CareQuest Institute for Oral Health®

REAEARCH BRIEF

How Ending Water Fluoridation Would Affect Children and State Medicaid Costs

Highlights

- Fluoride, a naturally occurring mineral, has been shown to protect the teeth of children and adults from decay (cavities). This is why many communities add it to their drinking water.
- The evidence shows that fluoride in water and fluoride toothpaste work in complementary ways to prevent cavities.
- A few states have banned this process (water fluoridation) and some others are talking about taking similar actions.
- This brief looks at the impact that a ban would have on children and Medicaid costs in five states. One of these states voted for a ban in 2025, and the other four are considering proposals that would curtail or ban fluoridation.
- Our research shows that these states would see thousands of additional children get cavities. The data also project that each state's Medicaid budget would see a spike in costs.

Tooth decay (cavities) is the most common chronic disease for US children and adults.

Cavities often go untreated. This can cause pain and lead to infections that make it difficult to eat, to speak, or to concentrate on school or work. Treating cavities through fillings and extractions can be expensive, especially for families who are living paycheck to paycheck. If treatment costs rise, this can also be expensive for states, which would face increased treatment costs in Medicaid.

The good news is that we know how to prevent cavities, and one proven approach is keeping the right amount of fluoride in drinking water. Fluoride is a mineral that has been shown to protect teeth from developing cavities. Most Americans live in a community that provides fluoridated water. More than 7,000 research papers have been published on water fluoridation, and this research demonstrates its benefits and safety.

Last year, Florida and Utah banned water fluoridation. Some other states are considering proposals to end or change their fluoridation laws. Some legislators are wondering whether water fluoridation is needed with the availability of fluoride toothpaste.

Calgary, one of Canada's largest cities, ended fluoridation in 2011. After seeing the cavity rate rise, Calgary's city council recognized that fluoridated toothpaste by itself did not offer full protection. The council voted to reverse its decision and start fluoridation again.

Calgary's experience reflects the conclusion reached by scientists at the Centers for Disease Control and Prevention, who state that fluoride in water and fluoride toothpaste "work together to prevent cavities."

What could states expect?

A 2024 study estimated what would happen if all 50 states were to ban water fluoridation. The study found that a ban could result in more than 25 million additional decayed teeth among children in the next five years. These additional cavities would add $9.8 billion to the country's health care costs.

Researchers at CareQuest Institute for Oral Health wanted to learn how ending fluoridation could affect individual states. This analysis examines the Medicaid programs in five states — Florida, Kentucky, Louisiana, Oklahoma, and Missouri. While children's dental coverage in Medicaid is virtually the same from one state to the next, state Medicaid programs offer different levels of coverage for adults. For this reason, this analysis focuses on children.

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This research brief examined Medicaid because children from low-income households have a greater risk of cavities compared to children from upper-income households. This analysis reveals that in each of the five states, thousands of additional children would need to have teeth filled or extracted (removed) if fluoridation ended (see Table 1).

After three years without the benefits of fluoridation, the estimated number of newly affected children would greatly increase:

- **Florida** banned fluoridation last year, and this analysis estimates that it is likely to see an additional 52,131 children who need teeth extracted or filled.
- **Kentucky** has a state policy ensuring access to fluoridated water. If fluoridation suddenly ended across the state, an additional 25,235 children would require tooth fillings or extractions after three years.
- If fluoridation in **Louisiana** ended, after three years, 15,562 additional children would need extractions or fillings.
- If **Missouri** were to end fluoridation, after the first three years, an additional 17,248 children would require teeth to be filled or extracted.
- If fluoridation ceased for three years in **Oklahoma**, 22,396 additional children would need a filling or extraction of a decayed tooth.

This surge in cavities would also squeeze state budgets by raising the costs of Medicaid programs.

Table 1. Impact of Ending Community Water Fluoridation on the Number of Medicaid Enrolled Children Receiving Dental Treatment for Cavities and Cost to Medicaid in 5 States

	1-Year Impact		3-Year Impact	
	Number of Children with Extractions and/or Restorations	Estimated Cost to Medicaid	Number of Children with Extractions and/or Restorations	Estimated Cost to Medicaid
Kentucky	7,788	$1,949,194	25,235	$6,315,389
Oklahoma	7,248	$2,037,673	22,396	$6,296,409
Louisiana	5,293	$1,692,208	15,562	$4,975,090
Florida	17,732	$2,173,182	52,131	$6,389,154
Missouri	5,424	$4,905,204	17,248	$15,598,550

Raising states' Medicaid costs

After three years without water fluoridation, an additional 132,572 Medicaid-enrolled children across these five states would need teeth filled or extracted. This spike would squeeze state budgets by increasing the amount Medicaid would need to pay to cover these increased treatment needs.

This analysis reveals that after three years without water fluoridation, Medicaid costs in each state would rise by several million dollars (see Table 1). The estimated increase ranges from a low of nearly $5 million in Louisiana to the highest jump in costs in Missouri, which would see its Medicaid costs rise by more than $15 million.[1] This would come at an especially tough time for Missouri, where state revenues are already expected to fall far below expectations.

Federal law defines what Medicaid covers for children. For this reason, states' Medicaid programs must absorb increased costs when dental treatment needs go up.

Although the increased Medicaid expenses appear small when compared to each state's overall program budget, legislators should look closely at dental costs.

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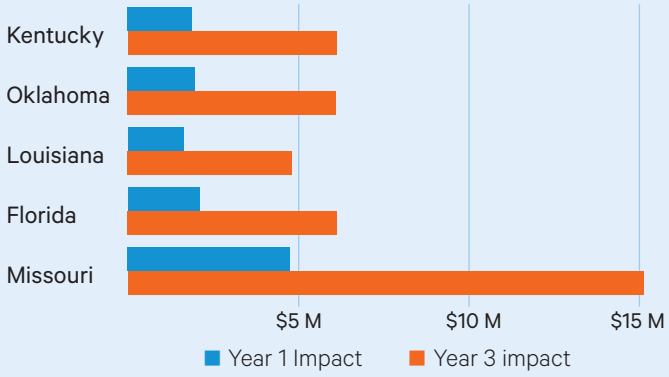
Rise in Medicaid costs in 5 states after three years without the benefits of fluoridation



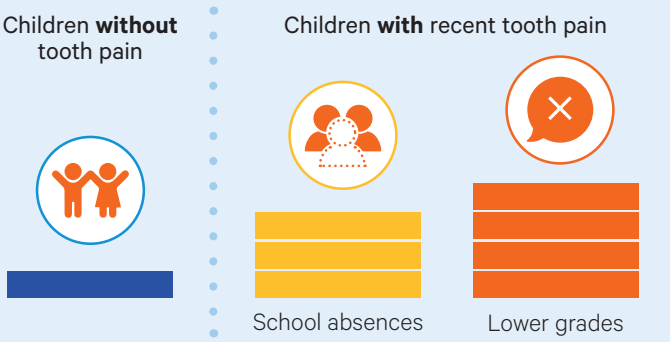
The school connection

This analysis focuses on how eliminating water fluoridation would affect the dental treatment needs of Medicaid-enrolled children and the corresponding costs of the program. There are other impacts that this research brief does not address directly. However, other research demonstrates that worsening dental health affects children and families in broader ways.

If left untreated, cavities can cause pain or more serious infections in children. Research shows that children with recent tooth pain were three times more likely to be absent from school and four times more likely to receive lower grades than children without tooth pain. Ending fluoridation could contribute to the educational hurdles that kids from low-income families already face.

Fluoridation improves children's odds of growing up with healthier teeth that last a lifetime. This is why water fluoridation is recommended by the largest US organizations of dentists, pediatricians, and public health professionals.

The impact of tooth pain on children's schooling



1. Medicaid cost increases are influenced by various factors, including the number of participating dental providers and states' reimbursement levels.

Impacts on parents and adults

The impact of dental problems goes beyond the children who are affected. The lives of parents and caregivers are also disrupted. In fact, in one year, 5.7 million parents/guardians missed an estimated 38.5 million productive hours due to their children's oral pain or unplanned dental visits. If these four states were to join Florida in ending fluoridation, this drag on productivity could be expected to rise.

This analysis did not examine how ending fluoridation would impact adults. However, research strongly suggests that adults' dental health would also suffer.

One study found that people who had grown up with access to fluoridated water were less likely to experience tooth loss as older adults. The study's authors wrote that for every four individuals who lived all or most of their lives in a fluoridated community, one such individual had one more tooth than they would have had if they had not grown up with fluoridation.

A higher cavity rate can also negatively affect adults' job opportunities. Untreated or severe cavities can make it necessary to extract decayed teeth. Research shows that adults with missing front teeth are perceived by others to be less intelligent and less trustworthy. In a national survey, nearly 3 in 10 adults in low-income households said that the "appearance of my mouth and teeth affects my ability to interview for a job."

1 in 4 individuals who lived all or most of their lives in a fluoridated community had one more tooth

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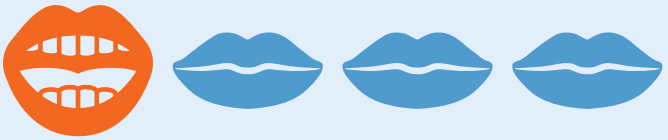

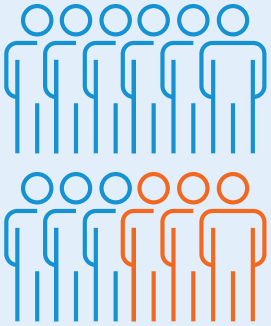

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Is fluoride toothpaste enough?

Some people claim there is no benefit to swallowing fluoride in drinking water. Others say that fluoride toothpaste makes water fluoridation unnecessary. Yet the evidence does not support these arguments.

Topical forms of fluoride, such as toothpaste, are beneficial for children. However, the fluoride in water provides a unique benefit that topical fluoride does not offer. Even before "tooth eruption" — when teeth first appear in a child's mouth — the enamel of teeth is strengthened by the fluoride that kids swallow from drinking water. In fact, a study of 17,000 children pointed to "the importance of a pre-eruptive exposure to fluoridated water" and found that "there was no significant prevention" of cavities unless kids' teeth were exposed to fluoride before eruption.

Real-world evidence supports this study. In Calgary, Canada, the city council voted to end water fluoridation in 2011. The council might have assumed that access to fluoride toothpaste

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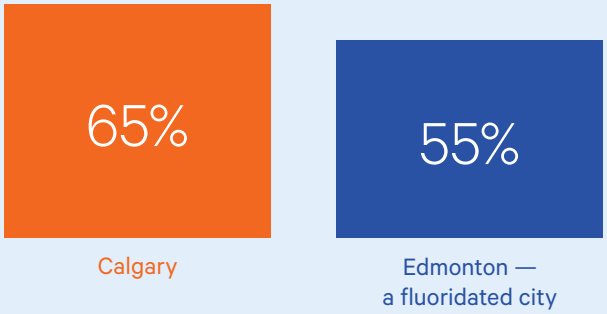
would be enough to keep cavity rates from rising. Yet, in the years that followed, cavities increased steadily among Calgary children. Meanwhile, the cavity rate in Edmonton — a fluoridated city in the same province — changed very little. Eight years after Calgary ended its water fluoridation, 65% of children in Calgary had cavities, compared to only 55% of children in Edmonton.

In Alaska's capital city, Juneau, dental treatment costs for Medicaid-enrolled children soared after the city ended fluoridation by an average of 47% across age groups. By contrast, the treatment costs for children in the city of Anchorage, which kept fluoridated water, barely changed during the same period (an overall increase of 5% across age groups).

Clearly, ending fluoridation would strike a blow to children's health, well-being, and opportunity. Additionally, a ban would raise Medicaid costs, adding pressure to state budgets. These higher costs would come at a troubling time — a time when the National Conference of State Legislatures reports that states are seeing "slowing revenue growth" and "declining federal support" for their programs.

Maintaining water fluoridation would protect dental health by avoiding a major jump in cavities. And it would keep states from seeing a big spike in their Medicaid budgets.

Percentage of children with cavities eight years after Calgary ended its water fluoridation



Average percentage of the increase in dental treatment costs for Medicaid-enrolled children after Juneau ended its water fluoridation

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Methodology

CareQuest Institute for Oral Health derived estimates of the impact of removing water fluoridation on Medicaid enrolled children using a variety of data sources. First, information on the Medicaid-enrolled population was collected using estimates from the American Community Survey and the State of Oral Health in America survey. Next, Medicaid claims data from each state were used to calculate the percentage of the enrolled child population receiving a dental visit and the number of patients that have an extraction or restoration in the most recent year of data. Estimates of the cost of these treatments were obtained by using fees for services derived from each state. Third, estimates of the increased probability of extractions and restorations were derived by using estimates published in prior research and those derived from a statistical analysis of the impact of living in a zip code with fluoridated water, controlling for other factors. Fourth, the previously cited data produced an estimate of the increased number of extractions and restorations that would occur if there were no fluoridation in the state, and the corresponding cost of delivering care, using the information derived in previous steps. Fifth, and finally, we developed estimates for three years, adjusting for anticipated changes in enrollment in Medicaid derived from post-unwinding estimates.

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