on early diagnostic efforts, and providing a comprehensive examination each time the patient is seen by the dentist.

The training of dentists should also be expanded to include an added emphasis on gerontology and gerodontology. This emphasis should also be a valued part of professional development training and inform the dentist's role as an advocate of oral health care.

Meurman JH, McKenna G, Murtomaa H, et al: Managing our older population: The challenges ahead. *J Dent Res* 97:1077-1078, 2018

Reprints available from JH Meurman, Dept of Oral and Maxillofacial Diseases, Helsinki Univ Hosp, Haartmaninkatu 8, 00029 HUS, Finland; e-mail: jukka.meurman@helsinki.fi

OPIOIDS

Clinical relevance of opioid research

BACKGROUND

The Centers for Disease Control and Prevention estimates that the total economic burden of prescription opioid misuse in the United States in 2016 was $78.5 billion. This includes not just the cost of health care, but also costs associated with lost productivity, treatment for substance use disorders, and criminal justice involvement. Overdoses of prescription opioids, heroin, and fentanyl resulted in the deaths of more than 42,000 individuals, with 40% of those deaths related to prescription opioids. Often these prescriptions are given to control acute pain after dental procedures or in emergency departments (EDs) to manage dental pain until treatment can begin. Dependence can result from the regular use of opioids and lead to addiction, overdose, and death. Often large numbers of opioid pills remain and can be subject to theft, diversion, or later misuse. Dentists can play a vital role in helping to gain an upper hand in the opioid crisis.

DENTISTS' ROLE IN CONTROLLING OPIOID USE

In the late 1990s dentists were responsible for 15.5% of the immediate-release opioids prescribed. By 2012 these dental prescriptions accounted for just 6.4% of all immediate-release opioid prescriptions.

The American Dental Association (ADA) began a new policy on opioids in March 2018. It was aimed at further reducing opioid misuse and keeping prescription opioids from causing harm to dental patients and their families. The policy includes mandatory continuing education on prescribing opioids and other controlled substances and sets prescribing limits on opioid dosage and duration. In addition, dentists are encouraged to register with and use Prescription Drug Monitoring Programs.

GUIDANCE FOR CLINICAL DECISIONS

The National Institutes of Health (NIH) National Institute of Dental and Craniofacial Research (NIDCR) is leveraging the National Dental Practice-Based Research Network. This network includes over 6000 dental practitioners in the United States who are engaged in patient care and interested in conducting research in their practices. A study of dentists' knowledge of opioids and decision-making processes, as well as other factors correlated with opioid prescription, was done, with data destined for use developing educational interventions directed at dental practitioners to encourage the use of risk mitigation strategies.

In relation to ED use of opioids for dental pain, it has been found that patients with dental conditions are nearly 3 times as likely to receive an opioid from a nurse practitioner as from a dentist. Information such as this is being used to develop evidence-based guidelines and policies to balance the need for opioid misuse risk mitigation with the provision of sufficient patient pain management.

Among the approaches proving useful in making better clinical decisions is a clinical decision support tool that is embedded into the electronic dental record. It prompts oral care providers to follow evidence-based recommendations and encourages prescribing nonopioid analgesic agents to manage acute pain after extractions.

Opioid misuse has hit rural communities especially hard. Strategies developed to help rural dental practitioners include screening for opioid use disorders and referrals for patients who are at

Clinical Significance

Oral health care providers can play an important role in addressing the dangers of opioid misuse. The combination of NIH and ADA efforts should provide scientific evidence that can be used in guiding clinical decision making. In addition, clinicians and researchers should collaborate so that clinical observations can inform scientific inquiry.

risk of developing problems with these agents. Reduced availability of opioids has also been recommended for rural dental practices. The NIDCR plans to invest in research addressing critical knowledge gaps as well as targeted research interventions related to rural dental care.

The NIH sponsors a Helping to End Addiction Long-term Initiative to enhance scientific efforts to provide solutions to the opioid crisis. This initiative builds on the basic science of pain and addiction, implementation science, and research to integrate behavioral treatments with medications used in treating opioid use disorder. Enhanced pain management and education in the science of pain and addition are among the approaches to prevent further opioid use disorders.

The NIH National Institute on Drug Abuse also offers a Web portal for easy access to clinical guidelines, practices, and recommendations, including the ADA's new opioid policy. Research into the causes and consequences of drug use and addiction along with advances in pain management is also being done.

Somerman MJ: Commentary: The role of the oral health community in addressing the opioid overdose epidemic. *J Am Dent Assoc* 149:663-665, 2018

Reprints available from MJ Somerman, Nat'l Inst of Dental and Craniofacial Research, Nat'l Insts of Health, Bldg 31, Rm 2C39, 31 Center Dr, Bethesda, MD 20814; e-mail: martha.somerman@nih.gov

WATER FLUORIDATION

Updating the evidence base

BACKGROUND

One of the greatest public health achievements of the 20th century with respect to the ability to reduce dental caries is the fluoridation of community drinking water. However, the evidence supporting community water fluoridation (CWF) is largely based on studies performed before 1990. Currently, dental caries in primary teeth affects about a fourth of all 2- to 5-year-olds in the United States and half of the 6- to 8-year-olds. Permanent dentition caries occurs in 20% of 6- to 11-year-olds. These rates have persisted since the 1990s, as have income-associated disparities in children's dental caries data. The US Preventive Services Task Force endorses CWF, and the Healthy People 2020 initiative has the goal of extending CWF coverage despite the lack of recent data. A cross-sectional study was undertaken to assess associations between the availability of CWF and dental caries experience in children and adolescents in the United States.

METHODS

The study used dental examination data from the 1999 to 2004 and 2011 to 2014 cycles of the National Health and Nutrition Examination Survey (NHANES). These were merged with county-level estimates of the percentage of the population served by CWF (% CWF) taken from the Centers for Disease Control and Prevention's Water Fluoridation Reporting system. Dental caries experience was calculated for the primary dentition of 7000 children age 2 to 8 years and for the permanent dentition of 12,604 children and adolescents age 6 to 17 years. Associations between the % CWF and dental caries experience were adjusted for age, sex, race/ethnicity, rural/urban location, head-of-household education, and period since the last dental visit.

RESULTS

Caries experience was lower in counties with 75% or more CWF than in counties with less than 75% CWF. The prevented fraction of caries in primary dentition was 30%. When permanent dentition was considered, the prevented fraction was 12%. However, the latter fraction tended to increase up to 24% after adjusting for covariates and in sensitivity analysis.

DISCUSSION

When considered at an individual's level, the effect size estimates reported here represent clinical benefits that are small or negligible. In group analysis, however, these effect estimates translate

Clinical Significance

Sound scientific evidence is required to underlie advocacy for fluoridated drinking water. Audiences then have to hear the data clearly and understand what they mean in terms of their own children and families. Currently in the United States, the potential for expanding CWF is limited by a lack of public water supply, a water system too small or otherwise unsuited to the engineering required for fluoridation, and opposition by people who have limited health literacy or other barriers to comprehending the value of CWF. This study offers an updated basis for advocating for expanded water fluoridation as an important public health intervention that translates to better oral health for millions of children and adolescents.