

## Problem

As noted in the 2000 Surgeon General's report, *Oral Health in America*, oral diseases are some of the most common chronic diseases in the older adult population.<sup>1</sup> They include dental caries, periodontal disease, and oral cancers. In addition, edentulism and side effects from the use of systemic drugs have adverse effects on oral and overall health.<sup>2,3,4</sup> By 2030, U.S. Census Bureau estimates indicate that over 20% of the U.S. population, or more than 70 million people, will be age 65 or older, significantly comprised of "baby boomers" (those born between 1948 and 1964).<sup>5</sup>

The 2011-2012 National Health and Nutrition Examination Survey (NHANES) and other sources show the following:

- Of adults older than 65 years of age, 96% had dental caries experience, and about one in five had untreated decay; data from the 2011-2012 NHANES survey seem to indicate an increase from previous levels.<sup>6,7</sup>
- Periodontal disease affects 17.2% of the older adult population.<sup>8</sup> Of U.S. adults, 46% or 64.7 million people have periodontitis, of whom 65% are older adults.<sup>9</sup> A greater burden of periodontal disease in the older adult population is due to a process that occurs with aging known as "inflammaging,"<sup>10</sup> a progressive increase in general pro-inflammatory status or chronic inflammation.
- The prevalence of edentulism (complete absence of teeth) in all older adults was about 19%; non-Hispanic Blacks had the highest prevalence at 29%.<sup>6</sup> Rates of edentulism have steadily decreased over the past several decades,<sup>3</sup> suggesting that more people are living longer with more of their natural teeth.
- National Cancer Institute data indicate that oral cavity and pharynx cancers are most frequently diagnosed among people aged 55 to 74; the median age at diagnosis is 62. Tobacco use, excessive alcohol use, exposure to sunlight (lip cancers), advancing age and Human Papilloma Virus (HPV) remain the primary risk factors.<sup>11</sup>

Loss of teeth directly affects quality of life, including physical, social, psychological health and intimacy, as well as food choices.<sup>12,13</sup> Nutrition, and consequently overall systemic health, can be influenced by edentulism. According to the 2002 NHANES, for example, older adults who had no teeth and did not wear dentures reported having had fewer servings of fruits and vegetables and foods rich in carotenes and Vitamin C, compared to those with teeth.<sup>14</sup> Because tooth loss and other compromises to oral health occur cumulatively, sometimes over several years, many people experience adverse impact on employability over their working lives, which ultimately reflects on their economic well-being.

Longer life spans, along with better preventive and restorative services, have resulted in longer retention of teeth, thus an increasing caries and periodontal disease burden for older adults.<sup>15</sup> A cohort study in Japan, reported in 2015, followed subjects starting at age 70 and examined the potential role of the number of teeth in predicting mortality. The five-year survival rate of these individuals increased with the increase in number of retained teeth. Although the authors stated that without further research their findings could not be applied to the general population, they suggested that individuals who retained 20 or more teeth had a lower mortality rate than those with 19 or fewer teeth.<sup>16</sup>

Biologic and epidemiologic studies support a systemic health and oral health connection. Research shows varying degrees of relationships between oral bacteria and inflammation from periodontal disease as it relates to diabetes, autoimmune disease, stroke, cardiovascular disease and arterial blockage.<sup>17,18,19,20</sup> The combination of poor oral hygiene, periodontal disease, dental caries, poor functional dentition and feeding disabilities increases the risk for aspiration pneumonia, one of the leading causes of hospital readmission.<sup>21</sup>

The U.S. lacks a uniform public insurance system to provide benefits for dental services for individuals aged 65 years and older. Thirteen countries provide dental services to all residents at no or heavily subsidized cost.<sup>22</sup> However, the U.S. does not provide this basic necessity for its older citizens. The Center for Medicare and Medicaid Services (CMS) is the largest provider of insurance in the U.S., but coverage for dental services for adults is optional in Medicaid and limited to “medically necessary” in Medicare. Oral Health America’s 2000 report card, *A State of Decay*, noted a sizable gap in oral health access and adult Medicaid coverage for older adults, confirmed by an update published in 2015.<sup>23,24</sup> *The State of Decay Volume III* re-emphasizes the fact that a strategic approach is required to address the oral health needs of older adults.

There is no federally mandated minimum requirement for Medicaid dental benefits for adults; coverage varies, with only one-third of the states offering more than emergency or limited dental coverage for adults.<sup>25</sup> As of May 2017, there were 17 states that provided extensive adult dental benefits to their base Medicaid populations, as defined by the Affordable Care Act (ACA); however, only 14 of these states included the same benefits for their Medicaid expansion populations. “Extensive” refers to a “comprehensive mix of services,” not the potential utilization of services.<sup>25</sup> When coverage is limited, expenditures are \$1,000 or less per person per year; when benefits are “extensive,” the annual expenditure cap is at least \$1,000 per person per year, but still imposes a limit on covered care.<sup>26</sup> Low Medicaid reimbursement typically discourages provider participation and impacts access.

Medicare Part A only pays for dental services under limited conditions, covering those “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 make payment for oral examinations, but not treatment, preceding kidney transplantation or heart valve replacement, under certain circumstances.” Medicare’s statutory dental exclusion, part of the original Medicare program, has not been amended since 1980 when an exception was made for medically necessary dental care.<sup>27</sup>

Private dental insurance coverage decreases with age; data from 2008 indicated that the proportion of expenses covered by insurance decreased from 50% for individuals between 55 and 64 years of age to 22% for individuals older than 65.<sup>3</sup> Dental services for adults are not considered one of the ten Essential Health Benefits (EHB) established by the ACA, and most retired veterans also are not eligible for dental benefits.<sup>28</sup> At the same time, however, between 2000 and 2014, utilization of dental services by older adults increased by almost 5%.<sup>29</sup> Some private insurance plans may be associated with but not integrated into medical plans or with union retiree benefit options, and are available through supplemental policies. These plans often come with an extra charge, and generally provide a subsidy against expenses rather than comprehensive coverage for expenses incurred.

Post implementation of the ACA, in states with Medicaid expansion, dental utilization among low-income adults increased by three to six percentage points between 2013 and 2016, while it decreased in states that

did not expand Medicaid and/or do not have adult dental benefits in Medicaid.<sup>30</sup> In the absence of comprehensive dental insurance for adults, whether privately purchased or publicly funded, most payment for dental services comes “out of pocket,” especially after retirement when many individuals who have had coverage through their employers lose that coverage.

Lack of access to oral health services often results in expensive hospital emergency department visits, a problem that has been addressed extensively elsewhere.<sup>31,32</sup> Emergency department dental care is generally palliative, meaning that treatment provides relief from symptoms but does not treat the condition.

In summary, factors that negatively impact the oral health of older adults in the U.S. include the lack of consistent or comprehensive dental insurance coverage or benefits for adults, relatively high out-of-pocket costs, and more older adults living longer with more of their own teeth. These factors and others, beyond the scope of this paper, result in more unmet oral health needs, increased demand for oral health care and inadequate access to needed care.

## Methods

There have been attempts to address the lack of uniform public dental insurance for older adults. The [Medicare Prescription Drug, Improvement, and Modernization Act of 2003](#) created incentives for Medicare managed care plans to provide dental benefits to their beneficiaries.<sup>33</sup> According to economic trends at the time, government sponsored benefits could be expanded through already existing Medicare Advantage plans.<sup>34</sup> Making supplemental Medicare (Medigap) insurance available to cover out of pocket dental costs was suggested as another option.<sup>35</sup> The “Elders Health Insurance Program” (EldersHIP), for poor and near poor older adults, was also proposed.<sup>34</sup> However, none of these initiatives led to the implementation of a dental benefit for older adults.

Some efforts also have been made to address barriers to care. Several federal agencies, including the Administration for Community Living (ACL), the Centers for Disease Control and Prevention (CDC), the Health Resources and Services Administration (HRSA) and the Office of Women’s Health (OWH), encourage the creation of local and statewide partnerships to address the oral health needs of older adults.<sup>36</sup> The Aging Services Network (ASN) and the Administration on Aging (AoA) within the ACL are representative of such initiatives. These agencies support several health and oral health promotion programs as well as dental screening for older adults. The ASN helps connect older adults to community health centers (CHCs) for dental care. Programs of All Inclusive Care for the Elderly (PACE), a Medicare and Medicaid program offered in about 30 states to help people stay in the community rather than move to a nursing home or other care facility, may also offer dental insurance for older adults living in the community.<sup>37</sup>

Several place-based efforts target access to oral care for older adults. Apple Tree Dental in Minnesota<sup>38</sup> and North Carolina Special Care Dentistry (also called Access Dental Care)<sup>39</sup> provide comprehensive dental care on-site in residential facilities. The Iowa Lifelong Smiles Coalition supports the I-Smile Silver initiative in parts of the state, conducting dental screenings to assess the oral health and dental needs of older Iowans; offering oral health training and education for direct caregivers, nurses, and other health professionals; facilitating access to dental services for older Iowans through care coordination and referral assistance; and providing community-based oral health promotion.<sup>40</sup> These locally designed organizations and others provide limited clinical services to the older adult population and work with other stakeholders

such as funders, state agencies, advocacy organizations and health professionals to improve access to dental and oral health care services for this population.

Some organizations, such as nonprofit clinics, dental schools, dental residency programs and Community Health Centers (CHCs), provide care to older adults at reduced prices, but the impact of these resources depends on their geographic availability. Not all states have dental schools and not all CHCs have dental programs.

Mission of Mercy (MOM)<sup>41</sup> and Remote Area Medical (RAM)<sup>42</sup> projects, conducted in some states, use volunteers to provide oral health services to adults with unmet and often urgent needs. These projects do not occur in all states, are usually one-time local events, and older adults may not be able to access them due to transportation and other issues. Although they are effective in addressing immediate needs, such programs do not serve as dental homes offering ongoing patient-centered care.

Dental Lifeline Network, headquartered in Denver, Colorado, operates the Donated Dental Services program in many states using volunteer dentists and dental labs to provide free, comprehensive dental treatment to individuals with disabilities or who are elderly or medically fragile. However, waiting times often are long, the treatment offered only resolves immediate problems, and the program is not available as an ongoing source of care.<sup>43</sup>

Twelve state oral health programs reported having state-level or state-sponsored oral health initiatives for older adults in 2016.<sup>44</sup> Oral health surveys (open mouth) of the older adult population had been conducted by at least eight states, as reported that year.<sup>45</sup> The [ASTDD Older Adult Basic Screening Survey](#) tool provides consistency and guidance for conducting statewide oral health surveys for the older adult population; since 2005, 25 states have used this tool, several multiple times.<sup>45</sup> Statewide efforts have the capacity to target the issue in a multipronged way by involving different stakeholders.

One of the goals for the DentaQuest Foundation's Oral Health 2020 network is inclusion of extensive dental benefits in Medicare and the expansion of Medicaid adult dental benefits in at least 30 states.<sup>46</sup> The Santa Fe Group, in collaboration with Oral Health America and Families USA, proposed a dental benefit for all Medicare beneficiaries in 2016, to be included as part of Medicare Part B. The proposal included a basic plan offered at no cost to older adults with incomes below 200% of the federal poverty level, while an upgraded version involving premiums and covering more extensive dental services would be offered to higher income older adults.<sup>47</sup> Similar to those attempts noted above, these proposals have not resulted in tangible changes. The [Older Americans Act Reauthorization Act of 2016](#), now a public law, includes a multifaceted approach for health promotion and disease prevention for older adults.<sup>48</sup> More recently, the [Seniors Have Eyes, Ears, and Teeth Act of 2017](#) was introduced in the U.S. House of Representatives in January 2017, proposing to amend Title XVIII of the Social Security Act (which established regulations for Medicare) to include insurance coverage for eyeglasses, hearing aids and dental care,<sup>49</sup> but apparently no further action was taken during that year.

Optimal overall health cannot be achieved without good oral health. A substantial need and an increasing demand for oral health services exists among older adults in the United States. A more analytical, systematic and comprehensive approach is required to address and resolve this situation; limited private practice and CHC care, charitable programs and emergency department care will not suffice.

## Concluding Statement:

A substantial proportion of older adults in the U.S. have no dental insurance; even those who do may defer or decline care due to limited coverage and high out-of-pocket costs. Insufficient access to oral health care results in compromised oral health status. ASTDD fully supports efforts to provide a comprehensive dental benefit for older adults in publicly funded programs such as Medicare and Medicaid, and inclusion of dental benefits in all health insurance plans. ASTDD also encourages state level data collection and supports research efforts to further document cost-savings and overall economic benefit from optimum oral health among older adults.

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<sup>1</sup> Ahluwalia KP, Cheng B, Josephs PK, Lalla E, Lamster IB. Oral disease experience of older adults seeking oral health services. *Gerodontology* 2010;27(2):96-103. doi:10.1111/j.1741-2358.2009.00311.x

<sup>2</sup> Satcher DS. Surgeon general's report on oral health. *Public Health Rep* 2000;115(5):489-490. doi:10.1093/phr/115.5.489.

<sup>3</sup> Griffin SO, Jones JA, Brunson D, Griffin PM, Bailey WD. Burden of oral disease among older adults and implications for public health priorities. *Am J Public Health* 2012;102(3):411-418. doi:10.2105/AJPH.2011.300362

<sup>4</sup> CDC - Oral Health for Older Americans - Fact Sheets - Publications - Division of Oral Health. Available at: [https://www.cdc.gov/oralhealth/publications/factsheets/adult\\_oral\\_health/adult\\_older.htm](https://www.cdc.gov/oralhealth/publications/factsheets/adult_oral_health/adult_older.htm). Accessed June 27, 2017.

<sup>5</sup> Federal Interagency Forum on Aging-Related Statistics. Older Americans 2016: key indicators of well-being. Federal Interagency Forum on Aging-Related Statistics. Washington, DC: U.S. Government Printing Office. August 2016. <https://agingstats.gov/docs/LatestReport/OA2016.pdf>

<sup>6</sup> Dye B, Thornton-Evans G, Li X, Iafolla T. Dental caries and tooth loss in adults in the United States, 2011-2012. *NCHS Data Brief* 2015;(197):197.

<sup>7</sup> Dental Caries (Tooth Decay) in Seniors (Age 65 and Over). Available at: <https://www.nidcr.nih.gov/DataStatistics/FindDataByTopic/DentalCaries/DentalCariesSeniors65older.htm>. Accessed June 26, 2017.

<sup>8</sup> Periodontal Disease in Seniors (Age 65 and Over). Available at: <https://www.nidcr.nih.gov/DataStatistics/FindDataByTopic/GumDisease/PeriodontaldiseaseSeniors65over.htm>. Accessed June 27, 2017.

<sup>9</sup> Eke PI, Dye BA, Wei L, et al. Update on Prevalence of Periodontitis in Adults in the United States: NHANES 2009 to 2012. *J Periodontol* 2015;86(5):611-622. doi:10.1902/jop.2015.140520.

<sup>10</sup> Ebersole JL, Graves CL, Gonzalez OA, et al. Aging, inflammation, immunity and periodontal disease. *Periodontol* 2000 2016;72(1):54-75. doi:10.1111/prd.12135.

<sup>11</sup> Association of State and Territorial Dental Directors (ASTDD) Best Practices Committee. Best practice approach: oral health in the older adult population (age 65 and older) [monograph on the Internet]. Reno, NV: Association of State and Territorial Dental Directors; Mar2017. 29p. Available from: <http://www.astdd.org>.

<sup>12</sup> Wright CD, McNeil DW, Edwards CB, et al. Periodontal status and quality of life: impact of fear of pain and dental fear. *Pain Res Manag* 2017;2017:5491923. doi:10.1155/2017/5491923.

<sup>13</sup> Durham J, Fraser HM, McCracken GI, Stone KM, et al. Impact of periodontitis on oral health-related quality of life. *J Dent* 2013. Available at: <http://www.sciencedirect.com/science/article/pii/S0300571213000262>.

<sup>14</sup> Ervin RB, Dye BA. The effect of functional dentition on healthy eating index scores and nutrient intakes in a nationally representative sample of older adults. *J Public Health Dent* 2009;69(4):207-216. doi:10.1111/j.1752-7325.2009.00124.x.

<sup>15</sup> Tonetti MS, Bottenberg P, Conrads G, et al. Dental caries and periodontal diseases in the ageing population: call to action to protect and enhance oral health and well-being as an essential component of healthy ageing. Consensus report of group 4 of the joint EFP/ORCA workshop on the boundaries between caries and periodontal diseases. *J Clin Periodontol* 2017;44 Suppl 18:S135-S144. doi:10.1111/jcpe.12681

<sup>16</sup> Hirotomi T, Yoshihara A, Ogawa H, Miyazaki H. Number of teeth and 5-year mortality in an elderly population. *Community Dent Oral Epidemiol* 2015;43(3):226-231. doi:10.1111/cdoe.12146.

<sup>17</sup> Nesse W, Dijkstra PU, Abbas F, et al. Increased prevalence of cardiovascular and autoimmune diseases in periodontitis patients: a cross-sectional study. *J Periodontol* 2010;81(11):1622-1628. doi:10.1902/jop.2010.100058.

<sup>18</sup> Spahr A, Klein E, Khuseyinova N, et al. Periodontal infections and coronary heart disease: role of periodontal bacteria and importance of total pathogen burden in the coronary event and periodontal disease (CORODONT) study. *Arch Intern Med* 2006;166(5):554-559. doi:10.1001/archinte.166.5.554.

<sup>19</sup> D' Aiuto F, Gable D, Syed Z, et al. Evidence summary: The relationship between oral diseases and diabetes. *Br Dent J* 2017;222(12):944-948. doi:10.1038/sj.bdj.2017.544.

<sup>20</sup> Heitmann BL, Gamborg M. Remaining teeth, cardiovascular morbidity and death among adult Danes. *Prev Med* 2008;47(2):156-160. doi:10.1016/j.ypmed.2008.04.007.

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- <sup>21</sup> Terpenning M. Geriatric oral health and pneumonia risk. *Clin Infect Dis* 2005;40(12):1807-1810. doi:10.1086/430603.
- <sup>22</sup> Dental reform: an overview of universal dental schemes – Parliament of Australia. Available at: [http://www.apph.gov.au/About\\_Parliament/Parliamentary\\_Departments/Parliamentary\\_Library/pubs/BN/2011-2012/DentalSchemes](http://www.apph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BN/2011-2012/DentalSchemes). Accessed August 26, 2017.
- <sup>23</sup> Dolan TA, Atchison K, Huynh TN. Access to dental care among older adults in the United States. *J Dent Educ* 2005;69(9):961-974.
- <sup>24</sup> Oral Health America Releases State-By-State Analysis Of Older Americans’ Oral Health – Oral Health America. Available at: <https://oralhealthamerica.org/blog/2016/05/oral-health-america-releases-state-by-state-analysis-of-older-americans-oral-health/> Accessed April 6, 2017. [See also <https://oralhealthamerica.org/our-work/advocacy/a-state-of-decay/> to access report.]
- <sup>25</sup> Medicaid Adult Dental Benefits: An Overview. Available at: <https://www.chcs.org/resource/medicaid-adult-dental-benefits-overview/>. Accessed June 29, 2017.
- <sup>26</sup> Nasseh K, Vujicic M. The impact of the affordable care act’s Medicaid expansion on dental care use through 2016. *J Public Health Dent* 2017. doi:10.1111/jphd.12257.
- <sup>27</sup> Medicare Dental Coverage – Centers for Medicare & Medicaid Services. Available at: <https://www.cms.gov/Medicare/Coverage/MedicareDentalCoverage/index.html>. Accessed August 25, 2017
- <sup>28</sup> Veterans Dental Care Benefits Guide & Qualifications. Available at: <https://nvf.org/veterans-dental-care/>. Accessed September 22, 2017.
- <sup>29</sup> Nasseh K, Vujicic M. Dental care utilization steady among working-age adults and children, up slightly among the elderly. Health Policy Institute Research Brief. American Dental Association. October 2016. Available from: [http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief\\_1016\\_1.pdf](http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_1016_1.pdf).
- <sup>30</sup> Nasseh K, Vujicic M. The impact of the affordable care act’s Medicaid expansion on dental care use through 2016. *J Public Health Dent* 2017. doi:10.1111/jphd.12257.
- <sup>31</sup> Association of State and Territorial Dental Directors (ASTDD) Best Practices Committee. Best practice approach: emergency department referral programs for non-traumatic dental conditions [monograph on the Internet]. Reno, NV: Association of State and Territorial Dental Directors; November 2015. 23 p. Available from: <http://www.astdd.org>.
- <sup>32</sup> Association of State and Territorial Dental Directors (ASTDD). Methods in assessing non-traumatic dental care in emergency departments, January 2016. Available at <http://www.astdd.org/a-z-topics/#E>
- <sup>33</sup> Compton RD. Expansion of dental benefits under the Medicare Advantage program. *J Dent Educ* 2005;69(9):1034-1044.
- <sup>34</sup> Jones JA. Financing and reimbursement of elders’ oral health care: lessons from the present, opportunities for the future. *J Dent Educ* 2005;69(9):1022-1031.
- <sup>35</sup> Kiyak HA, Reichmuth M. Barriers to and enablers of older adults’ use of dental services. *J Dent Educ* 2005;69(9):975-986.
- <sup>36</sup> U.S. Department of Health and Human Services Oral Health Coordinating Committee. U.S. Department of Health and Human Services Oral Health Strategic Framework, 2014-2017. *Public Health Rep* 2016;131(2):242-257. doi:10.1177/003335491613100208.
- <sup>37</sup> PACE | Medicare.gov. Available at: <https://www.medicare.gov/your-medicare-costs/help-paying-costs/pace/pace.html>. Accessed April 9, 2017.
- <sup>38</sup> Jacobi D, Helgeson MJ. Apple Tree Dental: an innovative oral health solution. *J Calif Dent Assoc* 2015;43(8):453-458.
- <sup>39</sup> North Carolina Dental Program Targets Special Needs Patients. Available at: <http://www.ada.org/en/public-programs/action-for-dental-health/action-for-dental-health-success-stories/north-carolina-dental-program-targets-special-needs-patients>. Accessed August 25, 2017.
- <sup>40</sup> Lifelong Smiles Coalition | Iowa. Available at: <http://www.lifelongsmilescoalition.com/about.php>. Accessed April 9, 2017 and December 29, 2017.
- <sup>41</sup> Mission of Mercy. <https://www.amissionofmercy.org/>
- <sup>42</sup> Remote Area Medical. <https://ramusa.org>
- <sup>43</sup> Learn About DLN and Improving Oral Health | DLN. Available at: <https://dentallifeline.org/> Accessed April 9, 2017.
- <sup>44</sup> Association of State and Territorial Dental Directors. Summary report, 2017 Synopses of state dental public health programs. ASTDD; 2017. Available at: <https://www.astdd.org/publications/>. Accessed December 4, 2017.
- <sup>45</sup> Association of State and Territorial Dental Directors. Link: States with oral health data at <http://www.astdd.org/basic-screening-survey-tool/#adults>.
- <sup>46</sup> Expand Adult Dental Benefit in Publicly-Funded Health Insurance | DentaQuest Foundation. Available at: <http://dentaquestfoundation.org/oh2020/adultdental>. Accessed October 27, 2017.
- <sup>47</sup> Wilentz JB, Kleinman DV, Alfano MC. Meeting commentary: Santa Fe Group Salon Expanding Oral Healthcare for America’s Seniors, September 28-30, 2016. *J Am Dent Assoc* 2017;148(4):272-274. doi:10.1016/j.adaj.2017.01.028.
- <sup>48</sup> S.192 - 114th Congress (2015-2016): Older Americans Act Reauthorization Act of 2016 | Congress.gov | Library of Congress. Available at: <https://www.congress.gov/bill/114th-congress/senate-bill/192>. Accessed December 8, 2017.
- <sup>49</sup> H.R.508 - 115th Congress (2017-2018): Seniors Have Eyes, Ears, and Teeth Act of 2017 | Congress.gov | Library of Congress. Available at: <https://www.congress.gov/bill/115th-congress/house-bill/508>. Accessed September 18, 2017.