

# Reducing Oral Health Disparities in Sheridan, Wyoming: Increasing Access to Fluoride Varnish for Children in a Non-Fluoridated Community

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## Hypothesis

The expansion of use of fluoride varnish (FV) by primary care providers (PCPs) in communities without access to fluoridated drinking water, like Sheridan, Wyoming, is likely to reduce oral health disease disparities.



Historic Downtown Sheridan: Sheridan Wyoming Visitor Guide

## Background

- Population: 18,737
- Higher healthcare coverage compared to the rest of the state
- Removed fluoride from water in 2019
  - Increased dental caries observed by local pediatric dentist
- Low economic status, limited access to preventative care, and carbohydrate-rich diets are risk factors for developing tooth decay
- Access to PCP:
  - National: 1,330:1
  - Wyoming: 1,510:1

## Literature Review

- Access to fluoridated drinking water significantly decreases tooth decay in children in comparison to non-fluoridated water
  - Reduction of dental caries in primary teeth from 30-59%**
- CDC recommends fluoride level of 0.7 ppm
  - Sheridan's = 0.2 ppm
- Oral health disease (tooth decay) associated with long-term adverse outcomes
  - Pain, missed school, CVD, Psychosocial issues
- Disproportionately affects low SES
  - 60% of children have had cavities
  - 18% living with untreated cavities
- FV is easy, quick, and well-tolerated
- When applied regularly (2-4 times/year), associated with 37-63% reduction in caries
- Main concern is fluorosis
  - 3 RCT of 2,424 children who received FV treatments had zero associated adverse events

### 2022 Annual Drinking Water Quality Report

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range		Sample Date	Violation?	Typical Source
				Low	High			
<b>Disinfectants and Disinfectant By-Products</b>								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
<b>Inorganic Contaminants</b>								
Sodium (ppm)	Not est.	Not est.	10.2	9.6	10.8	2022	No	Erosion of natural deposits, leaching
Fluoride	4.0	4.0	.20	.20	.20	2022	No	Erosion of natural deposits, leaching

From the City of Sheridan

## Interventional Design

- On average, children will see PCPs 11 times by the age of 3 years old
  - More often than dental visits
- Proposed intervention: FV application made available at PCP visits
  - Training via 6-hr CME AAFP course
- Target population includes children aged 6-months to 5-years of age
  - Coincides with primary tooth eruption
  - Evidence of the most benefits
- Lack of adverse effects in fluoride varnish use
- Necessary actions to start proposed intervention:
  - Obtain FV from medical suppliers
  - Increase number of providers performing oral exam and FV application
- Long-term goals of FV application by PCPs:
  - Regular/repeated exposure to fluoride
  - Decrease long-standing poor dental health outcomes
  - Extend to older children for remineralization benefits
  - Destigmatize fluoride treatment in the community
- FV is a historically accepted intervention in Sheridan, Wyoming

## Sustainability Considerations

- By completing AAFP-endorsed program, *Smiles for Life*, providers can learn how to properly perform oral exams
  - Can track oral health in patients
  - Importantly, covered by Wyoming Medicaid
  - Covers dental <20 years old
  - Covers preventative >20 years old
- Barriers include:
  - Time constraints
  - Considering oral health prevention low priority
  - Assuming FV is taken care of by dentists
  - Compensation
- Potential partnership between PCP clinic and pediatric clinic:
  - Track cavity rates over time



From Studio One Dental

## References

