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## GUEST EDITORIAL

# Improving health in the United States

## Oral health is key to overall health

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**T**he vital relationship between health and the economy has been recognized and studied, and countries with a healthier workforce see strong economic performance and gain.<sup>1,2</sup> What often goes unnoticed, however, is the significant role dentists can play in improving the overall health of the population.

Let's set the stage. National health expenditures are projected to grow at an average annual rate of 5.6% from 2016 through 2025 and reach 19.9% of gross domestic product by 2025.<sup>3</sup> The top 20 medical conditions account for 57.6% of the spending, with more resources spent on diabetes than any other condition (\$101.4 billion per year).<sup>4</sup>

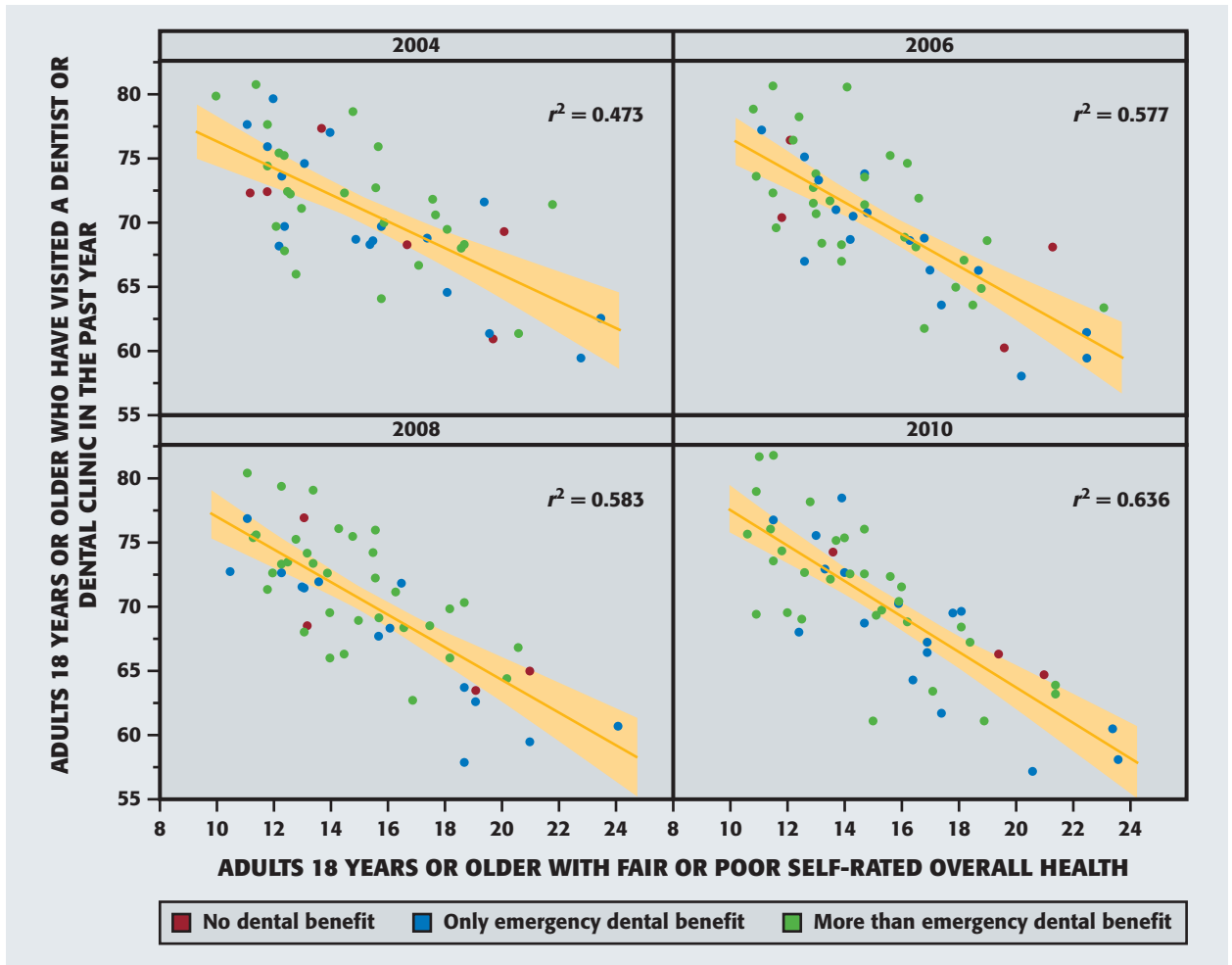
Dental health service expenditures grow 5.1% annually and are expected to reach \$185 billion in 2025.<sup>3</sup> We see significant spending related to oral health in costly settings, such as hospital emergency departments<sup>5,6</sup> and operating rooms, in which 50% to 75% of total charges are hospital related.<sup>7</sup>

The oral health–systemic connection has been well documented for many conditions, with strong evidence in 2017 connecting oral health and rheumatoid arthritis.<sup>8,9</sup> Yet, the lack of detailed national- and state-level data

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means understanding the role of oral health in state-level health economics remains a challenge. In addition, access-to-care challenges will persist until an understanding emerges that enables systematic approaches to oral health. Ultimately, we need more evidence to better inform decisions and develop programs and policies.

To that end, we sought to move the needle forward. We examined the oral–overall health relationship using data on dental service utilization from the National Oral Health Surveillance System,<sup>10,11</sup> self-rated overall health data from the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System surveys such as the questionnaires from the Health-Related Quality of Life,<sup>12</sup> and dental benefits from the Medicaid and the State Children's Health Insurance Program Payment and Access Commission.<sup>13</sup>



**Figure.** The figure illustrates state-level association between the proportion of adults who visited a dentist in the past year and the proportion reporting fair or poor overall health, color coded based on state Medicaid adult dental benefits and the years in which these 3 variables overlap (2004, 2006, 2008, and 2010). The results suggested that there is a strong correlation between a visit to the dentist and overall self-rated health, and this relationship is growing stronger over time. States with the highest level of benefits are concentrated in the upper left corners. Sources: Authors' analysis of the data from National Oral Health Surveillance System,<sup>11</sup> Health-Related Quality of Life: Percentage with fair or poor self-rated health,<sup>12</sup> and Medicaid and the State Children's Health Insurance Program Payment and Access Commission.<sup>13</sup>

Our analysis shows the state-level association between the proportion of adults who visited a dentist in the past year and the proportion of adults reporting fair or poor overall health in the same state (Figure). Medicaid adult dental benefits are stratified into 3 categories: no dental benefit, only emergency dental benefit, and more than emergency dental benefit. These 3 variables overlap in 2004, 2006, 2008, and 2010. The results indicated a strong correlation between dental visits and overall self-rated health, and this

relationship is getting stronger over time. In other words, states in which adults are more likely to visit the dentist also tend to have the lowest proportion reporting fair or poor health.

Why self-reported health? Research indicates self-rated health provides insight into a person's general health and serves as a guide to future outcomes, and it correlates with self-rated oral health.<sup>14,15</sup> Research also suggests dental care utilization associated with self-care resulting in good overall health,

whereas regular patterns of dental care utilization are opportune for health enhancement and promotion.<sup>16</sup> Given the dire need to address skyrocketing costs and limited access to care, our analysis suggests ongoing opportunities for dental care teams to effectively participate in the improvement of health and health care. This pursuit should include 3 aims: improve the experience of care, improve the health of populations, and reduce per capita costs of health care.<sup>17</sup> Medical-dental integration is a key

mechanism to aid the incorporation of these 3 aims.

Integration cannot happen simply because it is a good idea for patients and clinicians. It needs to be predicated on an assessment of cost-effectiveness, and a structured approach needs to be developed to ensure long-term success. There are few retrospective US-based studies that have explored the cost-effectiveness of service coordination and have shown medical-dental integration has a positive effect. For insured patients, dental treatment was associated with lower medical costs.<sup>18-20</sup> A series of prospective studies of healthy insured workers and older adults in Japan demonstrated similar cost effectiveness.<sup>21-25</sup> Taken together, these studies suggest that treating oral disease can lead to reduced expenditures for patients and states.

Diabetes is 1 of the top 20 most expensive medical conditions, and more resources are spent on diabetes than any other condition.<sup>4</sup> An analysis of a national health insurance claims database showed that newly diagnosed patients with diabetes who also received periodontal intervention had lower average total health (\$1,799), medical (\$1,577), and diabetes-related (\$408) costs over time.<sup>19</sup>

The evidence is there. Dentists can play a significant role in the systemic health of their patients beyond stabilization and prevention of oral disease. Many medical conditions can be first observed intra-orally, which provides an avenue for early diagnosis and treatment. Moreover, the use of screening processes to identify systemic disease indicators during the dental care encounter has grown over the last decade.<sup>26</sup> One report showed that most (55% to 90%) patient-respondents were willing to have dentists conduct medical screenings and many (50% to 67%) would pay up to \$20 for the service.<sup>27</sup> The authors also noted that 48% to 77% of respondents reported their

perceptions of their dentist's competence and compassion would improve if medical screening occurred during dental care.

Dental venues can serve as an effective care pathway access point for patients not active with primary medical care or in less than ideal health, and physicians have reported favorability and value with dental chairside medical screening and subsequent referral.<sup>28-30</sup> However, the interprofessional referral process is challenging and cumbersome.

A 2016 American Dental Association Health Policy Institute brief demonstrates physician dissatisfaction with the referral process due to absence of electronic referrals, inconsistent communication, and a lack of dentists willing to accept Medicare or Medicaid.<sup>31</sup> Because of their location and dental-medical record integration, federally qualified health centers may be a good place to start; they are well-positioned to integrate care efficiently and effectively.<sup>32</sup>

For other types of practice settings, we must consider a structured approach using improvement networks (for example, the Southern New England Practice Transformation Network). One such approach may be for dental providers to identify 1 health issue (for example, diabetes or heart disease), and focus the efforts on integrating care for people who have that condition. Using patient engagement processes that lead to patient activation and self-efficacy can positively impact overall well-being, and patients who are more active tend to report better outcomes and engage in ongoing care.<sup>33-35</sup> Each practice will be different, but meeting the specific needs of the clinic population will provide the best opportunity.

Oral diseases share risk factors with other noncommunicable diseases such as cardiovascular disease, diabetes, respiratory disease, and cancer.<sup>36</sup> Population-based frameworks such as "Oral Health in All Policies" are beginning to recognize

the importance of integrating oral health strategies with those for noncommunicable diseases.<sup>36</sup>

No matter how it plays out, we know that improving health in the United States will require a coordinated multisystem solution, and oral health is a key to improving the overall health of the nation. ■

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