


An Unexpected Strategy for Reducing Health Care Costs



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Health Care Needs a Cure

AMERICA IS THE most expensive country in the world in which to get sick—or, if you're healthy, to protect against the financial risk of getting sick.

This news is familiar, yet the basic facts are still staggering:

In 2014, more than one in every six U.S. dollars went to health care (or \$3 trillion total).¹ To bring that to a more human scale, in 2015 average health care costs for a family of four with preferred-provider coverage exceeded \$24,000. Employers covered more than 57 percent of that total—an astounding \$14,000 per employee.²

Under the weight of this hefty expense, business executives face intense pressure to use benefits to help satisfy employees and attract top talent, comply with government mandates, and monitor the bottom line. When budgets are tight, many resort to curbing coverage or deferring costs to employees.

The ROI of Oral Care

AGAINST THE BACKDROP of this health care crisis, a recent study shares some refreshingly positive news: There's real potential for billions in savings for the system (and thousands for individuals) by promoting *dental* care.

These findings, resulting from an analysis of medical, economics and epidemiology research, are based on a simple biological truth: The health of our mouths affects the health of our bodies. A healthy mouth often mirrors internal health; a diseased mouth can reveal, and complicate, internal illness.

When oral health worsens, medical health worsens and costs escalate. By improving oral health, savings can be realized:

- If **60 percent of diabetes patients** better managed their gum disease, savings could equal about \$39 billion per year, or about \$1,845 per diabetic individual.
- If **40 percent of pregnant women** better managed their gum disease: about \$7 billion, or nearly \$1,050 per pregnancy.
- If **50 percent of dental-related emergency visits** were handled in a community setting: around \$826 million, or \$385 per one of these visits.³

Figures are based on the 2014 population/2014 dollar.

The health care system, like the body, is in fact a *system*: When you strengthen one part, the burden on the whole lightens. When patients with systemic illnesses treat their gum disease, their medical outlook improves and treatment costs go down. When people receive regular dental care, they avoid expensive interventions during late stages of oral disease.

Savings Related to Systemic Disease

THE VALUE OF more widespread oral care can't be overstated. Consider these dental and nondental cases:

In a 2014 oral health study by United Concordia, Dr. Marjorie Jeffcoat found an impressive connection between dental care and medical savings while studying cases of people with systemic diseases: type 2 diabetes, stroke or coronary artery disease (CAD).

¹ "National Health Expenditure Data," Centers for Medicare & Medicaid Services, www.cms.gov.

² Christopher S. Girod, Scott A. Wetz and Susan K. Hart, "2015 Milliman Medical Index," May 19, 2015, www.milliman.com/mmi.

³ Uma Kelekar, Ph.D., "Economic Costs of Oral Care in the United States in 2014," 2015.

Analyzing more than 330,000 insurance records, Jeffcoat and her team discovered that when individuals living with one of these chronic conditions received treatment for their gum disease, their medical costs and hospital visits generally decreased overall. (The same was true for pregnant women.)

The calculated annual savings were as high as \$5,681 per individual, with hospitalization decreasing as much as 39.4 percent.⁴ This amasses to approximately \$74 billion across the population of those with diabetes, stroke and CAD, if 60 percent of these individuals realized the benefits of oral care.

The most greatly reduced hospitalizations came for individuals with diabetes, a condition that negatively interacts with gum disease. If a patient's diabetes is poorly controlled, they are three times more likely to develop severe gum disease. On the other hand, a patient's diabetic symptoms can worsen in the presence of gum disease (as bacteria in the mouth activates a type of white blood cell that is thought to create insulin resistance).⁵

Not surprisingly, research shows a connection between regular dental care and diabetes-specific medical care—with savings amounting to \$39 billion if 60 percent of the diabetic population received oral care.⁶ These figures, translating to about \$1,845 per diabetic individual, promise a trickle-down effect for households and businesses.

A similar scenario is true for lung disease, given that the oral cavity serves as a chamber for respiratory pathogens.⁷ Economically speaking, oral hygiene among Ventilator-Associated Pneumonia (VAP) patients is highly cost-effective. When doctors in one ICU unit administered an oral care treatment costing less than \$3 per case, they saw VAP cases (which can cost between \$10,000 and \$40,000 individually) decrease by 46 percent.⁸

Lastly, oral care has a bearing on pregnant women, given the evidence that poor oral health among expectant mothers is associated with low birth weight, preterm birth, preeclampsia and gestational diabetes.⁹ These unwanted circumstances all rack up additional medical costs.

Jeffcoat's study helps quantify these costs, finding a significant *decrease* in pregnancy costs when mothers received periodontal treatment—\$2,433 in average savings per pregnancy.¹⁰

These striking outcomes all underscore the far-reaching influence of oral care. When treated as an essential part of medical care, oral care improves overall health—in turn promising savings for individuals, employers and taxpayers.

It Pays to Spend on Preventive Care

IN THE CONVERSATION about dental-medical connections, another more universal theme emerges: the “spend now, save later” strategy of basic dental care. When you invest a modest amount in early, ongoing care, you're paid back over time by avoiding drastic care.

Consider a 2004 study on oral care for infants and children conducted by researchers in North Carolina. Drawing on Medicaid claims and other data sets, the team found that timely care during the first five years of life was critical in determining someone's oral health future.

Specifically, they found a positive link between early preventive care and the likelihood of later preventive care—as opposed to restorative or emergency care. This also amounted to lower dental costs per child. Those who received initial care by 12 months of age incurred \$262 (in 2004 dollars), as opposed to \$546 for children who waited until age 4 to get dental care.¹¹

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⁴ Marjorie K. Jeffcoat, Robert L. Jeffcoat, Patricia A. Gladowski, James B. Bramson, Jerome J. Blum, "Impact of Periodontal Therapy on General Health: Evidence From Insurance Data for Five Systemic Conditions," *American Journal of Preventive Medicine*, Vol. 47, No. 2, August 2014, 166-174.

⁵ Douglas B. Berkey and Frank A. Scannapieco, "Medical Considerations Relating to the Oral Health of Older Adults," *Special Care in Dentistry*, Vol. 33, No. 4, August 2013, 164-176.

⁶ Uma Kelekar, Ph.D., "Economic Costs of Oral Care."

⁷ Catherine Hayes, David Sparrow, Michel Cohen, Pantel S. Vokonas, Raul I. Garcia, "The Association Between Alveolar Bone Loss and Pulmonary Function: The VA Dental Longitudinal Study," *Annals of Periodontology*, Vol. 3, No. 1, August 1998, 257-261.



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The connection is clear: Kids who see the dentist early and often avoid more extensive treatment down the line.

Without this regular care, children are more likely to end up in the operating room, seeking treatment for cavities under general anesthesia—treatment that's far costlier than care in a dentist's chair. Case in point: For children with cavities registered for Iowa's Medicaid program, the cost was almost 20 times higher (\$2,009 for operating-room care over \$105 for clinical care).¹²

Another instance of prevention-driven savings occurs later in life when people wait until dental pain becomes severe and end up in the emergency room. According to the latest annual data from the Nationwide Emergency Department Sample, 2012 brought more than 2.1 million of these visits, worth a total of \$1.6 billion (or \$750 per visit).¹³ In 2014 dollars, this could potentially amount to \$826 million in system-wide savings for 50-percent fewer dental-related ER visits.¹⁴

And that's not to mention the benefits that routine oral care brings via early detection of oral cancer and other diseases, leading to less-aggressive treatments, lower costs and higher survival rates.

The Path Forward

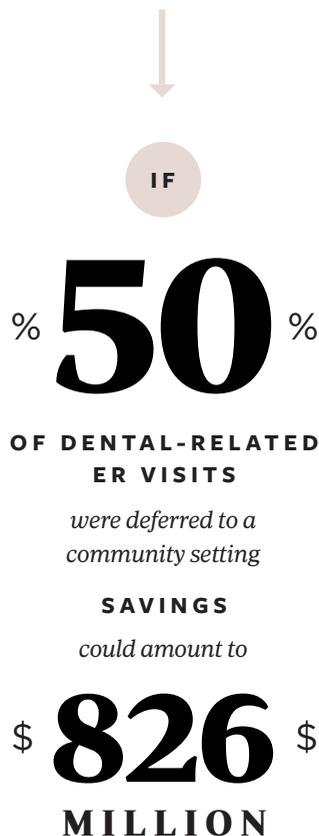
THIS POWERFUL ASSOCIATION—that oral care has the power to drive down medical costs and promote overall health—provides a foundation for change.

Policymakers, practitioners and insurance providers can begin to take targeted steps to realize the cost-effective benefits of more widely adopted dental care:

- Health care organizations** can better integrate oral care into primary care, offering it as part of their core services.
- Policymakers** can mandate dental coverage, either as stand-alone insurance or as part of medical insurance, to encourage regular care. They can redesign government programs to extend broader care to women and children.
- Businesses** can ensure their employees are covered for oral health and design wellness programs to encourage use of this coverage.
- Physicians** can more actively refer patients to dentists.
- Dentists** can expand their office hours to make services more easily accessible to those who would otherwise seek emergency treatment.
- Pediatricians and primary care physicians** can incorporate basic dental treatments, such as the application of fluoride varnishes and dental sealants, into routine annual checkups.

Underlying all of this is the positive, proven link between oral wellness and overall health. As individuals receive better dental care, their medical health promises to improve. As the nation's medical health improves, valuable health care dollars return to the government, businesses and the American people.

This report is based on research prepared for the Dental Trade Alliance by Uma Kelekar, Ph.D., Assistant Professor of Healthcare Management, Marymount University, Arlington, Virginia.



⁸ Carrie Sona, Jeanne Zack, Marilyn E. Schallorn, Maryellen McSweeney, Kathleen M. McMullen, James Thomas, "The Impact of a Simple, Low-Cost Oral Care Protocol on Ventilator-Associated Pneumonia Rates in a Surgical Intensive Care Unit," *Journal of Intensive Care Medicine*, Vol. 24, No. 1, Jan-Feb 2009, 54-62.

⁹ The American College of Obstetricians and Gynecologists, 2013.

¹⁰ Jeffcoat, et al., "Impact of Periodontal Therapy on General Health," 166-174.

¹¹ Matthew F. Savage, Jessica Y. Lee, Jonathan B. Kotch, William F. Vann, Jr., "Early Preventive Dental Visits: Effects on Subsequent Utilization and Costs," *Pediatrics*, Vol. 114, No. 4, October 2004.

¹² Michael J. Kanellis, Peter C. Damiano, Elizabeth T. Momany, "Medicaid Costs Associated with the Hospitalization of Young Children for Restorative Dental Treatment Under General Anesthesia," *Journal of Health Dentistry*, Vol. 60, No. 1, March 2000, 28-32.

¹³ Thomas Wall and Marko Vujicic, "Emergency Department Use for Dental Conditions Continues to Increase," Health Policy Institute Research Brief, American Dental Association, April 2015.

¹⁴ Uma Kelekar, Ph.D., "Economic Costs of Oral Care."

