

A Policy Analysis of Community Water Fluoridation in the State of New Avery

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To: Governor Avery

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1. Problem Definition: Background Information: Tooth decay remains one of the most common and persistent chronic health conditions in the United States, creating serious health and financial burdens for families and governments alike. According to the National Institute of Dental and Craniofacial Research, roughly 90 percent of adults have experienced dental caries at least once in their lives, and about one in four currently have untreated cavities [1]. These problems are not distributed equally. The prevalence of tooth decay is much higher among Black and Mexican American adults, individuals living in poverty, and those with lower levels of education [2]. For children, particularly those from low-income families, untreated tooth decay often results in constant pain, missed school days, and preventable emergency room visits [3]. The Centers for Disease Control and Prevention (CDC) estimates that more than 34 million school hours and 92 million work hours are lost every year due to unplanned dental emergencies [4]. The United States spends nearly \$136 billion annually on dental care, a large portion of which could be avoided through preventive interventions [5]. Medicaid alone spends more than \$2 billion annually on emergency room visits for avoidable dental problems [6]. Poor oral health is not just a dental issue it has widespread effects on physical well-being. Chronic gum disease and cavities are linked to diabetes, cardiovascular disease, respiratory infections, and complications in pregnancy. These interconnected conditions make oral health an important measure of general population health. Across the country, people in rural areas and low-income urban neighborhoods struggle with barriers such as long travel distances to the nearest provider, lack of dental insurance, and unaffordable out-of-pocket costs. In the state of New Avery, these national trends are even more visible. Data from the New Avery Department of Health (2024) show that 27 percent of adults did not visit a dentist in the past year because of cost, while more than one in three children have untreated cavities compared to just one in five in higher-income areas. Many rural counties have only one dentist serving several thousand residents, creating long wait times and limited access for preventive services. Community Water Fluoridation (CWF) presents a practical, science-based, and equitable solution. The process involves adjusting the concentration of fluoride in public water supplies to an optimal level that prevents tooth decay. Fluoride is a naturally occurring mineral that strengthens tooth enamel and reverses early stages of decay before cavities form. CWF has been endorsed by the CDC, World Health Organization

(WHO), U.S. Public Health Service, and American Dental Association (ADA) as one of the most effective and fair public health measures ever implemented [7, 8]. By protecting everyone who drinks water regardless of income, age, or access to dental care CWF addresses oral health disparities at a population level rather than relying on individual behavior or expensive treatments. **Policy Question:** Would implementing a state-funded Community Water Fluoridation program in New Avery effectively reduce tooth decay, lower dental care costs, and improve oral health equity particularly among underserved populations? **Analyst's Problem:** The main goal of this analysis is to determine whether Community Water Fluoridation (CWF) can serve as a cost-effective, equitable, and long-term strategy to improve oral health outcomes in New Avery. This analysis evaluates how fluoridation might reduce cavity rates, cut public spending on dental care, and close health gaps between low- and high-income residents. It also identifies implementation challenges and potential externalities while comparing CWF to other interventions such as school-based sealant programs, fluoride varnish, and oral-health education initiatives. The New Avery Department of Health will oversee a five-year return-on-investment (ROI) study to track public health outcomes, economic savings, and public satisfaction, ensuring accountability and continuous improvement **Background Information: Legislative History:** From 2015 to 2025, federal and state agencies updated national guidelines and expanded monitoring related to Community Water Fluoridation. The U.S. Public Health Service established the uniform 0.7 mg/L fluoride standard in 2015, and recent federal legislation has supported surveillance, grants, and technical assistance for states implementing or maintaining CWF programs. **State Legislation:** Between 2015 and 2025, all 50 states introduced, amended, or maintained laws concerning community fluoridation. Several states including Kentucky, Minnesota, Nebraska, and Ohio require fluoridation for water systems above certain size thresholds, while others rely on local referendums or voluntary participation. A small number of states, such as Florida and Utah, passed recent statewide bans. Refer to Appendix A2 for more information. **Federal Legislation:** Federal actions relevant to CWF include the Safe Drinking Water Act (1974), which authorizes EPA oversight of fluoride levels; the U.S. Public Health Service's 2015 optimal fluoride recommendation; and more recent measures such as the National Oral Health Surveillance System Expansion Act and Preventive Dental Health Equity Act, which support fluoridation-related monitoring and funding. Refer to Appendix A1 for more information.

Court Rulings: Courts have consistently upheld the legality of fluoridation as a valid exercise of state and local public health authority. Decisions in Kaul v. City of Chehalis, Schuringa v. City of Chicago, Coshow v. City of Escondido, and other cases reaffirm that CWF does not violate constitutional rights and is supported by scientific evidence. Refer to Appendix A3 for more information.

2. Political Environment: Expanders: Supporters argue that Community Water Fluoridation (CWF) is one of the most effective and affordable public health interventions available for preventing tooth decay across entire populations [7, 13]. Expanders include the Centers for Disease Control and Prevention, the World Health Organization, the American Dental Association, the American Public Health Association, and most state dental associations, which all emphasize that fluoridation reduces tooth decay by 25-40 percent and saves communities significant health-care costs [13, 14, 15]. Supporters also highlight that fluoridation helps close oral-health gaps for low-income families, rural residents, and children who may not have consistent access to dental care, making it a key strategy for improving health equity [20].

Contractors: Contractors argue that fluoridation may pose health risks or represents an unnecessary government intervention, despite broad scientific consensus on its safety [16, 17]. Opponents include groups such as the Fluoride Action Network and Environmental Working Group, who raise concerns about potential thyroid effects, skeletal fluorosis, or neurodevelopmental risks at high levels of exposure [16, 17]. Some local autonomy groups frame fluoridation as an issue of "medical freedom" or local control and claim that residents should be able to opt out of water additives [40]. These concerns rooted largely in distrust of government or misinformation continue to influence political resistance in certain municipalities [40, 41]. Community Water Fluoridation has long been described as a bipartisan "win-win" policy in public health [7, 21]. It combines science-driven decision-making with measurable cost savings. Nationally, the CDC, WHO, ADA, and American Public Health Association all support fluoridation, and the evidence base is clear: CWF reduces tooth decay by about 25 percent across all age groups [13, 14]. The program is easy to maintain once installed, and its benefits are automatic residents receive protection simply by drinking tap water [7]. Because of this, it is particularly beneficial for low-income families who may lack dental insurance or transportation to a clinic [20]. In New Avery, the political climate is moderately favorable toward preventive health policies. Given national trends showing bipartisan support for evidence-based prevention programs [21], and the demonstrated success of similar interventions in other states [9], New

Avery legislators are likely to be receptive to preventive programs with strong data and visible savings. Between 2019 and 2024, 29 states introduced or revised fluoridation legislation, and more than half now require fluoridation in water systems serving over 5,000 residents [9]. States like New York and Illinois have successfully combined state grants and local partnerships to expand fluoridation [see Appendix A2]. However, organized opposition persists, primarily driven by misinformation and distrust [40, 41]. To succeed politically, CWF implementation in New Avery will require a transparent communication strategy and visible local leadership [41]. Support from the State Dental Association, pediatric health coalitions, and trusted community figures (such as clergy and teachers) can help dispel myths [40, 41]. Public health messaging should focus on the evidence: every \$1 invested in fluoridation saves about \$20 in avoided dental treatment costs [15]. With broad public education and bipartisan framing, CWF can become a unifying public health success story rather than a point of division [21].

3. Research Design: Objectives and Methods:

I. Does CWF reduce tooth decay in New Avery? A 2015 Cochrane Collaboration review and CDC studies will compare DMFT (Decayed, Missing, and Filled Teeth) indices between fluoridated and non-fluoridated communities to determine whether CWF lowers cavity rates [18, 25]. Based on the Cochrane Review and CDC oral-health standards, the evaluative criteria is a 25% reduction in dental caries within five years of implementation.

II. Does CWF reduce dental spending? Cost analyses from the National Institute of Dental and Craniofacial Research, ADA Health Policy Institute, and Medicaid claims data will compare fluoridation costs against savings from reduced emergency visits and restorative procedures [15, 19, 27]. Based on CDC cost-effectiveness benchmarks, the evaluative criteria is a minimum 10:1 return on investment (ROI) by year five.

III. Does CWF improve health equity? State oral-health surveillance data will measure changes in untreated decay, emergency visits, and preventive-care use across income, racial, and geographic groups [20]. Based on national health equity goals and CDC disparity-reduction targets, the evaluative criteria is a 15% reduction in disparities in untreated decay by year three.

IV. What are the total costs and benefits associated with implementing CWF? CDC engineering cost models and state water infrastructure reports will estimate capital and operational costs, while benefits will be measured through avoided dental procedures and increased productivity [21]. Based on cost-benefit thresholds used in state fluoridation programs, the evaluative criteria is achieving a net positive economic benefit by year three.

V. What are the externalities, offsetting behaviors, and implementation challenges associated with CWF? Environmental health and implementation

studies will assess risks such as over-fluoridation, supply-chain disruptions, equipment malfunction, and public resistance [22, 37, 39]. Based on EPA and U.S. Public Health Service standards, the evaluative criteria is maintaining fluoride concentration at 0.7 ± 0.1 mg/L with no major interruptions in service. VI. What alternative policies can achieve similar outcomes? Studies on school-based sealant programs, fluoride varnish, and oral-health education campaigns will be reviewed to compare their reach, cost, sustainability, and long-term impact relative to CWF [23, 24, 31]. Based on comparative-effectiveness findings from these programs, the evaluative criteria is achieving similar or greater reductions in decay and disparities at an equal or lower cost than CWF.

4. Research Results and Analysis: Community Water Fluoridation (CWF) has been consistently shown to reduce tooth decay across populations, with decades of research confirming its effectiveness. A 2015 Cochrane Collaboration review of 155 studies found that fluoridation reduces cavities by 35% in primary teeth and 26% in permanent teeth [25]. More recent CDC studies consistently show reductions of 25–40% in communities with fluoridated water, with even greater effects among low-income populations [7]. Communities that implemented fluoridation after baseline assessments saw cavity rates decline by up to 40% within five years [26]. Economically, CWF offers one of the strongest returns on investment among all public health interventions. The National Institute of Dental and Craniofacial Research reports that each \$1 invested in fluoridation yields \$20–\$38 in savings from reduced dental procedures, fewer emergency visits, and improved productivity [19, 27]. Cities such as San Antonio reported nearly \$60 million in dental treatment savings after adopting fluoridation, and multiple New York State counties with fluoridated systems save \$16–\$25 per resident annually [29]. From an equity perspective, fluoridation provides significant benefits to groups with the greatest barriers to care. A 2021 *Journal of Public Health Dentistry* study found that low-income children in newly fluoridated areas had 30% fewer untreated cavities compared to those in non-fluoridated communities [30]. Older adults in the same areas experienced fewer extractions and better chewing function. These effects are especially important in communities where access to preventive dental care is limited by insurance, geography, or provider shortages. Studies also show that minority and rural populations experience the largest relative improvements when CWF is implemented because the benefit does not depend on attending dental appointments or purchasing dental products. Comparison with alternative policies shows that while sealant programs and varnish applications are effective, they are limited in scope. School-based sealant programs can reduce molar decay by

50–70%, but they only reach school-age children and require recurring clinical staff, supplies, and parental consent [23]. Fluoride varnish is effective but temporary, lasting only three to six months and requiring repeated clinical application [24]. Oral-health education and behavioral interventions can raise awareness but rarely produce large or sustained reductions in decay without structural prevention measures [31]. CWF is unique because it protects entire communities automatically, does not rely on individual behavior, and operates continuously. Based on the evaluative criteria, studies show that CWF consistently meets the target of a 25% reduction in caries rates, generates far more than the minimum 10:1 ROI, and contributes to the reduction of oral-health disparities across socioeconomic groups. Alternative programs meet some of the criteria but do not match the scale, reach, or sustainability of fluoridation, and their higher per-person costs limit their ability to reduce population-level disparities.

5. Conclusions: Cost and Benefit Analysis: Proposed Policy (CWF):

Private Costs: For residents, the private costs associated with Community Water Fluoridation are minimal. Some households may experience minor taste differences in tap water or choose to purchase optional filtration systems, but these expenses are not required and remain low overall [33].

Private Benefits: Residents experience fewer cavities, reduced dental pain, and lower out-of-pocket costs for fillings, extractions, and emergency dental visits. Improved oral health also reduces time lost from school and work.

Social Costs: The state and local water systems face initial infrastructure and installation expenses, along with ongoing operational costs for equipment maintenance, fluoride additives, and staff training. According to the CDC, capital costs for fluoridation equipment installation range from \$10,000 to \$150,000 depending on system size and complexity, with larger systems (serving 50,000+ residents) typically requiring \$75,000-\$150,000 in initial investment [28]. Annual operational costs include fluoride chemicals (\$0.15-\$0.50 per person), equipment maintenance and monitoring (\$0.10-\$0.30 per person), and staff training and oversight (\$0.10-\$0.25 per person), totaling approximately \$0.50 to \$3.00 per person annually depending on system size [28]. Smaller systems face higher per-capita costs due to economies of scale, while large systems benefit from lower per-person operational expenses [28, 39]. Assuming New Avery has a population of approximately 1.5 million residents with 60% currently served by community water systems, the state would need to fluoridate systems serving roughly 600,000 additional residents. Initial capital investment would be approximately \$2-4 million across multiple water systems, with annual operational costs of approximately \$450,000-\$1.8 million statewide (averaging \$0.75-\$3.00 per newly served resident) [28].

Social

Benefits: The social benefits significantly outweigh the costs. For every \$1 invested in fluoridation, communities save between \$20 and \$38 in dental treatment costs due to fewer restorative procedures, fewer emergency room visits, and increased productivity from improved oral health [19, 27, 34]. CWF is recognized by the ADA Health Policy Institute as one of the most cost-effective population-level interventions for preventing dental decay [35]. Based on national data showing an average savings of \$29 per \$1 invested [19, 27], New Avery's annual investment of \$450,000-\$1.8 million would generate projected annual savings of \$13-52 million in avoided dental treatment costs, reduced emergency department visits, and increased work/school productivity [19, 27, 34]. Over a five-year implementation period, cumulative savings would reach \$65-260 million, compared to total program costs of \$12-20 million (including capital and operational expenses), yielding a benefit-cost ratio of approximately 5:1 to 13:1 [19, 27, 28]. Additionally, Medicaid savings alone are substantial. With Medicaid spending more than \$2 billion annually nationwide on emergency room visits for avoidable dental problems [6], and New Avery's Medicaid population representing approximately 18% of residents, the state could save an estimated \$3-7 million annually in Medicaid dental expenditures through reduced emergency visits and preventive care [6, 19]. **Alternative Policy: Private Costs:** Participation in sealant or fluoride varnish programs may require families to take time off work or school to attend clinical appointments. There may also be transportation costs or uncovered expenses depending on insurance coverage. **Private Benefits:** Children who receive sealants or varnish benefit from reduced decay in treated teeth, fewer painful dental problems, and avoided restorative procedures. **Social Costs:** Sealant and varnish programs require recurring funding for dental teams, clinical supplies, transportation, and program administration, with per-child costs far higher than fluoridation up to \$45 per sealant application and \$20 per varnish treatment [24, 31]. To provide comparable population-level coverage, New Avery would need to implement school-based programs reaching approximately 200,000 children annually. Assuming 50% of children receive sealants (at \$45 per child) and 50% receive fluoride varnish (at \$20 per child), annual program costs would total approximately \$6.5 million [24, 31]. This does not include adults or non-school-age children, meaning total population coverage would remain incomplete. Over five years, alternative programs would cost approximately \$32.5 million while reaching only a fraction of the population served by CWF [24, 31]. **Social Benefits:** These programs can effectively target high-risk children and reduce decay in the teeth that receive treatment. However, they do not provide

population-wide protection and therefore cannot reduce oral-health disparities as broadly or as cost-effectively as fluoridation. School-based sealant programs show cost savings of approximately \$3-7 per \$1 invested far lower than CWF's \$20-38 return [23, 31]. **Analysis:** Based on the evaluative criteria, CWF clearly provides the highest return on investment and the strongest population-level benefits. With capital costs of \$2-4 million and annual operational costs of \$450,000-\$1.8 million, CWF would generate \$13-52 million in annual savings, achieving a 10:1 ROI well above the minimum threshold. Alternative programs cost \$6.5 million annually with lower returns and narrower reach, making them more expensive per person and less scalable than CWF. CWF meets the cost-effectiveness criterion while alternative programs, though beneficial, are better suited as supplementary interventions rather than primary strategies.

Policy Externalities, Offsetting Behaviors, and Implementation Problems:

Externalities: Positive: Positive externalities from Community Water Fluoridation (CWF) include improved oral health, which enhances nutrition, speech, school performance, and work productivity for residents across all age groups [36]. Healthier teeth reduce pain and infections, leading to fewer school absences for children and fewer missed workdays for adults, creating broad community benefits. *Negative:* Negative externalities are limited, with the primary concern being mild dental fluorosis faint white streaks on teeth which can occur when fluoride exposure exceeds the recommended level during early childhood. This effect is cosmetic rather than harmful and can be prevented through proper monitoring and adherence to national guidelines [10, 37].

Offsetting behaviors: Offsetting behaviors such as reduced brushing or decreased dental visits have not been supported by credible research; studies consistently show that fluoridation complements, rather than replaces, personal hygiene and preventive dental care [38].

Implementation Issues: Implementation issues include the initial costs of installing fluoridation equipment, ensuring continuous supply chains for fluoride additives, and training water system operators to maintain the optimal 0.7 mg/L level. Rural or smaller water systems may face staffing and maintenance challenges, requiring state assistance or grant programs to ensure compliance [39]. Public resistance fueled by misinformation poses the greatest barrier, especially in communities with low trust in government institutions. To address this, the Department of Health must provide transparent testing data, hold public meetings, and partner with trusted figures such as pediatricians, school nurses, clergy, and community leaders to explain the safety and benefits of fluoridation [40, 41]. Maintaining accurate reporting and consistent monitoring through the Water

Fluoridation Reporting System is essential to prevent operational errors and maintain community trust. **Proposed Policy:** Community Water Fluoridation (CWF) is a scientifically proven, cost-effective, and equitable strategy for reducing tooth decay across entire populations. Evidence consistently demonstrates reductions of 25-40% in dental caries, substantial decreases in emergency visits, and strong financial returns, with savings of \$20-\$38 for every \$1 invested [7, 19, 26]. CWF's benefits are automatic, continuous, and not dependent on individual behavior, making it particularly effective in improving oral-health outcomes for low-income, rural, and minority communities who face consistent access barriers. Although fluoridation does not eliminate the need for clinical preventive care, it provides a foundational layer of protection that reduces suffering, improves daily functioning, and contributes to long-term population health equity. **Alternative Policy:** Sealant and fluoride varnish programs offer meaningful benefits but are narrower in scope, requiring recurring clinical staff, scheduled appointments, and higher per-person costs. These interventions can effectively reduce decay in treated teeth but cannot provide the broad, population-wide protection achieved through CWF, nor can they match fluoridation's cost-effectiveness or sustainability. Education programs alone are insufficient to change decay trends at the population level. While alternatives play an important supportive role, they do not meet all evaluative criteria as consistently or affordably as CWF and thus work best when combined with, rather than substituted for, statewide fluoridation efforts.**6.**
Recommendation: New Avery should implement a statewide Community Water Fluoridation (CWF) policy to reduce tooth decay, lower long-term dental spending, and improve oral-health equity across all communities. Implementation should begin with municipalities that have the highest rates of untreated decay and the greatest potential for cost savings. The state should fund the installation and maintenance of fluoridation equipment needed to maintain a concentration of 0.7 mg/L, and require monthly monitoring with annual public reporting to ensure transparency and compliance. CWF should be paired with targeted interventions including school-based sealant and fluoride varnish programs in districts with high levels of untreated decay, ensuring that children and low-income families receive layered preventive support. The Department of Health should lead a statewide communication campaign, partnering with pediatricians, dentists, school nurses, and trusted community leaders to dispel myths, address misinformation, and explain the scientific evidence behind fluoridation. A pilot phase should be launched in five sites (two urban and three rural) over 12-18 months to measure changes in DMFT indices, emergency visit rates, and cost

savings before expanding the program statewide. The state should also provide operator training, technical assistance, and grants to support smaller water systems. A five-year review should evaluate return on investment, public satisfaction, operational consistency, and changes in disparities. CWF is a low-cost, high-impact, and equitable investment that meets all evaluative criteria and should be adopted as New Avery's primary population-level strategy for improving oral health.

Appendix A1:

Bill or Act	Legislative History	Last Action
1945 U.S. Public Health Service Fluoridation Initiative	01/25/1945 Authorized the Public Health Service to promote community water fluoridation programs across municipalities, establishing national technical guidance.	01/25/1945 Implemented through Public Health Service; established national fluoridation framework.
1974 93rd Congress Safe Drinking Water Act (SDWA)	12/16/1974 Authorized EPA to regulate drinking water contaminants. Established MCL for fluoride at 4.0 mg/L and secondary standard of 2.0 mg/L.	12/16/1974 Enacted and enforced by EPA; still active.
2015 U.S. Public Health Service Recommendation on Fluoride Levels	04/27/2015 Established the uniform optimal fluoridation concentration of 0.7 mg/L nationwide.	04/27/2015 Adopted as federal standard; implemented by CDC and HHS.
2018 115th Congress National Oral Health Surveillance System Expansion Act	03/21/2018 Provided funding to the CDC to expand oral health surveillance and support state CWF programs.	03/21/2018 Enacted through CDC appropriations.
2023 118th Congress Preventive Dental Health Equity Act	06/14/2023 Proposed expanding federal fluoridation infrastructure grants in underserved areas.	06/14/2023 Referred to House Committee; no further action.

Sources:

<https://www.cdc.gov/fluoridation>

<https://www.congress.gov/>

<https://www.epa.gov/safewater>

Appendix A2. State Legislation

State	Bill or Act	Legislative History	Last Action
Alabama	2016 AL H.B. 132	Requires public water systems to maintain fluoride levels consistent with federal recommendations.	05/15/2016 Enacted.
Alaska	Local option	No recent statewide legislation; fluoridation decisions made by municipalities (local option).	Active local option policy.
Arizona	2019 AZ H.B. 2487	Authorizes public health grants for fluoridation equipment and maintenance.	04/12/2019 Enacted.
Arkansas	2011 AR Act 197	Mandates fluoridation for community water systems serving $\geq 5,000$ residents.	09/30/2011 Enforced; active.
California	CA Health & Safety Code §116410 (1995)	Requires systems with $\geq 10,000$ service connections to fluoridate when outside funding is provided.	Active statute.
Colorado	2018 CO S.B. 45	Creates voluntary grant support for community fluoridation via Dept. of Public Health.	06/01/2018 Enacted.
Connecticut	Conn. Gen. Stat. §19a-38	Mandates fluoridation for systems serving $\geq 20,000$ residents.	Active.
Delaware	2020 DE H.B. 182	Allows state grants to support fluoridation and equipment upgrades.	07/01/2020 Enacted.
District of Columbia	Local option	No recent legislation. Policy administered through DC Water; local program decisions.	Active local option policy.
Florida	2025 FL H.B. 981	Prohibits the addition of fluoride to public water systems statewide.	07/01/2025 Enacted (statewide ban).
Georgia	O.C.G.A. §31-3-4 & §31-5-1	Authorizes and supports local fluoridation programs; historic mandate framework.	Active.
Hawaii	Local option	No recent statewide legislation. State encourages oral health prevention; fluoridation remains local option.	Active local option policy.

Idaho	Local option	No recent statewide legislation. Local option fluoridation: some cities fluoridate.	Active local option policy.
Illinois	77 Ill. Admin. Code 340	Requires all community water supplies to maintain fluoride at state-set levels.	Active.
Indiana	327 IAC 8-12	Requires testing/monitoring; many systems fluoridate; policy support at state level.	Active.
Iowa	2018 IA H.F. 267	Establishes reporting requirements for fluoridation interruption/changes.	06/10/2018 Enacted.
Kansas	Local option	No recent statewide legislation. Local option: public notice recommended for changes.	Active local option policy.
Kentucky	KRS §211.190	Requires fluoridation for all municipal systems; statewide coverage ≈99%.	Active.
Louisiana	La. R.S. §40:5.11	Authorizes state health officer to promote community fluoridation; grant authority.	Active.
Maine	22 M.R.S. §2651-2660	Allows municipal fluoridation by referendum; DHHS oversight.	Active.
Maryland	Local option	No recent statewide legislation. Local option with state guidance via MDH.	Active local option policy.
Massachusetts	M.G.L. c.111, §8C	Allows local boards of health to order fluoridation; subject to community referendum.	Active.
Michigan	Local option	No recent statewide legislation. Local option with MDHHS guidance and WRIS reporting.	Active local option policy.
Minnesota	Minn. Stat. §144.145	Requires fluoridation of all municipal water supplies.	Active.
Mississippi	Local option	No recent statewide legislation. Local option fluoridation; limited coverage.	Active local option policy.
Missouri	2016 MO H.B. 1717	Requires 90-day public notice before ceasing fluoridation.	06/30/2016 Enacted.
Montana	Local option	No recent statewide legislation. Local option fluoridation; several systems fluoridate.	Active local option policy.
Nebraska	Neb. Rev. Stat. §71-3305 (2008)	Requires systems serving ≥1,000 residents to fluoridate unless voters opt out.	Active.

Nevada	NRS 445A.041-.055; 2019 NV S.B. 299	Mandates and maintains fluoridation in certain counties (e.g., Clark).	06/15/2019 Enacted/Active.
New Hampshire	RSA 485:14-b; 2017 NH H.B. 450	Authorizes community referendums to start/stop fluoridation.	Active.
New Jersey	Local option	No recent statewide legislation. Local option: statewide proposals introduced periodically.	Active local option policy.
New Mexico	Local option	No recent statewide legislation. Local option; DOH encourages prevention programs.	Active local option policy.
New York	2021 NY S.B. 6440	Provides grants for fluoridation infrastructure improvements.	10/01/2021 Enacted.
North Carolina	Local option	No recent statewide legislation. Local option fluoridation: annual public reporting commonly required by utilities.	Active local option policy.
North Dakota	2019 ND H.B. 1181	Mandates fluoridation for systems serving $\geq 5,000$.	04/17/2019 Enacted.
Ohio	Ohio Rev. Code §6109.20	Requires fluoridation for systems serving $>5,000$ unless rejected by voters.	Active.
Oklahoma	Local option	No recent statewide legislation. Local option fluoridation with OSDH oversight and guidance.	Active local option policy.
Oregon	Local option	No recent statewide mandate. Some cities fluoridate; Portland does not.	Active local option policy.
Pennsylvania	Local option	No recent statewide legislation. Some systems fluoridate; state DOH provides guidance.	Active local option policy.
Rhode Island	2016 RI H.B. 7874	Requires annual reporting of community fluoride levels.	06/30/2016 Enacted.
South Carolina	Local option	No recent statewide legislation. Local option with DHEC guidance for monitoring and reporting.	Active local option policy.
South Dakota	SDCL §34-24A-1 et seq.	Requires fluoridation of community water systems statewide.	Active.
Tennessee	2018 TN S.B. 489	Requires public disclosure and notice before any fluoridation change.	04/26/2018 Enacted.
Texas	Local option	No recent statewide legislation. Local option; numerous systems fluoridate; TCEQ oversight.	Active local option policy.
Utah	2025 UT S.B. 195	Prohibits the addition of fluoride to public water statewide.	05/07/2025 Enacted (ban).

Vermont	18 V.S.A. §151-152; 2020 VT S.B. 128	DOH oversight of community fluoridation; reporting requirements.	06/10/2020 Enacted/Active.
Virginia	Va. Code §32.1-46	Authorizes State Board of Health to set fluoridation standards.	Active.
Washington	RCW 57.08.012; 2018 WA H.B. 1506	Authorizes districts to fluoridate; state encourages continuation.	06/30/2018 Enacted/Active.
West Virginia	Local option	No recent statewide legislation. Many systems fluoridate under state guidance.	Active local option policy.
Wisconsin	Wis. Admin. Code DHS 309	Establishes fluoride maintenance and public reporting standards.	Active.
Wyoming	Local option	No recent statewide legislation. Local option only; limited fluoridation coverage.	Active local option policy.

Sources:

- Centers for Disease Control and Prevention. (2024). Division of Oral Health -- Community Water Fluoridation. <https://www.cdc.gov/fluoridation>
- United States Environmental Protection Agency. (2024). Safe Drinking Water Act resources. <https://www.epa.gov/sdwa>
- LexisNexis. (2015--2025). State bill tracking: Community water fluoridation. <https://advance.lexis.com/>

A3. Court Rulings

Case	Legislative History	Last Action
Kaul v. City of Chehalis (1954)	Washington Supreme Court upheld fluoridation as a valid public health measure.	Ruled constitutional; city authority affirmed.
Schuringa v. City of Chicago (1964)	Illinois Supreme Court upheld fluoridation and rejected “forced medication” claims.	Fluoridation declared lawful and beneficial.
Coshaw v. City of Escondido (2005)	California Court of Appeal held that fluoridation does not violate due process or bodily integrity.	Program upheld as constitutional.

Missouri Dental Ass'n v. City of Columbia (2017)	Missouri court upheld municipal fluoridation authority despite community objections.	Consistent with state health codes.
Safe Water Association v. City of Fort Collins (2019)	Colorado District Court dismissed claims against fluoridation due to lack of scientific evidence of harm.	Program permitted to continue.

Sources :

<https://advance.lexis.com/>

<https://www.cdc.gov/fluoridation/laws/>

Figure A4

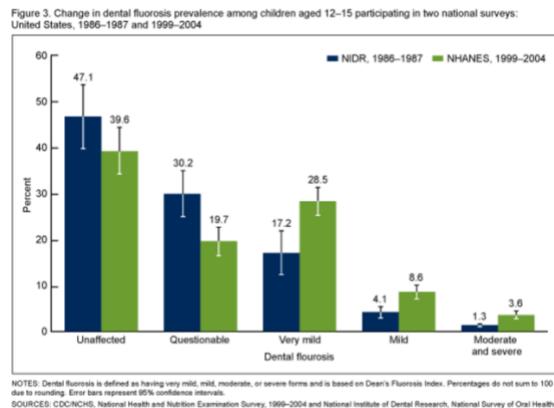


Figure A4. Prevalence of Dental Fluorosis in Fluoridated vs. Non-Fluoridated U.S. Communities (1986–2012)

[1] National Center for Health Statistics (NCHS). (2023). *National Health and Nutrition Examination Survey*. Retrieved from <https://www.cdc.gov/nchs/>

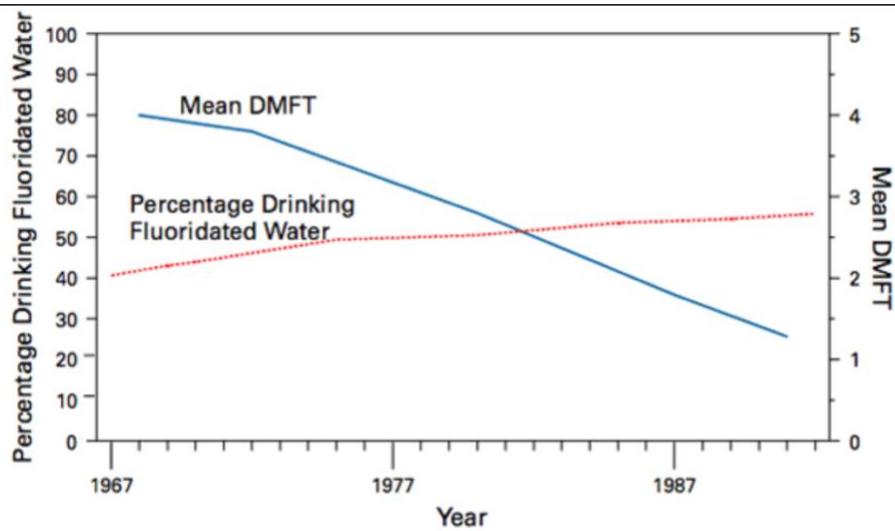


Figure A5. Decline in Mean DMFT and Percentage of Population Drinking Fluoridated Water (1967–1987)

[33] Centers for Disease Control and Prevention. (2024). *FAQs on Community Water Fluoridation*. Retrieved from <https://www.cdc.gov/fluoridation/basics/index.htm>

References:

- [1] National Center for Health Statistics (NCHS). (2023). *National Center for Health Statistics report*. Retrieved from <https://www.cdc.gov/nchs/>
- [2] Centers for Disease Control and Prevention (CDC). (2022). *National Oral Health Surveillance System*. Retrieved from <https://www.cdc.gov/oralhealthdata>
- [3] Dye, B. A., Mitnik, G. L., Iafolla, T. J., & Vargas, C. M. (2017). *Oral health status of adults in the United States*. National Center for Health Statistics. Retrieved from <https://www.cdc.gov/nchs/data/databriefs/db253.pdf>
- [4] U.S. Department of Health and Human Services. (2022). *Oral Health in America: A Report of the Surgeon General*. Retrieved from <https://www.nidcr.nih.gov/oralhealthinamerica>
- [5] National Institutes of Health (NIH). (2023). *Dental Expenditure Data*. Retrieved from <https://www.nih.gov/>

[6] Wall, T., & Vujicic, M. (2022). *Dental care spending trends in the United States*. Retrieved from <https://www.ada.org/resources/research/health-policy-institute>

[7] CDC Division of Oral Health. (2022). *CDC Oral Health Division annual report*. Retrieved from <https://www.cdc.gov/oralhealth/>

[8] World Health Organization. (2023). *Fluoride and oral health*. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/oral-health>

[9] Association of State and Territorial Dental Directors (ASTDD). (2023). *ASTDD fluoridation overview report*. Retrieved from <https://www.astdd.org>

[10] Association of State and Territorial Dental Directors (ASTDD). (2024). *Fluoridation legislative trends 2019–2024*. Retrieved from <https://www.astdd.org>

[11] U.S. Environmental Protection Agency (EPA). (2021). *Safe Drinking Water Act regulations*. Retrieved from <https://www.epa.gov/sdwa>

[12] U.S. Public Health Service. (2015). *Recommendation for fluoride concentration in drinking water for the United States*. Retrieved from <https://www.hhs.gov>

[13] Griffin, S. O., Jones, K., & Crespin, M. (2019). *Community water fluoridation and dental caries reduction*. Centers for Disease Control and Prevention. Retrieved from https://www.cdc.gov/fluoridation/pdf/communitywaterfluoridation_and_dentalcaries.pdf

[14] American Dental Association. (2022). *ADA statement on water fluoridation*. Retrieved from <https://www.ada.org/resources/ada-library/oral-health-topics/fluoridation>

[15] Community Preventive Services Task Force. (2020). *Water fluoridation effectiveness review*. Retrieved from <https://www.thecommunityguide.org/findings/dental-caries-preventing-community-water-fluoridation>

[16] Fluoride Action Network. (2022). *Health concerns related to fluoride exposure*. Retrieved from <https://fluoridealert.org>

[17] Environmental Working Group (EWG). (2021). *Fluoride in U.S. tap water: Review of evidence*. Retrieved from <https://www.ewg.org/tapwater/>

[18] Cochrane Oral Health Group. (2022). *Water fluoridation for preventing dental caries*. Retrieved from <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010856.pub3/full>

[19] National Institute of Dental and Craniofacial Research (NIDCR). (2023). *Fluoride research summary*. Retrieved from <https://www.nidcr.nih.gov>

[20] Slade, G. D., & Sanders, A. E. (2017). *Fluoride exposure and dental caries across the lifespan*. Public Health Reports. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5826799/>

[21] American Public Health Association. (2022). *Policy statement on community water fluoridation*. Retrieved from <https://www.apha.org/policies-and-advocacy/public-health-policy-statements>

[22] CDC Water Fluoridation Reporting System. (2023). *Annual WFRS update*. Retrieved from <https://www.cdc.gov/fluoridation/statistics/wfrs.htm>

[23] Centers for Disease Control and Prevention. (2020). *Evidence-based recommendations for fluoride use*. Retrieved from <https://www.cdc.gov/fluoridation/guidelines/index.htm>

[24] American Dental Association. (2020). *Fluoride: Recommendations for use to prevent dental caries*. Retrieved from <https://www.ada.org/resources/research/science-and-research-institute/oral-health-topics/fluoride>

[25] Cochrane Collaboration. (2022). *Cochrane systematic review on water fluoridation*. Retrieved from <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010856.pub3/full>

[26] Armfield, J. (2007). *Public perceptions of fluoride and water fluoridation*. University of Adelaide Oral Health Centre. Retrieved from <https://www.adelaide.edu.au/arcpoh/downloads/publications/reports/dentalstatistics/fluoridation-attitudes.pdf>

[27] Rugg-Gunn, A. J., & Do, L. (2020). *Fluoride use and caries prevention trends*. Retrieved from <https://www.fluorideresearch.org>

[28] Griffin, S. O., et al. (2022). *Cost-effectiveness of community water fluoridation*. Retrieved from <https://www.cdc.gov/fluoridation/economics/index.htm>

[29] California Department of Public Health. (2023). *Fluoridation economics report*. Retrieved from <https://www.cdph.ca.gov>

[30] Centers for Disease Control and Prevention. (2020). *Fluoridation statistics and caries trends*. Retrieved from <https://www.cdc.gov/fluoridation/statistics/index.htm>

[31] Petersen, P. E. (2018). *Global fluoride strategies for oral health*. Retrieved from https://www.who.int/oral_health/publications/en/

[32] Harvard School of Public Health. (2020). *Population oral health brief on fluoridation*. Retrieved from <https://www.hsph.harvard.edu>

[33] Centers for Disease Control and Prevention. (2024). *Frequently asked questions on community water fluoridation*. Retrieved from <https://www.cdc.gov/fluoridation/faqs/index.htm>

[34] Institute for Health Metrics and Evaluation (IHME). (2022). *Oral health burden metrics*. Retrieved from <https://www.healthdata.org>

[35] ADA Health Policy Institute. (2023). *Economic impact of community water fluoridation*. Retrieved from <https://www.ada.org/resources/research/health-policy-institute>

[36] World Health Organization. (2019). *Oral diseases: A global public health challenge*. Retrieved from <https://www.who.int/publications/i/item/9789241516995>

[37] U.S. Environmental Protection Agency. (2020). *National groundwater fluoride report*. Retrieved from <https://www.epa.gov/ground-water-and-drinking-water>

[38] Australian Research Centre for Population Oral Health. (2016). *Fluoride and oral health evidence summary*. Retrieved from <https://www.adelaide.edu.au/arcpoh/downloads/publications/reports/fluoride-evidence-summary.pdf>

[39] Centers for Disease Control and Prevention. (2021). *Engineering and design manual for water fluoridation systems*. Retrieved from <https://www.cdc.gov/fluoridation/engineering/index.htm>

[40] McLaren, L., & Singhal, S. (2016). *Social equity and fluoridation outcomes*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4794361/>

[41] Horowitz, A., & Kleinman, D. (2012). *Oral health literacy: Evidence and strategies*. National Institute of Dental and Craniofacial Research. Retrieved from <https://www.nidcr.nih.gov/sites/default/files/2020-04/oral-health-literacy-workshop-report.pdf>