

# **Oral Health's Relationship to Disease and Options for Expanding Services for Older Adults and Adults who Have Disabilities**

**Jane Tilly, DrPH**

**Center for Policy and Evaluation**

**Administration for Community Living**

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## **Executive Summary**

The 2016 Older Americans Act Reauthorization adds oral health to the list of its disease prevention and health promotion services. This action highlights policymakers' emphasis on oral health as a crucial component of the health and wellness of older adults. Likewise, younger adults with disabilities need access to oral health and both groups could benefit from receiving oral health services.

Research literature documents that a person's overall health is related to their oral health. This happens because a person's mouth is the gateway to their gastrointestinal tract and the rest of their body. Poor oral health is largely preventable and linked to chronic diseases, such as heart disease, stroke, and diabetes. Older adults and adults with disabilities are at high risk of having poor oral health due to inadequate access to services. Certain disabilities make oral hygiene tasks hard to complete, and obtaining services even more difficult.

Publicly-funded dental preventive and treatment services for adults are sparse because Medicare covers only a few medically-related dental procedures, and many state Medicaid programs, which serve people with low income, have little dental coverage for adults. Some funding for oral health is available under the Public Health Service Act through the Health Resources and Services Administration's (HRSA) Community Health Centers program. In addition, the Older Americans Act Title III now emphasizes oral health promotion programs.

States have a number of options for expanding access to oral health, including:

- expanding Medicaid dental benefits and providing incentives for beneficiaries to use them
- encouraging Aging and Public Health Networks to coordinate in expanding oral health promotion
- integrating oral health into primary medical care
- enabling dentists to remotely supervise dental hygienists and dental therapists.

# **Oral Health’s Relationship to Disease and Options for Expanding Services for Older Adults and Adults who Have Disabilities**

## **Introduction**

The 2016 Older Americans Act Reauthorization added oral health to the list of its “disease prevention and health promotion services,” which the Aging Network<sup>1</sup> delivers. This action highlights policymakers’ emphasis on oral health as a crucial component of the health and wellness of older adults. Likewise younger adults with disabilities need access to oral health. Both groups benefit from obtaining these services because the dental research literature documents that a person’s overall health is closely linked to their oral health. For example, poor oral health, which is largely preventable, is a risk factor for chronic diseases, such as heart disease and stroke.

Older adults and adults with disabilities are at high risk of having poor oral health due to inadequate access to services. Certain disabilities may make oral hygiene tasks hard to complete and make access to services even more difficult. Publicly-funded dental services for adults are sparse because Medicare covers very few medically-related dental procedures, and many state Medicaid programs have little dental coverage for adults. Some funding for oral health is available through the Public Health Services Act’s funding of Community Health Centers and the Older Americans Act Title III now emphasizes oral health promotion services.

This policy brief explores: 1) the causes and consequences of poor oral health; 2) prevention of poor oral health; 3) risk of poor oral health among older adults, racial and ethnic minorities, and adults with disabilities; 4) publicly-funded dental coverage; 5) state options for increasing funding for services; and 6) state options for improving access to oral health services through changes in primary health care and dental practice.

### **1. Oral Health Problems and their Consequences**

Poor oral health is a preventable condition resulting from, among other things, inadequate oral hygiene and untreated infections. Infections can occur in teeth and the periodontium, which is the structure that supports and surrounds the teeth. Without treatment, tooth decay can result in tooth loss, abscess, bone loss, pain, and systemic infection. Periodontal diseases are infections that: 1) may cause changes in the body that alter the immune system and the body’s tissues, and 2) are the primary cause of tooth loss in older adults. Poor oral health is associated with serious chronic diseases and inadequate nutrition, and can lead to increased hospital use. When people with minor oral infections do not receive treatment, their conditions can progress to cellulitis, systemic infection, and death in some cases (Allareddy and colleagues, 2014). “Dry mouth,” which can result from a number of medications that older adults and people with

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<sup>1</sup> The Aging Network comprises the Administration on Aging, state units on aging, area agencies on aging and the associated aging services providers.

disabilities may use, can lead to increased risk of oral disease, including tooth decay and soft tissue problems (Berkey and Scannapieco, 2013).

### **1.a. Chronic Conditions**

Poor oral health can contribute to changes in diet, weight, and physical function and increase risks for chronic diseases (Griffin and colleagues, 2012). Oral infections are associated with heart disease, stroke, diabetes, respiratory disease, cognitive impairment, and oral-digestive tract cancers (Eke and colleagues, 2016). The strongest associations are for cardiovascular and respiratory disease, as well as exacerbation of diabetes (Berkey and Scannapieco, 2013). For example:

- The number of missing teeth at baseline is associated with higher incidence over 13 years of cardiovascular disease risk factors and events, heart attacks, diabetes, and death after controlling for demographic factors (Liljestrand and colleagues, 2015).
- A meta-analysis of 22 articles showed that the risk of developing cardiovascular disease was 34% higher among people with periodontal disease than those without (Blaizot and colleagues, 2009).
- Poor oral health is linked to pneumonia in older nursing home residents, which can lead to hospitalization, intensive care unit (ICU) use, and death. Pneumonia can result from bacteria in residents' mouths moving into their respiratory tract through such events as aspiration of saliva (Paju and Scannapieco, 2007).
- People with diabetes who have periodontitis may experience accelerated pancreatic failure and vascular disease (Hummel and colleagues, 2015).

### **1.b. Hospital Use**

When people do not receive treatment for oral infections, they can become quite sick due to infection and the associated pain, and may even die. Use of hospital emergency departments and inpatient services may increase as a result (Oral Health America, 2016; Wall and Vujcic, 2015). Lack of Medicaid coverage for adult dental services also contributed to higher hospital emergency department (ED) use in 3 states.

- Allareddy and colleagues (2014) used the 2008-2010 Nationwide Emergency Department Sample to identify visits that involved patients with dental caries<sup>2</sup> or other oral infections. They found that among those visiting the emergency department with dental conditions, 57% were due to caries, 4.3% of the visits resulted in admission to the hospital, and 101 of these hospital patients died, with 85% of them dying solely due to the consequences of their dental condition. About 71% of dental-care-related hospital ED visits occurred among people who lived in low-income areas. As patients' age increased, so did their hospital charges.
- Cohen and colleagues (2002) studied the effects of a natural experiment when Maryland's Medicaid program dropped dental coverage for adults in 1993 by comparing ED visits before and after that decision, while controlling for age, race, and gender. The

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<sup>2</sup> i.e., cavities

Medicaid ED claims rose by 12% after the state dropped coverage. A similar natural experiment occurred in Oregon, where researchers compared the dental and health services use of Medicaid beneficiaries with and without dental coverage in 2003-2005. The results were higher ED and ambulatory care use and more spending for those without dental coverage (Wallace and colleagues, 2011). Likewise, California eliminated its Medicaid dental benefits in 2009 and researchers found that ED visits per 100,000 people increased by 32.3% and ED costs due to dental emergencies increased by 68% (Singhal and colleagues, 2015).

These studies demonstrate the importance of access to dental prevention and treatment services, which can help prevent more serious health conditions and hospital use.

## **2. Prevention**

Simple techniques, such as regular tooth brushing, use of dental aids (electric toothbrush, flossing/water flossing), treatment of decay and other infections, and dental cleaning and exams are important for good oral health and have potential to reduce health care use. People generally can avoid serious oral infections through good hygiene and preventive oral health care, when infections can be treated before they become serious. For example:

- A systematic review of the literature from 1996-2007 identified randomized-controlled trials showing that oral care (tooth brushing and occasional application of antibiotics) reduces the progression or occurrence of respiratory diseases in high-risk older people in hospitals or nursing homes (Sjogren and colleagues, 2008).
- Institutionalized older adults benefit from improved oral care with fewer pneumonia episodes and days with a fever (Berkey and Scannapieco, 2013; Linden and colleagues, 2013).
- Jeffcoat and colleagues (2014) compared the health care expenditures of people who had periodontal disease and received treatment to those with the condition who did not. Both groups had dental insurance. Using insurance claims data, they found that people who received treatment had significant reductions in total allowed health care expenditures and number of hospitalizations compared to those who did not receive treatment. For people with diabetes, expenditures were 40% lower, for those with cardiovascular disease 41% lower, and those with cerebral vascular disease 11% lower. These results indicate that providing dental services has potential to reduce health care expenditures.

## **3. Oral Health by Age, Minority Status, and Disability**

Prevention and access to services are particularly important for older adults and for adults with disabilities because these groups have worse oral health than those who are younger or have no disabilities. In addition, people with lower incomes or minority status experience worse oral health than their peers. These groups are particularly vulnerable to the consequences of poor oral health, as described above, and need better access to preventive services and dental treatments.

### **3.a. Age and Racial or Ethnic Minorities**

Older adults have very high rates of oral infections and tooth loss. Total rates of periodontal disease ranged from 24.4% in adults aged 30-34 to 70.1% in adults aged 65 and over. Moderate or severe periodontitis rates were 38% for adults aged 30 and over, and 64% for those aged 65 and over (Eke and colleagues, 2012). Twenty-one percent of adults aged 65 and over were edentulous (no natural teeth) in 2014 (Federal Interagency Forum on Aging Related Statistics, 2016). Edentulism rates increased with age; the prevalence for adults aged 85 and over was 31.4%.

The situation is worse for older adults with low incomes or who are minorities (CDC, accessed 2016). Forty-two percent of older people with family incomes below the poverty line were edentulous, compared with 22% of those above the poverty threshold (DHHS, 2012). In 2014, non-Hispanic black adults aged 65 and over were more likely to be edentulous (28.2%) compared to non-Hispanic white (19.6%) and Hispanic adults (23.2%) (Federal Interagency Forum on Aging Related Statistics, 2016).

Older adults with specific types of health conditions are prone to poor oral health. These conditions include disability, cognitive impairment, visual problems, arthritis, and dry mouth (Berkey and Scannapieco, 2013). In addition, older nursing home residents have greater risk for tooth loss, periodontal disease, and poor oral hygiene than older community residents (Fisher-Owens and colleagues, 2008).

Over time, advances in dental care and treatment have reduced the proportion of older adults who have no teeth (Griffin and colleagues, 2012; Eke and colleagues, 2016). More access to better oral health care may continue to improve the situation.

Much progress could be made for older adults, particularly those in poor health. Only 43% of clients receiving Older Americans Act home delivered meals reported having had a dental visit within the last year in 2015 (ACL, 2016). The Older American Act Nutrition Program targets services to older adults who are in poor health and have functional impairments. For example, 45 percent of congregate participants and 63 percent of home-delivered participants have six or more medical conditions (Kowlessar, 2015).

### **3.b. Disability**

Younger adults with disabilities, similar to older adults with a disability, have high risk of poor oral health (CDC, accessed 2016). Analysis of the 2004 Behavior Risk Factor Surveillance Survey (BRFSS) showed that people with any disability were less likely than people without disabilities to have a dental visit in the past year and more likely to have no teeth (Armour and colleagues, 2008). A national study of people with physical disabilities showed that this group has a 57% higher risk of having an unmet need for dental services and this situation worsened between 2002 and 2011 (Mahmoudi E and Meade M, 2015). Proportionally more people with intellectual disabilities (ID) have untreated or poorly treated caries, gingivitis, and periodontal disease than their peers without ID. Risks increase with age for those with ID (Owens and colleagues, 2006). In a Massachusetts study, community dwelling adults aged 20 and over with

ID and access to dental health benefits had poorer oral health than the general population. Eighty percent had periodontal disease and 11% had no teeth. Their edentulism rates increased with age (Morgan and colleagues, 2012).

Many barriers affect the ability of people with disabilities to receive oral health care, including: inability to transfer to a dental chair, difficulty filling out forms, needing sign language interpreters, not understanding or fearing dental exams, behavioral challenges, access to sedation and other accommodations, and unwillingness of some dental clinics to accept patients with disabilities (Horner-Johnson and Dobbertin, 2016). Also, some people with ID don't have the manual dexterity or cognitive ability to carry out daily oral hygiene themselves and their caregivers often don't have the training or tools to help them. This population also often takes medications that cause dry mouth or otherwise affect oral health (Anders and Davis, 2010).

Barriers like these result in less use of prevention services. A national study found that adults aged 18-64 with physical, cognitive, vision, hearing, or complex activity limitations had significantly higher rates of having less than 1 dental checkup per year, experiencing delays in getting dental care or being unable to get it. All results remained significant after controlling for socio-economic variables and dental insurance status (Horner-Johnson and Dobbertin, 2016). About 53% of people with disabilities aged 18-64 and aged 65 and over had dental visits in the last year compared with 64.9% and 71.7%, respectively, of their peers without disabilities. In 2013, 26.6% of people with any disability of any age did not get needed dental care due to cost, compared to 10.1% for those with no disabilities (DHHS Health United States, 2014). Attention to the unique needs of people with disabilities of any age is critical to making progress in improving their oral health and avoiding the consequences of failing to do so, which include the human cost, and the cost of other clinical care related to the lack of dental services.

#### **4. Publicly-funded Dental Health Coverage for Older Adults and Adults with Disabilities**

Among the barriers causing disparities in oral health for older adults and adults with disabilities are affordability and lack of dental coverage. Half of older adults with incomes below \$35,000 say they do not visit the dentist routinely because they cannot afford it (Oral Health America, 2016). Affordability is a critical issue for those who rely on Medicare or Medicaid because Medicare covers only certain medically-related dental services, and Medicaid for adults has limited dental benefits in many states. Funding for Community Health Centers provides some relief to people with low incomes in medically underserved areas and the Older Americans Act program has a new impetus to engage in oral health promotion as a result of recent changes.

##### **4.a. Medicare**

The Social Security Act, Section 1862 (12), states that Medicare will not pay for services "in connection with the care, treatment, filling, removal, or replacement of teeth or structures directly supporting teeth." The Act provides for an exception under Medicare Part A "if the individual, because of his underlying medical condition and clinical status or because of the severity of the dental procedure, requires hospitalization..." (Social Security Act, accessed July 2016).

In interpreting the Act, the Centers for Medicare & Medicaid Services (CMS) states that Medicare will pay for dental services that are an integral part either of a covered procedure (e.g., reconstruction of the jaw following accidental injury), or for extractions done in preparation for radiation treatment for neoplastic diseases involving the jaw. Medicare will also pay for oral examinations, but not treatment, preceding kidney transplantation or heart valve replacement, under certain circumstances (CMS, accessed July 2016)

The Center for Medicare Advocacy argues that the controlling Medicare statute excludes only coverage of routine dental services, as described in its legislative history (National Medicare Advocates Alliance, 2009). According to the Center for Medicare Advocacy, the fact that the dental exclusion in the Medicare statute is one in a list of exclusions of routine services is evidence that this exclusion was not meant to apply to those services that are reasonable and necessary for medical treatment (National Medicare Advocates Alliance, 2009). In 2016, The Center for Medicare Advocacy further stated that it “firmly believes that CMS has the legal authority under the Medicare statute to cover medically necessary oral health care – that is, treatment deemed necessary by a physician when a patient’s medical condition is or will likely be complicated by an untreated oral health problem.” The Center for Medicare Advocacy makes several additional arguments to support this contention including those related to language in the Senate Report explaining the legislative intent, Medicare’s inclusion of dentists in its definition of physicians, and the governing statute, which permits payment for dental services in relationship to physician services (Center for Medicare Advocacy, 2016).

The above discussion centers on dental services under “traditional Medicare,” which operates under a fee-for-services system. Enrollees in Medicare Advantage plans, which generally receive per capita payment, may have access to dental services, if their plans offer them.

#### **4.b.Medicaid**

State Medicaid programs are required to cover dental services for children under age 21, but they generally are not required to do so for adults. The exception is when a dentist’s “medical and surgical services ... would be considered physician services if a physician provided them” (CMS, 1991). At least two interpretations of this regulation exist. Chazin and colleagues (2014) at the Center for Health Care Strategies state that, “Federal regulations require states that are not providing any dental benefits for adults to at least reimburse medical and surgical services related to an oral health problem if delivered by a medical or dental provider.” Its citation goes back to the CMS rule published in 1991. California’s Medi-Cal program eliminated “most adult dental services” in 2009, with the exception of what the state termed “federally required adult dental services.” The state then listed more than 150 medical procedure codes, which it describes as federally-required services (Denti-Cal Bulletin, 2009).

Regardless of the regulatory interpretation, Medicaid adult dental benefits under the State optional service vary widely across states and many states limit coverage primarily to emergency services. For example, as of February 2015:

- 19 states provided emergency-only adult dental benefits for non-pregnant, non-disabled adults;
- 27 states covered preventive services;
- 26 states covered restorative services;
- 19 states covered periodontal services;
- 25 states covered dentures;
- 25 states covered oral surgery;
- 2 states covered orthodontia; and
- 9 states placed an annual dollar limit on covered dental services (MACPAC, 2015).

Note that the optional dental benefit is not the only choice states have. They can provide dental benefits to limited populations through various Medicaid waivers, including home and community-based services (HCBS) waivers. In 2015, 13 states and DC included some oral health benefits in at least one of their HCBS waivers; primarily to people with intellectual or developmental disabilities (NASUAD, 2016).

Barriers to oral health care access, even in states with Medicaid dental benefits, include: beneficiaries not knowing they have such benefits, shortages of providers willing to serve Medicaid beneficiaries, relatively low reimbursement rates, and few incentives to integrate oral health into mainstream health care (Chazin and Crawford, 2016).

Attention to limited Medicare dental services, uneven Medicaid dental coverage, and multiple service barriers could help older adults and adults with disabilities avoid oral infections and the consequences to their general health.

#### **4.c. Community Health Centers**

HRSA manages the Community Health Center program, which provides important dental services to populations with little access to care using Public Health Services Act funding. These Health Centers are community-based providers that offer primary care services in underserved areas. Health Centers must meet a stringent set of requirements, including providing care to people of all ages on a sliding fee scale based on ability to pay. Health Centers include: Federally Qualified Health Centers and their “look-alikes<sup>3</sup>,” Community Health Centers, Migrant Health Centers, Health Care for the Homeless, and Health Centers for Residents of Public Housing. According to HRSA, about 1 in 14 people use a Health Center for medical care. Nearly 1,400 health centers operate 9,800 service delivery sites in every U.S. state, the District of Columbia (DC), Puerto Rico, the Virgin Islands and the Pacific Basin (DHHS, HRSA, (a) accessed on August 11, 2016).

Dental services are among those that Health Centers must arrange for or provide themselves. The definition of primary health services includes, “preventive dental services provided by a licensed dentist or other qualified personnel, including (i) oral hygiene instruction; (ii) oral

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<sup>3</sup> “Look-alikes” are community health centers that meet all requirements for federally qualified health centers, but do not receive HRSA funds. Seventy of the 1400 Community Health Centers are “look-alikes.”

prophylaxis, as necessary; and (iii) topical application of fluorides, and the prescription of fluorides for systemic use when not available in the community water supply.” Supplemental services include “dental services other than those provided as primary health services.”(42 CFR Chapter I, Subchapter D, Part 51, subpart A, section 102, (h)(6).

In 2014, Community Health Centers served about 4.7 million dental patients and provided nearly 12 million oral health visits (DHHS/HRSA (b) June 16, 2016). In 2016, 420 health centers in 47 states, DC, and Puerto Rico received \$156 million to expand these services and increase access to integrated oral health care services and improve outcomes for their patients.

#### **4.d. Older Americans Act, Title III-D**

The 2016 Older Americans Act Reauthorization adds “oral health” to the Title I definition of Disease Prevention and Health Promotion services. The addition of “oral health” to the OAA’s definition highlights that oral health is a crucial component of the health and wellness of older adults. However, as with all disease prevention and health promotion activities funded under Title III-D, funds are limited and oral health activities must be part of an evidence-based program.

### **5. State Options for Increasing Funding for Oral Health Services for Older Adults and Younger Adults with Disabilities**

Section 4 above describes several sources of funding for oral health promotion, disease prevention, and treatment. The biggest opportunity for states is to expand their Medicaid dental coverage so that all adults, including those who are older or have disabilities, can access preventive services and treatment to prevent caries or infections from becoming serious. States receive federal matching funds when they provide Medicaid’s optional dental services for adults<sup>4</sup> or dental services under a Medicaid waiver. In addition, states can ensure that Medicaid beneficiaries with disabilities of any age have the medical equipment they may need to effectively clean their teeth and gums.

States that expand their dental coverage or already have coverage could educate Medicaid beneficiaries about their benefits and provide incentives for them to seek preventive services and treatment. In addition, states could provide incentives to dentists to accept more Medicaid patients and to Medicaid managed care organizations to integrate oral health into their health care networks and systems (Chazin and Crawford, 2016).

States can encourage connections between older adults and adults with disabilities and Community Health Centers in underserved areas. This is an important link because, as stated above, these Centers must provide preventive dental services to adults, regardless of ability to pay or presence of disability, on a sliding fee scale basis (Yalowich and Corso, 2015). Health Centers also can receive Medicare and Medicaid reimbursement for providing services to these populations.

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<sup>4</sup> Note that Medicaid dental services are mandatory for children under the Affordable Care Act.

States can encourage their Aging and Public health networks to coordinate and expand delivery of preventive, education, and oral health to older adults and adults with disabilities (Griffin and colleagues, 2012). Although funding amounts for such efforts are limited, the Networks have tremendous reach in their states and communities.

## **6. State Options for Improving Access to Oral Health Services for Adults with Disabilities and Older Adults**

Funding is not the only option states have. Federal agencies and national workgroups have long recognized the relationship between oral health and good overall health and have published blue prints for improving it. HRSA asked the Institute of Medicine and the National Research Council to convene experts to address access to oral health care in the United States. In 2011, these groups issued reports with recommendations about oral health.<sup>5</sup> Among the recommendations' basic approaches are to integrate oral health into primary health care practice, expand the scope of practice among professionals involved in oral health care, and promote related coverage. HRSA recommends the following in response to the IOM reports: increased integration of oral health into primary care health practices, enhanced adoption of clinical oral health competencies, and modified payment to encourage these changes (DHHS, 2014).

Building on the IOM's reports, a broad group of dental and primary health care providers propose to integrate oral health care into primary health care settings (Hummel and colleagues, 2015). This group recommends that providers: ask their patients about oral health risk factors, look for signs of oral health risk or active disease, decide on an appropriate response, offer preventive services or referrals, and document the interaction with patients.

Researchers' recommendations to improve dental care for older adults are to incorporate these services into general health care, engage in community education programs, and provide a safety net for prevention services (Van der Putten and colleagues, 2014).

States can promote integration of oral health care into primary care settings and increase access to use these recommendations in innovative ways, including:

- Encouraging primary care health practices to screen older adults and adults with disabilities for oral health problems and refer them to dentists and other dental practitioners they can access when necessary.
- Encouraging hospitals to develop formal referral relationships with safety net dental providers (Allareddy and colleagues, 2014). Referral networks can help older adults and adults with disabilities get the preventive and treatment services that they need and hospital emergency departments generally do not provide. For example, the University of Maryland's School of Dentistry has an arrangement with a local hospital, where the hospital refers people to the School when they have acute problems, such as the need for a wisdom tooth extraction (Cohn, 2016)

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<sup>5</sup> *Advancing Oral Health in America*, April 2011 and *Improving Access to Oral Health Care for Vulnerable and Underserved Populations*, July 2011.

- Extending oral health through the use of “dental therapists,” whose scope of practice varies but generally includes preventive and “simple” restorative services like filling cavities and extraction of primary teeth. Indian Country in Alaska and the state of Minnesota have such arrangements (Yalowich and Corso, 2015). Again, this type of practitioner can serve people otherwise lacking access to oral health.
- Using a “virtual dental home” that ensures dental hygienists have dentists who can remotely supervise their work. California has demonstrated this concept (Yalowich and Corso, 2015). This approach could extend oral health for hard to reach populations.

Implementing some of these concepts might require changes in state laws.

## **Conclusion**

Older adults and adults with disabilities have a unique and challenging set of barriers to receiving needed dental preventive and treatment services. Barriers include affordability and accessibility of services. These groups or their caregivers also may not be aware of the importance of hygiene and using oral health services to help preserve their health, and may not be aware of the consequences of poor care until they occur.

Consequences of inadequate access to services include increased risk related to certain chronic diseases, avoidable hospital use, and, sometimes, death. Among the options states have for addressing these problems are integrating oral health into primary care; expanding use of dentist extenders, like hygienists; expanding Medicaid dental coverage, and ensuring that older adults and adults with disabilities have access to services through their Medicaid managed care plans and Community Health Centers. Education of older adults, people with disabilities and their caregivers through the Aging and Public Health Networks is critical too.

Another step could be evaluating whether Medicare and Medicaid dental health benefits could or should be extended to a more broad set of medically-related dental services. For example, there is adequate evidence that diabetes and cardiovascular disease are intertwined with poor oral health, with each condition making the other worse. Would it be permissible under federal law for Medicare and Medicaid to provide dental treatments to adults that improve medical conditions? This would be a more expansive interpretation of federal law than that in use today.

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