

STATEMENT ON THE EVIDENCE SUPPORTING THE SAFETY AND EFFECTIVENESS
OF COMMUNITY WATER FLUORIDATION

KATHERINE WENO, DDS, JD
DIRECTOR
DIVISION OF ORAL HEALTH
NATIONAL CENTER FOR CHRONIC DISEASE PREVENTION AND HEALTH
PROMOTION
CENTERS FOR DISEASE CONTROL AND PREVENTION

Kansas Department of Health and Environment
January 22, 2014

Introduction

On behalf of the Centers for Disease Control and Prevention, I am pleased to provide a statement on the evidence regarding the safety and benefits of community water fluoridation.

Good oral health—a mouth and teeth without cavities or other oral diseases—is an important part of good overall health and an essential part of our everyday lives. Having healthy teeth improves our ability to speak, smile, smell, taste, chew, swallow, and convey feelings and emotions through facial expressions. Overall, the oral health of children and adults in the United States is better than ever.¹

However, for some of our most vulnerable citizens—poor children, the elderly, and many members of racial and ethnic minority groups—maintaining a healthy mouth and teeth can be challenging.¹ Recent national health data show, for example, that one in four children living below the federal poverty level have untreated tooth decay.² Untreated decay can cause pain, school absences, difficulty concentrating, and poor appearance – all contributing to decreased quality of life and ability to succeed.

Fortunately, community water fluoridation has been shown to be effective in reducing the number and severity of cavities and is a major reason that Americans today have better overall dental health. Currently, more than 210 million people, or 74.6 percent of the U.S. population served by public water supplies, drink water with optimal fluoride levels to prevent tooth decay.³

Safety and Effectiveness

For many years, panels of experts from different health and scientific fields have concluded that there is strong evidence that water fluoridation is safe and effective.⁴ Water fluoridation is beneficial for reducing and controlling tooth decay and promoting oral health in children as well as adults.

In 2013, the independent, non-federal Community Preventive Services Task Force recommended community water fluoridation based on strong evidence that tooth decay is substantially lower in communities with fluoridation.⁵ The percentage of children without tooth decay was higher and the average number of decayed teeth was lower in fluoridated communities. For example, the median difference in the percent of children without tooth decay was 14.6% between fluoridated and non-fluoridated communities.⁶ Available data also suggest that fluoridation is effective across all socio-economic groups.⁵

Although there are other sources of fluoride such as toothpaste, community water fluoridation continues to provide benefits. One recent review found that water fluoridation reduces tooth decay by about 25% in adults.⁷

The weight of the peer-reviewed scientific evidence does not support an association between water fluoridation and any adverse health effect or systemic disorder, including an increased risk for cancer, Down syndrome, heart disease, osteoporosis and bone fracture, immune disorders, low intelligence, renal disorders, Alzheimer disease, or allergic reactions.⁵

Cost Effectiveness

The Community Preventive Services Task Force also reviewed 5 studies of the cost-effectiveness of community water fluoridation. All studies found that community water fluoridation was cost-saving.⁸ In addition, three analyses of Medicaid dental claims data in New York,⁹ Texas,¹⁰ and Louisiana¹¹ found that fluoridation substantially reduced dental treatment costs among children and youth. Annual per person Medicaid treatment cost savings in these three states ranged from \$27.60 to \$66.80 (2010 US\$).

Conclusion

In the seminal report, *Oral Health in America: A Report of the Surgeon General*, Surgeon General Davidatcher observed a “‘silent epidemic’ of dental and oral diseases [...] with those suffering the most found among the poor of all ages.”¹ The report affirms that community water fluoridation is “an inexpensive means of improving oral health that benefits all residents of a community, young and old, rich and poor alike.” Because of its contribution to the dramatic decline in tooth decay over the past 65 years, the Centers for Disease Control and Prevention (CDC) named community water fluoridation one of 10 great public health achievements of the 20th century.¹²

Thank you for the opportunity to provide this statement.

¹ US Department of Health and Human Services. *Oral Health in America: A Report of the Surgeon General*. Rockville, MD: US Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000.

² Dye BA, Li X, Thornton-Evans G. Oral Health Disparities as Determined by Selected Healthy People 2020 Oral Health Objectives for the United States, 2009–2010. *NCHS data brief* 104. 2012.

³ CDC. 2010 Water Fluoridation Statistics. Available at <http://www.cdc.gov/fluoridation/statistics/2010stats.htm>

⁴ CDC. Community Water Fluoridation Benefits. Available at <http://www.cdc.gov/fluoridation/benefits.htm>

⁵ www.thecommunityguide.org/oral/fluoridation.html

⁶ McDonagh MS, Whiting PF, Wilson PM, et al. Systematic review of water fluoridation. *BMJ* 2000;321:855-9.

⁷ Griffin SO, Regnier E, Griffin PM, Huntley VN. Effectiveness of fluoride in preventing caries in adults. *Journal of Dental Research* 2007;86(5):410–414.

⁸ Truman BI, Gooch BF, Sulemana I, et al. Reviews of evidence on interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries. *Am J Prev Med* 2002;23(1S):21-54.

⁹ Kumar JV, Adekugbe O, Melnik TA. Geographic variation in Medicaid claims for dental procedures in New York State: Role of fluoridation under contemporary conditions. *Public Health Reports* 2010;125(5):647-54.

¹⁰ Texas Department of Health. Water Fluoridation costs in Texa: Texas Health Steps (EPSDT-Medicaid) 2000. www.dshs.state.tx.us/dental/pdf/fluoridation.pdf

¹¹ CDC. Water Fluoridation and Costs of Medicaid Treatment for Dental Decay – Louisiana, 1995-1996, *MMWR* 1999;48(34):753-757.

¹² CDC. Ten Great Public Health Achievements -- United States, 1900-1999. *MMWR* 1999;48(12):241-243.