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.

to 13 fewer primary tooth surfaces and 3 fewer permanent tooth surfaces that develop caries for every 10 children who have access to CWF. This has a clinically meaningful population impact. If CWF were extended to 20 million more individuals and 24% were children and adolescents, these prevented fraction numbers would translate to 6.2 million fewer primary tooth surfaces that develop caries and 1.4 million fewer permanent tooth surfaces that develop caries.

Slade GD, Grider WB, Maas WR, et al: Water fluoridation and dental caries in U.S. children and adolescents. *J Dent Res* 97:1122-1128, 2018

Reprints available from GD Slade, Dept of Dental Ecology, Koury Oral Health Sciences, UNC School of Dentistry, Rm 4501E, 385 S Columbia St, CB#7455, Chapel Hill, NC 27599-7455; e-mail: gary_slade@unc.edu