons-from-ca-pediatric-dental-coverage-in-the-exchange/>.
- ¹⁶¹ Yarbrough R, Vujicic M. More dental benefits options in 2015 health insurance marketplaces [Internet]. Chicago (IL): American Dental Association Health Policy Institute; 2015 Feb, cited 2019 Jul 5. Available from: https://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_0215_1.pdf?a=en.
- ¹⁶² Yarbrough C, Vujicic M. More dental benefits options in 2015 health insurance marketplaces [Internet]. Chicago (IL): American Dental Association Health Policy Institute; 2015 Feb, cited 2019 Jul 5. Available from: https://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_0215_1.pdf?a=en.
- ¹⁶³ Nasseh K, Vujicic M. Dental plan premiums in the Affordable Care Act marketplaces trended downward from 2014 to 2016. *J Am Dental Association*. 2017 Apr 1;148(4):230-5.
- ¹⁶⁴ U.S. Department of Health and Human Services. Patient Protection and Affordable Care Act; standards related to essential health benefits, actuarial value, and accreditation. *Fed Regist*. 2013 Feb 25;78(37):12833-72.
- ¹⁶⁵ Washington Health Benefit Exchange. Dental coverage [Internet]. Seattle (WA): 2017 Nov 1, cited 2019 Jul 5. Available from: <https://www.wahbexchange.org/dental-coverage>.
- ¹⁶⁶ Snyder A, Kanchinadam K. A check-up on dental coverage and the ACA. *Health Affairs blog* [Internet]. Washington (DC): 2015 Mar 24, cited 2019 Jul 3. Available from: <http://healthaffairs.org/blog/2015/03/24/a-check-up-on-dental-coverage-and-the-aca/>.
- ¹⁶⁷ 42 U.S.C. § 300gg-13.

- ¹⁶⁸ Coverage of preventive health services, 26 C.F.R. § 54.9815–2713.
- ¹⁶⁹ Coverage of preventive health services, 29 C.F.R. § 2590.715–2713.
- ¹⁷⁰ Coverage of preventive health services, 45 C.F.R. § 147.130.
- ¹⁷¹ U.S. Preventive Services Task Force. USPSTF A and B recommendations [Internet]. Atlanta (GA): 2019 Jun, cited 2019 Jul 5. Available from: <https://www.uspreventiveservicestaskforce.org/Page/Name/uspstf-a-and-b-recommendations/>.
- ¹⁷² Hummel J, Phillips KE, Holt B, Hayes C. Oral health: an essential component of primary care; white paper [Internet]. National Interprofessional Initiative on Oral Health; 2015 Jun, cited 2019 Jul 5. Support from DentaQuest Foundation, REACH Healthcare Foundation, and the Washington Dental Service Foundation. Available from: <http://www.safetynetmedicalhome.org/sites/default/files/White-Paper-Oral-Health-Primary-Care.pdf>.
- ¹⁷³ Provision of EHB, 45 C.F.R. § 156.115(d).
- ¹⁷⁴ Yarbrough R, Vujicic M. More dental benefits options in 2015 health insurance marketplaces [Internet]. Chicago (IL): American Dental Association Health Policy Institute; 2015 Feb, cited 2019 Jul 5. Available from: https://www.ada.org/-/media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_0215_1.pdf?la=en.
- ¹⁷⁵ Vujicic M, Yarbrough C. Young adults most likely age group to purchase dental benefits in health insurance market places [Internet]. Chicago (IL): American Dental Association Health Policy Institute; 2014 Aug.
- ¹⁷⁶ The Patient Protection and Affordable Care Act of 2010, Pub. L. 111-148, § 4101(a).
- ¹⁷⁷ The Patient Protection and Affordable Care Act of 2010, Pub. L. 111-148, § 4102(a)-(c) (amending The Public Health Service Act of 1944, 42 U.S.C. §§ 241, 247b-4).
- ¹⁷⁸ National Institute of Dental and Craniofacial Research. Health Info: HIV/AIDS & oral health [Internet]. Bethesda (MD): cited 2019 Jul 5. Available from: <https://www.nidcr.nih.gov/health-info/hiv-aids>.
- ¹⁷⁹ 42 U.S.C. § 300ff-11.
- ¹⁸⁰ U.S. Department of Health and Human Services, Health Resources and Services Administration, HIV/AIDS Bureau. FY 2019 Ryan White HIV/AIDS program funding: Part F dental programs grant awards [Internet]. 2019 Oct, cited 2020 Jan 5. Available from: <https://hab.hrsa.gov/about-ryan-white-hivaids-program/part-f-dental-programs/fy2019-awards>.
- ¹⁸¹ U.S. Department of Health and Human Services, Office of Early Childhood Development, Head Start. Oral health [Internet]. Washington (DC): Administration on Children and Families; cited 2019 Jul 5. Available from: <https://eclkc.ohs.acf.hhs.gov/about-us/article/head-start-program-facts-fiscal-year-2018>.
- ¹⁸² U.S. Department of Health and Human Services, Office of Early Childhood Development. Early Head Start services snapshot: national (2016-2017). Washington (DC): Administration on Children and Families; cited 2019 Apr 19. Available from: <https://eclkc.ohs.acf.hhs.gov/sites/default/files/pdf/service-snapshot-ehs-2016-2017.pdf>.
- ¹⁸³ Commonwealth Fund. State and federal efforts to enhance access to basic health care [Internet]. New York (NY): cited 2016 Jun 17. Available at <http://www.commonwealthfund.org/publications/newsletters/states-in-action/2010/mar/march-april-2010/feature/feature>.
- ¹⁸⁴ Institute of Medicine (US) Board on Health Care Services. The U.S. oral health workforce in the coming decade: workshop summary. Chap 7, Challenges of the current system [Internet]. Washington (DC): National Academies Press; 2009, cited 2019 Nov 22. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK219680/>.
- ¹⁸⁵ Foreman M, Blackman K, Tobler L and Johnson T. Oral health: state policy options. Washington (DC): National Conference of State Legislatures, 2015. Available at: <http://www.ncsl.org/Portals/1/Documents/Health/OralHealth2015.pdf>.
- ¹⁸⁶ Foreman M, Blackman K, Tobler L and Johnson T. Oral health: state policy options. Washington (DC): National Conference of State Legislatures; 2019 Jun, cited 2019 Nov 22. Available at: <http://www.ncsl.org/Portals/1/Documents/Health/OraHealth2015.pdf>.
- ¹⁸⁷ U.S. Department of Health and Human Services, Health Resources and Services Administration. Bureau of Health Workforce [Internet]. Cited 2017 May 9. Available at: <https://www.hrsa.gov/about/organization/bureaus/bhw/index.html>.
- ¹⁸⁸ Ng MW, Glassman P, Cral J. The impact of Title VII on general and pediatric dental education and training. *Acad Med* 2008;83:1039-48.
- ¹⁸⁹ U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Workforce. Grants to states to support oral health workforce activities [Internet]. Cited 2019 Nov 11. Available from: <https://bhw.hrsa.gov/fundingopportunities/default.aspx?id=644305e0-b467-4617-84a4-7790ef9a11b1>.
- ¹⁹⁰ Rafiuddin S, Rubin M, Edelstein BL. Integrating oral health in home visiting programs: program and policy options. Abstract for the New York Academy of Medicine's Margaret E. Mahoney Fellowship Program. 2016 Aug.
- ¹⁹¹ Maternal and Child Health Services Block Grant (Title V of the Social Security Act).

- ¹⁹² Edelstein BL. Pediatric dental-focused interprofessional interventions. *Dental Clinics of North America* 2017 Jul;61(3):589-606. doi: 10.1016/j.cden.2017.02.005.
- ¹⁹³ American Dental Association, Health Policy Institute. Supply and profile of dentists [Internet]. Chicago: 2019 Feb, cited 2019 Nov 22. Available from: <https://www.ada.org/en/science-research/health-policy-institute/data-center/supply-and-profile-of-dentists>.
- ¹⁹⁴ Vujicic M. Rethinking dentist shortages. *J Am Dent Assoc* 2015; 146(5):347-49.
- ¹⁹⁵ Vujicic M. Is the number of Medicaid providers really that important?. *J Am Dent Assoc*. 2016;147(3):221-223.
- ¹⁹⁶ Institute of Medicine. *Advancing oral health in America*. Washington (DC): The National Academies Press, 2011.
- ¹⁹⁷ Mertz EA, Wides CD, Kottek AM, Calvo JM, Gates PE. Underrepresented minority dentists: quantifying their numbers and characterizing the communities they serve. *Health Aff* 2016;35(12):2190-99.
- ¹⁹⁸ Jordan JJ, Gabriel BA, Terrell C. The case for diversity in the health care workforce. *Health Aff* 2002 Sep; 21(5): 90-102.
- ¹⁹⁹ American Dental Education Association. Transforming admissions. Chapter 2: Why diversity matters [Internet]. 2019 May, cited 2019 Nov 22. Available at http://www.adea.org/dental_education_pathways/AFASA/transforming/Pages/Ch2studentDiversity.aspx.
- ²⁰⁰ Wanchek T, Cook BJ, Valachovic RW. Annual ADEA survey of dental school seniors: 2017 graduating class. *J Dent Educ* 2018;82(5):524-539. Doi: 10.21815/JDE.018.059.
- ²⁰¹ Wanchek T, Cook BJ, Valachovic RW. Annual ADEA survey of dental school seniors: 2017 graduating class. *J Dent Educ* 2018;82(5):524-539.
- ²⁰² U.S. Department of Health and Human Services, Health Resource and Services Administration. Health professional shortage areas (HPSAs) [Internet]. Cited 2019 Nov 22. Available from: <https://bhwh.hrsa.gov/shortage-designation/hpsas>.
- ²⁰³ Rafiuddin S, Rubin M, Edelstein BL. Integrating oral health in home visiting programs: program and policy options. Abstract for the New York Academy of Medicine's Margaret E. Mahoney Fellowship Program, 2016 Aug.
- ²⁰⁴ McKernan SC, Reynolds JC, Kuthy RA, Kateeb ET, Adrianse NB, Damiano PC. Factors affecting Iowa dentist participation in Medicaid [Internet]. Iowa City (IA): University of Iowa Public Policy Center; 2013, cited 2019 Nov 22. Available at http://ppc.uiowa.edu/sites/default/files/evaluation_of_medicaid_fina.pdf.
- ²⁰⁵ Medicaid and CHIP Payment and Access Commission. June 2015 report to Congress on Medicaid and CHIP. Chapter 2. Medicaid coverage of dental benefits for adults [Internet]. Cited 2017 May 30. Available at <https://www.macpac.gov/wp-content/uploads/2015/06/June-2015-Report-to-Congress-on-Medicaid-and-CHIP.pdf>.
- ²⁰⁶ Health Policy Institute. Education [Internet]. Cited 2019 Nov 22. Available from: <https://www.ada.org/en/science-research/health-policy-institute/dental-statistics/education>.
- ²⁰⁷ Younker E. Updated: KCU to build College of Dental Medicine on Joplin campus. *The Joplin Globe* [Internet]. 2019 Jun 4, cited 2019 Nov 22. Available from: https://www.joplinglobe.com/news/updated-kcu-to-build-college-of-dental-medicine-on-joplin/article_ce413c82-86e2-11e9-bc78-4f9f873b9339.html.
- ²⁰⁸ Bärnighausen T, Bloom DE. Financial incentives for return of service in underserved areas: a systematic review. *BMC Health Services Research*. 2009; 9(1):86.
- ²⁰⁹ Weidon T. Dental fillings: states use loan repayment programs to attract dentists to underserved areas [Internet]. Lexington (KY): Council of State Governments; 2008, cited 2017 May 30. Available at <http://www.csg.org/knowledgecenter/docs/sn0806DentalFillings.pdf>.
- ²¹⁰ An act to amend Section 14169.53 of, to add Section 14184.90 to, and to add and repeal Section 14114 of, the Welfare and Institutions Code, relating to Medi-Cal, and making an appropriation therefor, to take effect immediately, bill related to the budget: California S.B. 849, Medi-Cal (Cal. 2017-2018). Cited 2019 Nov 22. Available from: http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB849.
- ²¹¹ U.S. Department of Health and Human Services, Health Resources and Services Administration. Grants to states to support oral health workforce activities: HRSA-16-038. Bureau of Health Workforce [Internet]. Cited 2019 Nov 25. Available at: <https://bhwh.hrsa.gov/fundingopportunities/default.aspx?c=b0565620-8e30-4526-9c1b-a7eda5185123>.
- ²¹² Children's Dental Health Project. Increasing access to dental care through public private partnerships: contracting between private dentists and federally qualified health centers. An FQHC Handbook [Internet]. Washington (DC): 2011, cited 2019 Nov 22. Available at <https://www.cdhp.org/resources/243-fqhc-handbook-increasing-access-to-dental-care-through-public-private-partnerships>.
- ²¹³ National Network for Oral Health Access. Contracting for dental services in health centers: implementation strategies. Denver (CO): 2017 Jun, cited 2019 Nov 22. Available at <http://www.nnoha.org/nnoha-content/uploads/2017/07/Contracting-Implementing-Strategies-FINAL-July-2017.pdf>.
- ²¹⁴ American Dental Association. Give Kids a Smile [Internet]. Cited 2019 Nov 22. Available from: <http://www.adafoundation.org/en/give-kids-a-smile>.

- ²¹⁵ America's Dentists Care Foundation, Mission of mercy [Internet]. Cited 2019 Nov 22. Available at <https://accf.net/about-us/>.
- ²¹⁶ Dental Lifeline Network. Our programs [Internet]. Available from: <https://dentallifeline.org/about-us/our-programs/>.
- ²¹⁷ American Dental Association. The ADA practical guide for international dentists: U.S. dental licensure and testing requirements e - P801D. E book [Internet]. Chicago (IL): 2015, cited 2019 Nov 22. Available at: <https://ebusiness.ada.org/productcatalog/33403/Clinical/Reference/P801T>.
- ²¹⁸ Universidad De La Salle. International dental program of De La Salle [Internet]. Bajio (Mexico): cited 2019 Nov 22. Available at http://bajio.uq-asalle.edu.mx/oferta/op_en.php.
- ²¹⁹ Bazargan N, Chi DL, Milgrom P. Exploring the potential for foreign-trained dentists to address workforce shortages and improve access to dental care for vulnerable populations in the United States: a case study from Washington State. *BMC Health Services Research* 2010; 10(1):336-343.
- ²²⁰ Washington State Dental Association. Licensure information: foreign trained dentists [Internet]. Cited 2019 Nov 22. Available at: <http://www.wsda.org/regulations/licensure-info/foreign-trained-dentists>.
- ²²¹ Institute of Medicine and National Research Council. Improving access to oral health care for vulnerable and underserved populations. Washington (DC): National Academies Press, 2011, p 119.
- ²²² Policy Surveillance Program. Dental hygiene practice laws [Internet]. Philadelphia (PA): LawAtlas; 2015 Jan 1; cited 2019 Nov 22. Available from: <http://awatlans.org/datasets/dental-hygiene-practice-laws>.
- ²²³ Professions and occupations. Colo. Rev Stat. § 12-35-124 (1987).
- ²²⁴ Independent practice dental hygienist. Me. Rev. Stat. Ann tit. 32 § 18375 (2015).
- ²²⁵ Dental therapist. Minn. Stat. § 150A.105 (2016).
- ²²⁶ Dental therapist. Me. Rev. Stat. Ann. tit. 32 § 18377 (2016).
- ²²⁷ Dentists, dental therapists, dental hygienists, and dental assistants. Vt. Stat. Ann. tit. 26, §§ 561-668 (2016).
- ²²⁸ American Dental Hygienists Association. Local anesthesia administration by dental hygienists: state chart [Internet]. 2018 Jun, cited 2019 Nov 22. Available at http://www.adha.org/resources-docs/7514_Local_Anesthesia_Requirements_by_State.pdf.
- ²²⁹ American Dental Hygienists Association. Nitrous oxide 2018. [Internet]. 2019 Jan, cited 2019 Nov 22. Available from: https://www.adha.org/resources-docs/7522_Nitrous_Oxide_by_State.pdf.
- ²³⁰ American Dental Hygienists Association. Dental hygienists restorative duties: state chart. 2016 Apr, cited 2019 Nov 22. Available at http://www.adha.org/resources-docs/7516_Restorative_Duties_by_State.pdf.
- ²³¹ Institute of Medicine and National Research Council. Improving access to oral health care for vulnerable and underserved populations. Washington (DC): National Academies Press, 2011, p. 119.
- ²³² Policy Surveillance Program. Dental hygiene practice laws [Internet]. Philadelphia (PA): LawAtlas; 2015 Jan 1, cited 2019 Nov 22. Available from: <http://awatlans.org/datasets/dental-hygiene-practice-laws>.
- ²³³ Dentists and dental hygienists: Colo. Rev Stat. § 12-35-124 (1987).
- ²³⁴ Dental Assisting National Board, Inc. Meet state requirements. State requirements search [Internet]. Cited 2019 Nov 22. Available at <http://www.danb.org/Meet-State-Requirements.aspx>.
- ²³⁵ National Denturist Association USA. Affiliates map [Internet]. Cited 2020 May 11. Available at <http://nationaldenturist.com/affiliates>.
- ²³⁶ Evans C, Chestnutt IG, Chadwick BL. The potential for delegation of clinical care in general dental practice. *Br Dent J* 2007;203:695-9.
- ²³⁷ Nash DA, Friedman JW, Mathu-Muju KR, Peter G, Robinson PG, Satur J, et al. A review of the global literature on dental therapists in the context of the movement to add dental therapists to the oral health workforce in the United States [Internet]. Battle Creek (MI): W.K.Kellogg Foundation; 2012, cited 2016 Jan 14. Available at http://depts.washington.edu/dentexak/workpress/wp-content/uploads/2012/10/Global_Literature.pdf.
- ²³⁸ Community Catalyst. Dental access project [Internet]. Cited 2019 Nov 22. Available at: <https://www.communitycatalyst.org/initiatives-and-issues/initiatives/dental-access-project/dental-access-project>.
- ²³⁹ American Dental Education Association. ADEA state update: Vermont governor signs dental therapy bill [Internet]. 2016 Jun 10, cited 22 Nov 2019. Available at <http://www.adea.org/Blog.aspx?d=34695&blogid=20132>.
- ²⁴⁰ American Dental Hygienists' Association. Competencies for the Advanced Dental Hygiene Practitioner (as adopted by the ADHA Board of Trustees 3/10/08) [Internet]. Chicago (IL): 2008, cited 2019 Nov 22. Available at: <https://ocplayer.net/2675319-Competencies-for-the-advanced-dental-hygiene-practitioner-adhp.html>.
- ²⁴¹ Rubin MS, Nunez N, Quick JD, Edelstein BL. A survey of US early childhood caries programs: findings and recommendations. *J Pub Health Dent.* 2019;79(2):116-123. Doi: 10.1111/jphd.12302.

- ²⁴² National Interprofessional Initiative on Oral Health. Clinicians for oral health [Internet]. Cited 2016 Jan 30. Available at <http://www.niioh.org/>.
- ²⁴³ Edelstein BL, Rubin MS, Douglass JM. In-depth solutions for integrated care. Improving children's oral health by crossing the medical-dental divide [Internet]. Hartford (CT): Connecticut Health Foundation; 2015, cited 2019 Nov 25. Available at <http://www.cthealth.org/wp-content/uploads/2015/02/Crossing-the-Medical-Dental-Divide-Final.pdf>.
- ²⁴⁴ Zexima K. Short of dentists, Maine adds teeth to doctors' training. New York Times, Sect. A:12. [Internet]. 2009 Mar 2, cited 2017 May 30. Available at <http://www.nytimes.com/2009/03/03/us/03dentist.html>.
- ²⁴⁵ Oral Health Care During Pregnancy Expert Workgroup 2012. Oral health care during pregnancy: a national consensus statement. Washington (DC): National Maternal and Child Oral Health Resource Center; 2012.
- ²⁴⁶ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Instructions for completing form CMS-416: annual early and periodic screening diagnostic and treatment (EPSDT) participation report [Internet]. 2017 Sept, cited 2020 May 10. Available at: <https://www.medicare.gov/sites/default/files/2019-12/cms-416-instructions.pdf>.
- ²⁴⁷ Edelstein BL. Pediatric dental-focused inter-professional interventions: rethinking early childhood oral health management. Dent Clin North Am [Internet]. 2017, cited 2019 Nov 25;61(3):589-606. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5512453/>.
- ²⁴⁸ Columbia University Center for New Media Teaching and Learning. MATCH: multidisciplinary approaches to children's oral health. 2014 Sept, cited 2019 Nov 25. Available at: http://ccnmtl.columbia.edu/portfolio/medicine_and_health/match.html.
- ²⁴⁹ American Dental Association. Breaking down barriers to oral health for all Americans: the community dental health coordinator. A statement from the American Dental Association [Internet]. Chicago (IL): 2012 Oct, cited 2019 Nov 25. Available at: https://www.ada.org/en/~/media/ADA/Publications/ADA%20News/Files/ADA_Breaking_Down_Barriers.
- ²⁵⁰ American Dental Association. Breaking down barriers to oral health for all Americans: the community dental health coordinator. A statement from the American Dental Association [Internet]. Chicago (IL): 2012 Oct, cited 2019 Nov 25. Available at https://www.ada.org/en/~/media/ADA/Publications/ADA%20News/Files/ADA_Breaking_Down_Barriers.
- ²⁵¹ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Health care innovation awards round one project profiles: Delta Dental Plan of South Dakota [Internet]. Cited 2017 May 28. Available at <https://innovation.cms.gov/files/x/hcia-project-profiles.pdf>.
- ²⁵² U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. Health care innovation awards round two: New York—Trustees of Columbia University in the City of New York [Internet]. Cited 2017 May 28. Available at <https://innovation.cms.gov/initiatives/Health-Care-Innovation-Awards-Round-Two/New-York.html>.
- ²⁵³ Diagnostic, screening, preventive, and rehabilitative services, 42 C.F.R. § 440.130(c) (2013).
- ²⁵⁴ U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services. CMCS Informational Bulletin from Cindy Mann: Update on preventive services initiatives [Internet]. 2013 Nov 27, cited 2019 Nov 25. Available at: <https://www.medicare.gov/Federal-Policy-Guidance/Downloads/CIB-11-27-2013-Prevention.pdf>.
- ²⁵⁵ Cohen LA. Enhancing pharmacists' role as oral health advisors. J Am Pharm Assoc. 2013 May-Jun;53(3):316-21.
- ²⁵⁶ American Pharmacists Association Foundation. Oral health initiatives [Internet]. Cited 2019 Nov 25. Available at: <http://www.aphafoundation.org/oral-health>.
- ²⁵⁷ Davies GM, Worthington HV, Ellwood RP, Bentley EM, et al. A randomized controlled trial of the effectiveness of providing free fluoride toothpaste from the age of 12 months on reducing caries in 5-6 year old children. Community Dent Health. 2002 Sep;19(3):131-6..
- ²⁵⁸ Cunha-Cruz J, Milgrom P, Shirtcliff RM, Huebner CE, Ludwig S, Allen G, Scott J. "Everybody Brush!": protocol for a parallel-group randomized controlled trial of a family-focused primary prevention program with distribution of oral hygiene products and education to increase frequency of toothbrushing. JMIR Res Protoc [Internet]. 2015;4(2):e58, cited 2019 Nov 25. Available from: <https://www.researchprotocols.org/2015/2/e58/>.
- ²⁵⁹ Deja E, Fink III J. Pharmacists prescribing birth control: improving access and advancing the profession. Pharmacy Times [Internet]. 2016 Nov 16, cited 2019 Nov 25. Available from: <https://www.pharmacytimes.com/publications/issue/2016/november2016/pharmacists-prescribing-birth-control-improving-access-and-advancing-the-profession>.
- ²⁶⁰ Practice of pharmacy: Idaho Code Ann. § 54-1704 (5)(a) (2016).
- ²⁶¹ American Dental Association. The ADA practical guide for international dentists: U.S. dental licensure and testing requirements (e - P801D) [Internet]. Chicago (IL); 2015, cited 2016 Jun 14. Available at <http://www.ada.org/en/education-careers/licensure/state-licensure-for-the-international-dentists>.
- ²⁶² Children's Dental Health Project. Increasing access to dental care through public private partnerships: contracting between private dentists and federally qualified health centers. An FQHC handbook [Internet]. Washington (DC): 2011, cited 2017 Sep 12. Available at: <https://www.cdhp.org/resources/243-fqhc-handbook-increasing-access-to-dental-care-through-public-private-partnerships>.

- ²⁶³ Clary A, Hanlon C, Mention N. Integrating oral health into Oregon Medicaid's coordinated care model: lessons for state policymakers [Internet]. Washington (DC): National Academy for State Health Policy; 2017 Sep, cited 2019 Nov 25. Available at <http://nashp.org/wp-content/uploads/2017/09/DentaQuest-Brief.pdf>.
- ²⁶⁴ Gates A, Rudowitz R, Guyer J. An overview of Delivery System Reform Incentive Payment (DSRIP) waivers [Internet]. New York (NY): Kaiser Family Foundation; 2014 Sep 29, cited 2019 Nov 25. Available from: <https://www.kff.org/medicaid/issue-brief/an-overview-of-delivery-system-reform-incentive-payment-waivers/>.
- ²⁶⁵ Chazin S, Crawford M. Oral health integration in statewide delivery system and payment reform [Internet]. Center for Health Care Strategies, Inc.; 2016 May, cited 2017 May 27. Available at <http://www.chcs.org/media/Ora-Health-Integration-Opportunities-Brief-052516-FINAL.pdf>.
- ²⁶⁶ Edelstein BL. A public health perspective on paying for dentistry, the Affordable Care Act, and looking to the future. *Dent Clin North Am*. 2018 Apr; 62(2):327-340.
- ²⁶⁷ Dental Health Improvement Act, S. 971, 107th Cong. (2002).
- ²⁶⁸ 42 U.S.C. § 256g.
- ²⁶⁹ U.S. Department of Health and Human Services, Health Resources and Services Administration. Grants to states to support oral health workforce activities: HRSA-16-038. Bureau of Health Workforce [Internet]. Cited 2019 Nov 25. Available at: <https://bhwh.hrsa.gov/fundingopportunities/default.aspx?id=b0565620-8e30-4526-9c1b-d7eda5185123>.
- ²⁷⁰ Association of State and Territorial Dental Directors. Why are ASTDD and state oral health programs important? [Internet]. Cited 2019 Apr 12. Available at: <https://www.astdd.org/docs/importance-of-schps-astdd-9-18-2012.pdf>.
- ²⁷¹ U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Synopses of state oral health programs [Internet]. Reviewed 2015 Jun 29, cited 2019 Nov 25. Available from: <https://www.cdc.gov/oralhealthdata/overview/synopses/index.html>.
- ²⁷² U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Oral health data [Internet]. Reviewed 2015 Jun 5, cited 2019 Nov 25. Available from: <https://www.cdc.gov/oralhealthdata/index.html>.
- ²⁷³ Association of State and Territorial Dental Directors. Best practices in state oral health coalitions and collaborative partnerships. Best Practice Approach Report [Internet]. Cited 2019 Apr 12. Available at <https://www.astdd.org/bestpractices-bpastatecoalitions.pdf>.
- ²⁷⁴ American Network of Oral Health Coalitions. Homepage [Internet]. Cited 2019 Nov 25. Available from: <http://www.anohc.org/>.
- ²⁷⁵ U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Oral health program plans [Internet]. Reviewed 2019 Nov 6, cited 2019 Nov 25. Available from: https://www.cdc.gov/oralhealth/funded_programs/oh_plans/index.htm.
- ²⁷⁶ Mofidi M, Rozier RG, King RS. Problems with access to dental care for Medicaid-insured children: what caregivers think. *Am J Public Health*. 2002, 92(1): 53-58.
- ²⁷⁷ Mofidi M, Rozier RG, King RS. Problems with access to dental care for Medicaid-insured children: what caregivers think. *Am J Public Health*. 2002, 92(1): 53-58.
- ²⁷⁸ Mofidi M, Rozier RG, King RS. Problems with access to dental care for Medicaid-insured children: what caregivers think. *Am J Public Health*. 2002, 92(1): 53-58.
- ²⁷⁹ National Rural Health Association. About rural health care [Internet]. Cited 2019 Nov 25. Available at: <https://www.ruralhealthweb.org/about-nrha/about-rural-health-care>.
- ²⁸⁰ Kimminau K, Welliver A. Mapping the rural Kansas dental force: implications for population oral health [Internet]. Kansas (KS): University of Kansas Medical Center, Center for Community Health Improvement; 2011 Sep, cited 2019 Nov 25. Available from: http://www.kcheks.gov/ohi/download/Mapping_the_Rural_Kansas_Dental_Workforce.pdf.
- ²⁸¹ The Social Security Act of 1935, Pub. L. 74-271, § 1902 (a)(4); Assurance of transportation, 42 C.F.R. § 431.53(a).
- ²⁸² 42 U.S.C. § 1396d(a)(27); Any other medical care or remedial care recognized under State law and specified by the Secretary, 42 C.F.R. § 440.170(a).
- ²⁸³ 42 U.S.C. §§ 1396a(a)(10)(A), 1396a(a)(43), 1396d(a)(4)(B), 1396d(r).
- ²⁸⁴ Kaiser Family Foundation. Medicaid benefits: non-emergency medical transportation services—2018 [Internet]. Washington (DC): Kaiser Family Foundation; cited 2019 Nov 25. Available at: <http://kff.org/medicaid/state-indicator/non-emergency-medical-transportation-services/?currentTimeframe=0>.
- ²⁸⁵ 42 U.S.C. § 1396a(a)(70).
- ²⁸⁶ Kaiser Family Foundation. Medicaid Benefits: Non-Emergency Medical Transportation Services- 2018. [Internet]. Washington (DC): Kaiser Family Foundation. Cited 2019 Nov 25. Available at: <http://kff.org/medicaid/state-indicator/non-emergency-medical-transportation-services/?currentTimeframe=0>.
- ²⁸⁷ Passel JS, Cohn D. Unauthorized Immigrant Population: National and State Trends, 2010. Washington, D.C.: Pew Hispanic Center. 2011.

- ²⁸⁸ Passel JS, Cohn D. Unauthorized Immigrant Population: National and State Trends, 2010. Washington, D.C.: Pew Hispanic Center. 2011.
- ²⁸⁹ Stevens GD, West-Wright CN, Tsai KY. Health insurance and access to care for families with young children in California, 2001-2005: differences by immigration. *J Immigr Minor Health*. 2010 Jun 1;12(3):273-81.
- ²⁹⁰ Ponce N, Lavarreda SA, Cabezas L. The impact of health care reform on California's children in immigrant families. Los Angeles (CA): UCLA Center for Health Policy Research, 2011.
- ²⁹¹ Wallace SP, Torres, J, Sadegh-Nobari T, Pourat N, Brown ER. Undocumented immigrants and health care reform [Internet]. UCLA Center for Health Policy; 2012. Available from: <http://healthpolicy.ucla.edu/publications/Documents/PDF/undocumentedreport-aug2013.pdf>.
- ²⁹² Heyman JM, Nunez GG, Talavera V. Healthcare access and barriers for unauthorized immigrants in El Paso County, Texas. *Family & Community Health* [Internet]. 2009, cited 2019 Nov 25; 32(1):4-21. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/19092431>.
- ²⁹³ Berk M, Schur C, Chavez L, Frankel M. Health care use among undocumented Latino immigrants. *Health Affairs*. 2000;19:44-57.
- ²⁹⁴ Berk ML, Schur CL. The effect of fear on access to care among undocumented Latino immigrants. *J Immigr Health* 2001;3(3):151-6.
- ²⁹⁵ Hagan J, Rodriguez N, Capps R, Kabiri N. The effects of recent welfare reform and immigration reforms on immigrants' access to health care. *International Migration Review*. 2003;37:444-463.
- ²⁹⁶ Heyman JM, Nunez GG, Talavera V. Healthcare access and barriers for unauthorized immigrants in El Paso County, Texas. *Family & Community Health* [Internet]. 2009, cited 2019 Nov 25;32(1):4-21. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/19092431>.
- ²⁹⁷ Pitkin Derose K, Escarce JJ, Lurie N. Immigrants and health care: sources of vulnerability. *Health Aff*. 2007 26(5):1258-1268.
- ²⁹⁸ Vargas Bustamante A, Fang H, Garza J, Carter-Pokras O, Wallace SP, Rizzo JA, Ortega AN. Variations in healthcare access and utilization among Mexican immigrants: the role of documentation status. *J Immigr Minor Health*. 2012;14(1):146-155.
- ²⁹⁹ Pitkin Derose K, Escarce JJ, Lurie N. Immigrants and health care: sources of vulnerability. *Health Affairs*. 2007; 26(5):1258-1268.
- ³⁰⁰ Heyman JM, Nunez GG, Talavera V. Healthcare access and barriers for unauthorized immigrants in El Paso County, Texas. *Family & Community Health* [Internet]. 2009, cited 2019 Nov 25; 32(1):4-21. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/19092431>.
- ³⁰¹ Heyman JM, Nunez GG, Talavera V. Healthcare access and barriers for unauthorized immigrants in El Paso County, Texas. *Family & Community Health* [Internet]. 2009, cited 2019 Nov 25;32(1):4-21. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/19092431>.
- ³⁰² U.S. Department of Health and Human Services, Office of Minority Health. National standards for culturally and linguistically appropriate services (CLAS) in health and health care. Rockville (MD): cited 2019 Dec 5. Available at: <https://www.thinkculturalhealth.hhs.gov/pdfs/enhancednationalclasstandards.pdf>.
- ³⁰³ Cross T, et al. Towards a culturally competent system of care: a monograph on effective services for minority children who are severely emotionally disturbed [Internet]. Washington (DC): Georgetown University Child Development Center, CASSP Technical Assistance Center; 1989 Mar, cited 2019 Nov 25. Available from: <https://files.eric.ed.gov/fulltext/ED330171.pdf>.
- ³⁰⁴ U.S. Department of Health and Human Services, Office of Minority Health. National standards for culturally and linguistically appropriate services in health and health care: A blueprint for advancing and sustaining CLAS policy and practice. Rockville (MD): 2013, cited 2020 Jul 06. Available at: <https://thinkculturalhealth.hhs.gov/pdfs/EnhancedCLASStandardsBlueprint.pdf>.
- ³⁰⁵ U.S. Department of Health and Human Services, Office of Minority Health. The national CLAS standards. Rockville (MD): cited 2019 Nov 30. Available from: <https://minorityhealth.hhs.gov/omh/browse.aspx?vi=2&viid=53>.
- ³⁰⁶ U.S. Department of Health and Human Services, Office of Minority Health. National standards for culturally and linguistically appropriate services in health and health care: compendium of state-sponsored national CLAS standards implementation activities [Internet]. Rockville (MD): 2016, cited 2019 Nov 25. Available at: <https://www.thinkculturalhealth.hhs.gov/assets/pdfs/CLASCompendium.pdf>.
- ³⁰⁷ Department of Health and Human Services, Office of Minority Health. National standards for culturally and linguistically appropriate services in health and health care: compendium of state-sponsored national CLAS standards implementation activities [Internet]. Rockville (MD): 2016, cited 2019 Nov 25. Available at: <https://www.thinkculturalhealth.hhs.gov/assets/pdfs/CLASCompendium.pdf>.

- ³⁰⁸ U.S. Department of Health and Human Services, Office of Minority Health. Tracking CLAS [Internet]. Rockville (MD): cited 2019 Nov 25. Available from: <https://www.thinkculturalhealth.hhs.gov/cias/cias-tracking-map>.
- ³⁰⁹ U.S. Department of Health and Human Services, Office of Minority Health. National culturally and linguistically appropriate services standards [Internet]. Rockville (MD): cited 2019 Dec 5. Available from: <https://thinkculturalhealth.hhs.gov/cias/standards>.
- ³¹⁰ U.S. Department of Health and Human Services, Office of Minority Health. National culturally and linguistically appropriate services standards [Internet]. Rockville (MD): cited 2019 Dec 5. Available from: <https://thinkculturalhealth.hhs.gov/cias/standards>.
- ³¹¹ Gracia JN. Fundamentals of the national standards for culturally and linguistically appropriate services in health and health care. Webinar presentation [Internet]. Rockville (MD): U.S. Department of Health and Human Services, Office of Minority Health; 2016 Mar 16, cited 2019 Dec 5. Available from: <https://www.thinkculturalhealth.hhs.gov/resources/presentations/1/fundamentals-of-the-national-standards-for-culturally-and-linguistically>.
- ³¹² U.S. Department of Health and Human Services, Office of Minority Health. Cultural competency program for oral health providers. Training [Internet]. Cited 2020 Apr 20. Available from: <https://thinkculturalhealth.hhs.gov/education/oral-health-providers>.
- ³¹³ Plain Writing Act of 2010, Pub. L. 111–274 (2010).
- ³¹⁴ Gambino CP, Grieco EM, Acosta Y. English-speaking ability of the foreign-born population in the United States: 2012. Suitland (MD): U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau; 2014 Jun, cited 2019 Dec 5. Available at: <https://www2.census.gov/library/publications/2014/acs/acs-26.pdf>.
- ³¹⁵ Ryan C. Language use in the United States: 2011. American Community Survey Reports; U.S. Census Bureau ACS-22 [Internet]. Cited 2020 Jun 11. Available from: <https://www.census.gov/library/publications/2013/acs/acs-22.html>.
- ³¹⁶ Whatley M, Batalova J. Limited English proficient population of the United States. Migration Policy Institute. 2020 Jul 06. Available at: <https://www.migrationpolicy.org/article/limited-english-proficient-population-united-states-0>.
- ³¹⁷ Meaningful access for individuals with limited English proficiency, 45 C.F.R. § 92.201(a).
- ³¹⁸ U.S. Department of Health and Human Services. Guidance to federal financial assistance recipients regarding Title VI prohibition against national origin discrimination affecting Limited English Proficient persons. 68 Fed. Reg. 43711, 43714 (Aug. 8, 2003).
- ³¹⁹ Chen AH, Youdelman MK, Brooks J. The legal framework for language access in healthcare settings: Title VI and beyond. *J Gen Intern Med.* 2007;22(Suppl 2): 362-367.
- ³²⁰ Chen AH, Youdelman MK, Brooks J. The legal framework for language access in healthcare settings: Title VI and beyond. *J Gen Intern Med.* 2007;22(Suppl 2): 362-367.
- ³²¹ Marcus V. Are hospitals required to provide language access services? *NWI Global* [Internet]. 2016 Aug 19, revised 2016 Feb 8, cited 2019 Nov 25. Available at: <http://www.nwglobal.com/wp-content/uploads/2016/02/Are-Hospitals-Required-to-Provide-Language-Access-Services.pdf>.
- ³²² U.S. Department of Health and Human Services, Office of Minority Health. National standards for culturally and linguistically appropriate services in health care [Internet]. Rockville (MD): cited 2019 Dec 5. Available from: <https://minorityhealth.hhs.gov/omh/browse.aspx?vl=2&vlid=53..>
- ³²³ U.S. Department of Health and Human Services. Center for Medicaid, CHIP and Survey & Certification. Increased medical matching funds for translation and interpretation services under Medicaid and CHIP. SHO Letter (#10-07) [Internet]. Baltimore (MD): 2010 Jul 1, cited 2019 Dec 5. Available from: <https://www.medicare.gov/Federal-Policy-Guidance/downloads/SHO10007.pdf>.
- ³²⁴ U.S. Department of Health and Human Services, Office of Minority Health. National standards for culturally and linguistically appropriate services in health care [Internet]. Rockville (MD): Cited 2019 Dec 5. Available from: <https://minorityhealth.hhs.gov/omh/browse.aspx?vl=2&vlid=53&HHS.gov>.
- ³²⁵ Vujicic M. Is the number of Medicaid providers really that important? *JADA* 2016 Mar; 147(3):221–223. Cited 2020 Jun 22. Available at: [http://jada.ada.org/article/S0002-8177\(16\)00023-4/abstract](http://jada.ada.org/article/S0002-8177(16)00023-4/abstract).
- ³²⁶ Public Health Service Act of 1944, § 330 (k)(3)(A), 42 U.S.C. § 254b.
- ³²⁷ Governing board, 42 C.F.R. § 51 (c) 102(h)(4).
- ³²⁸ Availability of services, 42 C.F.R. § 438.206(c).
- ³²⁹ Civil Rights Act of 1964, 42 U.S.C. §§ 2000d et. seq.
- ³³⁰ U.S. Department of Health and Human Services, Office for Civil Rights. Know the rights that protect us from discrimination based on race, color or national origin [Internet]. Washington (DC): cited 2019 Nov 25. Available from: <https://www.hhs.gov/sites/default/files/yourrightsunderitlevofthecivilrightsactfactsheet.pdf>.
- ³³¹ U.S. Department of Health and Human Services, Office for Civil Rights. Know the rights that protect us from discrimination based on race, color or national origin [Internet]. Washington (DC): cited 2019 Nov 25. Available from: <https://www.hhs.gov/sites/default/files/yourrightsunderitlevofthecivilrightsactfactsheet.pdf>.

- ³³² U.S. Department of Health and Human Services, Office for Civil Rights. About us [Internet]. Washington (DC): Reviewed 2019 Oct 8, cited 2019 Nov 25. Available from: <https://www.hhs.gov/ocr/about-us/index.html>.
- ³³³ Health Care Payment Learning & Action Network. Alternative payment model: APM framework white paper. 2017 Jul 11, cited 2020 Jun 11. Available from: <https://hcp-lan.org/workproducts/apm-refresh-whitepaper-final.pdf>.
- ³³⁴ Oral Health Workforce Research Center. Trends in the development of the Dental Service Organization model: implications for the oral health workforce and access to services. University of Albany, SUNY. Rensselaer NY. Available from: http://www.oralhealthworkforce.org/wp-content/uploads/2016/11/Year-3_Project-1_Description.pdf
- ³³⁵ Townsend J, Tate A, Brickhouse T, Casamassimo PS, Wright R. Competition or collaboration: exploring the relationship between corporate dentistry and dental training programs. Chicago, IL: Pediatric Oral Health Research and Policy Center, American Academy of Pediatric Dentistry. Available from: <https://www.aapd.org/assets/117/DSO-May2016.final.pdf>.
- ³³⁶ Bowen WH. Dental caries – not just holes in teeth! A perspective. *Mol Oral Microbiol* 2016;31(3):228-33. Doi: 10.1111/omi.12132.
- ³³⁷ Tenovuo J. Salivary parameters of relevance for assessing caries activity in individuals and populations. *Community Dent Oral Epidemiol* 1997;25(1):82-6. Doi: 10.1111/j.1600-0528.1997.tb00903.x.
- ³³⁸ Wright JT. Genetic determinants of risk and resistance to dental caries. *Decisions in Dentistry*, 2018. Available at <https://decisionsindentistry.com/article/genetic-determinants-risk-resistance-dental-caries/>.
- ³³⁹ Davies GM, Worthington HV, Ellwood RP, Bentley EM, Blinkhorn AS, Taylor GO, Davies RM. A randomised controlled trial of the effectiveness of providing free fluoride toothpaste from the age of 12 months on reducing caries in 5-6 year old children. *Community Dental Health*. 2002;19:131-136.
- ³⁴⁰ U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Community water fluoridation [Internet]. Cited 2020 May 7. Available from: <https://www.cdc.gov/fluoridation/index.html>.
- ³⁴¹ U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Healthy People.gov. Healthy People 2020 topics & objectives, oral health: OH-13 [Internet]. Rockville (MD): Cited 2019 Jul 19. Available from: <https://www.healthypeople.gov/2020/data-search/Search-the-Data#objo=5003>.
- ³⁴² Dye BA, Lopez Mitnik G, Iafolla TJ, Vargas CM. Trends in dental caries in children and adolescents according to poverty status in the United States from 1999 through 2004 and from 2011 through 2014. *Journal Am Dental Assoc* [Internet]. 2017, cited 2019 Nov 25;148(8):550-65. Available from: [https://jada.ada.org/article/S0002-8177\(17\)30348-3/fulltext/](https://jada.ada.org/article/S0002-8177(17)30348-3/fulltext/).
- ³⁴³ Rozier RG, White BA, Slade GD. Trends in oral diseases in the US population. *J of Dent Ed*. 2017;81(8):eS97-109.
- ³⁴⁴ Vujicic M, Buchmueller T, Klein R. Dental care presents the highest level of financial barriers, compared to other types of health care services. *Health Affairs* [Internet]. 2016 Dec, cited 2020 Jun 28. 1;35(12):2176-82. Available at: <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2016.0800>.
- ³⁴⁵ Berwick DM, Nolan TW, Whittington J. The triple aim: care, health, and cost. *Health Aff (Millwood)*. 2008;27(3):759–769.
- ³⁴⁶ Bodenheimer T, Sinsky C. From triple to quadruple aim: care of the patient requires care of the provider. *The Annals of Family Medicine* [Internet]. 2014 Nov 1; 12(6):573-6. Available from: <http://www.annfammed.org/content/12/6/573.full>.
- ³⁴⁷ Polverini PJ, editor. *Personalized Oral Health Care*. Switzerland: Springer. 2015.
- ³⁴⁸ Clary A, Hanlon C, Mention N. Integrating oral health into Oregon Medicaid’s coordinated care model: lessons for state policymaker. *National Academy for State Health Policy*. 2017 Sep, cited 2020 Jun 29. Available at: <https://www.nashp.org/wp-content/uploads/2017/09/DentalQuest-Brief.pdf>.