

# Older Adult Oral Health Resources for Collaboration

Raising awareness about the importance of older adult oral health to increase collaborative efforts to improve health and well-being



# Introduction

Older adults' oral health is influenced by many factors, so developing an effective toolkit requires a multidisciplinary approach. Diet, medical conditions, cognitive functioning, socioeconomic status, and community supports are among the many factors that can influence oral health. Oral health, in turn, affects older adults' capacities to work, engage socially, and maintain a healthy lifestyle. Improvement in older adults' oral health requires both individualized initiatives, such as educational programs for older adults and their caregivers, and institutional changes, such as policy changes to promote access to care.

State programs dedicated to improving quality of life for older adults and reducing racial and socioeconomic disparities also are seeking strategies to improve oral health. State programs identified a need for a set of resources similar to what has been available for younger age groups. Older adults are a highly diverse population however, so a "one-size fits all" approach will not be sufficient to improve population-level oral health.

The Association of State and Territorial Dental Directors (ASTDD) created this document as a resource to assist with training and educating professionals who work with older adults. While this is not an exhaustive list of all resources available, it is intended to spark the interest of multiple groups in taking an education and/or advocacy role around older adult oral health through a health equity lens.

The goal of the Older Adult Oral Health Resources for Collaboration document is to prepare State/Territorial Oral Health Programs (S/TOHPs), State Units on Aging (SUAs) and Area Agencies on Aging (AAAs) to actively partner with one another. The broader goal is to educate stakeholders, such as social service organizations, dental and non-dental health care providers, municipal leaders, political influencers, dental associations, dental hygiene associations, organizations representing older adults, caregivers, anyone who interacts with older adults and older adults themselves, about the impact of oral health on overall health.

Oral health is an often-overlooked aspect of overall health in the older adult population. Changing perceptions of the importance of older adult oral health requires the dissemination of educational messaging to multiple audiences that result in an increased awareness and improved policy, funding, and program planning that result in older adults getting routine oral health care.

This initiative brought together experts in oral health and aging, representing academic, clinical, and government settings. Our conversations were lively and robust. I'd like to thank all the workgroup members, past and present, along with members of the Healthy Aging Committee for their work in developing and gathering materials. I'd like to thank the Gary and Mary West Foundation for their support, and the leadership of Apple Tree Dental for their wisdom. Finally, my sincere gratitude to Lori Kepler-Cofano for taking on the critical leadership role for this task. Lori kept us focused even as there were shifts in participation. Our team hopes that users find this full of valuable resources to help achieve the goal of improved oral health.

**Samuel Zwetchkenbaum**, DDS, MPH  
Chair, ASTDD Healthy Aging Committee  
Dental Director, Rhode Island

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## **Sondos Alghamdi, BDS**

Dental Public Health Resident  
MMSc Candidate in Dental Education, 2023  
Oral Health Policy and Epidemiology  
Harvard School of Dental Medicine  
Boston, MA

## **Jessica Ball, BS**

Dental Health Coordinator, Nebraska Dept.  
of Health & Human Services Office of Oral  
Health & Dentistry  
Lincoln, NE

## **Pamela Blankenship, BSDH**

Adult Oral Health Coordinator  
Virginia Department of Health  
Richmond, VA

## **Julie Boeckman, BS**

Program Manager, Office of Oral Health,  
Missouri Dept. of Health and  
Human Services  
Jefferson City, MO

## **Steffany Chamut,\* DDS, MPH, FICD**

Curriculum Evaluation Lead, National  
Center for Equitable Care for Elders  
Instructor in Oral Health Policy and  
Epidemiology  
Harvard School of Dental Medicine  
Boston, MA

*Note: Dr. Chamut is a 2021-2022 Health  
and Aging Policy Fellow at the Centers for  
Medicare & Medicaid Services. Her work on  
this document was completed prior to her  
fellowship appointment.*

## **Charles Craft, DDS**

Dental Health Director, Office of Oral  
Health Dentistry  
Nebraska Dept. of Health & Human Services  
Lincoln, NE

## **John Dane, DDS**

Consultant  
Missouri Department of Health &  
Senior Services  
Jefferson City, MO

## **Ellen Davis, RD, LDN**

Iowa Department on Aging

## **Guy Deyton, DDS, FACD**

State Dental Director, Office of  
Dental Health  
Missouri Dept. of Health & Senior Services  
Jefferson City, MO

## **Russell Dunkel, DDS, FPFA, FACD, FICD**

State Dental Director, Wisconsin Division  
of Public Health, Dept. of Health Services

## **Angie Friedmann, BAS, RDH**

Community Health Consultant, I-Smile  
Silver Lead  
Bureau of Oral Health and Delivery Systems  
Iowa Dept. of Public Health  
Des Moines, IA

## **Tommy Johnson, DMD**

State Dental Director, Alabama Dept. of  
Public Health  
Montgomery, AL

# Acknowledgements

**Katie McBurney, BSHM, RDH, CPHQ**

I-Smile Silver Lead, Iowa Dept. of  
Public Health  
Des Moines, IA

**Kathy B. Miller, MS, RN, MSHA**

Director of Aging Programs & Services  
Virginia Dept. of Aging and  
Rehabilitative Services  
Division for Community Living-Office for  
Aging Services

**Meaad Mogaddam, BDS, MSc**

Dental Public Health Resident  
DMSc in Oral Biology Candidate, 2025  
Oral Health Policy and Epidemiology  
Harvard School of Dental Medicine  
Boston, MA

**Carrie Molke, MS**

Director, Bureau of Aging and Disability  
Resources, Division of Public Health,  
Wisconsin Dept. of Health Services

**Nick Nyberg, BSc**

Programs and Planning Division Chief  
Alabama Dept. of Senior Services

**Alicyn Reimer**

Case Management & Elder Abuse  
Prevention Director, Iowa Dept. on Aging  
Des Moines, IA

**Tracy Rodgers, RDH, BS CPH**

Bureau of Oral Health and Delivery Systems  
Iowa Dept. of Public Health  
Des Moines, IA

**Ben Stromberg, MSW**

Program Manager  
Nebraska State Unit on Aging

**Mindy Ulstad, B.A.P.S.Y.**

Aging Program Specialist, Dept. of Health  
and Senior Services, Division of Senior  
and Disability Services, Bureau of  
Senior Programs  
Jefferson City, MO

**Erik White, MS, RDN, LMNT**

Nutrition Coordinator, Nebraska Unit on  
Aging, Medicaid and Long-term Care  
Lincoln, NE

**Kathy Wilson-Gold, MS, RDN, LD, FAND**

Nutrition Contractor  
Office of Nutrition and Health Promotion  
Programs (ONHPP)  
Administration on Aging  
Administration for Community Living  
U.S. Dept. of Health and Human Services  
Washington, DC

**Samuel Zwetchkenbaum, DDS, MPH**

Dental Director, Oral Health Program,  
Rhode Island Dept. of Health  
Providence, RI



# Background



The older adult population, age 65 and older, is growing rapidly in the United States (U.S.). This increase, along with older adults' greater retention of their natural teeth, intensifies the need to focus on older adult oral health and access to oral health care.<sup>1</sup> Better access to routine oral health care for problems such as untreated tooth decay, gum disease and oral cancer will allow these issues to be found and treated earlier. Educating older adults about the importance of oral health care, including focusing on prevention of oral disease may drive them to seek care before their health concerns progress. By focusing on prevention of oral disease, infections can be addressed before they become advanced and require more extensive and expensive treatment. Focusing on early intervention and prevention and using technology (for example, teledentistry and telehealth), has improved access to care for children.<sup>1</sup> These approaches could also benefit older adults, especially those who are homebound and/or have mobility issues.

Despite the importance of oral health to older adults' overall well-being, obstacles to their care exist. The National Institutes of Health (NIH) 2021 report, *Oral Health in America: Advances and Challenges*-Section 3B: Oral Health Across the Lifespan: Older Adults, addresses some of the oral health challenges facing older adults such as:

- Loss of employer-provided dental insurance.
- Lack of an oral health benefit in Medicare.
- A longer lifespan with more chronic disease and complex health conditions.
- Adults who are frail, disabled, homebound, cognitively impaired or those residing in long-term care facilities require a coordinated team of caregivers to address their oral health care needs – despite an unprecedented shortage of paid long-term care providers.

Older adults living in poverty are particularly vulnerable to dental problems, including tooth loss. Many “baby boomers,” those born from 1946 to 1964, will keep their teeth longer than any generation before, yet they continue to experience declines in oral health.<sup>1</sup> While improvement has been made in the past 20 years, challenges still need to be addressed around inequity and access to care. Many older adults have difficulty accessing routine oral health services. While economics is a common barrier to care to the population as a whole, access to care for older adults is complicated by no perceived need, place of residence, dentition status, education level, lack of knowledge, fear, health literacy, social isolation, professional attitudes, lack of effective oral health policies, insurance, transportation, availability, and accessibility of dental providers. Generally, it is not a single deterrent but rather a combination of barriers that impact the receipt of care.

In 2018, 52 million people aged 65 and over lived in the U.S., accounting for 16% of the total population. By 2034, there will be more adults over age 65 than there will be youth in the U.S.<sup>2</sup> and the health care needs of older adults are quite different from those of younger people. By then, the older population is projected to be more than twice as large as it was in 2000, growing from 35 million to 73 million and representing 21% of the total U.S. population.<sup>3</sup> “The “oldest old” population will be growing at an ever steeper pace: the number of U.S. adults age 85+ is projected to triple from 6.7 million in 2020 to 20 million by 2060 while the number of centenarians is projected to quintuple from 72,000 to over 300,000.<sup>4</sup> Advanced age brings with it multiple co-morbidities.

The older population is projected to become increasingly diverse, reflecting demographic changes in the U.S. population over the past several decades. In 2018, 71% of the population was non-Hispanic White alone, 9% non-Hispanic Black alone, 5% non-Hispanic Asian alone, and 21% Hispanic of any race.<sup>3</sup> By 2060, Hispanics are projected to account for 21 percent of all older adults, and the proportion who are Black and Asian will also increase, although at a slower rate.<sup>3</sup> Race disparities in health, a function of long-standing systemic racism, are well-documented, further intensifying the need for increased access to high-quality oral health care.

Social factors and cultural beliefs may contribute to an expectation that loss of natural teeth is to be expected as one gets older. This has led some people to erroneously think they do not need routine dental care.

## Oral Health in America Report Calls to Action



To significantly improve the nation’s oral health, policy changes, such as a dental benefit in Medicare, are needed to reduce or eliminate social, economic, and other systemic inequities that affect oral health behaviors and access to care towards a more equitable comprehensive healthcare across the life course.



To improve oral health for more people, dental and other health care professionals must work together to provide integrated oral, medical, and behavioral health care in schools, community health centers, nursing homes, and medical settings, as well as dental clinics.



To strengthen the oral health workforce, we need to diversify the composition of the nation’s oral health professionals, address the costs of education and training the next generation, and ensure a strong research enterprise dedicated to improving oral health.

The 2016 Global Burden of Disease Study reported that among 328 health-related conditions assessed, three among the 30 most prevalent diseases impact older adult oral health and overall health:

- Untreated dental caries in adult teeth (#1),
- Severe periodontitis (#11), and
- Severe or complete tooth loss (#29).<sup>1</sup>

In 2018, about 66% of non-institutionalized people aged 65 and older visited the dentist in the past year.<sup>3</sup> The connection between oral health and overall health needs to be more clearly communicated to older adults and their caregivers. Oral health is essential to overall health and well-being. That relationship was a major conclusion of a Surgeon General's report on oral health over 20 years ago. Yet ways in which oral health and disease are intertwined with other major social and health challenges, including the ongoing crises of opioid misuse and the coronavirus (COVID-19) pandemic, are rarely acknowledged.<sup>5</sup>

One overarching challenge since the 2000 Surgeon General's report on oral health is the inadequate access to dental care that adversely affects millions of individuals and their families. This particularly affects older adults who do not have dental insurance coverage. Unlike children and adolescents, there are few programs to address this issue.<sup>5</sup> Even when dental policies are affordable, they generally limit dental benefits and require large out-of-pocket payments. Dental insurance is treated as an add-on to health insurance, rather than an essential part of it. With or without insurance, some people simply cannot afford dental care.<sup>6</sup> The future direction of oral health for older adults in America now rests on actions to ensure that everyone has an equal opportunity to enjoy the benefits of good oral health tomorrow.<sup>5</sup>

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# Oral Health and Overall Health

Introduction provided by Samuel Zwetchkenbaum, DDS, MPH,  
Rhode Island State Dental Director  
ASTDD Healthy Aging Committee Chair

The bi-directional relationship between chronic disease and oral health creates opportunities for collaboration between state oral health and aging programs. Chronic disease and treatment of chronic disease can affect oral health, and oral disease affects systemic health. Greater oral health changes can be seen in older adults because they have less ability to bounce back. An example is dry mouth, also called xerostomia, defined as the perception of oral dryness. Dry mouth results from reduced function of the salivary glands, most often due to medications. Researchers found the same dose of a drug produced a greater reduction in saliva flow in older adults and it took twice as long to recover than in young adults.<sup>1</sup> In another example of how chronic disease can impact oral health, people who have sustained a stroke may not sense food that is packing alongside roots of molars, allowing longer sugar exposure and increased risk of dental caries.<sup>2</sup> Yet despite these significant age-related physiological changes, medical colleagues outside of oral health may not be aware or take necessary steps to mitigate the impact on oral health. This presents an opportunity for collaboration between state oral health programs and programs on aging to educate providers and the public. For example, health care providers need to ensure that their older patients receive a routine oral examination by a dentist on an annual or biannual basis. The creation of resources to facilitate optimum patient care, for example to promote topical fluoride application by primary care providers can be of great benefit to the people they serve.

Examples of the impact of oral health on chronic conditions include inflammation from periodontal disease altering vascular function<sup>3</sup> and tooth loss playing a role in compromised nutrition.<sup>4</sup> Multiple studies document associations between oral health and other major health concerns, ranging from dementia to heart disease. Although the underlying biological processes are not well-understood, an important take-away message for providers and patients is that good oral health can have far-ranging physical and mental health benefits.



As an example, Medicare Advantage plans increasingly include a dental benefit, both recognizing this as a way to compete with other plans and to reduce long term medical expenses. Moreover, many of the social and behavioral factors that contribute to chronic illness also are risk factors for oral health problems. High sugar consumption leads to dental caries and obesity, with obesity in turn contributing to risk of diabetes, heart disease, and stroke. Smoking contributes to periodontal disease and oral cancer, and also heart disease, lung disease, and chronic obstructive pulmonary disease (COPD). State oral health and aging programs have an opportunity to collaborate on public health efforts such as analysis of population health data, interdisciplinary education, and medical-dental integration to promote preventive measures, examples of which are shown below.

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# Oral Health and Overall Health: The Resources

## Oral health and overall health

Acora Foundation  
**The Mighty Mouth Campaign**

Administration for Community Living (ACL)  
**Oral Health Resources**

CDC MMRW  
**Prevalence of Changes in Tooth Loss Among Adults Aged > 50 Years with Selected Chronic Conditions**

CareQuest Institute for Oral Health  
**How Oral Health Affects Overall Health and How to Improve Both**

Frontiers in Dental Medicine  
**Interdisciplinary Research**

Gerontological Society of America  
**Oral Health an Essential Element of Healthy Aging (infographic)**

Provention Health Foundation  
**Thought Leader Roundtable on Oral Health and Chronic Disease in Older Adults Summary Report and Key Recommendations**

Mayo Clinic  
**Oral Health: A Window Into Your Overall Health**

Nebraska Enduring Smiles Module #4:  
**The Oral -Systemic Link: Diseases and Oral Implications in the Elderly**

National Institutes of Health  
**Oral Health in America: Fact Sheet – Section 3B: Oral Health Across the Lifespan: Older Adults**

National Institute on Aging  
**Taking Care of Your Teeth and Mouth**

NIDCR  
**Oral Health in America – May 2022 Bulletin**

Oral Health Nursing and Education (OHNEP)  
**Interprofessional Oral Health Faculty Toolkit**

## Oral health and overall health: impact on independent living

Smiles for Life  
Oral Health Curriculum  
**Geriatric Oral Health**

# Oral Health and Overall Health: The Resources

## Impact of oral health on maintaining blood sugar levels in people with diabetes

Acora Foundation **Link Between Oral Health & Diabetes**  
(90 sec video)

American Diabetes Assoc.  
**Incremental Dental Expenditures Associated with Diabetes Among Noninstitutionalized U.S. Adults Aged ≥ 18 Years Old in 2016-2017**

CDC  
**Prevalence of Past-Year Dental Visit Among U.S. Adults Aged 50 Years or Older, With Selected Chronic Diseases-2018**

Center for Medicare Advocacy  
**The Diabetes and Dental Disease Connection**

CareQuest Institute for Oral Health  
**Impacts Beyond the Mouth (infographic)**

NIDCR  
**Diabetes: Dental Tips (one-pager English)**

NIDCR  
**Diabetes: Dental Tips (one-pager Spanish)**

Nebraska Enduring Smiles Module #1:  
**Oral Health Care for Residents in Long-Term Facilities**

Nebraska Enduring Smiles Module #4  
**The Oral-Systemic Link: Diseases and Oral Implications in the Elderly**

**CDC Diabetes and Oral Health**

## Link between oral health and heart health

Center for Medicare Advocacy  
**The Dental and Heart Disease Relationship**

Nebraska Enduring Smiles Module #4:  
**The Oral-Systemic Link: Diseases and Oral Implications in the Elderly**



# Oral Health and Overall Health: The Resources

## Link between oral health and respiratory health

Center for Medicare Advocacy  
**Dental Issues Related to Pulmonary Diseases**

Nebraska Enduring Smiles Module #1:  
**Oral Health Care for Residents in Long-Term Facilities**

Nebraska Enduring Smiles Module #4:  
**The Oral-Systemic Link: Diseases and Oral Implications in the Elderly**

Journal of the American Medical Directors Assoc.  
**Practical Guidelines for Physicians in Promoting Oral Health in Frail Older Adults**

## Salivary gland hypofunction, dry mouth (xerostomia), and medications

Center for Medicare Advocacy  
**Dental Issues Related to Cancer Treatment**

Center for Medicare Advocacy  
**Dental Issues Related to Rheumatic Diseases, Arthritis and Joint Replacement**

HRSA  
**Dry Mouth & Older Adults Information (English)**

HRSA  
**Dry Mouth & Older Adults Information (Spanish)**

Mouth Healthy™  
**Medications and Oral Health**

National Institutes of Health  
**Chemotherapy and Your Mouth**

Nebraska Enduring Smiles Module #2:  
**Oral Assessment of Long-Term Care Residents**

Nebraska Enduring Smiles Module #3:  
**Oral Effects of Common Medications Prescribed for Long-Term Care Residents**

Special Care Dentistry Association  
**Oral Care After Head and Neck Radiotherapy Fact Sheet**

The Oral Cancer Foundation  
**Helping patients with dry mouth**

Acora Foundation  
**Resource Brochures**

# Oral Health and Overall Health: The Resources

## Older adult oral health data

BMC Geriatrics Journal  
**Measurement properties of oral health assessments for non-dental healthcare professionals in older people: a systematic review**

Health Affairs  
**A Call To Measure The Oral Disease Burden In Nursing Homes**

## Periodontal disease

CDC  
**Periodontal Disease**

## Provider information

Administration for Community Living  
**Oral Health**

## Relevant HP2030 Objectives

OH-03  
**Reduce the proportion of adults with active or untreated tooth decay**

OH-04  
**Reduce the proportion of older adults with untreated root surface decay**

OH-05  
**Reduce the proportion of adults aged 45 years and over who have lost all of their teeth**

OH-06  
**Reduce the proportion of adults aged 45 and over with moderate and severe periodontitis**

OH-07  
**Increase the proportion of oral and pharyngeal cancers detected at the earliest stage**

# Special populations oral health needs

Introduction by Jay Balzer, DMD, MPH  
ASTDD Consultant, People with Special Health Care Needs

Among the generally healthy older adult population, a subset of individuals present with very challenging intellectual, medical, behavioral and financial conditions that pose barriers to optimal oral health toward the end of the lifespan.<sup>1</sup> For example, older adults with various forms of dementia may be unable to brush or floss their teeth and may be resistant to the help of others.<sup>1,2</sup> Older adults with intellectual disabilities and chronic and debilitating medical conditions such as cancer, dementia, Parkinson's disease, rheumatoid arthritis, stroke and heart disease may not pursue recommended dental care that is often expensive and inadequately covered by insurance.<sup>3</sup> Few dentists are willing to treat patients with special needs and few have specialized training in the care of older patients who have special needs, including how to create patient-centered treatment plans which take into account the patient's social conditions, financial constraints, general health conditions, and oral health.<sup>4</sup> This section of the resources provides some patient care resources and policy recommendations to address these issues.

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# Special Populations: The Resources

## Strategies for caring for people living with dementia

ACHIEVA  
**Assisting People with Disabilities Clean their Teeth (YouTube video)**

Alzheimer's Association  
**Food and Eating**

Alzheimer's Association  
**Daily Dental Care**

Alzheimer's Society  
**Dental Care and Oral Health**

Cochrane Review  
**Oral health educational interventions for nursing home staff and residents**

Family Caregiver Alliance  
**Dental Care for Dementia**

HRSA  
**Module 16: Dentistry and Dementia (PP) References Faculty Guide Continuing Education**

HRSA  
**Train Health Care Workers About Dementia (16 Modules for various health care workers)**

Inside Dentistry  
An Underserved Population:  
**Expanding access to care for patients with IDD's**

NIDCR  
**Dental Care Every Day: A Caregiver's Guide**

**Providing Mouth Care for Persons with Dementia**  
(Rita Jablonski Video)

University of North Carolina  
**Mouth Care Without A Battle Training**

Washington Dental Service Foundation  
**Dementia Flipbook (English)**

Washington Dental Service Foundation  
**Dementia Flipbook (Spanish)**



# Special Populations: The Resources

## — Potential barriers related to social determinants of health (SDOH) —

Center for Health Care Strategies: Fact Sheet  
**Medicaid Adult Dental Benefits: An Overview**

Center for Medicare Advocacy Fact Sheet  
**Important Facts About Medicare & Dental/Oral Health Coverage**

Jon C. Burr Foundation  
**Video: Hidden Pain—America's Oral Health Crisis**

## — Vulnerable and underserved older adults —

Center for Health Care Strategies  
**Talking About Complex Care: At-A-Glance Tips for Clear and Effective Communications**

Center for Medicare Advocacy  
**Dental Issues Related to Parkinson's Disease**

HRSA  
**Improving Access to Oral Health Care for Vulnerable and Underserved Populations**

Mouth Healthy  
**Dental Coverage for Medicare: Supporting Vulnerable Patients**

# Tooth Loss and Oral Health

Introduction provided by Russ Dunkel, DDS, BS, BA, FPFA, FACD, FICD  
Wisconsin State Dental Director

It is important for the dental team to educate older adults that dental care is lifelong and tooth loss is NOT a normal consequence of the aging process, despite what they may have been told in the past by friends or relatives.<sup>1</sup> The public needs to be informed that with good professional and personal care, your teeth can last a lifetime. There are an array of preventative technologies and procedures available to prevent tooth loss from occurring, to emphasize that dental disease is a preventable and treatable condition.<sup>2,3</sup>

Tooth loss in the U.S. continues to decline across all subgroups of the adult population. Currently, results among adults aged 65-74 years show evidence of only 13% with complete tooth loss as compared with 50% in the 1960s.<sup>4</sup>

Prior to any extensive dental procedures involving the removal of teeth and fabrication of a prosthetic replacement (dentures), the dental team and older adult should have an open and honest conversation regarding patient expectations and realistic outcomes and limitations.<sup>5</sup> The dental team needs to inform the patient that:

1. Dentures are a replacement for NO teeth and not a replacement FOR teeth.<sup>6</sup> Xerostomia due to polypharmacy and neuromuscular conditions may affect the ability to wear dentures. Studies have shown that on average dentures only provide a chewing efficiency of 25% compared to one's own natural teeth and,
2. That significant tooth loss will directly impact their nutrition, digestive health, and overall quality of life.<sup>7</sup>



One bright spot or hope for older adults who have no other recourse but to have multiple teeth removed is the use of dental implants. There has been a fourfold increase in the percentage of older adults receiving implants since 2000. Major advances in implant technology and practice have made placing implants faster and more successful, improving the quality of life for many adults. Unfortunately, implant procedures remain costly and therefore out of reach for most older adults.<sup>7</sup>

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# Tooth Loss: The Resources

## Tooth loss is not part of the aging process

CDC  
**Severe Tooth Loss and Chronic Disease**

CDC  
**Tooth Loss Infographic**

Mouth Healthy™  
Video  
**Why Getting Older Doesn't Mean Losing Your Teeth**

NIDCR  
**Older Americans are Keeping More of Their Teeth**

## Daily care of removable dentures (complete or partial), including overdentures

Center for Medicare Advocacy  
**Dental Issues Related to Rheumatic Diseases, Arthritis and Joint Replacement**

Mayo Clinic  
Denture Care:  
**How do I clean dentures?**

Nebraska Enduring Smiles Module #1:  
**Oral Health Care for Residents in Long-Term Facilities**

Special Care Dentistry Association (SCDA)  
**Care of Dentures (one-pager)**

## Oral health data related to adults age 65+ — complete or partial tooth loss

CDC  
**Oral Health Data- Edentulism rates (2018)**

CDC  
**Oral Health Data – Six or more teeth lost (2018)**

CDC MMWR-**Prevalence of and Changes in Tooth Loss Among Adults Aged >50 Years with Selected Chronic Conditions – U.S., 199-2004 and 2011-2016**

**Tooth Loss Among Older Adults According to Poverty Status in the U.S. from 1999-2004 and 2009-2014**



# Non-ventilator and Ventilator-Associated Pneumonia

Introduction provided by Judith Haber, PhD, APRN, BC, FAAN  
NYU College of Nursing

Oral health is increasingly linked to overall health. This connection is of special significance among older adults who are hospitalized, residents of long-term care facilities, and whose capacity to independently complete Activities of Daily Living (ADL) such as oral hygiene is limited because of chronic conditions such as arthritis, Parkinson's Disease, and frailty.

Hospital Acquired Pneumonia is the #1 hospital acquired infection in the U.S.; 60% of those cases occur among non-ventilated adults, placing an estimated 35 million U.S. adults at risk each year. A single case of non-ventilator hospital acquired pneumonia (NVHAP) is shown to result in an average direct cost of \$40,000 with associated mortality rates ranging from 15-30%.<sup>1,2</sup> Older adults are especially vulnerable to non-ventilator hospital acquired pneumonia (NVHAP) NVHAP and its related sequelae, sepsis, and increased risk of death. Studies have shown that 72-80% of patients who spend time in a healthcare facility do not receive any oral care assistance during their stay. However, NVHAP is a preventable complication. The primary source of pneumonia is aspiration of bacteria present in the oral biofilm.

Dental plaque frequently become the reservoir for pathogens including antibiotic-resistant organisms in the hospital setting. Plaque buildup and bacterial overgrowth, along with micro aspiration when patients are bedridden and lying supine, increases the risk for NVHAP.<sup>3,4,5,6</sup> Reducing the bacterial burden in the mouth through consistent oral care by regular toothbrushing, flossing and denture cleaning is associated with a significant reduction in the incidence of NVHAP.<sup>7</sup>



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## References

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2. Magill SS, O'Leary, E., Janelle SJ, et al. Changes in prevalence of health care associated infections in U.S. hospitals. *NEJM* 2018;379(18):1732-1744. doi: 10.1056/NEJMmaa1801550.
3. Munro S, Baker D. Reducing missed oral care opportunities to prevent non-ventilator hospital acquired pneumonia at the Department of Veterans Affairs. *Applied Nursing Research* 2018;445, 48-53. doi: 10.1016/j.apnr.2018.09.004.
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5. Baker D, Quinn B. HAPPI-2: Incidence of non-ventilator hospital-acquired pneumonia in the United States. *Am. J. Infec. Control* 2018; 46(1), 2-7. doi: 10.1016/j.ajic.2017.08036.
6. Kalisch BJ, Landstrom G, Williams RA. Missed nursing care: Errors of omission. *Nurs. Outlook* 2009;57(1), 3-9, 875-890. doi: 10.1016/j.outlook.2008.05.007.
7. Munro S, Baker D. Integrating oral health into patient management to prevent hospital-acquired pneumonia: A team approach. *J. Mich. Dent. Assoc.* 2019: 48-57.

# Pneumonia: The Resources

## Educate about the disease process to reduce non-ventilator and ventilator associated pneumonia

Center for Medicare Advocacy  
**Dental Issues Related to Pulmonary Diseases**

Cochrane Review  
**Oral hygiene care for critically ill patients to prevent ventilator-associated pneumonia**

Department of Veterans Affairs  
**Hospital acquired pneumonia prevention by engaging nurses (HAPPEN)**

Nebraska Enduring Smiles Module #4:  
**The Oral-Systemic Link: Diseases and Oral Implications in the Elderly**

Pubmed  
**Non-ventilator hospital-acquired pneumonia: A Call to Action**

Stryker  
**Cetylpyridinium Chloride as an oral antiseptic**

Stryker  
**Hospital-acquired pneumonia (HAP)**

Stryker  
**Patient Toothbrushing Education Card (English/Spanish) non-ventilated patient**

Stryker  
**Sage Self Oral Care**

Stryker  
**Uncover and quantify hospital-acquired pneumonia (HAP) infographic**

Stryker  
**The role of pneumonia and sepsis: Recommendations & Guidelines**

Stryker  
**The impact of Surgical Site Infections (SSI) and hospital-acquired pneumonia (HAP)**

University of Texas Health Science Center at Houston  
**Ventilated Adult (PowerPoint®)**

Veterans Health Administration  
**Healthy Teeth, Healthy You (YouTube video)**

Veterans Health Administration  
**Healthy Teeth Healthy You, Preventing Hospital Acquired Pneumonia (YouTube)**

Veterans Health Administration  
**Hospital-Acquired Pneumonia Prevention by Engaging Nurses (HAPPEN) Implementation Guide**

# Nutrition and Oral Health

Introduction provided by Kathy Wilson-Gold, MS, RDN, LD, FAND

Brushing and flossing teeth daily are essential to a healthy smile, but diet and nutrition can also impact oral health.<sup>1</sup> There is strong evidence connecting oral health to a healthy diet as well as overall health.<sup>2</sup> Diet can affect teeth and oral tissues and the health of the mouth and teeth can often affect what a person is able to eat. This is especially true with gum disease or lost teeth because many find it harder to eat certain foods.<sup>3</sup> Foods such as nuts may be difficult for someone with reduced gag reflexes and may cause choking. Eating a variety of nutrient-rich foods from across the food groups promotes healthy teeth and gums. A balanced eating plan that includes fruits, vegetables, protein, grains, and dairy provides essential nutrients for maintaining oral health. Older adults should be encouraged to eat the following foods.

- Calcium-rich foods, such as low-fat or fat-free milk, yogurt and cheese, and fortified soymilk help promote strong teeth and bones. Other sources of calcium include tofu (made with calcium sulfate), canned salmon, almonds, and some dark green leafy vegetables.
- Phosphorus is a mineral found in eggs, fish, lean meat, dairy, nuts, and beans, and is essential for strong teeth.
- Vitamin C promotes gum health and is found in many sources, including citrus fruits, tomatoes, peppers, broccoli, potatoes, and spinach.

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## References

1. [Healthy Nutrition for Healthy Teeth \(Academy of Nutrition and Dietetics\)](#)
2. Touger-Decker, Riva PhD, RD, FADA [Nutrition and Oral Health in Older Adults, Topics in Clinical Nutrition: July 2005 - Volume 20 - Issue 3 - p 211-218](#)
3. Importance of Oral Health Preventive Practices. [Retrieved here.](#)





# Nutrition: The Resources

## Link between dental care and nutrition

Academy of Nutrition and Dietetics  
**Eat right – Healthy Lifestyles for Healthy Older Adults**

**Academy of Nutrition and Dietetics**

Alzheimer's Association  
**Food and Eating**

ASTDD  
**Chewing Tips: Nutrition and Oral Health for Older Adults (infographic)**

ASTDD  
**Dry Mouth: Nutrition and Oral Health for Older Adults (infographic)**

ASTDD  
**Gum Disease: Nutrition and Oral Health for Older Adults (infographic)**

ASTDD  
**Healthy Foods: Nutrition and Oral Health for Older Adults (infographic)**

ASTDD  
**Healthy Habits: Nutrition and Oral Health for Older Adults (infographic)**

Gerontological Society of America  
**Interrelationships Between Nutrition and Oral Health in Older Adults**

Nebraska Enduring Smiles Module #4:  
**The Oral-Systemic Link: Diseases and Oral Implications in the Elderly**

NWS-10  
**Reduce consumption of added sugars by people aged 2 years and over**

## Nutrition components that help maintain oral health (vitamins, minerals, etc.)

Academy of Nutrition and Dietetics  
**Healthy Lifestyles for Healthy Older Adults**

Academy of Nutrition and Dietetics  
**Eat Right for Life**

American Dental Association (ADA)  
**Nutrition and Oral Health**

Mouth Healthy™  
**Nutrition**

Mouth Healthy™  
**The Truth About Sugary Drinks and Your Smile**



# Nutrition: The Resources

## Registered Dietitian's role in older adult oral health

Academy of Nutrition  
and Dietetics  
**Eat right – Healthy  
Lifestyle for Healthy  
Older Adults**

Academy of Nutrition  
and Dietetics  
**Position of the  
Academy of Nutrition  
and Dietetics: Oral  
Health and Nutrition**

Academy of Nutrition and  
Dietetics  
**About Registered Dietitian  
Nutritionists (RDNs) and  
Nutrition and Dietetics  
Technicians, Registered  
(NDTRs)**

# Financing Routine Dental Care

Introduction provided by:

- Samuel Zwetchkenbaum, DDS, MPH Chair, ASTDD Healthy Aging Committee and Dental Director, Rhode Island
- Lori Kepler-Cofano, RDH, BSDH, Dental Public Health Consultant

As working adults transition into retirement, most lose their employer provided dental insurance, and Medicare does not provide an oral health benefit except in certain narrow circumstances. This puts the oral health of older adults at risk at a time when they are most likely to need care.<sup>1</sup> Physiologic changes such as narrowing of the dental pulp chamber result in decreased perception of pain, which is frequently the prompt for people to seek care. Patients and families are often surprised by large cavities or tooth breakage when there was no prompt. This is a time when aggressive preventive strategies, both at home and by a professional, can play a significant role, yet lack of public awareness and appropriate funding mechanisms serve as barriers.

Dental utilization strongly correlates with dental insurance coverage. Among the four major age groups representing the lifespan, older adults are most likely not to have dental insurance. The result of this is that, during the past 20 years, older Americans have seen the highest increases in out-of-pocket dental expenditures.<sup>2</sup> Continued use of dental services upon retirement is wealth dependent.<sup>3</sup> Some older adults do purchase dental insurance through a Medicare Advantage plan. Medicaid<sup>1</sup> dental insurance may be available for some older adults depending on the state they live in; however, many dental offices do not accept Medicaid. While the Patient Protection and Affordable Care Act of 2010 included dental care as an essential health benefit for children, it was not included for adults.<sup>4</sup>



Including a dental benefit in Medicare Part B assures equitable access and has significant cost offsets. Health leaders have performed extensive research to develop a benefit and have worked on a number of executive and legislative proposals. Several studies have shown that adherence with preventive dental care was associated with significant yearly cost savings in medical expenses.<sup>2,5</sup> Work continues to reach this goal and states can play a role through public education and advocacy.

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## References

1. Oral Health America, An Oral Health Benefit in Medicare Part B: It's Time to Include Oral Health in Health Care. 2018. [Available here](#).
2. Borah B J, Brotman S G, Dholakia R et al. Association Between Preventive Dental Care and Healthcare Cost for Enrollees with Diabetes or Coronary Artery Disease: 5-Year Experience. *Compendium* 2022; 43(3):1-9.
3. Manski RJ, Moeller JF, St Clair PA, Schimmel J, Chen H, Pepper JV. The influence of changes in dental care coverage on dental care utilization among retirees and near-retirees in the United States, 2004–2006. *American Journal of Public Health*. 2011;101(10):1882–91.
4. Vujcic, M. A tale of two safety nets. *Journal of the American Dental Association*. 2014;145(1):83-5
5. Lamster I, Molloy KP, and DiMura PM et al. Dental Services and Health Outcomes in the New York State Medicaid Program *JDR* 2021; 100:928-34

# Financing: The Resources



## [Oral Health in America Report Call to Action](#)

[A policy that mandates dental coverage in Medicare would reduce health inequities for older adults by assuring access to preventive and other oral health services for all, including those who are place-bound or in need of caregiver assistance.](#)

## Strategies to maintain dental health for older adults

**Seattle Care Pathway**

## Medicare Rights Center

**Community Statement on Medicare Coverage for Medically Necessary Oral and Dental Health Therapies**

## Healthy People 2030 Measures

**AHS-02 Increase the proportion of people with dental insurance**

## Resources to educate and advocate for a dental benefit in Medicare Part B

ASTDD  
**Improving Oral Health Access and Services for Older Adults – White Paper (February 2018)**

Center for Health Care Strategies  
**Medicaid Adult Dental Benefits: An Overview Fact Sheet**

Center for Medicare Advocacy  
**Important Facts About Medicare & Dental/ Oral Health Coverage Fact Sheet**

Families USA  
**Oral Health for All**

Health Affairs  
**Dental Care And Medicare Beneficiaries: Access Gaps, Cost Burdens And Policy Options**

Medicaid and CHIP Payment and Access Commission (MACPAC)  
**Raising the Bar: Requiring State Integrated Care Strategies**

Oral Health America  
**Whitepaper**

Santa Fe Group  
2019 Salon  
**Comprehensive Health Without Oral Health: the Medicare Paradox**

# Oral Health Care and Non-dental Providers

Introduction provided by Anita Glicken, MSW, National Interprofessional Initiative on Oral Health

The population of US adults aged 65 and older continues to grow. Over 54 million are over age 65<sup>1</sup> with this number increasing by about 16 million by 2030.<sup>2</sup> These older adults are expected to be one of the most diverse by race/ethnicity, and functional, health, and socioeconomic status.<sup>3</sup> Although many have better oral health than prior generations, access to oral health care remains a significant barrier. In addition, there is increasing recognition of the bidirectional relationship between oral health and overall health.

This is problematic for older adults who are not only at risk for many oral diseases like gum disease and oral cancer, but most also live with at least one (80%) or two (70%) chronic diseases such as diabetes or cardiovascular disease.<sup>4</sup> In 2014 to increase access to care and advance interprofessional collaborative oral health practice, the Health Resources and Services Administration (HRSA) published, the Integration of Oral Health and Primary Care Practice, including a set of oral health core clinical competencies for nondental primary care providers.<sup>5</sup>

Primary care competencies include risk assessment, oral health evaluation, preventive interventions, communication and education, and interprofessional collaborative practice. Innovative teams of primary care providers, their dental colleagues and other nondental health professionals are making progress by working together to incorporate interprofessional oral health care into comprehensive care models focused on prevention, value, and population health.





New integrated oral health care models draw from several resources included in this document to extend access to oral health care to older adults and their caregivers wherever and whenever they need it. As new partners of the health care team, frontline health workers including community health care workers, promotores de salud, public health workers, community health advocates and care coordinators are now also learning to integrate oral health to address the complex medical, social, and financial needs of older adults to enable them to achieve optimal overall health.

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## References

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2. Colby SL, Ortman JM, Projections of the Size and Composition of the U.S. Population: 2014 to 2060, Current Population Reports, P25-1143, U.S. Census Bureau, Washington, DC, 2014. Accessed May 12, 2022.
3. United States Population 2018. [World Population Review](#). Accessed May 12, 2022.
4. Centers for Disease Control and Prevention. [Chronic Disease Fact Sheets](#). Accessed May 12, 2022.
5. [Integration of oral health and primary care practice](#). U.S. Department of Health and Human Services, Health Resources and Services Administration 2014. Accessed May 12, 2022.

# Non-dental Providers: The Resources

## Interprofessional collaboration

ADEA Policy Brief  
**Interprofessional  
Education and Practice-  
An Imperative to Optimize  
and Advance Oral and  
Overall Health**

Interprofessional  
Education Collaborative  
**Core Competencies for  
Interprofessional  
Collaborative Practice:  
2016 Update**

National Council for  
Mental Wellbeing  
**Oral Health, Mental  
Health and Substance  
Use Treatment Toolkit**

NIDCR  
**Section 3B  
Oral Health Access  
Across the Lifespan:  
Older Adults**

NIH  
**Oral Health in America:  
Fact Sheet – Section 4:  
Oral Health Workforce,  
Education, Practice, and  
Integration**

Primary Care Collaborative  
**Developing an  
Interprofessional Oral  
Health Education System  
that Meets the Needs of  
Older Adults**

Primary Care Collaborative  
**Putting the Mouth Back into  
the Body: A PCC Report  
Calling for More Integration  
of Oral Health and  
Primary Care**

Smiles for Life  
**Geriatric Oral Health**

Qualis Health  
**Oral Health: The Oral  
Health Delivery  
Framework and  
Implementation Guide  
and Toolkit**

# Non-dental Providers: The Resources

## Caregiver training (professional and family)

CDC  
**Alzheimer's Disease and  
Healthy Aging – BRFSS  
Infographics by state  
(caregiver data)**

Diverse Elders Coalition  
**Resources for Providers:  
Meeting the Needs of  
Diverse Family  
Caregivers-Toolkit**

Family Caregiver  
Alliance  
**Dental Care for  
Dementia**

MOTIVATE  
**Tips to Improve  
Oral Care in Long-  
Term Care**

**Mouth Care and  
Assessment for  
Dependent Older Adults**  
Adapted from Healthy  
Smiles for Veterans from  
the Veterans Health  
Administration

NIDCR  
**Oral Health & Aging-  
Information for  
Caregivers:  
Brushing (English)**

Nebraska Enduring  
Smiles Module #1:  
**Oral Health Care for  
Residents in Long-Term  
Facilities**

Nebraska Enduring  
Smiles Module #2:  
**Oral Assessment of  
Long-Term  
Care Residents**

Nebraska Enduring  
Smiles Module #3:  
**Oral Effects of Common  
Medications Prescribed  
for Long-Term Care  
Residents**

NIDCR  
**Information for  
Caregivers- topics of  
brushing, flossing, dry  
mouth, and finding low-  
cost dental care  
(available in English and  
Spanish)**

Nebraska Enduring  
Smiles Module #4:  
**The Oral-Systemic Link:  
Diseases and Oral  
Implications in the Elderly**

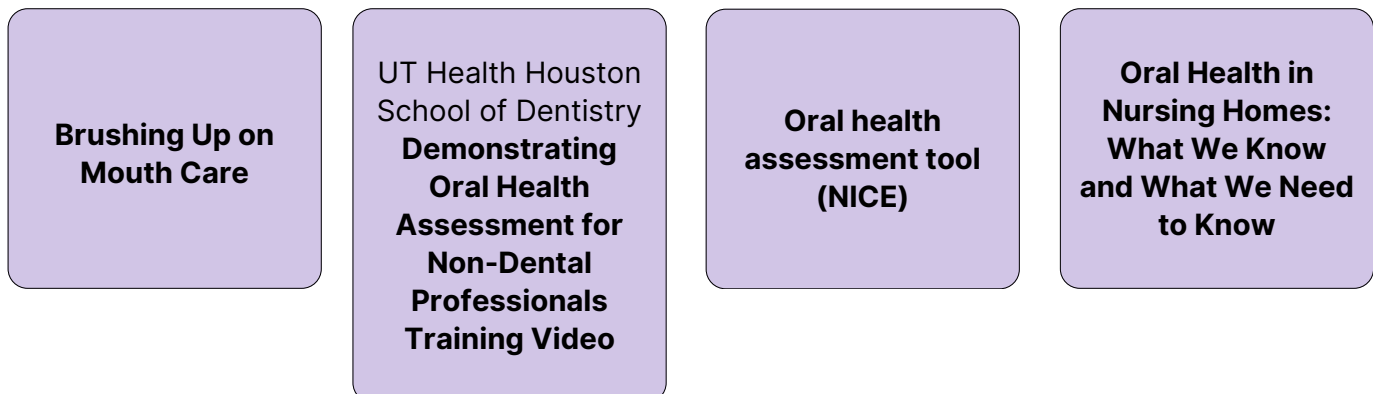
UNC  
**Mouth Care  
Without a Battle -  
Training**

# Non-dental Providers: The Resources

## — Use of Community Health Workers (CHWs) to share information —



## Tools to document oral health and oral hygiene in long term care or other congregate care settings



# Teledentistry

Introduction provided by Scott Howell, DMD, MPH  
Director of Teledentistry  
A.T. Still University-Arizona School of Dentistry & Oral Health

It is estimated that by 2060, nearly a quarter of U.S. citizens will be 65 years or older.<sup>1</sup> While two-thirds of community dwelling older adults had a dental visit within the last year (as of 2017), these numbers drop to below 50% for adults who are poor (42.7%) or near poor (42.8%).<sup>2,3</sup> Cost continues to be a primary concern for most seniors<sup>3</sup> but there are also issues of physical access to an oral health provider for the 1.3 million individuals living in long term care facilities causing rates of dental visits to be even lower.<sup>4,5</sup> Unique healthcare delivery systems need to be considered when addressing the oral health needs of seniors. Teledentistry is an example of one of those unique systems. Its use can help connect older adults with an oral health provider when time, distance, or provider availability might be potential barriers. The technology used to connect oral health providers in one location to a person in a second location can help providers assess their patients' needs and plan efficient and effective solutions to addressing those needs. Whether it's a hygienist guiding a nurse aid on proper oral hygiene protocols, or if it's a dentist discussing an ill-fitting denture, older adults and providers who take advantage of teledentistry can see meaningful change in health outcomes.

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## References

1. Colby SL, Ortman JM. Projections of the size and composition of the US Population: 2014 to 2060. Current Population Reports, P25-1143. Washington DC: US Census Bureau; 2014.
2. Kramarow EA. Dental care among adults aged 65 and over, 2017. NCHS Data Brief, no 337. Hyattsville, MD: National Center for Health Statistics. 2019.
3. Manski, R., Rohde, F., and Ricks, T. Trends in the Number and Percentage of the Population with Any Dental or Medical Visits, 2003-2018. Statistical Brief #537. October 2021. Agency for Healthcare Research and Quality, Rockville, MD.
4. Oral Health America, "A State of Decay;" and Jerry Berggren, director of research and information, National Association of Dental Plans, pers. comm. with Jane Koppelman, The Pew Charitable Trusts, April 29, 2016.
5. National Center for Health Statistics. Nursing Home Care. Centers for Disease Control and Prevention, 2022.





# Teledentistry: The Resources

## Dental practice acts that include use of teledentistry

Center for Connected  
Health Policy  
**National Telehealth  
Policy Resource Center**

Mouthwatch@:  
**Teledentistry  
Regulations in  
Your State**

National Conference of  
State Legislators  
**Teledentistry:  
Connecting Rural  
Communities to  
Dental Care**

## Examples of teledentistry being used to provide access to older adult population

ASTDD Best Practice  
Approach Report  
**Teledentistry:  
Opportunities for  
Expanding the Capacity  
and Reach of the Oral  
Healthcare System (2021)**

ASTDD White Paper  
**Teledentistry: How  
Technology Can  
Facilitate Access To  
Care (2019)**

Oral Health Workforce  
Research Center  
**Evolving Delivery Models  
for Dental Care Services  
in Long-Term Care  
Settings: 4 State Case  
Studies**

State Medicaid & CHIP  
Telehealth Toolkit  
**Policy Considerations for  
States Expanding Use of  
Telehealth**

# Health Equity Approach for Older Adults' Oral Health

Introduction by Dental Directors Angela Filzen, DDS, Mississippi, and Samuel Zwetchkenbaum, DDS, MPH, Rhode Island.

The distinction between health equality and health equity remains significant in approaches to decrease oral health disparities in older adults. “Health equity means that everyone has a fair and just opportunity to be as healthy as possible. This requires removing obstacles to health such as poverty, discrimination, and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care.”<sup>1</sup>

For the purposes of measurement, health equity means reducing and ultimately eliminating disparities in health and its determinants that adversely affect excluded or marginalized groups. Excluded or marginalized groups are those who have often suffered discrimination or been excluded from society and the health promoting resources it has to offer. They are economically and/or socially disadvantaged and have included groups-but are not limited to-people of color, people living in poverty, religious minorities, people with physical and mental disabilities, LGBTQ persons and women.<sup>1</sup>

Data on oral health use and outcomes of Black, Indigenous, (and) People of Color (BIPOC) older adults in the U.S. consistently shows disparities as compared to White counterparts. Non-Hispanic Black adults aged  $\geq 65$  years were more likely to be edentulous (27.0%) compared with non-Hispanic White (16.2%), non-Hispanic Asian (18.0%), and Hispanic adults (16.4%) aged  $\geq 65$  years.<sup>2</sup> The 5-year survival rate for oral pharyngeal (throat) cancers is lower among Black men (41%) than White men (62%),<sup>3</sup> reflecting a pattern of low access and use of dental services by Black males.<sup>4</sup> This can be attributed to long standing accepted approaches in health care, from location of dental offices in affluent neighborhoods, predominantly White dental workforce, unavailability of dental coverage in service jobs and lack of knowledge and commitment to Culturally and Linguistically Appropriate Services (CLAS) standards. Similarly, chronic diseases may also be more prevalent, such as diabetes, resulting in negative oral health outcomes. When viewed as a process and an outcome, a health equity approach for older adults in oral health requires a commitment to constant evaluation and monitoring.<sup>1</sup>



To begin to address these inequities, states should approach all programs with an equity lens and consider oral health a social justice issue. Potential strategies to consider:

1. When teaching oral exam for non-dental providers, be sure to recognize diversity in physiologic appearance, for example, showing what is normal pigmentation of oral tissues and what would be cause for concern.
2. Learn about challenges members of diverse communities may have in achieving good oral health to teach dental providers appropriate modifications to care. This has been done increasingly in the medical community<sup>5</sup> and has been studied through focus groups for dental care.<sup>6</sup>
3. Evaluate cultural perceptions of health as they relate to oral health in different communities and incorporate strategies to educate and promote oral health based on such.<sup>7</sup>

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2. CDC/NCHS. National Health and Nutrition Examination Survey Data. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2011 -2014.
3. Cancer Facts and Figures, 2022 , American Cancer Society; 2022.
4. Akintobi TH, Hoffman LM, McAllister C, Goodin L, Hernandez ND, Rollins L, Miller A. Assessing the Oral Health Needs of African American Men in Low-Income, Urban Communities. *Am J Mens Health*. 2018 Mar;12(2):326-337. doi: 10.1177/1557988316639912.
5. American Medical Association, 5 steps physicians can take to prioritize Black patients' well-being, July 16, 2020.
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# Health Equity: The Resources

## Promote diversity and inclusion policies

Association of American Medical Colleges  
**AAMC Diversity and Inclusion Toolkit Resources**

## Expose dental students and hygiene students to treating diverse patients

CareQuest Institute for Oral Health:  
**CareQuest: Topics in Health Equity**

## Promote and provide oral health messaging that is culturally appropriate

Frameworks Institute -  
**Unlocking the Door to New Thinking: Frames for Advancing Oral Health Reform | FrameWorks Institute**

## Cultural competency

HHS Office of Minority Health  
**Cultural Competency Program for Oral Health Professionals**

## Promote provider training

(dental and non-dental provider) regarding National Standards for Culturally and Linguistically Appropriate Services (CLAS) in Health and Health Care

CMS  
**A Practical Guide to Implementing the National CLAS Standards (cms.gov)**

## Healthy People 2030 measures

AHS-05  
**Reduce the proportion of people who can't get the dental care they need when they need it**

AHS-08  
**Increase the proportion of adults who get recommended evidence-based preventive health care**



# Resources from State Programs

## Access to Care

- [Nebraska Teeth Forever](#) — Poster (Nebraska)

## ASTDD

- [Improving Oral Health Access and Services for Older Adults](#) — White Paper (February 2018)
- [Improving the Oral Health of Older Adults Best Practice Approach Report](#) (December 2023)
- [Oral Health in the Older Adult Population \(Age 65 and older\) Best Practice Approach Report](#) (May 2018)

## Dental Benefit

- [Dental Care and Dental Insurance: Vermonters Aged 65+ Enrolled in Medicare](#) — Data brief (Vermont)
- [Don't Retire Your Dental Care: Planning for Dental Care During Retirement](#) — Infographic (Iowa)

## Oral Health and Overall Health

- [A Healthy Smile for Life](#) — Brochure (Nebraska)
- [Daily Oral Care Saves Lives](#) (Aspiration pneumonia) — Infographic (Iowa)
- [Dental Care in the Emergency Department](#) — Infographic (Iowa)

## Oral Health and Overall Health, cont.

- [Dental Care and Your Heart](#) — Infographic (Iowa)
- [Diabetes: A Healthy Mouth Matters](#) — Infographic (Iowa)
- [It's More Than a Smile: Oral Health Affects Your Entire Body](#) — Brochure (Nebraska)
- [Your Healthy Smile for Today and Tomorrow](#) — Infographic (Iowa)
- [Older Adults & Oral Health](#) — Infographic (Kansas)

## Oral Health Status

- [Iowa Older Adult Basic Screening Survey 2017](#) — Data dissemination infographic (Iowa)
- [Nebraska Oral Health Survey of Older Adults 2019](#) — Report (Nebraska)
- [The Hidden Costs of Tooth Decay](#) — Data dissemination infographic (Iowa)
- [The Oral Health of Adults Living in Nebraska Long-Term Care Facilities](#) — Data dissemination infographic (Nebraska)





# Acronyms with URL Links

(where available)



<b>AAA</b>	Area Agencies on Aging (see N4A below)
<b><u>Academy</u></b>	Academy of Nutrition and Dietetics
<b><u>ADvancing States</u></b>	ADvancing States (formerly the National Association of State Units on Aging)
<b><u>AACDP</u></b>	America Association of Community Dental Programs
<b><u>AAMC</u></b>	American Association of Medical Colleges
<b><u>AAPHD</u></b>	American Association of Public Health Dentistry
<b><u>AARP</u></b>	American Association of Retired Persons
<b><u>ACL</u></b>	Administration for Community Living
<b><u>ACS</u></b>	American Cancer Society
<b><u>ADA</u></b>	Americans with Disabilities Act
<b><u>ADA</u></b>	American Dental Association
<b><u>ADA</u></b>	American Diabetes Association
<b><u>ADEA</u></b>	American Dental Education Association
<b><u>ADHA</u></b>	American Dental Hygienists Association
<b><u>AGS</u></b>	American Geriatrics Society
<b><u>AHCA/NCAL</u></b>	American Health Care Association/National Center for Assisted Living
<b><u>AHEC</u></b>	American Health Education Center
<b><u>AHRQ</u></b>	Agency for Healthcare Research and Quality
<b><u>AMA</u></b>	American Medical Association
<b><u>ANOHC</u></b>	American Network of Oral Health Coalitions
<b><u>AoA</u></b>	Administration on Aging
<b><u>APHA</u></b>	American Public Health Association
<b><u>ASTDD</u></b>	Association of State and Territorial Dental Directors
<b><u>ASTHO</u></b>	Association of State and Territorial Health Officials
<b><u>BSS</u></b>	Basic Screening Survey
<b><u>BRFSS</u></b>	Behavior Risk Factor Surveillance System
<b><u>CDC</u></b>	Centers for Disease Control and Prevention
<b><u>CDHC</u></b>	Community Dental Health Coordinator
<b><u>CHCS</u></b>	The Center for Health Care Services: Mental Health & Substance Abuse Solutions

# Acronyms with URL Links

*(where available)*

<b>CHW</b>	Community Health Worker
<b><u>CMS</u></b>	Centers for Medicare and Medicaid Services
<b>DHS</b>	Department of Health Services
<b>DMS</b>	Department of Medicaid Services
<b>DPH</b>	Dental Public Health
<b>FQHC</b>	Federally Qualified Health Centers
<b><u>GSA</u></b>	Gerontological Society of America
<b>HAP</b>	Hospital Acquired Pneumonia
<b>HHS</b>	Health and Human Services
<b><u>IPEC</u></b>	Interprofessional Education Collaborative
<b><u>HRSA</u></b>	Health Resources and Services Administration
<b>LTC/SNF</b>	Long-Term Care/Skilled Nursing Facility
<b><u>MCO</u></b>	Managed Care Organization
<b><u>MDS</u></b>	Minimum Data Set
<b><u>N4A</u></b>	National Area Agencies on Aging
<b><u>NACDD</u></b>	National Association of Chronic Disease Directors
<b><u>NACHC</u></b>	National Association of Community Health Centers
<b><u>NCOA</u></b>	National Council on Aging
<b><u>NCSL</u></b>	National Council of State Legislators
<b><u>NDA</u></b>	National Dental Association
<b><u>NGA</u></b>	National Governors' Association
<b><u>NIDCR</u></b>	National Institutes of Dental and Craniofacial Research
<b><u>NIH</u></b>	National Institutes of Health
<b><u>NNOHA</u></b>	National Network for Oral Health Access
<b><u>ONHPP</u></b>	Office of Nutrition and Health Promotion Programs
<b><u>PCC</u></b>	Primary Care Collaborative
<b><u>SCDA</u></b>	Special Care Dentistry Association
<b>SHO</b>	State Health Officer
<b>UNC</b>	University of North Carolina