

---

Dear Reader,

Do you wonder WHY Arizona needs a state oral health plan? After all, brushing, flossing and seeing your dentist regularly keeps your teeth healthy, right? Dental care, however, is not the same as oral health care. The World Health Organization defines oral health as “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.”

ORAL HEALTH is an essential part of our overall health and well-being. Research continues to demonstrate how ORAL HEALTH affects physical and mental health. People with poor oral health face higher risk of cardiovascular disease, complications in pregnancy and childbirth, poor diabetes control, and many other conditions. People with untreated dental problems often have difficulty finding jobs, and concentrating in school. Poor oral health leads to increased healthcare costs carried by society.

WHY are we struggling to ‘unlock’ this problem? Mouth care has been separated from medical care since the mid-1800s and trying to re-integrate care is complex; there are no simple solutions, no one answer to solve it all. It’s a ‘wicked’ problem, one that is difficult or impossible to solve because of incomplete, contradictory, and changing components or pieces that are often difficult to align.

Oral health disparities are profound in Arizona. The health care system we have only adequately serves a portion of our population because of the way it was designed and built. Health care providers continue to grapple with meeting the gaps in care and integrating oral health care with general health services.

The oral health needs in all of our communities are far greater than we will ever be able to treat. We need everyone working together to improve the health of all Arizonans. We must work to engage communities in self-care and prevention, Arizona needs a viable action plan to create what we need – care that is more affordable, equitable and attuned to the needs of all people.

WHEN? Now! HOW? Turn the page.....

*“Ours is not the task of fixing the entire world all at once, but of stretching out to mend the part of the world that is within our reach... What is needed for dramatic change is an accumulation of acts, adding, adding to, adding more, continuing.”*

– Clarissa Pinkola Estes



# FINDING THE KEYS TO ARIZONA'S ORAL HEALTH ISSUES



**ARIZONA  
2019- 2022  
O R A L  
H E A L T H  
A C T I O N  
P L A N**

## ARIZONA STATE ORAL HEALTH ACTION PLAN 2019-2020 WORKGROUP

**Jan Grutzius, RDH, BSDH**  
Oral Health Program Manager  
Arizona Alliance for Community Health Centers  
Phoenix, AZ

**Denise Helm, RDH Ed. D.**  
Professor,  
Department of Dental Hygiene  
Project Zero -Women & Infants  
Northern Arizona University  
Flagstaff, AZ

**Julia Wacloff, MSPH, RDH**  
Chief, Office of Oral Health  
Bureau of Women's and Children's Health  
Arizona Department of Health Services  
Phoenix, AZ

**Dr. Pallavi V. Jugale, BDS, MDS, MPH**  
Oral Health Program Coordinator  
Arizona Alliance for Community Health Centers  
Phoenix, AZ

## REVIEWERS

**Will Humble, MPH**  
Executive Director  
Arizona Public Health Association  
Phoenix, AZ

**Kasey Wilson**  
Policy Analyst, Dental Access Project  
Community Catalyst  
Boston, Massachusetts

**Jessica Yanow, MPH**  
Chief Operations Officer  
Arizona Alliance for Community Health Centers  
Phoenix, AZ

**Anna Marie Trester, PhD**  
FrameWorks Institute  
Washington D.C.

## Arizona Oral Health Coalition Steering Committee 2015-2018

**Connie Baine, RDH, AP, BS**  
Navajo-Apache-Gila Regional  
Oral Health Coalition Coordinator

**Kavita Bernstein**  
First Things First  
Program Manager, Children's Health

**Mary Busch, MEd, RDH**  
Program Coordinator  
Greater Valley Area Health Education Center  
President, Arizona Dental Hygienists' Assoc.

**Jennifer Dangremond**  
Grants Manager  
Native American Connections

**Kevin Earle, MBA, MPH**  
Executive Director  
Arizona Dental Association

**Joyce Flieger, BSDH, MPH**  
First Smiles – retired  
College of Agriculture and Life Sciences  
University of Arizona

**Denise Helm, RDH, Ed.D**  
Northern Arizona University  
Dept. of Dental Hygiene,  
Professor  
Project Zero, Women and Infants

**Jan Kalina, RDH, BS**  
Office of Oral Health  
Maricopa County Public Health

**Deborah Kappes, RDH, MPH**  
Vice-President  
Arizona Dental Hygienists' Association

**Filmer Lalio**  
Arizona American Indian Oral Health  
Coalition Coordinator

**Sandi Perez, Ph.D.**  
SandRose, LLC

**Layal Rabat, M.A**  
Empowerment and Advocacy Manager  
Asian Pacific Community in Action

**Valerie Ruiz, RDH, MPH**  
Oral Health Analyst  
Office of Healthcare Innovation  
Maricopa County Public Health

**Siman Qasim, MBA**  
Director of Health Policy  
Children's Action Alliance

**Alicia Thompson, MSW**  
Southern AZ Oral Health Coalition Coordinator  
Dental Manager, El Rio Community Health Center/Dental Clinics

**Emma Violante, RDH**  
MOLAR Coalition Coordinator

**Julia Wacloff, MSPH, RDH**  
Chief, Office of Oral Health  
Bureau of Women's and Children's Health  
Arizona Department of Health Services

**Ashley Wood**  
La Paz/Mohave Oral Health Coalition Coordinator  
Director of Community Impact  
River Cities United Way

## ACKNOWLEDGEMENTS

**Zeenat Hasan, MA, MPH**  
Grants and Contracts Manager  
Arizona Alliance for Community Health Centers  
Phoenix, AZ

**Erika Mach**  
Grassroots Coordinator  
Arizona Alliance for Community Health Centers  
Phoenix, AZ

# LIST OF ORAL HEALTH STAKEHOLDERS

- |  |   |  |
|--|---|--|
| <ul style="list-style-type: none"> <li>• A.T. Still University</li> <li>• Arizona Alliance for Community Health Centers</li> <li>• Ability 360</li> <li>• Abrazo Health</li> <li>• Adelante Healthcare</li> <li>• American Association of Retired Persons</li> <li>• Arizona Academy of Pediatrics</li> <li>• Arizona Chapter</li> <li>• Arizona Association of Health Plans</li> <li>• Arizona Dental Association</li> <li>• Arizona Department of Health Services</li> <li>• Arizona Diabetes Coalition</li> <li>• Arizona Health Care Cost Containment System</li> <li>• Arizona Public Health Association</li> <li>• Arizona School Nurse Consortium and School Nurses of Arizona</li> <li>• Association for Supportive Child Care</li> <li>• Arizona Dental Hygienist's Association</li> <li>• Asian Pacific Community in Action</li> <li>• Axiom Public Affairs</li> <li>• Arizona Dental Board</li> <li>• AZ Developmental Disabilities</li> <li>• Arizona Healthcare Association</li> <li>• BHHS Legacy Foundation</li> <li>• Big Smiles</li> <li>• Bridgeway Health Solutions</li> <li>• Brighter Way Institute</li> <li>• Canyonlands Healthcare</li> <li>• Carrington College</li> <li>• Cenpatico Integrated Care</li> <li>• Child Parent Centers</li> <li>• Children's Action Alliance</li> <li>• Chiricahua Community Health Center</li> <li>• Church Women United</li> <li>• Circle The City</li> </ul> | <ul style="list-style-type: none"> <li>• Coconino County Public Health</li> <li>• Services District</li> <li>• Collaborative Ventures Network</li> <li>• Community Health Center of Yavapai</li> <li>• Copper Queen Community Hospital</li> <li>• Delta Dental of Arizona Foundation</li> <li>• Dental Home Concepts</li> <li>• DentaQuest Foundation</li> <li>• Desert Senita Community Health Center</li> <li>• Dignity Health</li> <li>• Dignity Health- Community Integration</li> <li>• Easter Seals Blake Foundation</li> <li>• El Rio Community Health Center</li> <li>• Empowerment Systems</li> <li>• Esperanca</li> <li>• Families USA</li> <li>• First Things First</li> <li>• Fortis College</li> <li>• Foundation for Senior Living</li> <li>• FrameShift Group-Manager Health Systems Strategy</li> <li>• Future Smiles</li> <li>• Governor's Advisory Council on Aging</li> <li>• Greater Valley Area Health Education Center</li> <li>• Healthnet</li> <li>• Indian Health Services</li> <li>• Intertribal Council of Arizona</li> <li>• Keogh Health Connection</li> <li>• La Paz County Public Health Education</li> <li>• Lions Club of Overgaard</li> <li>• March of Dimes</li> <li>• Maricopa County Department of Public Health</li> <li>• Maricopa County Head Start Program</li> <li>• Mariposa Community Health</li> </ul> | <ul style="list-style-type: none"> <li>Center</li> <li>• Mercy Maricopa</li> <li>• Mesa Community College</li> <li>• MHC Healthcare</li> <li>• Mohave Community College</li> <li>• Mountain Park Health Center</li> <li>• Native American Connections</li> <li>• Native Health</li> <li>• Northern Arizona University</li> <li>• Navajo County Public Health</li> <li>• Neighborhood Outreach Access to Health</li> <li>• North Country Health Care</li> <li>• Protecting Arizona's Family Coalition</li> <li>• Phoenix College</li> <li>• Phoenix Day</li> <li>• Pima County Public Health</li> <li>• Pivotal Policy</li> <li>• Reach Out Mobile Dental</li> <li>• Regional Center for Border Health</li> <li>• Rio Salado College</li> <li>• River Cities United Way</li> <li>• Sun Life Community Health Center</li> <li>• Sunset Community Health Center</li> <li>• Tanner Community Development Corporation</li> <li>• Terros Health</li> <li>• Tohono O'odham Nation</li> <li>• United Community Health Center</li> <li>• United Healthcare</li> <li>• University of Arizona Cooperative Extension</li> <li>• University of Arizona Center for Rural Health</li> <li>• Vitalyst Health Foundation</li> <li>• Women's Health Coalition of AZ</li> </ul> |
|--|---|--|



# TABLE OF CONTENTS

04		<b>Executive Summary</b>
05		<b>Introduction</b>
07		<b>Locks of Arizona’s Oral Health: Understanding the Disparities</b>
08		<i>Children</i>
11		<i>Pregnancy and Early Childhood</i>
12		<i>Adults</i>
14		<i>Older Adults</i>
15		<i>Special Needs Populations</i>
16		<b>Unlocking Oral Health Equity</b>
17		<b>The Cross Cutting Systems of Oral Health Care</b>
19		<b>Opening the Doors to Better Health</b>
19		<i>Policy: Coverage, Fluoridation, Infrastructure</i>
22		<i>Care: Workforce, Integration</i>
24		<i>Community: Oral Health Literacy and Perceptions, Prevention Efforts, Care Delivery Systems</i>
26		<i>Financing: Cost and Affordability</i>
27		<b>Unlocking the Doors to Better Oral Health</b>
29		<b>References</b>

---

## ABBREVIATIONS

.....

**AACHC:** Arizona Alliance for Community Health Centers

**ADHS:** Arizona Department of Health Services

**AHCCCS:** Arizona Health Care Cost Containment System

**BRFSS:** Behavioral Risk Factor Surveillance System

**BSS:** Basic Screening Survey

**CDHP:** Children’s Dental Health Project

**CHIP:** Children’s Health Insurance Program

**CHW:** Community Health Worker

**CWF:** Community Water Fluoridation

**DHP SA:** Dental Health Professional Shortage Areas

**IPE:** Inter-Professional Education

**MCO:** Managed Care Organization

**SLRP:** Student Loan Repayment Program

# EXECUTIVE SUMMARY

The Arizona Oral Health Action Plan 2019-2022 is designed to ensure that all Arizonans have the keys necessary to unlock doors to improve their health. Oral health is essential to overall health and quality of life. Wellness is not possible without oral health. The U.S. Surgeon General's seminal report <sup>(1)</sup> in 2000, "Oral Health Care in America," disclosed the burden of oral diseases and the impact of oral disease on overall health. Since 2000, great strides have been made in raising oral health awareness so that all Americans can have the same level of oral health and well-being. Many national and local organizations/agencies have responded to the call to action. Arizona is accelerating its efforts to address the challenges through this plan.

Unfortunately, too many Arizonans continue to experience needless pain and suffering from oral diseases because of oral health disparities. This pain and suffering translates into lost productivity and poor individual and community health. Neglected and untreated oral diseases can lead to tooth loss and bacterial infections. These outcomes are tragic, disappointing, and unnecessary, particularly given the massive body of information about oral health, its effects on overall health, and the fact that oral disease is nearly 100% preventable. <sup>(2)</sup>

Arizona's children, pregnant women and their infants, adults, older adults, and developmentally disabled all suffer greater oral health disparities than similar groups in other states in the U.S. While tooth decay is largely preventable, it remains the single most common chronic disease in Arizona children. Similarly, 33% of adults (aged ≥65) in Arizona have more than 6 missing teeth. <sup>(3)</sup>

The Arizona Oral Health Action Plan 2019-2022 offers a vision, articulates goals, delivers recommendations, and identifies strategies to improve the oral health of all Arizonans. It incorporates strategies gathered over three years

of collaboration with health care stakeholders, state and regional oral health coalitions, educational institutions, professional associations, and grassroots organizations. This plan offers solutions to address the tremendous burden of preventable oral diseases that affect individuals across the lifespan by collaboratively creating a new blueprint to improve oral health and overall health.

Barriers to improving oral health in Arizona are significant, numerous, and interconnected. Therefore, goals and objectives address four cross-cutting systems of care: Policy, Care, Community, and Financing.<sup>(4)</sup> Recommendations include: 1) **Policy**—using data and stories to educate, advocating for Medicaid dental coverage for pregnant women, increasing the number of Arizonans with optimally fluoridated water, and establishing a state oral health surveillance plan. 2) **Care**—ensuring an adequate, diverse, and culturally competent workforce, incorporating oral health as an essential component of overall health and well-being through integrated inter-professional systems, and encouraging, supporting, and tracking interprofessional educational models of care. 3) **Community**—maintaining a statewide network of champions and leaders for oral health advocacy and planning, supporting evidence-based prevention and early detection programs, and implementing and disseminating consistent and uniform messaging. 4) **Financing**—financing oral health as an important component of overall health, funding and expanding oral health prevention, and sustaining financial support to improve health outcomes.

Implementation of the 2019-2022 Arizona Oral Health Action Plan will require a strong, coordinated, well-resourced, and interdisciplinary team focused on improving oral health. Together Arizona can attain better oral health for its residents.

# INTRODUCTION

The Arizona Oral Health Action Plan 2019-2022 is intended to provide guidance for improving the oral health of all Arizonans, wherever they live, and whatever challenges they face. This is a living document that is to be reviewed, revised, and updated as new opportunities and challenges emerge around oral health.

The “Keys to Oral Health” <sup>(5)</sup> is a metaphor for unlocking systemic barriers to oral health. Across the country a national network of over 1000 organizations and individuals aligned around bettering oral health for all are using this metaphor to frame messages. Navigating the oral healthcare system is like going through a series of locked doors. Some people have the keys to unlock every door, while others are missing some or all of the keys. This plan helps Arizonans identify the necessary keys to unlock the right doors to improve health. Many individuals and organizations have time, talent, expertise, and passion to help make this plan a reality. A strong, coordinated, well-resourced, interdisciplinary team focused on improving oral health needs to be persistent in continuing this effort to unlock doors to better oral health for Arizona.

There is growing recognition of person-centered care as the best model for optimal health outcomes. Person-centered care is a way of thinking and doing things that sees the people using health and social services as equal partners in planning, developing

and monitoring care to make sure it meets their needs. This means putting people and their families at the center of decisions and seeing them as experts, working alongside professionals to get the best outcome. There is no one definition of person-centered care and many different aspects. However, making sure that people are involved in and central to their care is now recognized as a key component of developing high quality healthcare.

## FIGURE 1: THE QUADRUPLE AIM



*Thomas Bodenheimer & Christine Sinsky (2014)<sup>(6)</sup>*

The Arizona Oral Health Action Plan 2019-2022 reflects the current increased focus on healthcare integration and person-centered care. It is grounded in the “Quadruple Aim” framework <sup>(6)</sup> of improving population health, improving patient satisfaction, reducing overall healthcare costs, and improving the work life of the healthcare workforce. This plan is intentional (as opposed to merely aspirational) about how to move past the locked doors (barriers) to care.

# HISTORY OF THE ARIZONA ORAL HEALTH ACTION PLAN 2019-2022

**2005**

Arizona Department of Health Services (ADHS) drafted the Arizona Oral Health Action Plan, which was the result of strategies and goals identified from the 2002 Oral Health Summit.

**2012**

Arizona Alliance for Community Health Centers (AACHC) convened a diverse group of oral health stakeholders to discuss the status of oral health in Arizona.

**2014-2017**

State Sen. David Bradley re-convened oral health stakeholders and partners, healthcare organizations, advocates, policy makers, educational institutions, state agencies, and consumers to work toward improving oral health from a policy perspective.

**2015**

AACHC brought together the key oral health advocates after receiving funding to form a state oral health coalition and explore the development of a new state oral health action plan.

**October 2015**

Developing and advancing policy workshop hosted by the coalition steering committee and facilitated by the Children's Dental Health Project (CDHP) brought advocates together to identify the top five oral health policy priorities.

**2015-2018**

Monthly steering committee meetings were held to formalize infrastructure, advocate for oral health policies, strategically plan actions for oral health improvement, and expand inclusion of diverse members with the same vision for improved health in Arizona.

**January 2016**

The Steering Committee conducted its first strategic planning meeting to draft the priorities, goals and objectives for the Coalition and the State Plan.

**2016**

Hosted five Regional Roundtables in conjunction with Regional Oral Health Coalitions to identify their oral health issues and priorities.

**May 2017**

The Arizona Alliance for Community Health Centers and the Arizona Oral Health Coalition Steering Committee hosted an Oral Health Summit, Launching the Future of Arizona's Oral Health. 140 Arizonans came together to focus on ways to improve overall and oral health through communication and collaboration.

**2019**

The Arizona Oral Health Action Plan (2019-2022) is completed, submitted to ADHS, and distributed to stakeholders.



# LOCKS ON ORAL HEALTH: UNDERSTANDING THE DISPARITIES

Just as the mouth offers clues about your overall health, the status of oral health in Arizona reveals important truths about the state. Despite improvements in oral health for the population, Arizonans still fall below national averages in oral health measures. Disparities and inequities continue to exist among low-income, racial/ethnic minority groups, those residing in medically/dentally underserved areas, those with developmental or acquired disabilities, and many older adults dependent on assisted care. Certain regions of the state experience these disparities at higher rates than others. <sup>(8&9)</sup>

Health disparities represent health inequalities<sup>(10)</sup>.

Finding the keys to accessing oral health is harder for groups who have experienced greater social, economic and environmental obstacles to health. <sup>(11)</sup> Full access to equitable care includes: comprehensive coverage for all, affordability, and *getability* (the ability of consumers to avail themselves of oral healthcare). The lack of oral health access for marginalized populations puts burdens on society and creates deficits for individuals that affect their ability to succeed at school, work, and life. Once individuals have oral

disease, it never goes away; the chronic condition requires continuous attention throughout the life cycle. The consequences can be devastating and all too familiar including <sup>(8)</sup>:

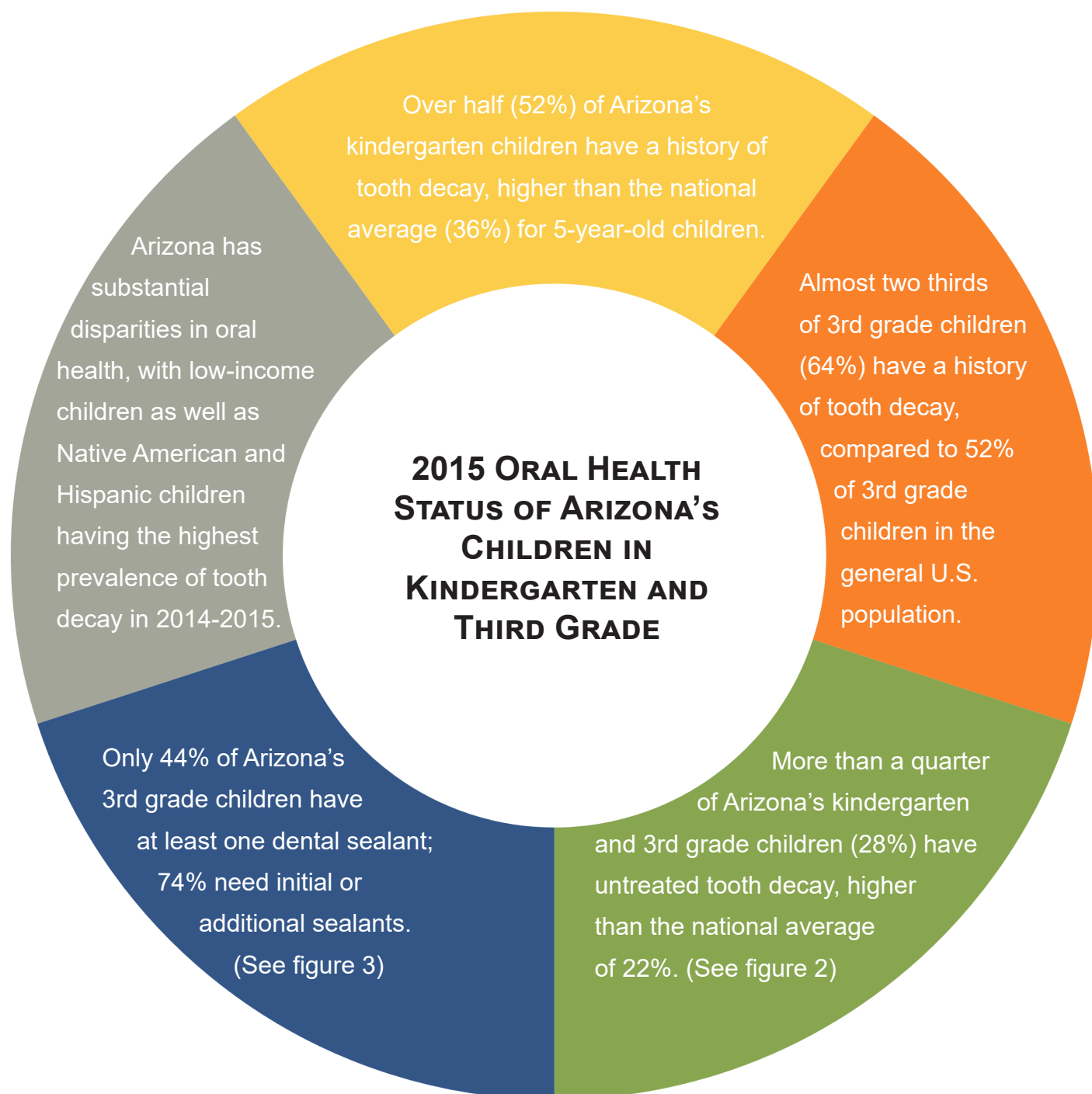
- Increased risk for chronic conditions, including heart disease and diabetes
- Lost work/school hours and lost wages
- Reduced quality of life, throughout the lifespan

This disturbing oral health picture and its ramifications are not new to Arizona. The inadequacies of the oral healthcare system have been known for decades. <sup>(9 & 12)</sup> Circumstances and policy decisions since the 2005 State Oral Health Action Plan <sup>(13)</sup> have resulted in a lack of support, maintaining a status quo that is more troubling today given the deeper understanding of connections between oral health, overall health, and socioeconomic well-being.

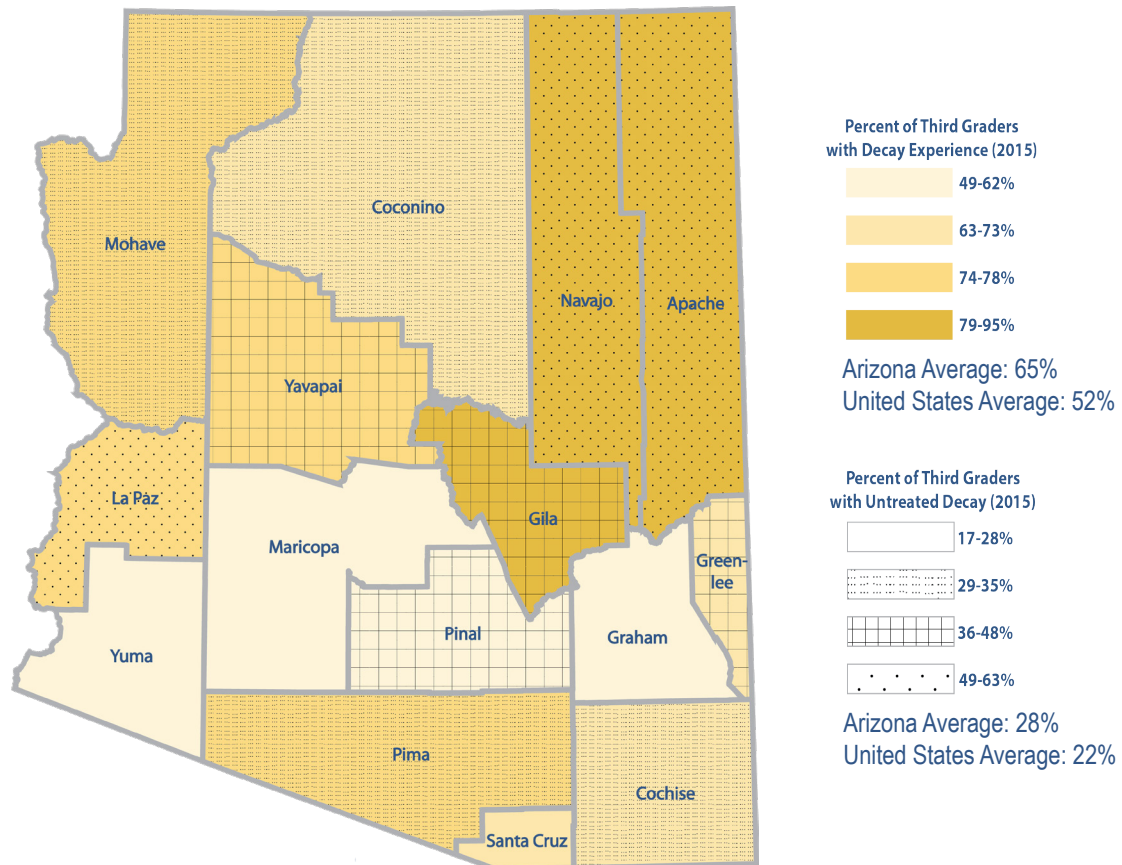
Identifying health disparities helps stakeholders and communities adopt strategies and engage partners where they are most needed and have the greatest impact. The following sections outline the oral health status of children, pregnant women, adults, older adults, and special needs populations, including obstacles that require age specific solutions. Combined they paint a state in need of a variety of keys to open the doors to better health.

## CHILDREN

Overall, Arizona children are worse off than national averages. In 2015, the Arizona Department of Health Services (ADHS) Office of Oral Health, in partnership with First Things First, conducted a statewide oral health survey (Healthy Smiles Healthy Bodies) to determine the oral health status of Arizona's children in kindergarten and 3rd grade.<sup>(14)</sup> Five key findings were:



## FIGURE 2: DENTAL DECAY AMONG ARIZONA THIRD GRADERS



## FIGURE 3: DENTAL SEALANTS AMONG ARIZONA THIRD GRADERS

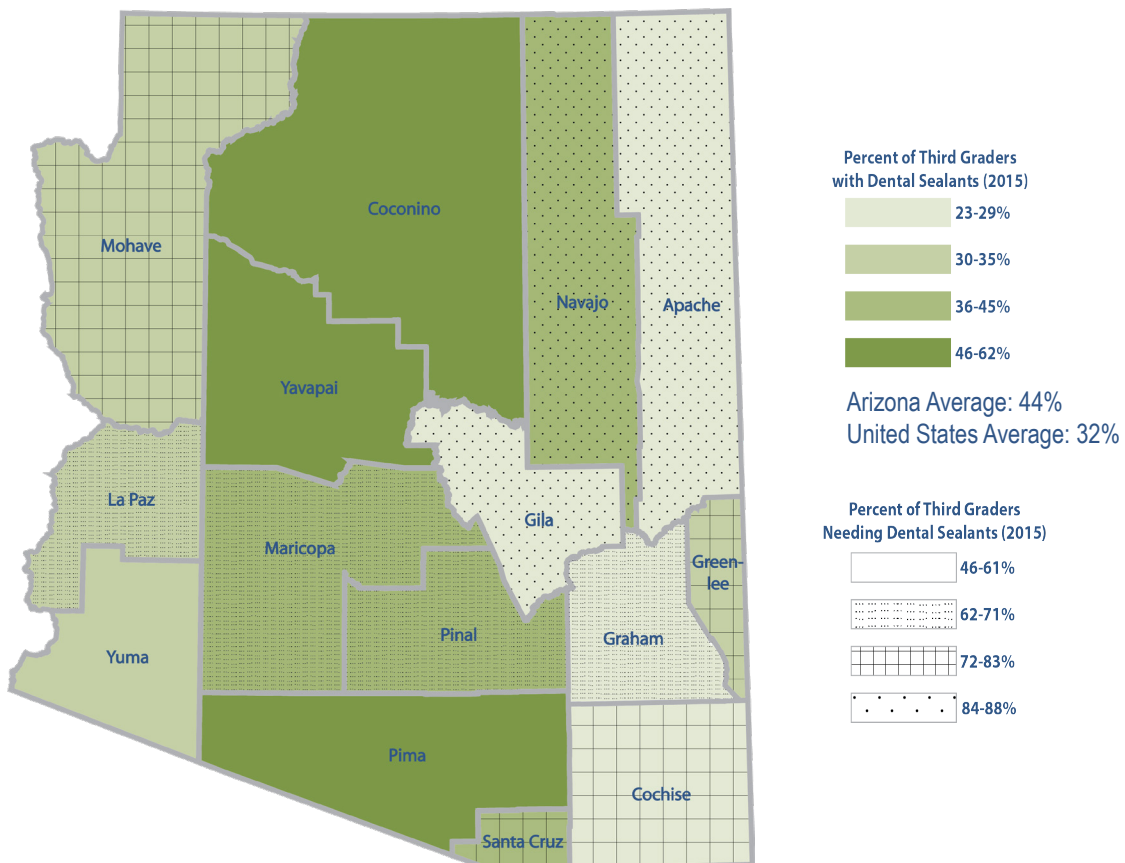
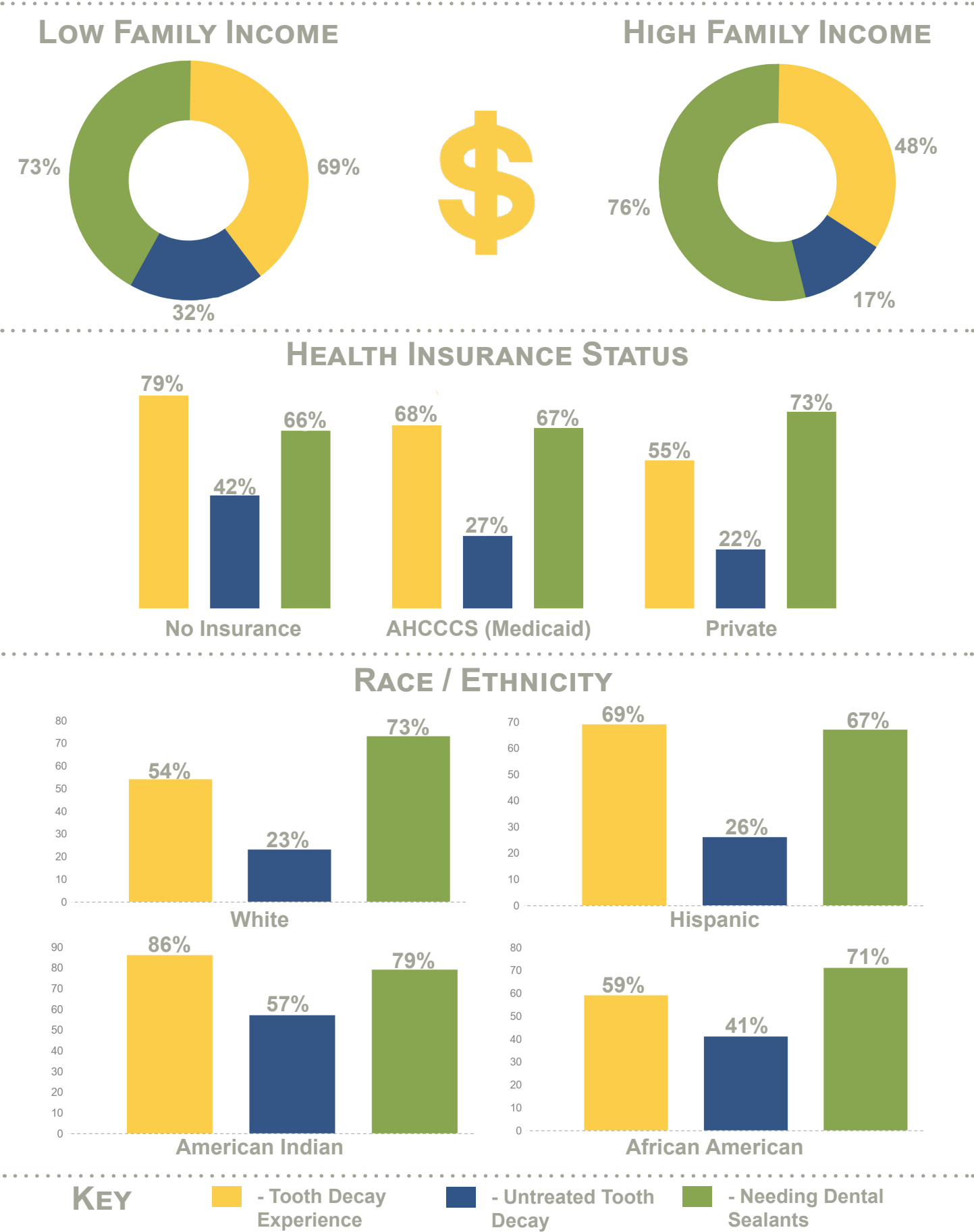


FIGURE 4: DISPARITIES IN ORAL HEALTH  
ACROSS ARIZONA THIRD GRADERS





## PREGNANCY AND EARLY CHILDHOOD

The health of a woman's mouth is an essential part of a healthy pregnancy, and it is an important indicator of her child's risk for developing tooth decay. Many women are unaware of the consequences of poor oral health on them and their babies. The hormonal changes that pregnant women undergo put them at higher risk of oral health problems, such as gingivitis. For the child, research strongly suggests a link between periodontitis (a serious gum infection that damages the soft tissue and destroys the bone that supports your teeth) and poor birth outcomes such as maternal high

blood pressure, preterm delivery, and lower birth weight, which may lead to complicated deliveries<sup>(15)</sup> thus increasing the overall cost of care.

Improving the oral health of expectant mothers starts with better oral health education. Improved oral health literacy and better oral healthcare during pregnancy will reduce the transmission of bacteria, and may delay the onset of tooth decay for their children, reducing the cost of their future care.

**Dental care usage during pregnancy remains low** due to affordability, lack of insurance, and lack of knowledge on good oral health during pregnancy.

Between 2007 and 2009, **56%** of pregnant women **did NOT** visit a dentist during pregnancy.

Approximately **one third** of all pregnant women have gum disease (periodontal disease).

Preterm birth rate has been reported to be **11.2%** in women without periodontal disease compared to **28.6%** in women with moderate to severe disease.

In 2014, there were almost **87,000** live births in Arizona. More than **6,000** of these births were low birthweight babies, and **7 out of 10** were pre-term.

*Arizona Public Health Association 2018<sup>(16)</sup>.*

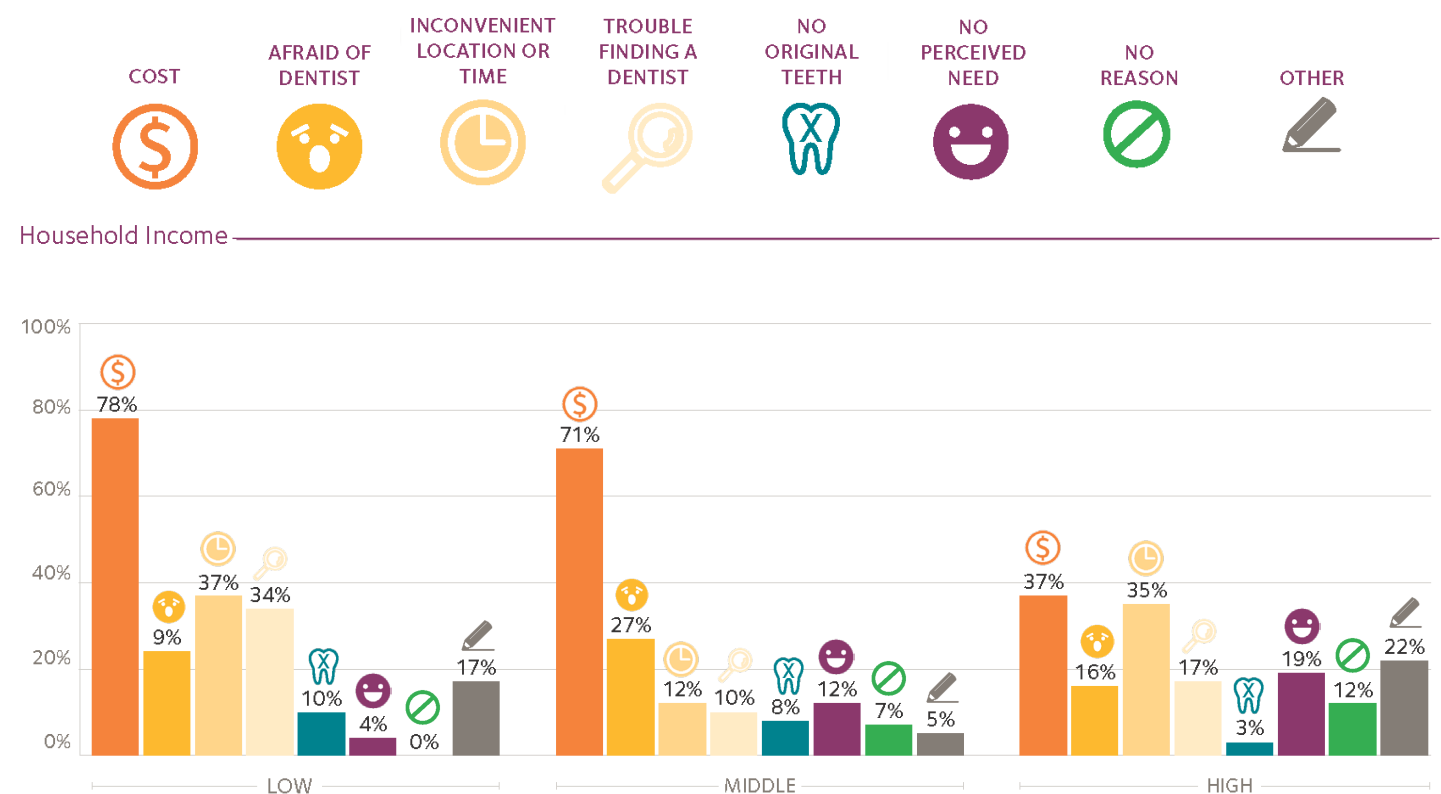
Nationally, a downward trend of dental care utilization has been seen for pregnant women compared to women in general.<sup>(17)</sup> Additionally Arizona Health Care Cost Containment System (AHCCCS, Arizona's Medicaid Program) dental care utilization rates by Arizona women in general are lower than other states. Currently, dental utilization data for pregnant women in Arizona is unavailable or unanalyzed. Most states have included a dental benefit in their coverage for pregnant women enrolled in Medicaid<sup>(18)</sup>. Oral health advocates in Arizona have been pursuing a legislative effort to establish similar coverage.

## ADULTS

Although Arizona adults value good oral health (99%), the keys to unlocking access to care are hard to find.<sup>(9)</sup> High cost, inconvenient locations, limited time available to schedule appointments, difficulty navigating the healthcare system, and increasing socioeconomic disparities hinder adults' ability to act on their values.<sup>(19)</sup> Inability to access care leads to dissatisfaction and discomfort. In Arizona, one in four low-income adults say their mouth and teeth are in poor condition.<sup>(9)</sup>

In 2015, only 56% Arizona adults with private dental coverage had visited the dentist in the past 12 months <sup>(19)</sup>.

**FIGURE 5: REASONS FOR NOT VISITING THE DENTIST BASED ON HOUSEHOLD INCOMES**

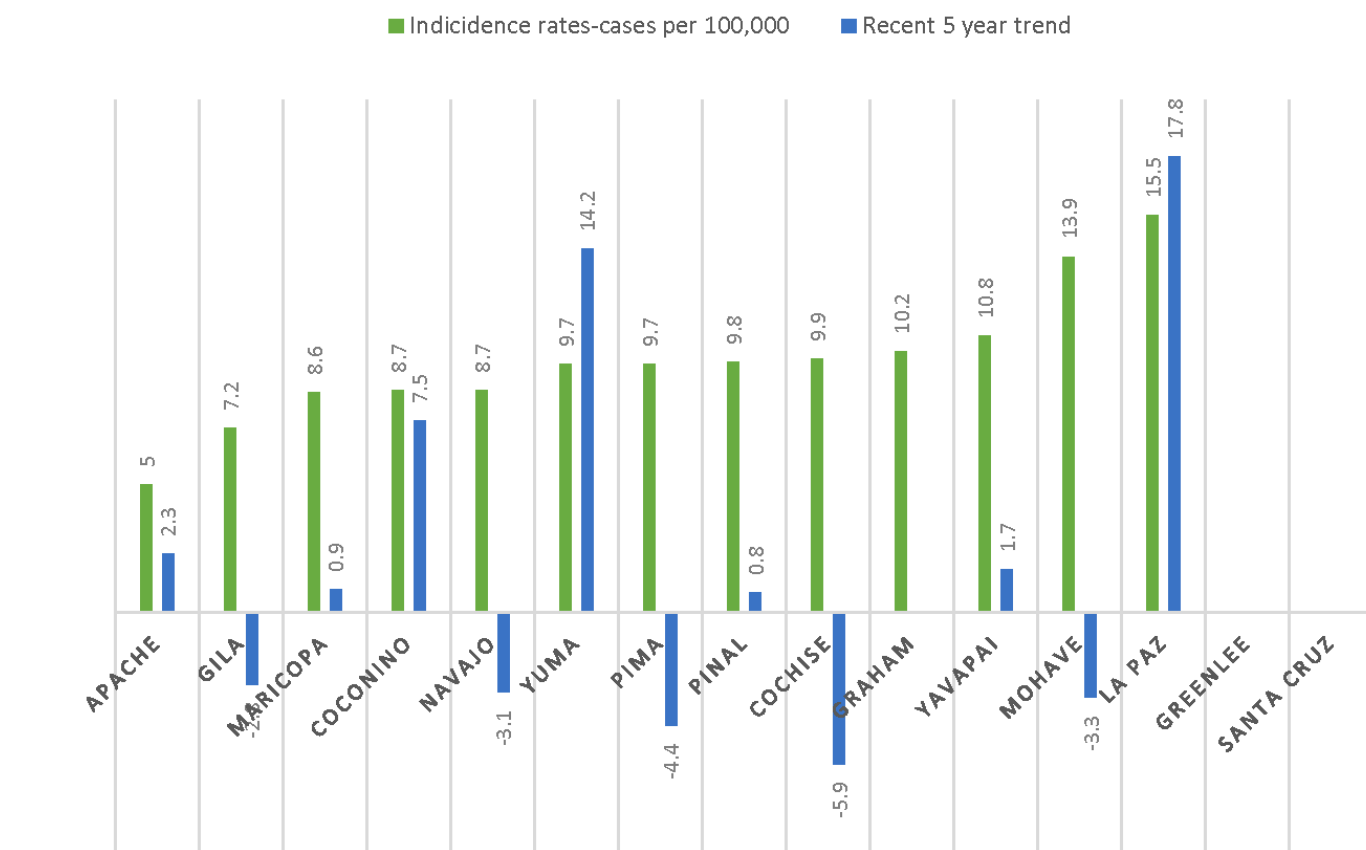


American Dental Association Health policy Institute- Oral health and well-being in Arizona 2015.<sup>(9)</sup>

One in five adults avoids smiling and feels embarrassment because of the condition of their mouth and teeth <sup>(9)</sup>. The top oral-health problem for low-income Arizona adults is difficulty biting and chewing. Cost is the primary reason for not visiting the dentist for 66% of Arizona adults across all income groups. This percentage increases to 78% for low-income households compared to 37% of high-income households.<sup>(9)</sup> (See Figure 5)

Oral cancer is found three times more frequently in Arizona men (14.1 new cases per 100,000 population) than in women (5.0 new cases per 100,000 population), while nationally oral cancer is found two times more frequently in men than women. There were 723 reported cases of oral cavity cancer in Arizona in 2018. <sup>(20)</sup> Nearly three quarters (72.2%) of those cases were among men. The county-wise distribution of oral and pharyngeal cancer incidence rates and the recent 5-year trend is shown in Figure 6. <sup>(20)</sup> While oral and pharyngeal cancers are usually linked to tobacco and alcohol use, there has been a recent increase in Human Papilloma Virus (HPV) associated cases, particularly among whites.

**FIGURE 6: ORAL AND PHARYNGEAL CANCER INCIDENCE RATES FOR ARIZONA BY COUNTY**



CDC: State Cancer Profile, National Cancer Institute 2015 <sup>(20)</sup>

## OLDER ADULTS

By 2020, one in four Arizonans will be 60 or older, according to the state's <sup>(21)</sup>

Are older Arizonans coming of age without oral healthcare? Arizona's rank for oral health status of older adults dropped in 2018. Currently, the state ranks 38th compared to 32nd in 2016 based on the data collected from the Arizona Department of Health Services (ADHS) Office of Oral Health <sup>(22)</sup>. Factors contributing to this lower ranking include:

- There is no coverage for dental services in Medicare.
- One third (33%) of adults have severe tooth loss (no natural teeth or 6 or more missing teeth).
- In the last 12 months, only 68% of adults have had a dental visit.
- AHCCCS enrolled older adults are only covered for emergency dental services.
- Only 58% of Arizonans live in areas where the water is fluoridated.
- Arizona's 2005 Oral Health Plan did not include strategies to improve the oral health of older adults.
- A Basic Screening Survey (BSS) has not been conducted for older adults in Arizona since 2008.

52% of older adults are either unsure or believe Medicare covers routine dental, however, Medicare does not. <sup>(23)</sup>

Older adults in marginalized groups such as those who are homebound and those residing in long-term care facilities are less likely than their peers to have had a dental visit in the previous year. Cost, once again, is the number one reason for individuals in this populations for not visiting a dentist. <sup>(22)</sup>

*"Oral health for older adults is in fragile condition. Oral health for seniors is important for their diet, nutrition, self-esteem, socialization, and freedom from pain, among many other benefits."* <sup>(24)</sup>



## SPECIAL NEEDS POPULATIONS

Children with special health care needs and adults with disabilities face significant barriers to good oral health. In 2018, approximately 19.7% (n= 322,055) of Arizona children under the age of 18 years are Children with Special Health Care Needs (CSHCN), compared with the national average of 12.8%. Similarly, around 96,867 of Arizona adults have some level of developmental disability. <sup>(25)</sup>

CSHCN and adults with developmental disabilities often times require a wide spectrum of services ranging from preventive care to advanced dental treatment, medical equipment, and therapies. A survey conducted by the Arizona Developmental Planning Council in 2016 <sup>(26)</sup> found that at least 18% of CSHCN nationally reported that they needed at least one health care service that they were unable to obtain. The service that was most commonly reported as needed was dental care.

Similar to most states, people with special health care needs in Arizona are less likely to have access to adequate dental care than people without special health care needs. Only 72% of adults with developmental disabilities reported they had visited a dentist in the past two years. <sup>(26)</sup> The most frequently reported reasons for not going to the dentist were -- no money to pay for dental care (70%) and no dental insurance (59%). In addition, 57% of adults with developmental disabilities rated the condition of their teeth and gums as fair to poor, and over 17% indicated they had a problem with their teeth or gums that made it painful to eat. <sup>(26)</sup>

### Oral Health for People with Developmental Disabilities

Luke is a 24 year-old man with Down's syndrome that lives here in Arizona. Earlier this year, Luke woke up with an extremely swollen face which turned out to be related to an infected tooth. Luke's parents cover him for dental services under their employer-based insurance plan. Navigating the system wasn't easy, even with the family's resources and took more than a day to find a provider that would extract the infected tooth.

People with developmental and intellectual disabilities face challenging oral health issues. Prior to 2016, people with disabilities enrolled in AHCCCS had no access to oral health care, not even emergency dental services. Fortunately, an ALTCS dental benefit was reinstated in 2016 but is limited to \$1,000 per year and does not include preventive or restorative care. In addition, there is a shortage of dental professionals with expertise in working with special needs populations.

Our Oral Health Plan is committed to finding and implementing creative ways to improve oral health services for persons with disabilities. Research is needed to examine the extent of the need for additional services and to identify evidence-based and cost-effective approaches to improve oral health care for persons with disabilities in Arizona. Creative solutions may include incentives for providers to work with persons with disabilities, examining how general anesthesia fits into care for persons with special needs and extending targeted prevention services that can prevent the kinds of infections that Luke experienced.

# UNLOCKING ORAL HEALTH EQUITY

You're not healthy without good oral health. <sup>(1)</sup>

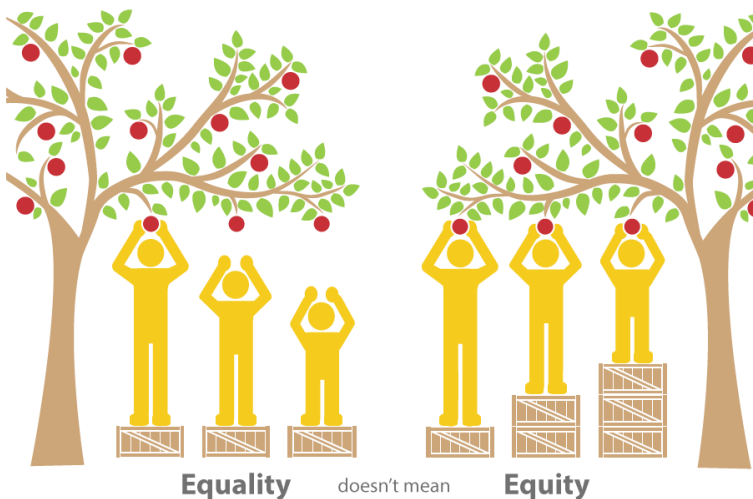
A just, equitable system is one in which all people have access to health care as well as the benefits of disease prevention. Viewing healthcare as a basic human right changes the perception of the current oral healthcare system, as a one-size-fits-all approach leads to inequities. <sup>(5)</sup>

A person's cultural background has a significant influence on beliefs, behaviors, perceptions, diet and attitude to illness and pain.

Locked doors affecting health equity include governmental policies, social and structural influences, which lead to continuation of privilege for

some and ongoing discrimination for others. Many Arizonans lack oral health insurance, struggle to find transportation to appointments, live in 'food deserts' where there are limited options to buy healthy food, have limited or no access to potable drinking water, and are challenged to navigate through the complex healthcare system with limited resources.

**FIGURE 7: EQUALITY VS EQUITY**



Fortunately, public health issues can be resolved with strategic intentionality and action towards clear goals. Oral health is a case in point. The Arizona State Health Assessment (2014) <sup>(8)</sup> and the Arizona Health Improvement Plan (2015-2020) <sup>(27)</sup> established improved oral health as a public health priority. These two documents helped lay the groundwork for statewide collaborative planning to advance oral health in Arizona. The Arizona State Oral Health Action Plan 2019-2022 builds on this

groundwork, identifying priorities and strategies for health improvement, which also align with national oral health initiatives.

To realize improvements in oral health status means taking action, making sure the actions are measurable, working to eliminate barriers, addressing the stark inequities and disparities, and promoting person-centered/whole person care.

More remains to be done to protect the oral health of Arizona's at-risk populations.

# THE CROSS-CUTTING SYSTEMS OF ORAL HEALTH CARE

The Arizona Oral Health Action Plan 2019-2022 defines specific goals, objectives, and strategies for advancing oral health for all Arizonans. The Cross-cutting systems are a “complex, interrelated set of factors” that range from good oral hygiene and optimal water fluoridation to providing more equitable access to oral health care services. This state plan recognizes and provides strategies in each of the cross-cutting systems of: Policy, Care, Community, and Financing.

**Policy** is the key to all cross-cutting systems. It is critical to make changes at the upstreams within the healthcare system. The persistent and universal nature of oral health inequalities presents a significant challenge to oral health policy makers. With a robust oral health policy structure, it is possible to leverage and maximize resources, augment data collection, and address policy barriers. <sup>(28)</sup>

**Care** encompasses delivery of care by a workforce that is diverse, competent, affordable, easily accessed, and representative of the population. Arizona’s public health infrastructure, to date, is insufficient to address the needs of all citizens seeking care, especially disadvantaged groups. Integration of oral health into all traditional care models is critical. It is necessary to bring together health professionals from different disciplines and sectors to improve service efficiency and quality of care to reduce differences in access and usage of services among all geographical and socioeconomic groups.

Being healthy is more than accessing healthcare. Actual care accounts for only 10% of one’s health and well-being. **Community** circumstances

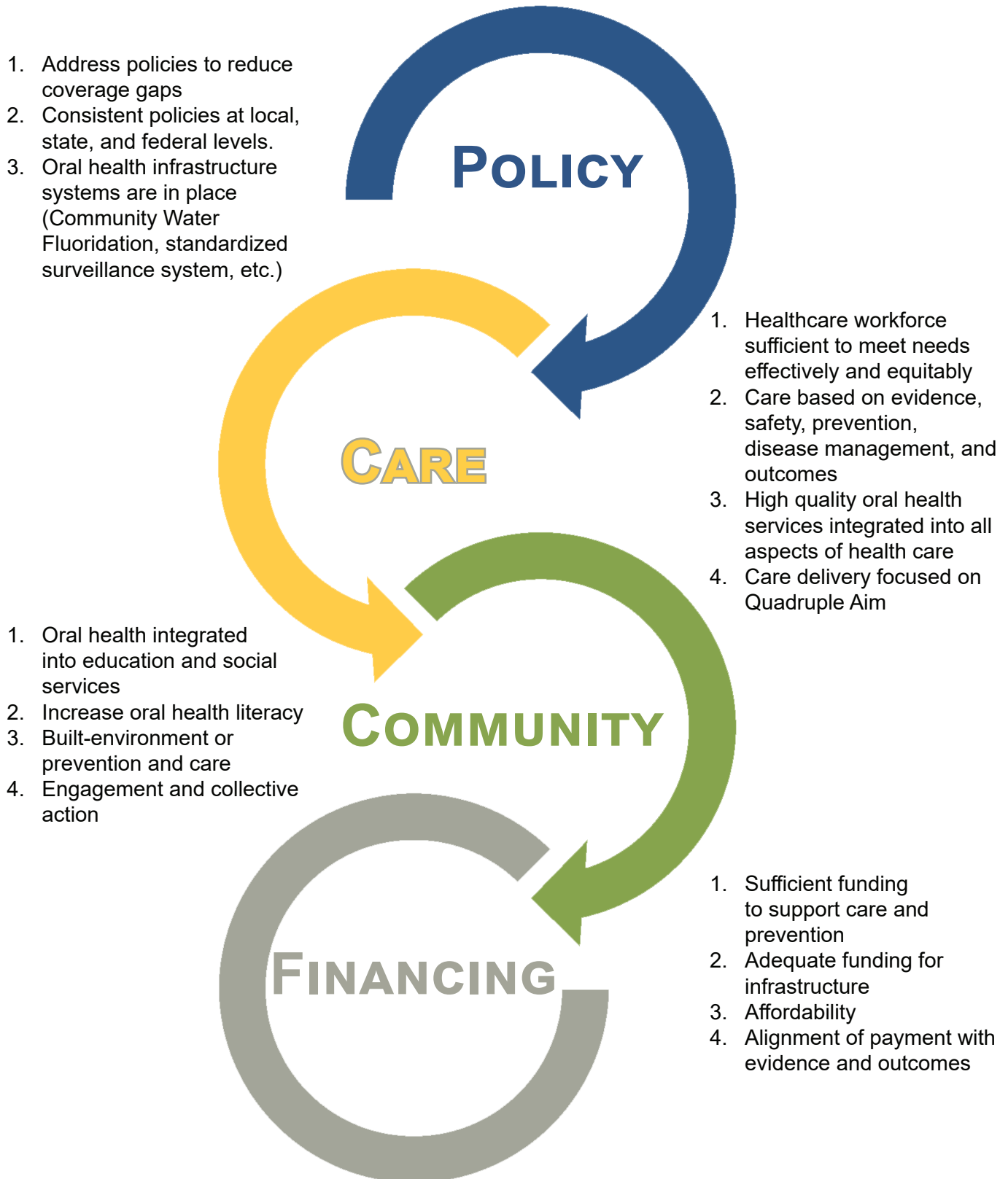
such as transportation, housing, safety, affordable and healthy food, education, and social justice contribute to the status of overall health by 30%.

<sup>(29)</sup> Oral health is essential to overall health, and it is crucial to target communities to make delivery of care easier, more affordable, acceptable, and sensitive towards cultural beliefs. Equally critical is the continued development of collaborative partnerships with other public health and social welfare sectors, educational and health care organizations, and private organizations concerned with oral health.

**Financing** for oral health care influences where and whether individuals receive care. Understanding how oral health services are financed is critical to the “getability” or access to care. Cost is the number one reason people don’t visit the dentist. <sup>(9)</sup> Those individuals that have private coverage or can afford the out-of-pocket expenses can generally get care. The uninsured, underinsured, and those with limited financial means face significant barriers. The gap between these two groups is growing. The future of payment for dental care has come to the forefront of oral health strategies, with emphasis on value rather than procedure.

Figure 8 illustrates the cross-cutting systems of oral health care and the objectives under each system that this state plan addresses.

**FIGURE 8: THE CROSS-CUTTING SYSTEMS OF ORAL HEALTH CARE**





# OPENING THE DOORS TO BETTER HEALTH

## POLICY

### Goal 1: Support policies that develop and support a robust oral health infrastructure



#### Coverage Gaps: Prohibit access to care

- Dental benefits for adults enrolled in AHCCCS is limited to emergency services capped annually at \$ 1000. <sup>(30 & 31)</sup>
- There is no dental benefit under Medicare for older adults.



#### Unlocking Coverage Gaps

**Objective A:** Use data and stories to educate and build support among decision makers and consumers for expanding oral health coverage for all Arizonans.

#### **Strategies:**

1. Identify gaps in oral health coverage across age groups, regions, and race/ethnicity.
2. Ensure sustainable support and advocate to add/expand adult dental benefits through public (AHCCCS and Medicare) and private insurance.
3. Engage and support stakeholder organizations, locally and nationally, to include dental benefit in Medicare.
4. Advocate and support sustained coverage of children under AHCCCS and CHIP programs.
5. Use public service announcements and innovative outreach methods (e.g. social media) to educate the public on the benefits of dental care insurance.
6. Convene a statewide policy workgroup that includes a broad array of stakeholders to review and make recommendations on oral health policies and payment rates for dental providers.

**Objective B:** Advocate and support AHCCCS dental coverage for pregnant women.

#### **Strategies:**

1. Educate policy makers about the linkage between pregnancy and oral health through stories and evidence based studies.
2. Support AHCCCS dental coverage bill for pregnant women.



## Lack of water Fluoridation

- Only 57.8% of Arizonans receive optimally fluoridated drinking water; the Healthy People 2020 target is 80%.<sup>(8, 32, & 33)</sup> (See Figure 9). The United States' average is 74.7%.
- Arizona has no statewide policy to support community water fluoridation: adding optimal fluoride to water is a community-level decision.



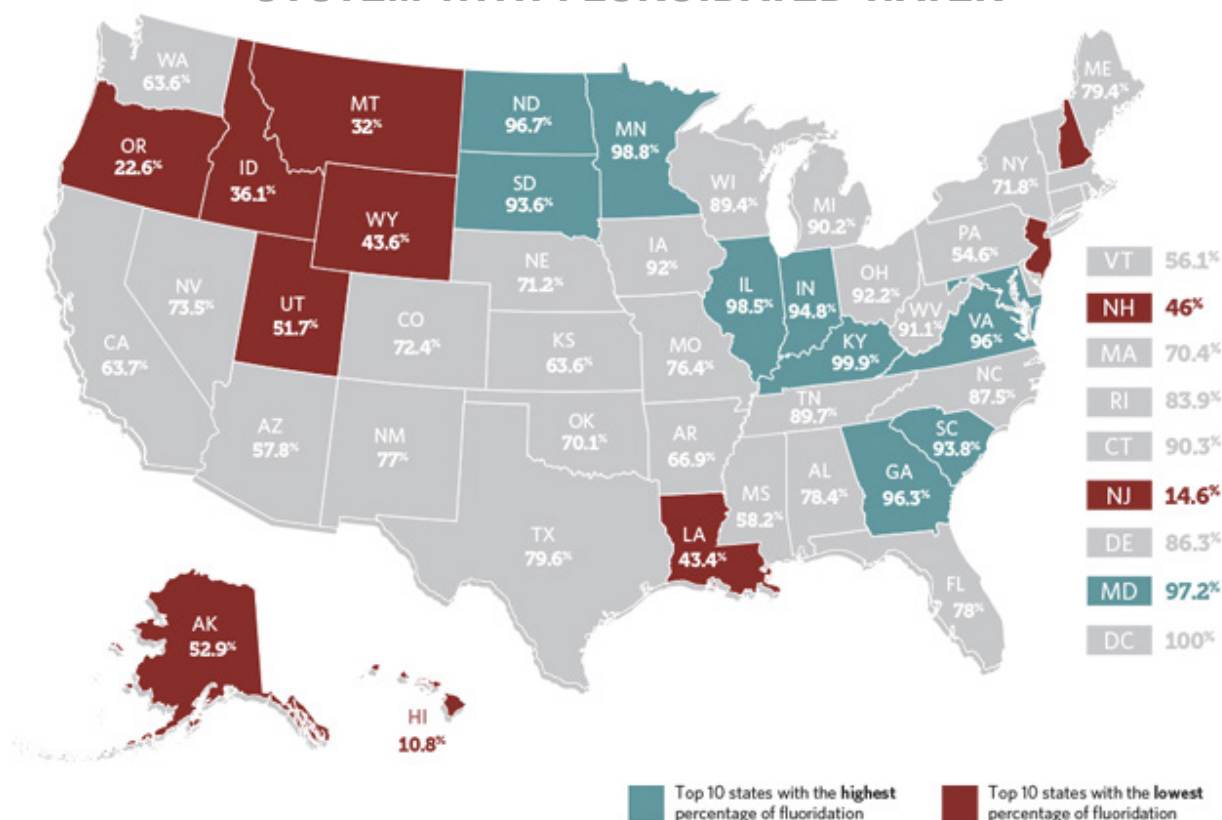
## Opening doors to optimum water fluoridation

**Objective C:** Increase the number of Arizonans served by an optimally fluoridated water system.

### Strategies:

1. Develop collaborative strategies with stakeholders to educate people and ensure rapid response to communities in need of technical assistance and training on Community Water Fluoridation (CWF).
2. Provide state and local decision makers with stories and scientific information on fluoride and fluoridation on a proactive and ongoing basis.

**FIGURE 9: PERCENTAGE OF RESIDENTS SERVED BY PUBLIC WATER SYSTEM WITH FLUORIDATED WATER**





## Inadequate Infrastructure

- Arizona lacks a comprehensive surveillance system to identify, investigate, and monitor oral health status, needs, and services.
- Complex systems are difficult for consumers and providers to navigate.



## Opening doors to Adequate Infrastructure

**Objective D:** Establish a state oral health surveillance plan inclusive of data on disparities and special populations.

### **Strategies:**

1. Develop a surveillance plan for the state, by engaging stakeholders and partners.
2. Develop a dental resource inventory, which includes all of the dental providers throughout the state.
3. Identify key health and delivery systems surveillance indicators for partnership and action.
4. Expand existing surveys [e.g: Basic Screening Survey (BSS), Behavior Risk Factor Surveillance System (BRFSS)] to include barriers to oral health care access.
5. Improve surveillance for pregnant women accessing oral health services.
6. Develop performance measures and track progress for protocols/standards of care.

## CARE

### Goal 2: Healthcare workforce is sufficient to meet needs effectively and equitably and is integrated within overall health



#### Workforce Predicament

- There is unequal distribution of health care professionals throughout the state with more dentists practicing in urban areas. <sup>(34)</sup>
- 4.6 million Arizonans live in a Dental Health Professional Shortage Area (DHPSA). <sup>(35)</sup>
- Only 10% of Arizona dentists bill over \$10,000 annually to AHCCCS. <sup>(36)</sup> (See Figure 10)



#### Workforce Opportunities

**Objective A:** Ensure an adequate, diverse, and culturally competent workforce throughout the state.

**Strategies:**

1. Identify and support pipeline programs to ensure capacity and diversity of the oral health workforce in the state.
2. Provide opportunities for open discussion among communities experiencing dental workforce shortages regarding workforce solutions.
3. Facilitate and support collaboration between AHCCCS and Managed-Care Organizations (MCOs) to increase provider participation in Medicaid and Medicare.
4. Advocate to expand the State Loan Repayment Program (SLRP).
5. Expand access to oral health workforce through innovative approaches (i.e. Teledentistry).

**FIGURE 10: NUMBER OF PROVIDERS BILLING \$10,000+ TO AHCCCS**







## Siloed Healthcare System

- Few Interprofessional Education (IPE) programs currently exist in Arizona.
- Siloed healthcare systems impede interprofessional care.
- No referral system exists between primary care and oral health providers.



## Workforce Integration

**Objective B:** Integrate oral health with primary care.

### **Strategies:**

1. Engage other health professionals (physician assistants, nurse practitioners, Community Health Workers (CHWs), etc) to help consumers navigate the healthcare system.
2. Increase capacity of oral health care professionals to screen for chronic diseases and refer to health care professionals.
3. Increase the number of health care professionals who routinely perform oral risk assessment and/or fluoride varnish.
4. Equip the Primary Care Association -- Arizona Alliance for Community Health Centers (AACHC) to lead and support health centers in implementing service coordination models that provide person-centered comprehensive care.
5. Create a process to facilitate and document referrals between healthcare streams.
6. Provide technical assistance to support inclusion of oral health education to front-line health care programs.

## COMMUNITY

.....

### Goal 3: Create a shared understanding of oral health literacy, prevention, and advocacy.



#### Inadequate Oral Health Literacy

- Oral health is not included in education.
- A network of champions is in its early organizational stages.



#### Unlocking Oral Health Literacy

**Objective A:** Maintain a statewide network of champions and leaders for oral health advocacy.

#### **Strategies:**

1. Partner with statewide and regional coalitions that are representative of Arizona communities.
2. Continue to support local/regional health coalitions and grassroots organizations with coordinated efforts to improve oral health.
3. Ensure that consumer voices are included in policy and programming discussions.
4. Engage partners from the Department of Education to explore the best approach to integrate oral health into school curriculum.



#### Inadequate Prevention Efforts

- Inadequate prevention efforts are missed opportunities to avert future health problems that could become serious and expensive to treat.



#### Opening doors to Oral Health Prevention

**Objective B:** Support proven prevention and early detection programs.

#### **Strategies:**

1. Promote community engagement of school-based dental sealant programs.
2. Promote regular and consistent evidence-based early childhood preventive program (examples: fluoride varnish, screening and referrals, home visiting, etc.).
3. Encourage oral health screening for older adults in long-term care facilities.



## Perception Gaps

- There is no consistent, universal message about the importance of oral health. <sup>(5)</sup>
- There is a widespread perception that brushing, flossing, and going to the dentist are the solutions to oral health problems, and that there is nothing society can do. <sup>(5)</sup>



## Unlocking doors to Oral Health thinking

**Objective C:** Disseminate consistent and uniform messaging to change public perceptions about oral health.

### Strategies:

1. Ensure families have self-care information (about diet, nutrition, oral hygiene practices) and tools that support improved oral health at the individual/household level.
2. Use media and social media to create, disseminate, and promote messaging that advances the importance of oral health.
3. Grow and sustain a coordinated network of partners to disseminate oral health information.
4. Foster collaborative relationships between unexpected/unusual community partners that can impact the oral health movement.

### Health

- *Health Individualism*
- Health hierarchy (vital organs vs. other stuff)
- *Consumerism*

### Oral Health

- Good oral health=no cavities
- Pretty smile and fresh breath
- Self-esteem and social status
- Mouth=gateway to the body

### Causes of Problems

- Poor personal hygiene
- Bad parents
- Too much sugar and smoking
- Choosing to delay or avoid care
- "Cultures" of poor self-care

*What's in the Swamp of...*

## Oral Health

### Solutions

- Three simple things (brush, floss, go to the dentist)
- Better information for better decisions
- Low priority
- There's nothing society can do

### Oral Health System

- Dentist offices are the system
- Team=dentists, hygienists, receptionists
- Dental insurance coverage is supplemental
- Prevention=better, earlier self-care

© 2017, FrameWorks Institute. All rights reserved.

## FINANCING

### Goal 4: Pursue adequate financing for oral health



#### Inadequate Oral Healthcare Financing

- In Arizona, 66 % of those polled, across all socioeconomic levels, said cost is the number one factor for postponing or neglecting care. <sup>(9)</sup>
- The average U.S. annual household spending has shown rapid increase for dental services; more than any other health care expense. <sup>(37)</sup>
- There is inconsistent State funding for oral health care.
- Dentists are reimbursed for treating disease rather than preventing disease.
- Individuals often seek palliative treatment in emergency rooms increasing costs to the overall healthcare system.



#### Unlocking doors to adequate Oral Healthcare Financing

**Objective A:** Oral health care will be financed as an important component of health.

##### **Strategies:**

1. Address current limitations to utilization of public and private insurance coverage.
2. Advocate for financial support to cover costs associated with seeking oral health care such as transportation, time off work, child care etc.



#### Inadequate Oral Health Infrastructure Financing

- Inadequate infrastructure for individuals with emergent oral health needs exists.
- There is no funding for oral health infrastructure.
- There is no funding to support and sustain a statewide network of champions to advocate for oral health.



#### Unlocking doors to adequate Oral Health Infrastructure Financing

**Objective B:** Oral health infrastructure is funded, and expanded, to sustain positive health outcomes.

##### **Strategies:**

1. Advocate for funding for oral health infrastructure at local, state and federal levels.
2. Develop an awareness of the cost of providing dental care in emergency departments.
3. Identify and support pilot projects to explore new models of service delivery that emphasize oral health prevention.
4. Secure legislative support to fund development of a state oral health surveillance plan.

# UNLOCKING THE DOORS TO BETTER ORAL HEALTH

More people experience good oral health today than ever before because of the vast knowledge about prevention, treatment, and the connection between chronic diseases of the body and mouth. However, those individuals and populations at greatest risk still face tremendous barriers and the most locked doors to health and well-being.

The Arizona Oral Health Action Plan 2019-2022 is designed to:

- Increase visibility and awareness of the importance of oral health
- Serve as an action guide for reducing the prevalence of oral disease
- Allow stakeholders to work collectively towards shared goals
- Unlock doors for those most at risk enabling a healthier quality of life
- Inspire and guide everyone striving to improve oral health in Arizona
- Focus on four critical cross-cutting systems of Policy, Care, Community, and Financing

Now the real work begins. Steady progress towards achieving goals is essential, and actions around each goal must be dynamic in order to affect change, or Arizona risks a continual, costly, inequitable erosion of population health. The mouth must not be overlooked, ignored, or neglected so that opportunities to improve oral health for all can be achieved.

In summary, oral health undeniably is linked to overall general health, and oral disease is preventable. In currently configured healthcare delivery systems, oral health has been separated from primary care. In the last 20 years, significant attention and efforts have been directed toward the integration of oral health into primary care practice and the imperative to increase access to quality oral health, to increase early detection and prevention of oral disease, to reduce associated costs of oral disease and impacts on general health, and to improve oral and general health outcomes.

“

The teeth are made from stern stuff. They can withstand floods, fires, even centuries in the grave. But the teeth are no match for the slow-motion catastrophe that is a life of poverty: its burdens, distractions, diseases, privations, low expectations, transience, the addictive antidotes that offer temporary relief at usurious rates.

— Mary Otto, *Teeth: The Story of Beauty, Inequality, and the Struggle for Oral Health in America* <sup>(38)</sup>

”

# BY 2020, ARIZONA'S ORAL HEALTH WILL HAVE...

.....

Dental benefits for  
pregnant women covered  
by AHCCCS

**POLICY**



Family-centered oral health  
care accessible in many  
community settings by a  
diverse inter-professional  
and expanded healthcare  
workforce

**CARE**



Campaigns to educate  
marginalized populations  
on their risks for oral  
diseases and effective  
prevention options

**COMMUNITY**



Healthcare providers  
reimbursed for preventive  
interventions, not only  
restorative procedures

**FINANCING**





# REFERENCES

1. U.S. Department of Health and Human Services (2000). Oral health in america: a report of the surgeon general. Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health. Retrieved from <https://www.nidcr.nih.gov/sites/default/files/2017-10/hck1ocv.%40www.surgeon.fullrpt.pdf>
2. World Health Organization (2018). Oral health. Retrieved from [http://www.who.int/oral\\_health/en/](http://www.who.int/oral_health/en/)
3. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. Chronic Disease Indicators (CDI) Data [online]. 2016 [accessed Oct 04, 2018]. Retrieved from <https://nccd.cdc.gov/cdi>.
4. DentaQuest Foundation (2018). DentaQuest foundation grants-making statement of purpose. Retrieved from <http://www.dentaquestfoundation.org/sites/default/files/DQF%20Grantmaking%20Statement%20of%20Purpose.pdf>
5. FrameWorks Institute (2017). Unlocking the door to new thinking: frames for advancing oral health reform. A FrameWorks Message Memo. Retrieved from [http://frameworksinstitute.org/assets/files/PDF\\_oralhealth/oral\\_health\\_messagememo\\_may\\_2017.pdf](http://frameworksinstitute.org/assets/files/PDF_oralhealth/oral_health_messagememo_may_2017.pdf)
6. Thomas Bodenheimer and Christine Sinsky (2014). From triple to quadruple aim: care of the patient requires care of the provider. *Annals of Family Medicine*. 12, 573-576
7. Health Innovation Network (2016). What is person-centered care and why is it important? Resources Health Innovation Network, South London. Retrieved from: [https://healthinnovationnetwork.com/system/ckeditor\\_assets/attachments/41/what\\_is\\_person-centred\\_care\\_and\\_why\\_is\\_it\\_important.pdf](https://healthinnovationnetwork.com/system/ckeditor_assets/attachments/41/what_is_person-centred_care_and_why_is_it_important.pdf)
8. Arizona Department of Health Services (2014). Arizona state health assessment, 74-77. Retrieved from <https://www.azdhs.gov/documents/operations/managing-excellence/az-state-health-assessment.pdf>
9. American Dental Association Health Policy Institute (2015). Oral health and well-being in Arizona. Retrieved from <http://www.ada.org/en/science-research/health-policy-institute/oral-health-and-well-being/Arizona-facts>
10. Brennan Ramirez LK, Baker EA, Metzler M (2008). Promoting Health Equity: A Resource to Help Communities Address Social Determinants of Health. Atlanta: US Department of Health and Human Services, Centers for Disease Control and Prevention.
11. Marmot Michael (2018). An inverse care law for our time. *British Medical Journal*. 362, k3216
12. Office of Oral Health, Department of Public Health Services, Arizona Department of Health services (2005). The oral health of arizona's children-current status, trends, and disparities. Retrieved from: <http://fluoridealert.org/wp-content/uploads/az.2005.pdf>
13. The Arizona oral health action plan 2005 (Unpublished document). Arizona Department of Health Services, Phoenix Arizona.
14. Arizona Department of Health Services (2015). Healthy smiles healthy bodies survey: the oral health of Arizona's kindergarten and third grade children. Phoenix Arizona. ADHS Firsts Things First. Retrieved from <https://www.azdhs.gov/documents/prevention/womens-childrens-health/reports-fact-sheets/oral-health/healthy-smiles-healthy-bodies-data-brief-2015.pdf>
15. S. Offenbacher, H.L. Jared, P.G. O'Reilly, S.R. Wells, G.E. Salvi, H.P. Lawrence, S.S. Socransky-, and J.D. Beck. (1998). Potential pathogenic mechanisms of periodontitis-associated pregnancy complications. *Annals of Periodontology*. 3, 1, 233-250. Retrieved from <https://doi.org/10.1902/an-nals.1998.3.1.233>
16. Arizona Public Health Association (2018). Better teeth, better health- improving oral health for Arizona moms and babies. Retrieved from [http://azchildren.org/wp-content/uploads/2018/01/SB-1445-FACT-SHEET-AZPHA-Dental-Infographic\\_Jan-9\\_2018.pdf](http://azchildren.org/wp-content/uploads/2018/01/SB-1445-FACT-SHEET-AZPHA-Dental-Infographic_Jan-9_2018.pdf)
17. Mohan P, Roubla A, Humble W, Calhoun E. A case for medicaid dental coverage for pregnant women. Center for Population Science and Discovery- Issue brief. University of Arizona. Retrieved from [https://pophealth.uahs.arizona.edu/sites/default/files/uploads/dental\\_coverage\\_during\\_pregnancy\\_dec\\_21\\_pm.pdf](https://pophealth.uahs.arizona.edu/sites/default/files/uploads/dental_coverage_during_pregnancy_dec_21_pm.pdf)
18. Silverman D (2012). Dental coverage for low-income pregnant women- issue brief. National Health Law Program. Retrieved from <https://healthlaw.org/resource/dental-coverage-for-low-income-pregnant-women/>

19. American Dental Association Health Policy Institute (2015). Oral health care system -arizona. 20-22. Retrieved from <https://www.ada.org/en/~media/ADA/Science%20and%20Research/HPI/OralHealthCare-StateFacts/Arizona-Oral-Health-Care-System>
20. Centers for Disease Control and Prevention. National Cancer Institute (2018). State cancer profiles. Retrieved from <https://statecancerprofiles.cancer.gov/incidencerates/index.php?stateFIPS=04&-cancer=003&race=00&sex=0&age=001&type=incd&sortVariableName=rate&sortOrder=de-fault#results>
21. State of Arizona, Office of the Governor (2005). Aging 2020: Arizona's plan for an aging population. Phoenix Arizona. Retrieved from: <http://govtrans.az.gov/aging/Documents/Aging2020/Aging2020Report.pdf>
22. Oral Health America (2018). A state of decay-are older americans coming of age without oral healthcare? Volume IV. Wisdom Tooth Project.
23. Oral Health America (2015). Oral health america 2015 public opinion poll: executive summary. Chicago, Illinois.
24. Dentistry Today (18 April 2018). Oral healthcare for senior citizens still requires improvement. Retrieved from: <https://www.dentistrytoday.com/news/industrynews/item/3183-oral-healthcare-for-senior-citizens-still-requires-improvement>
25. The National Survey of Children with Special Health Care Needs (2007). Retrieved from: <http://childhealthdata.org/learn-about-the-nsch/archive-prior-year-data-documents-and-resources> and [https://oralhealthamerica.org/wp-content/uploads/AStateOfDecay2018\\_OHA.pdf](https://oralhealthamerica.org/wp-content/uploads/AStateOfDecay2018_OHA.pdf)
26. Arizona Developmental Disabilities Planning Council (2011). Oral healthcare for adults with developmental disabilities in arizona. Phoenix, Arizona.
27. Arizona Department of Health Services (2016). Arizona health improvement plan: healthy people, healthy communities 2016-2020. Retrieved from <https://www.azdhs.gov/documents/operations/managing-excellence/azhip.pdf>
28. Oral Health program, Minnesota Department of Health (2013). Minnesota oral health plan- advancing optimal oral health for all minnesotans 2013-2018. St Paul, Minnesota. Retrieved from: <https://www.health.state.mn.us/people/oralhealth/contact/stateplan.html>
29. Paul Glassman, Maureen Harrington, and Maysa Namakian (2014). Promoting oral health through community engagement. California Dental Association Journal. 42, N° 7, 465- 470.
30. Arizona Health Care Cost Containment System (2017). AHCCCS medical policy manual. Section 310- covered services. 310-D1 dental services for members 21 years of age and older. 1-6. Retrieved from: <https://www.azahcccs.gov/shared/Downloads/MedicalPolicyManual/300/310-D1.pdf>
31. Arizona Alliance for Community Health Centers. Arizona department of health services disparities data: burden document (unpublished).
32. Centers for Disease Control and Prevention. Community Water Fluoridation (2016). State fluoridation percentage calculations and state ranked by fluoridation percentage. Retrieved from <https://www.cdc.gov/fluoridation/statistics/2014stats.htm>
33. The PEW Charitable Trust (2014). Community Water Fluoridation: the top 10 and bottom 10. Retrieved from: <https://www.pewtrusts.org/en/research-and-analysis/data-visualizations/2014/fluoridation-by-the-numbers>
34. American Dental Association Health Policy Institute (2018). Geographic access to dental care: arizona. Retrieved from: <https://www.ada.org/en/~media/ADA/Science%20and%20Research/HPI/AccessToDentalCare-StateFacts/Arizona-Access-To-Dental-Care.pdf>
35. Henry J Kaiser Family Foundation (2017). Dental care health professional shortages areas (HPSAs) state health facts. Retrieved from: <https://www.kff.org/other/state-indicator/dental-care-health-professional-shortage-areas-hpsas/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>
36. Northern Arizona University, Project Zero Women and Infant (2016). Arizona oral health data page-dentists data summary. Retrieved from: <https://in.nau.edu/Project-Zero/Arizona-Oral-Health-Data-Page/> and <https://in.nau.edu/wp-content/uploads/sites/39/2018/08/4c5aaf2a-f122-4c44-bc2a-e21a3814b0de-ek.jpg>
37. Centers for Medicare and Medicaid services (2018). National Health expenditures 2016 highlights. Retrieved from: <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/downloads/highlights.pdf>
38. Mary Otto. (2016). Teeth: the untold story of beauty, inequality, and the struggle for oral health in America. New York. New Press. Retrieved from: <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/downloads/highlights.pdf>

