today is funded by private insurance or out-of-pocket personal expenditures, with just 12% through public insurance and 2% by direct care programs.

ADDITIONAL CONSIDERATIONS

Dental care financing differs significantly between different age groups. Children are covered by the ACA and other programs, but adults, especially older adults, are paying a disproportionate share of dental care costs out of pocket. Attempts to repeal and replace the ACA face the same trade-offs and challenges present before this became law.

As a result of these factors, the United States will continue to have significantly higher per capita health care costs than in other developed countries and achieve worse health outcomes. Medical inflation in the United States outpaces overall inflation, and politically acceptable approaches to encouraging or requiring coverage and stabilizing the health insurance marketplace continue to be elusive. Health care solutions require sophisticated policymaking that aims to maximize outcomes and cause the least possible harm.

Edelstein BL: A public health perspective on paying for dentistry, the Affordable Care Act, and looking to the future. *Dent Clin N Am* 62:327-340, 2018

Reprints available from BL Edelstein, Population Oral Health, Columbia Univ College of Dental Medicine, Columbia Univ Medical Ctr, 622 W 168th St, PH7-311, Box 20, New York, NY 10032; e-mail: ble22@columbia.edu

HEALTH SCREENINGS

Expanding dental services into chairside screening

BACKGROUND

Cardiovascular disease (CVD) and diabetes mellitus (DM) are among the primary noncommunicable disease causes of morbidity and mortality in the world. Coronary heart disease (CHD) is the major contributor to heart disease mortality, and DM is the seventh leading cause of mortality in the United States and a significant cause of morbidity. The best strategy for control of the CVD and DM epidemics is to prevent the disease or control disease severity. Early disease detection and integrated health care delivery are essential in prevention and in achieving optimal health outcomes. Oral health care providers could contribute to the effort to maximize patient health outcomes by screening for medical diseases such as CVD and DM. This screening is designed to facilitate the early identification of disease risk rather than establish a diagnosis, which would exceed the scope of practice for oral health care professionals. Chairside screening of medical conditions in the dental setting and the issues associated with these activities were discussed.

ATTITUDES TOWARD SCREENING IN DENTAL SETTINGS

Surveys of oral health care providers and their patients have indicated that most have favorable attitudes toward chairside screening for medical conditions in dental settings. Dentists have expressed the belief that chairside screening for hypertension, CVD, DM, HIV, and hepatitis C constitute an important aspect of providing care. The majority of dentists would be willing to refer patients to physicians, collect saliva samples, conduct screening that yields immediate results, and collect finger stick blood samples. The barriers to incorporating chairside screening into a dental practice include insurance coverage, liability, time, cost, and the patient's willingness to participate, with insurance coverage considered perhaps the most important ingredient.

Dental hygienists (DHs) have also been surveyed for their attitude toward including health screening in dental care. Their results were similar to those of the dentists.

Patients believe chairside screening in a dental setting is an important undertaking and would be willing to participate. Their primary concern is confidentiality. They have no serious concern that the screening is not done by a physician. Most believe dentists can conduct screening for CVD, hypertension, and DM and favor tests that yield immediate results. They would be willing to discuss the results with the dentist, receive a referral from the dentist to a physician, provide saliva specimens, provide a finger stick blood sample, and pay $10 to $20 for the screening. The majority of the patients who have been surveyed believe their opinion of a dentist who screens them for medical conditions would improve in the areas of competence, compassion, knowledge, and professionalism. The primary concern is how time consuming the process could be.

Primary care providers (PCPs) would also be a party to these dental office screenings. The majority of PCPs who have been surveyed believe these screenings would be effective and

worthwhile to identify patients with or at risk for disease. The screening tests identified as candidates for chairside use were those for hypertension, DM, HIV infection, and CVD. Most PCPs would be willing to discuss the results with the dentist and receive a medical referral from the dentist, with few expressing a negative reaction because the referral came from a nonphysician. Factors PCPs have identified as important in the process include patient willingness to be tested, level of training of the dentist and their own capacity to accept referrals, duplication of provider reimbursement, and duplication of roles.

RELEVANT CONSIDERATIONS

Efficacy and Yield

Studies on screening in a dental setting indicate that dentists are more likely to consider incorporating these tests for medical conditions supported by evidence to be in a relationship with oral health. When patients were screened in an inner city university-based clinic, the tests indicated which patients were at increased risk for a severe CHD event in 10 years and which patients had major risk factors of interest. In addition, screening for hemoglobin A1c level identified those who were at increased risk for DM. A study has also measured the efficacy of using dental features along with hemoglobin A1c level when screening for DM. The combination was able to greatly increase the sensitivity of the test. Tests of the yield of medical diagnosis among individuals who screen positive have also supported the use of chairside screening.

Dental Links to Systemic Disease

Interest has been expressed in establishing an association between oral infections and overall health. Several studies have tried to use an association between periodontal disease (PD) and CVD. Numerous steps will be necessary before screening results linking PD disease status and medical conditions such as DM and CVD can be clearly shown to offer important diagnostic information.

DISCUSSION

Data suggest that both providers and patients have a positive attitude toward having dentists and dental hygienists perform medical screening tests chairside. Efficacy studies support the effectiveness of these chairside screening efforts to identify patients who are at a higher risk for disease or who have disease risk factors and could benefit from medical interventions or surveillance. The ability to perform the necessary procedures for screening has been shown to be present in both dentists and dental hygienists. This chairside screening initiative offers another way that dentists can contribute to the overall health of their patients.

Clinical Significance

Challenges remain in the area of reimbursement for the time and resources used in screening patients for medical conditions and in the need to expand the dental practice acts for dentists and dental hygienists so they can perform these tasks. Oral health care professionals will need additional training in both performing and interpreting the findings of these tests so that accurate information can be shared with the patient and physician. The dental school curriculum will require adaptations to address this new area where dentists provide services. These challenges remain to be figured out, but it appears that the benefits of early detection and of close monitoring of patients with chronic life-threatening diseases would win out over the barriers to implementing this exciting expansion of oral health care practice.

Greenberg BL, Glick M: Providing health screenings in a dental setting to enhance overall health outcomes. *Dent Clin N Am* 62:269-278, 2018

Reprints available from BL Greenberg, Dept of Epidemiology and Community Health, School of Health Sciences and Practice, New York Medical College, 40 Sunshine Cottage Rd, Valhalla, NY 10595; e-mail: Barbara_greenberg@nymc.edu

ORAL HYGIENE

Interdental cleaning

BACKGROUND

Periodontal disease and dental caries share predisposing conditions, specifically, a susceptible host, supportive environmental factors, and the presence of a predisposing oral biota. Microorganisms in the oral biofilm play a vital role in both disorders, so oral hygiene instructions offered to prevent these diseases include the removal of the biofilm by tooth brushing and the performance of interdental cleansing, such as flossing. Direct evidence supporting connections in adults between flossing and having fewer carious teeth and less periodontal disease remains weak, mostly due to small sample sizes or the study design. Flossing added to tooth brushing is known to reduce gingivitis in adults