

Nebraska DHHS Hearing

Revision to Title 179 to reduce fluoride treatment level and other updates

Review and Comment by Tracy Aksamit, Lincoln, Nebraska

9/18/24

Summary Recommendations

- Encourage open access to wise, traditional, nutrient-dense diets and health and healing arts and allow choice and informed consent.
- If fluoridation continues, require warning notification in annual community water reports, and if not already, reminders to the dental profession, regarding the 2011 American Dental Association recommendation for pregnant women and infants to avoid fluoridated water.
 - Maintain 0.7 mg/L as the maximum fluoride level due to the high risk of bias in studies claiming caries prevention and the vague, subtle symptoms of initial stage chronic poisoning.
 - Lower the operational range to 0.5 to 0.7 mg/L to mitigate harms. As the graph in my supporting document shows, Lincoln test reports and a 2017 AWWA report support the ability to main an operational range within close to ± 0.1 mg/L
 - Reduce public notification of treatment accidental overdose from 12 months to the number of weeks currently recommended.

Introduction

I attempted an unbiased review from a variety of sources, including: the American Water Works Association, Pediatric Reports, Environmental Health, and the open access journal Materials. My review also included the top 6 supporting documents provided by DHHS Public Health, and those sources referenced by our state's leading experts, Drs. Timothy Tesmer and Debra Esser during the February fluoride hearing.

General

According to Dr. Tesmer, "Nebraska currently has over 45 counties that are designated as state shortage areas for general dentistry. This means those counties are experiencing a shortage, shortage of healthcare professionals." Providing a broader range of traditional self-care alternatives can build personal capacity for self-care to empower individuals, reduce the burden on general dentistry, and the cost to Medicaid. Oral Health in American, 2021, while giving a nod to what they refer to as complementary or alternative medicine, the report minimizes its value by claiming, "Most complementary and alternative medicine systems have insufficient clinical evidence for their safety or efficacy (Shi and Heber 2013; Rigassio Radler 2014)." The report continues, "Most complementary and alternative medicine systems in oral health care are biologically based, such as botanical products and holistic medical systems such as (e.g., Ayurveda, homeopathy, Chinese medicine)"

Contrary to the Oral Health report interpretation of Shi and Heber, the 2014 edition of *Nutrition and Dental Health* claims, "Nutrition is intimately involved in the prevention and etiology of both dental caries or tooth decay and periodontal disease... dental caries in children are mostly preventable." Allow choice and informed consent in health and healing by restoring hundreds of years of communal wisdom in traditional healing, and by creatively blending it with the best of today's scientific inquiry and discovery. (Price 1939; Cowan 2021)

The top 2 DHHS supporting documents, the CDC MMWR June 2023 and the USPHS 2015 recommendation, both refer to the same report claiming that fluoridated water reduces dental caries and that there is no clear evidence of harms, the 2000 JAMA report by the CDC Division of Oral Health called Achievements in Public Health, 1900-1999: Fluoridation of Drinking Water to Prevent Dental Caries (DOH 2000).

The 2000 CDC Oral Health report claims, "Dental caries is an infectious, communicable, multifactorial disease in which bacteria dissolve the enamel surface of a tooth." and "The safety and effectiveness of water fluoridation have been re-evaluated frequently." Nebraska's regulations have not been revised since 1983 and there is a refreshed debate, for a new generation, challenging the theory of communicable disease. (Cowan 2021)

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The U.S. PHS 2015 recommendation reports rapid water system response, 68% of water systems adjusted treatment levels within 6 months of the draft regulation by the summer 2011. Nebraska's current treatment level is higher than the U.C. PHS 1962 level.

Fluoridated water reduces dental caries

I was curious about the statistics shared by Dr. Esser, during the February HHS Committee fluoride hearing and found a possible reference cited several times in the MMWR June 2023 report. The 2015 Cochrane systematic review assessed the quality and risk of bias in 155 out of 277 studies of dental caries, fluorosis and risk of adverse effects. 112 of the studies under review were excluded for inappropriate study design. The remaining 155 studies included 20 on the effects of fluoridated water on tooth decay and 135 studies on dental fluorosis.

It is understandable why people might take away a different ideas from the report. The key result found in the selected studies was, "that water fluoridation is effective at reducing levels of tooth decay among children." and that "results are based predominantly on old studies and may not be applicable today." and further results conclude, "where the fluoride level in water is 0.7 ppm, there is a chance of around 12% of people having dental fluorosis."

However, in the next paragraph, the report continues by describing the quality of the evidence, "We assessed each study for the quality of the methods used and how thoroughly the results were reported. We had concerns about the methods used, or the reporting of the results, in the vast majority (97%) of the studies." 97%. And, the potential for confounding factors they report that make it, "difficult to be confident of the size of the effects of water fluoridation on tooth decay or the numbers of people likely to have dental fluorosis."

So, the Cochrane Library review had limited confidence and found insufficient or no evidence to determine results.

Fluoride adverse effects

Dr. Tesmer said, "To date there has not been consistent and convincing evidence that links water fluoridation with any unwanted health effect other than dental fluorosis, a change in the appearance of tooth enamel that can occur when the permanent teeth of young children are still developing."

The CDC 2000 Oral Health report states that, "Since 1950, opponents of water fluoridation have claimed it increased the risk for cancer, Down syndrom, heart disease, osteoporosis and bone fracture, acquired immunodeficiency syndrome, low intelligence, Alzheimer disease, allergic reactions, and other health conditions. The safety and effectiveness of water fluoridation have been re-evaluated frequently, and no credible evidence supports an association between fluoridation and any of these conditions."

This last sentence cites the 1993 National Research Council, Health effects of ingested fluoride. 3 hits resulted from a search of the NRC report for the word "credible." Every reference, page 10, 110 and 113, relates to cancer risk, only cancer risk. Here is one, "Findings from the additional studies support the conclusions of the knox report and the IARC panel in that they provide no credible evidence for an association between fluoride in drinking water and risk of cancer." and a second, "The expert panel reviews generally agree that available data provide no credible evidence for an association between either naturally occurring fluoride or added fluoride in drinking water and risk of human cancer." and the third, "These studies provide no credible evidence for an association between fluoride in drinking water and the risk of cancer."

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Now, the CDC report clearly states no association between fluoridation and ANY condition. Conversely, the NRC report “credible evidence” references only cancer risk. Why would the CDC Division of Oral Health represent the NRC report as all encompassing in having no credible evidence supporting an association between fluoridation and ANY of the many conditions lists? Additionally, why is the 2023 draft NTP monograph not a key supporting document?

Fluorosis

Fluoride’s universality possesses a real threat to the human body in the form of acute and chronic poisoning. In order to avoid overdose, it is best to consult a specialist to properly select the dosage. (Lubojanski 2023) Excessive fluoride ingestion can compromise dental health and also lead to other general health problems. When prescribing dietary fluoride supplements to children, to minimize the risk of dental fluorosis, caution should be exercised to avoid excessive fluoride ingestion relevant to the child’s age and tooth development stages. This is especially important if there are other relevant sources of fluoride intake such as drinking water, salt, milk, and the use of personal care products.” (Pontigo-Loyola 2024)

In 2011, the American Dental Association recommended that pregnant women and infants avoid fluoride to reduce incidents of fluorosis. (Berg ADA 2011) In 2015, the U.S. PHS recommended lowering the drinking water fluoridation level also to lower fluorosis. As Figure 1 indicates, the claim of benefit is narrow.

Fluorosis: A Visible Sign of Fluoride's Systemic Toxicity

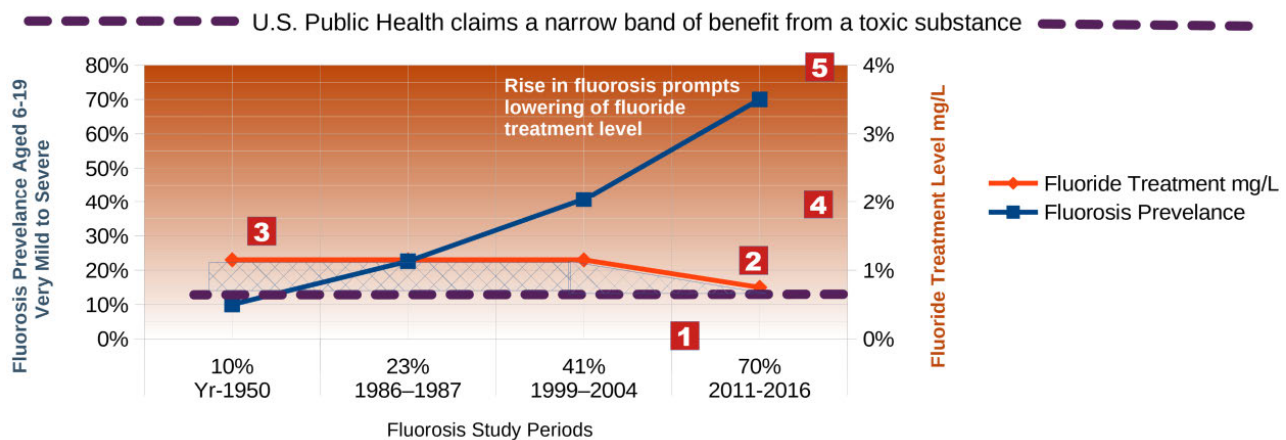


Figure 1

1. 2011 American Dental Association recommends non-fluoridated water for pregnant women and infant formula
2. 2015 U.S. Public Health recommends lowering treatment level to 0.7 mg/L to reduce fluorosis
3. 1962 Fluoride treatment level recommendation 0.7 to 1.2 mg/L
4. 2.0 mg/L over-fluoridation error requires public notification – NE notification within 12 months compared to weeks recommended by EPA
5. 4.0 mg/L: EPA National Primary Drinking Water Regulations, potential long-term

In the early 1950’s not long after fluoridation began, doctors like allergy specialist George Waldbott began to diagnose the effects of fluoride poisoning. Waldbott writes of his clinical experience, “Chronic poisoning from most toxic agents is rarely diagnosed by physicians in its initial stage. Most systemic poisons induce vague, subtle symptoms before the appearance of features characteristic of a particular kind of poisoning.”

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The EPA regulation for fluoride contamination in drinking water. The level is 4.0 mg/L for potential health effects from long-term exposure noting risk of bone disease (pain and tenderness of the bones); and children may get mottled teeth.

Dosing

“Correct dosing is well known and documented; therefore, we must remember when taking fluoride containing products to consider the health consequences of overdosing by carefully monitoring its supply. The current position of experts is that the use of fluorine compounds in the broadly understood fluoride prophylaxis is a correct, safe, and scientifically proven procedure. In any case, the choice of the method and prophylactic measure should depend on the individual needs of the patient” (Lubojanski 2023)

Operating range

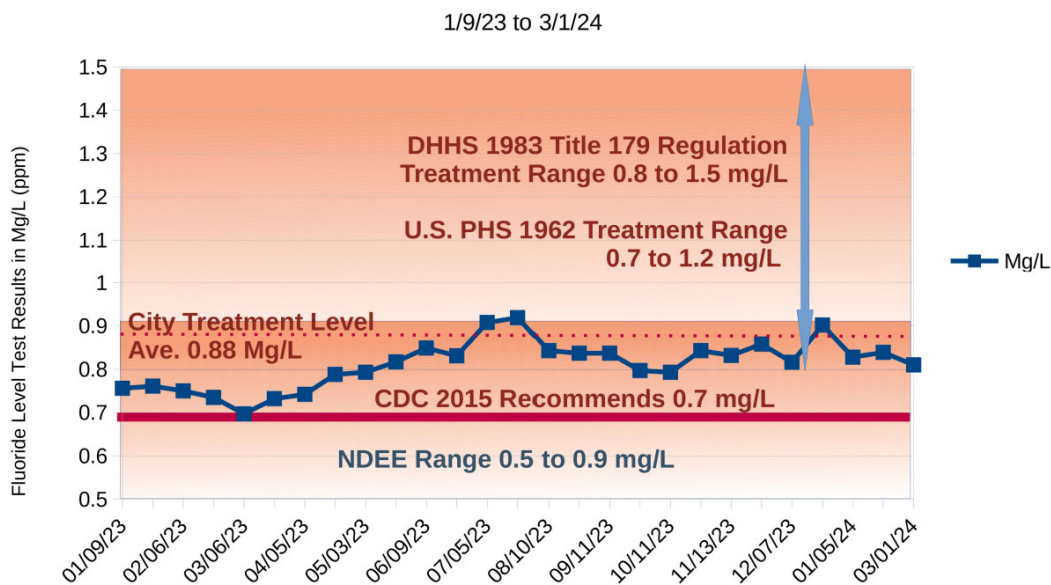
If fluoride treatment continues, the AWWA reports, “ In 2015, 70% of adjusted systems maintained averages within ± 0.1 mg/L of their system's annual average for nine of 12 months.” (Barker 2017)

The City of Lincoln has maintained a range within 0.2 mg/L for the better part of a year. Please consider the MMWR recommendation of 0.7 mg/L as the maximum with acceptable fluctuation below, within a range of 0.5 to 0.7 mg/L. Operational range within ± 0.1 mg/L: “In 2015, 70% of adjusted systems maintained averages within ± 0.1 mg/L of their system's annual average for nine of 12 months... Control ranges narrower than ± 0.2 mg/L may be feasible for monthly average fluoride concentration.” (Journal AWWA Barker 2017)

**2023 Water Quality Reports
Fluoride Treatment Goals**

	Treatment Goal (ppm)	2022 Test Results (ppm)	2023 Test Results (ppm)
Lincoln	0.8 – 1.5	0.899 – 0.901	0.899 – 0.901
Omaha	0.7	0.571 – 0.806	0.620 – 0.807

City of Lincoln Fluoride Test Reports



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