

A Best Practice Approach Report describes a public health strategy, assesses the strength of evidence on the effectiveness of the strategy, and uses practice examples to illustrate successful/innovative implementation.

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Best Practice Approach Report Oral Health in the Older Adult Population (Age 65 and older)

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I. Description

A. Older Adults in the United States

The population of older adults is increasing significantly in the U.S. Currently the number of people age 65 and older is more than 45 million, about 1 in 7 U.S. residents and will rise to more than 70 million in 2030, making up nearly one in five U.S. residents. (Fig. 1) ¹ Baby boomers, the cohort of 76 million people born between 1946 and 1964, are largely responsible for this increase in the older population.² The oldest boomers turned 65 in 2011 and will turn 85 in 2030; with the number of those 85 years and older tripling from 5.7 million in 2010 to 20 million in 2060.¹ Other factors contributing to this demographic shift include increased life expectancy and reduced birth rate.

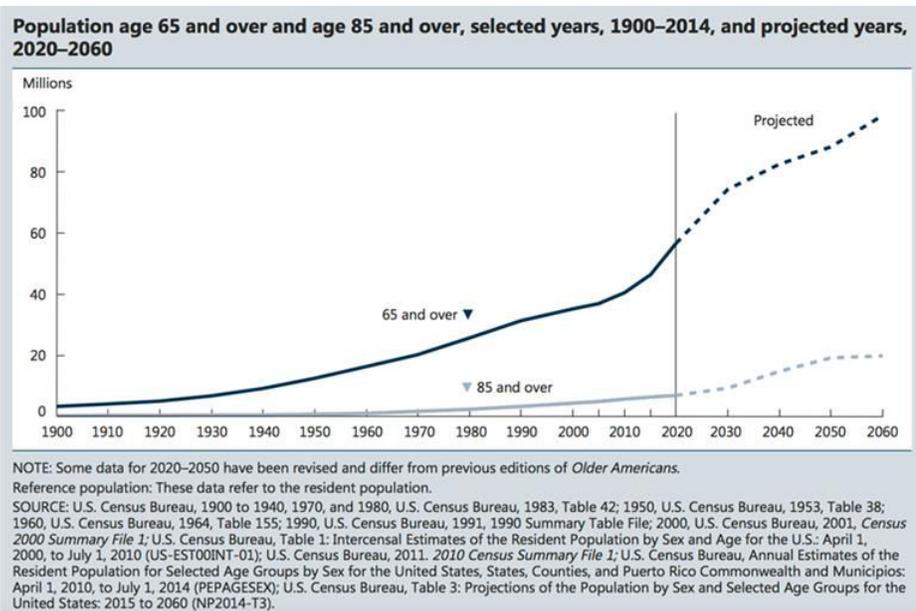


Fig. 1

In this report, the term **older adult** refers to the population 65 years and older. Older adults can be further classified by age, such as the “young-old” (65-74 years), and the “oldest-old” (85 years and older).³ However, it may be more useful to describe older adults by their health and functional status:

1. “Successful aging” refers to people who are active and maintain a high level of function.⁴
2. “Usual aging” is “typical” for one’s age with no overt pathology, but with some functional decline.
3. “Frailty” indicates adverse functioning.⁵

Over the next several decades, older adults will become increasingly diverse, presenting significant challenges for health care providers, policy makers, and social programs. In 2014, 22% of persons age 65 and older were members of racial or ethnic minority populations: 10% African American, 11% Asian, 8% Native Hawaiian and Other Pacific Islanders, 10% American Indian and Native Alaskans, and 6% Hispanic.⁶

Most older adults have at least one chronic health condition. (Fig. 2) As physiologic functions decline with age, individuals are more susceptible to stress, infection and disease, while being less able to perform activities of daily living (ADLs) such as bathing, feeding, and dressing; and instrumental activities of daily living (IADLs) including food preparation, housekeeping, and using the telephone.^{7,8}

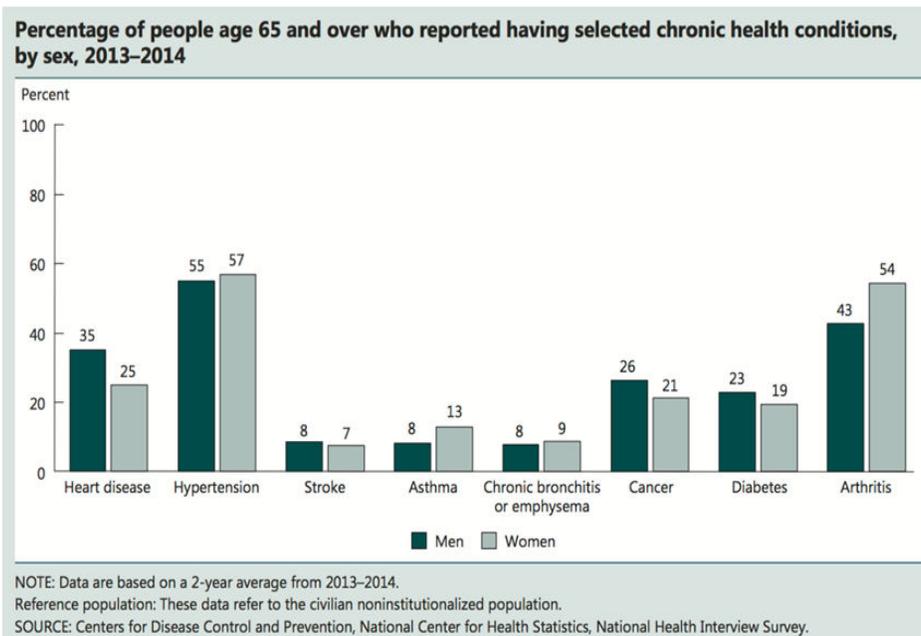


Fig. 2

A relatively small number (1.5 million) and percentage (3.2%) of the 65+ population in 2014 lived in institutional settings. Among those who did, 1.2 million lived in nursing homes. However, the percentage increases dramatically with age, ranging (in 2014) from 1% for persons 65-74 years to 3% for persons 75-84 years and 10% for persons 85+.⁶ Of this population, women outnumbered men 2.5 to 1. Those residing in nursing homes are more medically and functionally complex compared both to those living in the community and their counterparts in nursing homes 25 years ago. Nearly 780,000 people age 65 and over resided in alternative settings such as assisted living facilities in 2014.¹ These facilities provide personalized supportive services and may be appropriate for older adults deficient in IADLs but not ADLs.

B. Oral Health for Older Adults: Quality of Life and Impact on Overall Health

Good oral health is one of the major contributors to older adults’ quality of life and is essential to good general health as the mouth is seen as the gateway to the rest of the body. Research

indicates that older adults with 20 or more teeth have a significantly lower mortality rate than those with 19 and fewer teeth.⁹ An intact dentition is associated with improved dietary intake and reduced risk of malnutrition.¹⁰ Those who report they have good oral health participate more in social activities and are more mobile -- both keys to successful aging.¹¹ Good oral health can mean absence of infection or discomfort, adequate masticatory function, and increased social interaction that contribute to positive self-esteem.¹²

Improvement in the oral health of Americans over the past 50 years is a public health success story. Most of the gains are a result of effective prevention and treatment efforts. One major success is community water fluoridation; the latest data show that in 2014, 74.4% of the U.S. population on public water systems, or a total of 211.4 million people, had access to optimally fluoridated water.¹³ Ironically, these advances are accompanied by a new challenge: an increased number of retained natural teeth offers more tooth surfaces at risk for dental caries and more gingival crevices and embrasures at risk for periodontal disease. This increased risk comes at a time in life when performing daily oral hygiene can be physically and cognitively challenging, while dental treatment is often less affordable and more difficult to access. Significant variation exists geographically in the U.S., with nearly 18% of older adults having lost all of their teeth.¹⁴ While this represents a significant decline in edentulism over the past five decades, 74% relative decline for 64-74 years and 64% for 75+ years, this equates to a little over 8 million older adults, who are still edentulous.¹⁵

Emerging evidence on the interaction of oral health and systemic health is of particular importance for older adults. Altered texture, color, moistness, or odor from the oral cavity can serve as an early warning system for immune system problems, general infections, stress, or nutritional deficiencies. Persons with diabetes and periodontal inflammation often are found to have poorer glycemic control.¹⁶ In the nursing home population, a greater oral bacterial load due to inadequate oral hygiene is associated with aspiration pneumonia.¹⁷ Poor oral health may result in nutritional deficiencies or diets that favor refined carbohydrates over natural fruits and vegetables. Those with an inadequate dentition and ineffective chewing are more likely to have a diet deficient in fruits and vegetables, increased gastrointestinal disorders, obesity, and often resort to laxatives to compensate.¹⁸

Many medications, particularly those for hypertension and depression, reduce salivary flow causing hyposalivation or [dry mouth](#) and therefore increase the risk for oral disease. Poor oral health increases the use of analgesics as well as antibiotics to control pain and infection. With an increased focus among geriatricians on reducing medications among older adults, maintaining oral health is a critically important goal.

Health care providers are increasingly including the oral cavity as part of their complete examination. Oral diseases, such as dental caries, periodontal disease and oral cancer, can cause pain and disability across the lifespan, undermine self-image and self-esteem, discourage social interaction, and lead to stress and depression. Recent research is leaning toward a correlation between oral health and risk of dementia.^{19,20}

C. Oral Health Issues for Older Adults

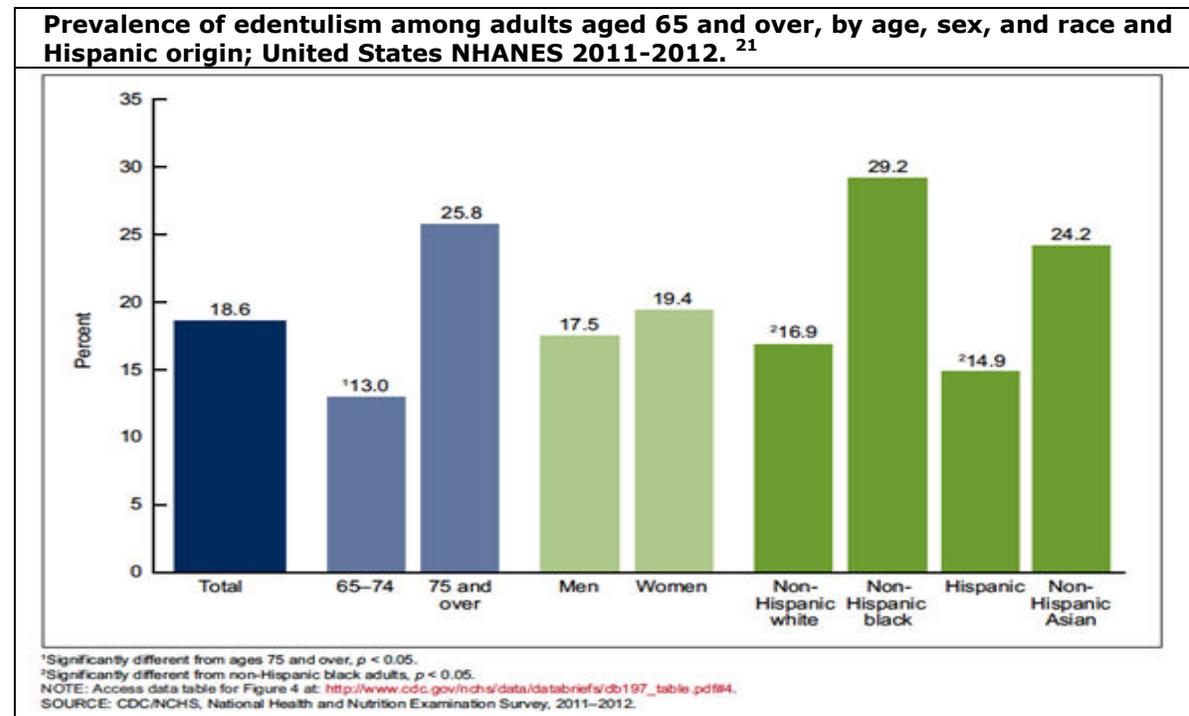
The current generation of older adults has benefitted from many preventive strategies for improving oral health including toothpaste with fluoride, community water fluoridation, pre-paid dental plans and advances in dental restorative procedures. The result is adults entering their senior years with more of their natural dentition. For some older adults, oral health problems may become severe and require extensive treatment. Problems may include tooth loss, dental caries, periodontal disease, mucosal and salivary gland changes, and oral and pharyngeal cancer, as well as challenges with oral health literacy, oral health self-care and cognitive changes. The impact of oral disease, noted in the following topic-specific sections, underscores the need for all older adults to have regular dental visits, even if they have complete dentures, to prevent further disease, optimize function, and prolong quality of life.

1. Tooth Loss

Tooth loss has one of the most significant negative impacts on oral health-related quality of life for older adults. The loss of teeth may be a consequence of new or recurrent dental caries, periodontal disease, trauma, neglect. . Due to a variety of causes, the risk for caries and periodontal disease increases as older adults retain more of their natural dentition. Comparison of the 1988-94, 1998-2004 and 2011-12 U.S. National Health and Nutrition Examination Survey (NHANES) data reveals the number of adults aged 65 years and older missing all their natural teeth has declined from 31% to 25% to 19% and this segment averages 19 remaining teeth.²¹ The World Health Organization recognizes that of the original 32 teeth, 20 constitute the minimum adequate functional dentition.

Some older adults utilize removable prosthetics to replace their missing teeth. In general, complete and partial dentures are 30% to 40% as efficient as one's natural dentition, may cause tooth damage and can increase one's risk for dental caries and periodontal disease.²² Dental implants are also available to replace natural teeth; although highly successful, they are costly, which is often a deterrent, especially for individuals on fixed incomes.

One of the overarching goals of Healthy People 2020 is to achieve health equity, eliminate disparities, and improve the health of all groups, regardless of socioeconomic status and ethnicity. Oral health for older adults falls short in this regard. Despite major improvements in oral health for the population as a whole, oral health disparities exist for many racial and ethnic groups, by socioeconomic status (SES), gender, age and geographic location. Tooth loss, which varies greatly by state and SES, is an oral health indicator that illustrates the wide variation across the country; roughly 42% of Americans over age 65 living in West Virginia are toothless, compared to only 13% of those living in California. More than one-third (34%) of older adults aged 65–74 living below the Federal Poverty Level (FPL) are edentulous (have no natural teeth), compared to 13% of older adults living above the poverty level.²³



2. Dental Caries

More than 96% of older adults have experienced dental caries throughout their lifetime and 19% had untreated disease, according to the 2011-2012 NHANES, though there are disparities in

untreated caries by race and SES. Caries prevalence among non-Hispanic black (40.9%) and Hispanic (26.7%) was significantly greater than the prevalence of untreated caries in non-Hispanics white (15.5%) 65 years and older.²¹ Persons whose income was less than 100% of the FPL were more than twice as likely to have untreated caries as those greater than 200% of the FPL.²⁴ The public and policymakers tend to focus on dental caries in younger people, yet root caries represents the most significant risk for tooth loss in older adults. Nearly half of all individuals 75 years of age and older have experienced root caries.²⁵ Daily use of prescription high-concentrated fluoride gel (5000 ppm) has been found to be more effective in reversing primary root caries compared to conventional toothpaste, which contains 1100 ppm fluoride.²⁶

The need for improved dental caries surveillance, preventive efforts, and treatment strategies for older adults is acute. Comprehensive data on the scope of oral disease in older adults overall is challenging to obtain. NHANES provides national data on the oral health of older adults however; it does not include information on institutionalized older adults, creating a significant gap in data.

The Behavioral Risk Factor Surveillance Survey (BRFSS), a random digit-dialed phone survey, provides limited self-reported oral health status data on dental visits and missing teeth at the state level. The Association of State and Territorial Dental Directors (ASTDD) [Older Adult Basic Screening Survey \(BSS\)](#) is a data collection tool that states may use to collect oral health status data on adults in nursing homes, assisted living facilities, and congregate meal sites. As of December 2016, more than ten states have completed an [Older Adult BSS](#) and additional states are in the planning stages. Other surveys such as the [Community Assessment Survey for Older Adults \(CASOA\)](#) assess self-reported quality of life measures, and may include oral health questions depending on the individual state. Overall, current oral health status data for seniors is primarily self-reported at the state level with limited data for the at-risk seniors (less than 5%) that live in skilled nursing, assisted living, and congregate homes.

3. Periodontal Disease

Studies report that 40% of ambulatory older adults have gingivitis (inflammation of the gums), while 68% have periodontitis, a more severe infection of the gums and supporting bone structure.²⁷ Severity of periodontitis increases with age, with people at the lowest socioeconomic level having the most severe disease.²⁸

Periodontal disease, a progressive systemic inflammation, can cause oral pain, discomfort, tooth mobility, and loss of teeth. Like other diseases, early intervention for periodontal disease can prevent further destruction of the bone and gingival tissue.

A bi-directional relationship exists between periodontal disease and diabetes. Poor glycemic control is associated with a threefold increase in the risk of periodontal disease. Treatment of periodontal disease results in a 10-20% improvement in glycemic control.²⁹

4. Salivary Gland Hypofunction (hyposalivation)

Saliva is a critical component of maintaining good oral health, and those with reduced quantities are at greater risk for oral diseases. Saliva contains antimicrobial components and minerals that help maintain and repair tooth enamel demineralized by acid-producing bacteria. While it was long assumed that reduction in saliva flow was a part of normal aging, it is most often due to medications prescribed to older adults for common age-related diseases.³⁰ Xerostomia is the patient's perception of dry mouth, while hyposalivation is the professional assessment of an individual's dry mouth. Less than 25% of older adults experience hyposalivation and/or xerostomia.³¹

Consequences of having reduced salivary flow include: increased risk of dental caries, periodontal disease, oral soft tissue trauma, difficulty wearing prosthetic appliances, and difficulty speaking and eating. Individuals in long-term care facilities, less than 5% of older adults, take an average of eight medications each day. While medical staff add medications to address most side effects, it is rare to see prescription high-concentrated fluoride in the form of rinse, gel, or fluoride varnish on the order sheet.²⁵

Communication and collaboration among medical, dental, pharmacy, nursing and other professionals are essential to maximize management of medical conditions while minimizing oral side effects. Older adults have reduced resiliency and reserve; they also process medications slower and less effectively than those who are younger. More than 500 prescription and over-the-counter medications taken by older adults for chronic conditions cause salivary gland hypofunction, including antihistamines, diuretics, and antidepressants. The risk of reduced salivary flow increases as the number of medications increase, as does the risk for oral diseases. Documented quality daily oral care, as well as prescribing high-concentrated fluoride in the form of rinse, gel, or varnish, an evidence-based practice to reduce caries risk, is recommended for individuals experiencing hyposalivation.

5. Oral and Pharyngeal Cancer

According to [Surveillance, Epidemiology, and End Results Program \(SEER\) data](#), oral and pharyngeal cancers are responsible for nearly 9,000 deaths each year. Oral and pharyngeal cancers are most frequently diagnosed among people aged 55-64, with the median age at diagnosis being 62. From 2009 to 2013 the percent of new cases in those ages 65 and older was 43%.³² Death rates have not changed significantly over 2004-2013. Five year survival trends have only slightly increased.³²

The primary risk factors for oral cancer include tobacco use, excessive alcohol use, exposure to sunlight (lip cancers), advancing age and Human Papillomavirus (HPV).³³ Tobacco use and Human Immunodeficiency Virus (HIV) infection are also associated with increased oral HPV prevalence. Oral HPV appears to increase in prevalence with older age, which may be due to decreased oral HPV clearance or age-related changes in the immune system.³⁴

Given that having risk factors for oral cancer is not a good predictor of disease, it is imperative that individual primary care health care providers provide an oral cancer examination of all patients' mouths, with referral to dental providers when suspicious lesions are identified. There is some evidence that an oral cancer screening, as part of a population-based screening program, reduces the mortality rate of oral cancer in high-risk individuals.³⁵

6. Oral Pain, Age-related Changes, and Mucosal Infections

Routine dental recalls for older adults are imperative to help prevent or reduce the impact of oral diseases and pain. Nearly a quarter of all adults report having experienced oral pain in the past six months that interfered with vital functions, such as eating, swallowing, and talking.³⁶ Pain negatively affects quality of life, which can cause social withdrawal and lead to more severe dental and systemic problems by compromising nutritional intake. Painful conditions that affect the facial nerves can be severely debilitating, and can affect mood, sleep, and oral-motor functions, such as chewing and swallowing.

Although inconsistent, many older adults do not experience the pain associated with oral diseases in the same way they did when they were younger. Because of the reduced sensitivity, many older adults are unaware of disease present in their mouth. Thus, it is imperative for older adults to obtain a comprehensive oral examination from a dental professional. In cases of dementia, cognitive deficit may diminish recall of pain. Others may try to live with the pain or view it as a part of normal aging.

With age, the facial bone, especially the mandibular ridge, which supports dentures in older adults, continues to resorb, precipitating poorly fitting dentures. In addition, older adults with dentures often have difficulty keeping the prosthetics clean. Subsequent yeast infections may give rise to mucosal infections, such as stomatitis.³⁷ Emphasis on assisting older adults and/or caregivers in maintaining cleanliness of dentures and/or natural teeth will help prevent painful mouths.

Neurological diseases associated with age such as, Parkinson's, Alzheimer's, and Huntington's diseases, as well as stroke, affect oral sensory and motor functions, thus limiting the ability to express discomfort and/or care for oneself.

D. Barriers to Optimal Oral Health for Older Adults

1. Compromised Oral Self-Care due to Dexterity and Cognition Changes

Many older adults are unable or unwilling to accomplish the same level of daily oral care as they did when younger. This may be the result of depression, disease or disability. Degenerative arthritis, neuromuscular changes, and diabetes-related compromised extremities may have a negative impact on a person's ability to practice effective daily oral hygiene. Those with poor hand function have increased plaque on teeth and dentures and can benefit from either modified and powered oral hygiene devices or from the assistance of a trained caregiver or family member.³⁸

People with dementia perform suboptimal self-oral hygiene, as early cognitive changes may contribute to poor recall of oral hygiene instructions or established behaviors.³⁹ The World Federation of Public Health Associations passed a resolution at their 2014 General Assembly with the following recommendations:

"Individuals with dementia have a right to good oral health. Oral health problems can and do impact upon their general health and quality of life, causing pain and disrupting their lives. Oral health is an integral part of their overall wellbeing and is essential for comfortable eating, speech, socializing and quality of life.

To promote oral health, every individual with dementia should have access to:

- A designated provider and coordinator of dental care so as to be able to access regular oral health care from suitably trained dental professionals.
- Good oral hygiene every day, provided when necessary by trained caretakers.
- Therapy to prevent, or minimize, the effects of xerostomia (self-perceived dry mouth), dental caries (tooth decay), periodontal (gum) diseases, and/or oral ulceration.
- A healthy diet with minimal sugar content and, where necessary, treatment with suitable fluoride products to prevent or reverse dental caries."⁴⁰

These recommendations can apply to adults of all ages, with or without dementia.

2. Limited Oral Health Literacy

Recent studies indicate that a majority of U.S. adults do not have the literacy skills needed to use health-related print materials and tools with accuracy and consistency. Older adults are more than twice as likely to have health literacy skills below the basic level of younger adults.⁴¹ Studies indicate in order to use the healthcare system effectively; one needs higher than a high school education. The ability of older adults to process, recall and apply spoken or printed information, such as medication instructions from a health care provider, depends on their capacity to fully hear the spoken message or see the printed or graphical information presented. Older adults, who are recent immigrants, often struggle with the language, or have cultural beliefs and practices that hinder health literacy. These adults can be particularly challenged in comprehending and complying with oral health instructions.

The Centers for Disease Control and Prevention (CDC) recommend that health professionals work to improve health literacy among older adults in the following ways:

- Adjust their expectations and demands;
- Consider the literacy environment;
- Improve patients' written and oral communication skills; and
- Apply greater rigor to the development of materials and tools designed for older adults.⁴²

Providing information and introducing previously unfamiliar dental terminology to older adults has been shown to improve oral health literacy.⁴³ Oral health professionals interested in helping older adults to adopt healthy behaviors need to develop skills in community engagement and partner with organizations where these behaviors can be fostered and sustained past one educational encounter.

Older adults with the poorest oral health are those who are economically disadvantaged, lack insurance, or are members of racial and ethnic minorities. Being disabled, homebound, socially isolated or institutionalized also increases the risk of poor oral health. Social factors that contribute to these differences are lifestyle behaviors, such as tobacco use, frequency of alcohol use, and poor dietary choices.

3. Gaps in Dental Insurance Coverage

The economic factors that often relate to poor oral health include access to health services and an individual's ability to get and keep dental insurance. Benefits for employed adults are commonly lost at retirement. In 2012, only 12% of Medicare beneficiaries reported having at least some dental insurance. Use of dental services after retirement is highly tied to wealth, with those of high wealth being three times more likely to have had a dental visit in the last year than those of low wealth.^{44,45}

Medicare, which provides health insurance for people older than age 65 and people with certain illnesses and disabilities, does not provide routine dental care. While the Affordable Care Act includes provisions to improve dental access for children, dental care for older adults is not mandated. Currently, many older adult advocacy groups have shown renewed interest in creating a dental benefit in Medicare. Medicaid, the jointly-funded Federal-State health insurance program for certain low-income people, can be an unpredictable source of financing dental care for older adults. While coverage of dental care for children is mandated, care for older adults and those with disabilities is not. In 2016, [only 34 states](#) included adult dental (limited or extensive care) as a benefit. Reimbursement for adult dental care varies state to state and is lower than in the commercial sector, resulting in low participation by dentists.⁴⁶

Data from the American Dental Association's (ADA) Health Policy Institute demonstrated that dental utilization by older adults increased 38% between 2000 and 2014.⁴³ Those at greater than 400% FPL were more than two times as likely to have had a dental visit compared to those below the FPL (60.7%:23.5%).

Older adults from lower SES strata are less likely to have had preventive and restorative care in their early years, and more likely to have had teeth extracted, seeking dental care on an emergency rather than routine basis. Older adults may have more difficulty attending dental appointments for a variety of reasons including financial barriers and dependence on others for transportation.

4. Need for Increased Emphasis on Geriatric Dentistry in Dental Education

The oral health needs of older adults are significantly different from those of younger people, and older adults face a variety of challenges in meeting these needs. Educating future dental providers to care for older adults is necessary. In 1987, the National Institute on Aging (NIA) predicted a need for 1,500 geriatric dental academicians and 7,500 dental practitioners with training in geriatric dentistry by the year 2000.^{47,48} These numbers were never achieved, and with only a handful of providers receiving advanced geriatrics training each year, the focus has shifted to assuring that all dental providers are adequately trained in pre-doctoral programs.

The availability of geriatric education for dentists has improved over the past few decades. Almost all dental education programs self-reported teaching geriatric dentistry in 2011, whereas only 23% reported clinical training in geriatrics.^{49 50}

The Commission on Dental Accreditation's [Accreditation Standards for Predoctoral Dental Education](#) Standard 2-22 states: "Graduates must be competent in providing oral health care within the scope of general dentistry to patients in all stages of life." In the American Dental Education Association (ADEA) Foundation Knowledge and Skills for the New General Dentist, Section 3.2, "Graduates must be competent to apply psychosocial and behavioral principles in patient-centered health care" which specifically mentions geriatrics.⁵¹ Curriculum content varies greatly among schools ranging from a single elective or required course to a few guest lectures. Further, exposure to clinical experiences is lagging behind the didactic requirements.⁵² Creative

programs that increase exposure of students to older adults have been shown to impact attitudes and likelihood to provide care.^{53,54,55}

Less is known about education in geriatrics for dental hygienists, although these oral health professionals are increasingly important in providing care to special populations, especially those in rural areas and long-term care settings. Some states have extended scope of practice for dental hygienists, allowing them to practice without supervision in alternative settings and in a limited number of states to be reimbursed as Medicaid providers. While all schools have integrated geriatric content, about half (49.5%) consider their geriatric curricula to be inadequate.⁵⁶ Although advanced degree programs for dental hygienists in geriatrics are lacking, continuing education programs, such as the [Mini-residency in Nursing Home and Long-Term Care for the Dental Team](#) offered by the University of Minnesota, are well-attended by dental hygienists and typically filled six-months in advance.

The American Dental Association has developed an [on-line education program](#) at the continuing education level on oral health in long-term care settings. This program is a part of the ADA's "Action for Dental Health" Campaign. Other online courses in general dental considerations for aging adults are available on the Special Care Dentistry Association [webpage](#).

E. Special Considerations for Care for Older Adults in the General Dental Office

The majority of older adults still live independently or with family members and access private or publicly-funded dental clinics for their care. A number of them continue at the same family dental practice they have been going to most of their adult lives. The dental practice must continue to welcome older adult patients by being responsive to the changing physiologic and cognitive health issues of older adults.

The dental team needs to address the sensory changes of older adults. Many older adults have hearing and visual impairments making regular visits to the dental office more challenging. Assessing the older adult's ability to hear instructions and implementing techniques, such as talking directly to them in a slow, clear voice (not necessarily louder) will facilitate compliance. The dental team needs to be aware that many adults wearing hearing aids may choose to turn them down or off to block out background sounds while in the dental office, particularly handpiece noise. In this case, conversations will need to occur before or after each visit. Visually impaired older adults [may benefit by large-print](#) instructions and large-print magazines in the waiting room.

Mobility issues are an important consideration. Older adults are more prone to tripping on cords and hoses in the dental operator, or on loose rugs in waiting rooms. Manual dexterity issues or mild to moderate arthritis may impact their ability to get to the office easily. Power toothbrushes have been shown to be effective for improving [oral hygiene among older adults with dexterity issues](#).

Many older adults take multiple medications resulting in hyposalivation. Consideration should be given to incorporating additional time to review oral hygiene instructions, application of fluoride varnish, and to recommend strategies to address dry mouth. Salivary substitutes, antimicrobial rinses, and fluoride mouthrinses should be recommended or prescribed. The older adult should also be reminded to drink tap water containing fluoride if available.

The [Dental Lifeline Network](#) operates a volunteer dental program in nearly every state, matching low-income elderly (as well as medically fragile and adults with disabilities) to volunteer dentists willing to provide comprehensive dental care. Another component program is the [Dental Housecalls Program](#) in Colorado, which provides on-site care for homebound elderly, those in daycare, residential and nursing home facilities, providing comprehensive oral health care using portable equipment.

Similarly, [Apple Tree Dental](#) in Minnesota and California utilizes mobile and portable equipment to provide comprehensive care where older adults reside in long-term care facilities and at meal sites.

Veteran Affairs Clinics

As nearly half of veterans have entered their senior years (12.4 million in 2012)⁵⁷, oral care may be even more challenging for this population to obtain. The Administration on Veterans Affairs (VA) offers comprehensive [dental benefits](#) to those veterans whose dental issues are service related (trauma, service-related medical condition requiring oral care, relief of pain and infection for homeless veterans). The VA has more than 200 locations nationwide for eligible veterans to receive dental care.⁵⁸

Dental and Dental Hygiene Schools

Dental and dental hygiene programs often are well suited for older adults on limited incomes and with time to spend at the training program. Dental fees tend to be lower at these programs, and often the schedules of older adults allow them to be available for lengthy appointments. They may also have a desire to give back and help teach the next generation of oral health professionals.

Becoming comfortable treating the independent older adult is the focus of curriculum developed by experts and supported by ADEA and GlaxoSmithKline. "[Oral Health for Independent Older Adults: ADEA/GSK Predoctoral Curriculum Resource Guide](#)" provides a comprehensive set of modules for use by dental faculty. Treating older adults during clinical rotations impacts dental and dental hygiene student attitudes and comfort levels for treating this population in the future.

F. Considerations for Providing Dental Services in Long Term Care Facilities

Three decades of studies document the poor oral health status of older adults.^{12,37,39} With the population 85 years and older most likely to require long-term care, risk for oral diseases will increase as individuals retain more of their natural teeth, necessitating the need for daily and routine professional oral care. Adding the expected increased need of oral care to a system with a demonstrated lack of resources portends an escalating problem.

Types of Long-Term Care

- Facilities
 - Nursing Home: Residents have significant functional deficit in at least three Activities of Daily Living (ADLs) such as toileting and transferring
 - Assisted Living: Residents can perform ADLs but may be deficient in Instrumental Activities of Daily Living (IADLs) such as cooking and shopping.
- Aging in Place Alternatives
 - Home Health Aide
 - PACE: Program for All-Inclusive Care for the Elderly
 - Senior Centers

Residents of long-term care facilities (LTC) are inadequately served despite legislative efforts to address their acute oral health care needs. The federal Omnibus Reconciliation Act of 1987 (OBRA '87) established specific requirements for dental services in more than 20,000 nursing homes across the country. The Centers for Medicaid and Medicare Services (CMS), formerly known as the Health Care Financing Administration (HCFA), mandated that all nursing homes receiving Medicaid and Medicare reimbursements provide emergency and routine oral health care to their residents however, no funding was attached to the mandate. These regulations went into effect April 1, 1992 and specifically require long-term care facilities to:

- 1) assist patients in obtaining emergency and routine dental care;
- 2) provide dental care internally or obtain this care from an external source for each resident;

- 3) assist in scheduling appointments for dental care and arrange transportation to the dentist;
- 4) develop an oral health program that includes annual staff in-service training, an oral examination within 45 days of admission that is repeated annually for each resident and an oral hygiene preventive care plan for each resident.

State regulations typically match, and in some cases exceed federal requirements. An excellent summary of state requirements regarding dental services, oral hygiene, and dental exams in long term care is available as part of a [compilation of nursing home regulations from the University of Minnesota School of Public Health](#).

Each facility should have an agreement with a dentist to deliver oral health care services and make referrals. Despite these regulations, studies show a lack of oral health care for residents.^{59,60} Few offer anything other than emergency care. In most states, the provision of dental services is not financially supported, and those states with an adult dental benefit through Medicaid provide rates that are significantly below usual, customary and reasonable (UCR).

In states with an adult Medicaid dental benefit, utilization still remains poor and dentist participation is low. An unpublished report from *Access Dental in North Carolina* found that nursing home staff reported greater difficulty accessing care for patients with Medicaid coverage than for those who were self-pay.⁶¹

In states with limited or no adult Medicaid dental benefits, dentists providing care in long-term care facilities may utilize the Incurred Medical Expense (IME) reimbursement mechanism as described in [federal statute](#). Medically necessary care not covered under Medicaid, including dental care, is described under a provision referred to as Post Eligibility Treatment of Income or PETI. Collaboration between the dental provider, the resident or their responsible party, and nursing home staff, including the Medicaid case worker, is required to effectively utilize this mechanism. Although the use of IME (or PETI) has been used for many years to provide other medically necessary care like eye glasses and hearing aids, its use for dental care is less commonly employed. Educational resources and information pertaining to the IME are available through the [American Dental Association's How to Guide for IME](#).

Providing dental care to LTC residents can be accomplished in numerous ways. Although transporting the resident to a traditional dental office is most comfortable for the dentist, it can also be expensive and less efficient. Alternative delivery systems that bring equipment and personnel to the facility offer many advantages, including the elimination of transport costs and assuring that resident care occurs in a familiar environment. Access to interdisciplinary partners ready to collaborate as needed is important for patients with medical and/or cognitive disorders.

Nursing staff may implement the [Kayser-Jones `Brief Oral Health Status Examination \(BOHSE\)](#) in their facility. Using a pen light, tongue depressor, and gauze, the conditions of the oral cavity, surrounding tissues, and natural/artificial teeth are examined and categorically graded from 0 (normal) to 2 (significantly problematic).

Module 8 of the [Smiles For Life Curriculum](#), developed in part by the Society of Teachers of Family Medicine, is specific to older adult oral health. Endorsed by many health associations including ADA, ASTDD, the American Association of Public Health Dentistry (AAPHD), and the National Interprofessional Initiative on Oral Health (NIIOH), the geriatric module covers oral conditions and systemic health implications, as well as a section on primary care-dental collaboration.

ASTDD, in collaboration with other organizations, developed the [Mobile-Portable Dental Manual](#) that provides guidance to those seeking to provide care in alternative settings.

Recent advances in the use of telehealth-connected teams allow traditional dental practices to better serve individuals in long-term care settings. In a demonstration of a "[Virtual Dental Home](#)" dental hygienists, using portable equipment, are able to capture a full electronic health record in a cloud-based records system, have those records reviewed by a dentist, and subsequently perform prevention and early intervention procedures on site. This system keeps two thirds of residents healthy on-site and facilitates care by dentists for those needing more advanced treatment.

Mouth care training in nursing homes

OBRA `87 mandates routine training of nursing staff in techniques of mouth care, however little guidance is provided. Studies have found residents of nursing homes typically have poor oral hygiene, a result of deficient mouth care. Research varies on best approaches to improve oral hygiene care; however it is clear that well-meaning educational programs may be ineffective.⁶² Mouth care for residents with dementia is complicated by care-resistant behavior. Hands-on demonstration of strategies and tools, improving self-efficacy and facilitative behavior have been effective.⁶³ Studies in Europe have shown that employing oral care staff had a positive influence on the microbial flora of residents.⁶⁴ Chalmers emphasized the importance of every resident having an oral health assessment and an oral health plan, yet it is not clear that this is routinely done.⁶⁵

A package of training materials called [*Overcoming Obstacles to Oral Health*](#) has been developed collaboratively by the ADA, the American Health Care Association, and the Arthur Dugoni School of Dentistry at the University of the Pacific. It contains educational materials and guides for working with administrators and staff in long-term care and other settings.

Care coordination

Coordination between medical and dental providers is essential. Often, there is no shared patient health record, which increases the time required for the oral health provider to obtain needed information including medications, labs, and cognitive status. New electronic medical records in long-term care facilities often do not include tabs for oral health, despite well-studied protocols, that could easily be adapted for a web-based platform. Collaborating with geriatricians in multidisciplinary settings is ideal but rare. A model of having an "oral health care coordinator" in the long-term care facility could go a long way toward enhancing interdisciplinary communication and care.⁶⁴

G. Public Health Strategies for Improving Oral Health of Older Adults

State and local dental public health programs are responsible for identifying the population's oral health problems/needs and issues. The following strategic framework for improving oral health for older adults is adapted from the core public health activities set forth in *Ten Essential Public Health Services to Promote Oral Health in the U.S.*⁶⁶ Public health agencies can use the framework to examine oral health for older adults, implement steps to improve oral health for older adults, and build broad community support for public policies, regulations, funding, and other means for improving oral health for older adults in the community and in long-term care.

1. Assess and monitor oral health of older adults

Increased state and community-based surveillance of oral health for older adults is essential for establishing oral health baselines, monitoring oral health status and disparities, timely communication of findings to stakeholders and policy makers, and promoting the use of data to initiate and evaluate oral health programs serving older adults

Examples of Actions

- Promote regional or statewide surveys of the oral health of seniors living in nursing facilities or attending senior center programs. The ASTDD Basic Screening Survey for Older Adults provides guidance to facilitate and assure consistency. <http://www.astdd.org/basic-screening-survey-tool/#adults>
- Collaborate with dental associations and other groups to survey private practices and safety-net providers regarding gaps in availability of both oral health and dental care programs for seniors.
- Encourage and train long-term care staff in oral health assessment tools developed by their professions.
- Expand the reach of oral cancer screening programs to sites where senior populations will be served.
- Collaborate with the long-term care industry and state nursing home surveyors to help assure that long-term care facilities are in compliance with existing regulations regarding daily mouth care, mandatory dental exams/screenings within specified time frames upon admission to a facility, and availability of restorative dental services.

2. Enhance infrastructure and build partnerships

Understanding and working effectively with oral health providers who serve older adults in varied living environments will help to improve access to dental care. Building partnerships with foundations, industry and other stakeholders will leverage resources and support for a variety of senior oral health initiatives.

Examples of Actions

- Screening programs at senior centers for older adults living independently with referral for care, for example ElderSmile of New York.⁶⁷
- Establish on-site dental programs at larger retirement communities such as continuing care retirement communities (CCRCs).
- Assist in the establishment of high quality mobile and portable dental programs that provide both oral health and dental care services in long-term care facilities, for example [Apple Tree Dental](#).
- Promote partnerships with foundations and industry to develop educational programs for older adults and caregivers, for example [Oral Health America's Tooth Wisdom](#) project.
- Bring together dental leaders and stakeholders who work with older adults to create a Coalition for Oral Health for the Aging, such as [Michigan's](#), to improve the oral health of older adults through advocacy, professional education, public education, and research by focusing on prevention, health promotion, and evidence-based practices.

3. Educate older adults and their caregivers to improve their oral health and empower them to advocate for the services they need.

Older adults may not recognize that both normal changes of aging and changes associated with illness can impair their ability to maintain oral health. Educating older adults and their caregivers about modifying oral health care routines, such as instructing them on the use of alternative devices for removing plaque and the use of fluoride, can help reduce their risk of dental disease. Older adults engaged in their community create opportunities to mobilize older adults to impact policy thus influencing the infrastructure necessary to bring these changes about.

Examples of Actions

- Form partnerships between industry and academia to promote educational programs for older adults and caregivers that include preventive strategies, use of fluorides and tobacco cessation. Programs such as *Overcoming Obstacles to Oral Health* from the [American Dental Association](#) are available.
- Health literacy and cultural considerations are important when communicating with older adults and their caregivers.
- Promote the development and widespread use of websites aimed at older adults focusing on oral health. These can empower older adults to value oral health and enhance service availability.
- With increased prevalence of Alzheimer’s disease, educate the general public about the importance of helping caregivers develop skills to assist with daily oral health care and how to access regular professional dental services for patients experiencing progressive loss of cognitive abilities.
- Work with older adult coalitions to advocate for policies such as private and public insurance coverage for evidence-based prescription fluoride regimens.
- Engage a broad group of stakeholders to set priorities for oral health for older adults and disseminate the goals in state oral health plans.

4. Prepare all members of the dental workforce to better serve older adults, including frail elders.

Caring for older adults requires unique skills and clinical competencies, encompassing an understanding of medical, social, ethical and dental issues. Education in geriatric dentistry must include both didactic and clinical experiences and engage all members of the dental team with other medical, nursing and social services providers.

Examples of Actions

- Promote expanded didactic and clinical education programs in the care of older adults for all oral health professionals during their professional training. Support the development and deployment of competency based curricula developed by content leaders from across the U.S. and the world. The [Curriculum Resource Center from the American Dental Education Association \(ADEA\)](#) includes a series on geriatric dentistry.
- Include more “geriatric” content in postgraduate training programs such as General Practice Residencies (GPR), Advanced Education in General Dentistry (AEGD) and specialty training programs (e.g., endodontics, prosthodontics, periodontics).
- Promote and provide enhanced funding for postgraduate fellowships in geriatric dentistry.
- Create more special certificate or other programs in geriatrics for practicing dental hygienists, such as the program at the University of Minnesota.
- Increase the availability of continuing education in geriatric dentistry for practicing dental professionals.
- Promote interdisciplinary education on geriatric dentistry topics for medical, nursing and social services professionals.

5. Promote expanded private and public insurance coverage for dental services needed by older adults and frail elders

There are gaps in the availability of dental insurance for older adults, resulting in significant financial barriers to care and disparities in oral health access. Few retirees are able to extend

private dental insurance coverage beyond retirement, and Medicare does not include coverage for dental services. In 2016, [only 34 states](#) included adult dental services (limited or extensive) as a benefit for Medicaid enrollees. Therefore, millions of older adults are left without coverage for needed dental services.

Examples of Actions

- Advocate for the inclusion of dental care in Medicare as a full benefit and at minimum an optional benefit that older adults can elect and pay for themselves.
- Require coverage of oral health services for institutionalized older adults in Medicaid programs, such as in the Special Care Dentistry Act, described in Section II below.
- Promote changes to reimbursement rates and covered services to better support the delivery of oral health services to older adults.
- Support innovative systems of care delivery utilizing the Medicaid waiver process, CMS Innovations grants and other mechanisms that promote innovations designed to achieve the triple aim of improved care delivery, health outcomes and reduced total costs.

6. Integrate dental and medical into comprehensive health homes

Dental and medical homes are as important for older adults as they are for children and adults across the entire age spectrum. Medical homes bring together patients, families and health care professionals to make services available in a comprehensive, continuously accessible, coordinated, and family-centered way. A dental home should emphasize prevention and disease management, as well as tailor care to meet individual needs for better health outcomes at lower costs. Dental homes should also provide education and counseling and make necessary medical and dental referrals. A more ideal scenario is a “Health home”, which breaks down the health care silos.

Examples of Actions

- Adopt, endorse, and promote oral health guidelines and recommendations for older adults in a variety of living situations and for professionals and agencies engaged in geriatric health, social services, and education.
- Develop and support geriatric oral health champions who promote geriatric oral health programs and interdisciplinary system integration.
- Mobilize communities to advocate for policies and activities that will improve oral health for older adults (e.g., inclusion of dental benefit in Medicare, Special Care Dentistry Act, oral health services in nursing homes, fluoride varnish and water fluoridation programs).
- Encourage the development of mobile and portable dental care delivery systems that provide on-site care and eliminate transportation barriers for older adults.
- Encourage all professionals to work to the full scope of their training and license. Utilize dental hygienists as front-line clinicians in collaborative practice, and promote the use of telehealth technologies that support the delivery of on-site care.

7. Collaborate with State and Federal organizations involved with regulation of long-term care facilities to assure that oral health requirements are being addressed.

Regulations are in place for nursing homes regarding oral care, yet information from several of the Older Adult BSS reveal inconsistencies in compliance. It may be that state and federal

regulatory staff lack the dental expertise or appreciation of the role of oral health in general health and quality of life.

Examples of Actions

- Encourage state dental directors to address oral health needs across the lifespan by including older adults in state oral health plans.
- Encourage communication between state dental directors and Area Agency on Aging leaders to help promote interdisciplinary collaboration and community-clinical linkages.
- Improve the coordination of federal and state Medicaid reimbursement policies so that they support the delivery of oral health services including preventive services and fluorides for older adults.
- Encourage extension of nursing home regulations relating to oral health and dental care to other long-term care settings, including memory units at assisted living facilities and hospice care.
- Encourage state dental directors to engage with state nursing home surveyors to help assure compliance with oral health regulations, including assuring that residents who need assistance with daily mouth care are identified and that appropriate and necessary care is being provided. Facilitate care and follow up with local dental providers who are committed to partner to improve oral health.
- Encourage state regulatory agencies to mandate oral health assessments and oral health plans for each individual in long-term care.

II. Resources, Reports, and Recommendations

Recognition of the importance of good oral health to overall health and quality of life has illuminated significant disparities by race and SES in the state of oral health of older adults. Responses to concerns have come from governmental agencies at the federal and state level as well as from both national and grass roots organizations. The following describes examples of these efforts.

1. Federal Programs

A. The Department of Health and Human Services (HHS) has numerous branches that impact the oral health of older adults:

- [Centers for Medicare and Medicaid Services \(CMS\)](#) plays a financial role
- Health Resources and Services Administration (HRSA) funds training programs, including [geriatric programs](#)
- [Centers for Disease Control and Prevention \(CDC\)](#) and [National Institute for Dental and Craniofacial Research \(NIDCR\)](#) seek to improve oral health through research, data analysis and dissemination; CDC also provides some support for conducting older adult BSS in states.
- [Administration for Community Living \(ACL\)](#), which includes the Administration on Aging (AoA), oversees efforts associated with the Older Americans Act. The AoA maintains the [Eldercare Locator](#) that connects people to community services for older adults and their families. Although it provided significant support for collaborative projects in the 1980s for oral health for older adults, little emphasis or funding since then has been devoted to oral health.
- ACL and the Office of Women's Health convened a group of subject matter experts to guide the creation of an annotated roster of local and state programs working to improve the oral health of older adults. Release of the roster is currently being cleared by HHS and will eventually appear on the ACL [Oral Health page](#).

The HHS has developed an [Oral Health Coordinating Committee \(OHCC\)](#) to bring together these multiple federal efforts. The [Agency for Health Care Research and Quality \(AHRQ\)](#) has a mission to improve the quality, safety, efficiency, and effectiveness of health care for all Americans, including older adults.

B. [Healthy People 2020](#)

Healthy People 2020 is a Federal initiative from the Office of Disease Prevention and Health Promotion, with contributions from a number of Federal agencies, including the CDC, Administration on Aging, HRSA, NIH and others, comprising a series of goals and targets for health measures. Among the over 33 objectives in the [Oral Health](#) section, about eight pertain to older adults, including three examples below:

- *OH-3.3* Reduce the proportion of adults aged 75 years and older with untreated root surface caries by 10%, from a baseline of 37.9% to a goal of 34.1%.
- *OH-4.2* Reduce the proportion of adults aged 65 to 74 years who have lost all of their natural teeth by 10%, from a baseline of 24.0% to a target of 21.6 %.
- *OH-5* Reduce the proportion of adults aged 45 to 74 years with moderate or severe periodontitis by 10% from a baseline of 12.8% of adults aged 45 to 74 years had moderate or severe periodontitis in 2001–04 to a target of 11.5 percent.

In the Older Adults section, oral health is supported as follows:

OA-7.4 Increase the proportion of dentists with geriatric certification

C. Older Americans Act (OAA)

The Older Americans Act Reauthorization Act of 2016 was signed into law on April 19, 2016. Oral health was added to the definition “disease prevention and health promotion services” in section 102(a)14(B). The addition of oral health to the OAA Title I definition of disease prevention and health promotion highlights that oral health is a crucial component of the health and wellness of older adults. With regard to Title III-D, any oral health activities- like all activities funded through Title III-D-would need to be part of an evidence-based program. Criteria for what can be considered an evidence-based program:
http://www.aoa.acl.gov/AoA_Programs/HPW/Title_IIID/index.aspx

D. Timeline of past Federal reports and conferences:

2003: Senate Special Committee on Aging held a forum chaired by Senator John Breaux of Louisiana on [“Ageism in Health Care: Are Our Nation’s Seniors Receiving Proper Oral Health Care?”](#)

2011: Institute of Medicine (IOM) issued two reports on Oral Health, [Advancing Oral Health in America](#) and [Improving Access to Oral Health Care for Vulnerable and Underserved Populations](#). Both reports recognize the current shortfalls and call for initiatives to improve access to oral health care through research, funding and training.

2011: U.S. Senate hearing to discuss the oral health issues facing the nation, resulting in a [September 2013 report](#) and introduction of the Comprehensive Dental Reform Act of 2013, and more recently, the [Dental Reform Act of 2015](#).

2015: The White House has held a Conference on Aging every ten years, beginning in 1961, to identify and advance actions to improve the quality of life for older Americans. In 2015, the U.S. marked the 50th anniversaries of Medicare, Medicaid, and the OAA, as well as the 80th anniversary of Social Security. **Final Report:** <https://whitehouseconferenceonaging.gov/2015-WHCOA-Final-Report.pdf>

2. State Programs

State Oral Health Plans vary greatly in their development, with some led by state oral health programs in state health departments and others led by oral health coalitions. The Children’s Dental Health Project (CDHP) compiled a [review of State Oral Health Plans](#) that includes objectives related to seniors. The five most common references to seniors include:

1. Increase knowledge of geriatric oral health among dental and medical providers (15 states)
2. Improve oral health in long-term care facilities (10 states)
3. Increase funding for Medicaid reimbursement and senior oral health programs (10 states)
4. Target education and promotion of oral health to seniors (9 states)
5. Increase access to care for seniors (9 states)

3. Professional and Non-profit Organizations

The following organizations are involved with issues of oral health for older adults. The list is not meant to be comprehensive, as new efforts are introduced regularly.

- A. The [Association of State and Territorial Dental Directors](#) (ASTDD). The ASTDD represents directors and staff of state and territorial public health agency programs for oral health. The ASTDD [Healthy Aging Committee](#) serves as a focal point for healthy aging issues and resources for state oral health programs. The committee is involved with reviewing model programs, policies, and resource materials related to healthy aging with the goal of supporting state efforts, including providing technical assistance via BSS coaches to assist with planning and sharing lessons learned from other states who have completed the [Older Adult BSS](#). The Healthy Aging Committee webpage offers various resources related to older adult oral health.

ASTDD's Healthy Aging Committee and [Data Committee](#) track states that have completed the Older Adult BSS. The Data Committee also offers technical assistance to states for BSS that includes sampling and data analysis.

ASTDD's Data Committee is also responsible for the annual Synopses Survey of state oral health programs. Data collected includes demographics, state infrastructure, status of Medicaid adult dental benefits, workforce information, and types of oral health programs in the state. This annual report can be found on the ASTDD homepage in the left side tab, *Synopses of State Programs*.

- B. [American Dental Association \(ADA\)](#) The ADA initiative to facilitate dentists providing care to nursing home residents is titled the "Establish the Long Term Care Dental Campaign," one of eight initiatives in the [Action for Dental Health](#) program aimed at reducing disparities. The ADA provides information on the consumer side through their [MouthHealthy education program](#), which includes a section for adults 60+ years.

The ADA's National Elder Care Advisory Committee (NECAC)'s Goal is to "Increase public recognition that the ADA and its members are leaders and advocates for elders' oral health." There are four objectives:

- Promote the provision of dental services to the elderly by evidence-based education and support of dentists and state associations, and fostering affiliations with elder care organizations.
- Improve elder oral health by supporting members in engaging national and state coalitions in advocating for oral health and promoting legislative and regulatory reform.
- Enable members to help elders and their caregivers be good stewards for their own health through health education, promotion, and prevention.
- Build and transfer the knowledge base members need to improve the oral health of elders.

The [National Consensus Conference](#) on the Oral Health of Vulnerable Older Adults and Persons with Disabilities was sponsored by the ADA in 2010.

In the fall of 2014, the NECAC completed a project with the University of the Pacific to help dental professionals better meet the needs of the elderly. NECAC members developed a [10-hour CE course](#) including eight educational modules designed to assist

dentists and dental hygienists be better prepared for meeting the needs of frail and institutionalized elders.

- C. [American Geriatrics Society](#) (AGS). Recognizing the role of oral health in long-term care, the AGS provides resources from an inter-professional perspective through their [Annals of Long-Term Care](#) website section on oral health addressing topics, such as xerostomia, oral health assessment, and mouth care training.
- D. [Center for Oral Health](#)- Holds an annual symposium to highlight the economic benefits of good oral health on older adults living with chronic conditions and to inform policy makers and decision makers at the state and federal levels of the much needed changes to ensure better health outcomes, quality of life, and more efficient healthcare systems. In October 2015, the Center for Oral Health held a symposium: *Oral Health & Quality of Life Among Older Adults: A Multidisciplinary and Interprofessional Perspective*.
- E. The [Gerontological Society of America](#) (GSA) – The GSA is the nation’s oldest and largest interdisciplinary organization devoted to research, education, and practice in the field of aging. The principal mission of the Society is to advance the study of aging and disseminate information among scientists, decision makers, and the general public. GSA’s structure also includes a policy institute, the [National Academy on an Aging Society](#), and an educational branch, the [Association for Gerontology in Higher Education](#). The GSA has assembled a team of experts that comprise the [Workgroup on Oral Health](#). The Workgroup is charged with increasing awareness and understanding of the importance of appropriate oral care and strengthening the impact that all members of healthcare and caregiver teams have on ensuring good oral care for older adults.
- F. [Institute of Oral Health, Washington State](#): The institute brings together dental leaders from research, academia, clinical settings, dental benefit programs and policy to develop solutions aimed at improving efficiency and efficacy in oral health care. A number of their sessions have included issues related to oral health for older adults, such as access to care.
- G. [Michigan Coalition for Oral Health for the Aging](#): Established in March 2006 as the Michigan Geriatric Dentistry Coalition, COHA seeks to bring together stakeholders from multiple areas of aging services in order to create a coalition. Regional symposia unite diverse groups of health professionals and community leaders with the aim of inspiring strategic change to improve the oral health of older adults. See State Activity Submission for more information.
- H. The National Association of Chronic Disease Directors (NACDD), [Healthy Aging](#). Previously the NACDD has been involved in a variety of activities and initiatives related to healthy aging. For several years NACDD provided funding through a Cooperative Agreement with the CDC to support Oral Health Opportunity Grants that enabled a small number of states to collect or analyze existing data on older adult oral health. [Several states used the funding to conduct an Older Adult BSS](#). NACDD is not currently funded to engage in specific activities related to healthy aging.
- I. [Oral Health America \(OHA\)](#) connects communities with resources to increase access to care, education, and advocacy for all Americans, especially those most vulnerable. OHA's Wisdom Tooth Project develops projects in the area of oral health and aging. Initiatives include:
 - [Toothwisdom.org](#) provides oral health information and local and national care resources for older adults, caregivers, and oral health professionals.
 - [A State of Decay](#), a publication released in 2003 and updated in 2013, 2016 and again in 2018, grades states on five leading indicators of older adult oral health.
- J. The [Pacific Center for Special Care](#), of the Arthur A. Dugoni School of Dentistry at the University of Pacific, is an example of a university-based program that has contributed significantly through [education](#) and [innovation](#).

- K. [Santa Fe Group](#) fosters policy and initiates actions to improve the health and well-being of the public. In September 2016 *Expanding Oral Healthcare for America's Seniors: A Santa Fe Group Salon* convened 150 leaders and advocates in Washington, DC to review evidence about the need for improved oral healthcare access for seniors. Discussion centered around the need for government funded benefit coverage and how to achieve expanded access to basic dental care.
- L. [Society of Teachers of Family Medicine \(STFM\)](#): Recognizing the inter-professional role of oral health in family medicine, the STFM collaborated with numerous organizations to establish [Smiles for Life: A National Oral Health Curriculum](#). Designed for primary care clinicians, the eight-module course covers the relationship of oral to systemic health, child oral health, adult oral health, dental emergencies, oral health in pregnancy, fluoride varnish, the oral examination and geriatric oral health.
- M. The [Special Care Dentistry Association \(SCDA\)](#) is composed of three components or councils: the Council of Hospital Dentistry, the Council of Dentistry for People with Disabilities, and the Council of Geriatric Dentistry*. SCDA provides educational opportunities and information exchange for oral health care professionals who treat patients with special needs. Members of SCDA contributed to the [Special Care Dentistry Act](#), which was referred to the Subcommittee on Health in 2011. They sponsor an annual conference and a professional, peer-reviewed journal.

*Note: The Social Security Act uses the terms "Aged, Blind and Disabled" to identify vulnerable adults and children. The Special Care Dentistry Act extends required Medicaid dental benefits beyond children to include vulnerable adults in every state. It addresses disparities and reduces avoidable general health care costs by expanding federally required Medicaid coverage to include the nation's "Aged, Blind and Disabled," supporting states by increasing federal funding for Medicaid oral health services by creating a 90/10 federal/state match, and providing additional support for other medically necessary services, such as transportation.

4. Other

- A. The World Health Organization (WHO) - [WHO Global Oral Health Programme White Paper](#). Highlights the challenges posed by the rapidly changing burden on chronic diseases in old age. Chronic disease and most oral diseases share common risk factors. "Globally, poor oral health amongst older people has been particularly evident in high levels of tooth loss, dental caries experience, and the prevalence rates of periodontal disease, xerostomia and oral precancer/cancer."

III. Best Practice Criteria

The ASTDD Best Practices Project has selected five best practice criteria to guide state and community oral health programs in developing their best practices. For these criteria, initial review standards are provided to help evaluate the strengths of a program or practice to improve oral health in older adults.

1. Impact / Effectiveness

- ***A practice or program produces outcomes that improve the oral health status and/or improve access to dental care for older adults.***

Example: fewer older adults who require emergency visits to the dentist or to the hospital emergency room for oral problems.

- ***A practice or program enhances the processes to improve the oral health status and/or improve access to dental care for older adults.***

Example: increased number of programs to train dental providers to treat older adults or increased number of providers being trained.

2. Efficiency

- ***A practice or program shows cost savings in preventing oral disease and reducing the extent of treatment needs for older adults.***

Example: savings based on comparison of the cost for delivering early prevention services to the projected cost of dental treatment for averted tooth decay and having treatment in the OR for patients with advanced Alzheimer's disease.

- ***A practice or program shows leveraging of federal, state and/or community resources to improve the oral health of older adults.***

Example: partnerships between the public and private sectors to support an oral health program of outreach, case management, counseling, preventive services and dental care for older adults.

3. Demonstrated Sustainability

- ***A practice or program that demonstrates sustainability or a plan to maintain sustainability.***

Example: a program that has served older adults for many years and receives agency line-item funding in addition to reimbursement from public and private insurers.

4. Collaboration / Integration

- ***A practice or program establishes partnerships or collaborations that integrate oral health efforts with other disciplines to improve the general health of older adults.***

Example: the state oral health programs working collaboratively to improve systems of care (such as improved collaboration between medical and dental homes) and financing for oral health.

Example: state oral health programs working collaboratively with chronic disease programs to develop and disseminate integrated messages pertaining to oral health and chronic diseases.

5. Objectives / Rationale

- ***A practice or program aligns its objectives with the national or state agenda to improve the health of older adults.***

Example: As states mandate mouth care education for long-term care staff, programs that develop or make available effective training programs will be needed.

Evidence Supporting Best Practice Approaches

The ASTDD Best Practices Committee takes a broad view of evidence to support best practice approaches for building effective state and community oral health programs. Practices that are linked by strong causal reasoning to the desired outcome of improving oral health and total well-being of priority populations will be reported by the Best Practices Committee. Strength of evidence from research, expert opinion and field lessons fall within a spectrum: on one end of the spectrum are **promising best practice approaches**, which may be supported by little research, a beginning of agreement in expert opinion, and very few field lessons evaluating effectiveness; on the other end of the spectrum are **proven best practice approaches**, ones that are supported by strong research, extensive expert opinion from multiple authoritative sources, and solid field lessons evaluating effectiveness.

Research may range from a majority of studies in dental public health or other disciplines reporting effectiveness to the majority of systematic review of scientific literature supporting effectiveness.

Expert opinion may range from one expert group or general professional opinion supporting the practice to multiple authoritative sources (including national organizations, agencies or initiatives) supporting the practice. Field lessons may range from success in state practices reported without evaluation documenting effectiveness to cluster evaluation of several states (group evaluation) documenting effectiveness.

To access information related to a systematic review vs. a narrative review: [Systematic vs. Narrative Reviews. \(Accessed: 6/23/2016\)](#)

IV. State Practice Examples

The following practice examples illustrate various elements or dimensions of the best practice approach **Oral Health in the Older Adult (Age 65 and older) Population**. These reported success stories should be viewed in the context of the particular state, as well as the program’s environment, infrastructure and resources. Readers are encouraged to review the practice descriptions (click on the links of the practice names) and adapt ideas for a better fit to their states and programs.

#	Practice Name	State	Practice
1	Overcoming Obstacles to Oral Health: A Training Program for Caregivers of People with Disabilities and Frail Elders	DE	09002
2	Iowa Lifelong Smiles Coalition	IA	18009
3	Maryland Pilot for the Older Adult Basic Screening Survey	MD	23013
4	Coalition for Oral Health for the Aging	MI	25010
5	Apple Tree Dental	MN	26006
6	North Carolina Special Care Dentistry	NC	36006
7	Oral Health for Caregivers	WA	54010

B. Highlights of Practice Examples

Highlights of state practice examples are listed below.

DE [Overcoming Obstacles to Oral Health: A Training Program for Caregivers of People with Disabilities and Frail Elders](#) (Practice #09002)

The Center for Disabilities Studies (CDS) at the University of Delaware was contracted by the Delaware Department of Health and Social Services (DHSS) Division of Public Health (DPH) to plan, coordinate, and evaluate training for dental professionals, direct support professionals (e.g., group home managers, team leaders) and family members This training was designed to prepare them to successfully implement an oral hygiene routine for individuals with disabilities to improve their dental home care for these individuals. The training curriculum used for the program was “Overcoming Obstacles to Oral Health,” developed by the Dugoni School of Dentistry at the University of the Pacific.

IA [Iowa Lifelong Smiles Coalition](#) (Practice #18009)

The Lifelong Smiles Coalition was formed to address access to oral health care for older adults in Iowa through community learning and engagement to form a collective action plan. The Coalition was formed following meetings sponsored by the Delta Dental of Iowa Foundation to begin discussions about the issue. The Delta Dental of Iowa Foundation has committed to funding a consultant to facilitate Coalition activities and cover meeting costs. The Coalition consultant facilitates and coordinates activities and meetings and also ensures progress and effective communication. Lifelong Smiles Coalition has a wide variety of members/organizations participating, which helps to provide a comprehensive approach to collective action planning.

MD [Maryland Pilot for the Older Adult Basic Screening Survey](#) (Practice #23013)

The Maryland Office of Oral Health (OOH), in collaboration with the Maryland Department of Aging, conducted the Basic Screening Survey (BSS) of Older Adults in 2013/2014. The objective of the survey was to provide baseline data for surveillance of the oral health of the older adult population and to identify areas throughout the state where dental programs and treatment policies are needed. A representative sample of older adults 50 years and older was selected from congregate meal sites, senior centers, nursing homes and assisted living facilities around the state. A total of 994 older adults participated in the survey.

MI [Coalition for Oral Health for the Aging](#) (Practice #25010)

The mission of the Coalition for Oral Health for the Aging (COHA; www.micoha.org) of Michigan is to improve the oral health of older people through advocacy, professional education, public education, and research by focusing on prevention, health promotion, and evidence-based practices. This mission is achieved through COHA's organizational goals: 1) to be a resource for providers of care for the aging and special needs populations; 2) to promote the implementation of policies that support evidence based strategies that provide optimal oral health for the aging; and 3) to develop collaborative partnerships that address the oral health needs of the aging and special needs populations.

MN [Apple Tree Dental](#) (Practice #26006)

Apple Tree Dental is a non-profit group dental practice founded in 1985. Initially addressing unmet dental needs of individuals living in long-term care settings in Minnesota, Apple Tree now serves people of all ages and abilities. The mission of Apple Tree is to improve the oral health of all people, including those with special access needs, who face barriers to care. Apple Tree's staff works to achieve its mission by delivering education, prevention, and restorative dental services to vulnerable populations and by providing leadership and innovation to transform the health care system. Apple Tree shares its expertise in geriatric and special care dentistry with educational institutions, researchers, and policymakers.

NC [North Carolina Special Care Dentistry](#) (Practice #36006)

Access to Dental Care (ADC) is a non-profit organization whose mission is to provide on-site, quality comprehensive dental services, via mobile equipment and trained professionals to the intellectually disabled/developmentally disabled (ID/DD) and frail populations in long-term care facilities, nursing and group homes and community-dwelling individuals with disabilities. Recent program expansion includes services to Program of All-Inclusive Care for the Elderly (PACE) centers and regional HIV clinics. ADC has four missions: clinical care for special care patients, continuing education for medical professionals, advocacy for expansion of special care services and health services research.

WA [Oral Health for Caregivers](#) (Practice #54010)

To address workforce development and access to dental care challenges, Washington Dental Service Foundation (WDSF) staff and clinical specialists developed curriculum titled "Oral Health for Caregivers." It provides critical oral health information for paid and family

caregivers who care for community-dwelling older adults-to improve the oral health of both care recipients and caregivers. With an emphasis on prevention, the interactive demonstrations, visuals and printed materials introduce oral health in an easy-to-understand format that can be used to educate caregivers.

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