

ASTDD Health Impact Snapshot: Evidence-Based Caries Prevention



The Challenge

Tooth decay (dental caries) remains one of the most common—and preventable—chronic diseases across the lifespan. If left untreated, it can cause significant pain, disrupt daily life, and contribute to broader health problems. **Nearly 20% of children ages 5–11 in the U.S. have untreated tooth decay**, with higher rates among children from low-income families and communities of color. For adults, untreated caries can lead to serious complications, including tooth loss, nutritional deficits, and worsening of dangerous and costly chronic conditions such as diabetes and heart disease.

Fortunately, powerful and effective tools exist to prevent tooth decay and avoid its many health and economic costs. When public health systems are equipped and supported to implement these tools, caries prevention is not only possible—it is achievable at scale.

Proven Prevention Strategies

Two cornerstone, evidence-based strategies have consistently demonstrated success in reducing tooth decay and improving oral health outcomes: **fluoride** and **dental sealants**.

- **Fluoride**, found in toothpaste, varnishes, drinking water, and other modalities such as Silver Diamine Fluoride, strengthens enamel and prevents cavities. **Community Water Fluoridation (CWF)**—adjusting the fluoride level in public water supplies to optimal levels of 0.7 ppm—is one of the most effective and equitable public health interventions. It reduces tooth decay by about 25% and saves communities thousands in treatment costs for every dollar spent.
- **Dental sealants** are thin coatings applied to the chewing surfaces of back teeth—where most decay starts. School-based sealant programs can prevent up to 80% of cavities in molars and are especially impactful in high-need communities. The Community Preventive Services Task Force strongly recommends these programs as a way to reduce health disparities and improve outcomes in children.

Yet even with strong evidence, implementation varies widely—and that’s where ASTDD steps in.

Strengthening Prevention Through Public Health Partnerships

In 2024, ASTDD played a pivotal role in supporting state and territorial oral health programs to expand and improve their use of fluoride and sealant strategies. Through targeted technical assistance, knowledge sharing, and the timely provision of practical tools, ASTDD helped states translate research into real-world impact. Our efforts focused on empowering programs, countering misinformation, and connecting practitioners with the tools and guidance they need to serve their communities effectively.

Fluoride-Related Support:

- Delivered timely technical assistance, created fact sheets and talking points, and curated partner materials to help states respond to misinformation and promote CWF.
- Hosted Community of Practice sessions and led a well-received National Oral Health Conference (NOHC) workshop focused on effective fluoridation messaging—100% of participants reported they would apply the insights in their work.
- Maintained a proactive monitoring system (Curate and Google Alerts) to flag emerging fluoridation-related issues in local jurisdictions and notify state leaders before public meetings occur.



The Impact¹

While reporting gaps remain, states are making measurable progress in expanding school-based dental sealant programs and reaching more children with preventive care:

- In **2023**, 30 states reported 27,499 eligible schools (with ≥50% of students on Free/Reduced Lunch), but only 2,816 schools had school-based or school-linked dental sealant programs, serving 73,574 children.²
- In **2024**, 33 states reported 31,307 eligible schools, with 5,256 schools hosting programs serving 68,674 children.³
- For the 22 states reporting both years:



Schools served **increased**
from **2,446** to **3,043**



Children served **increased**
from **43,292** to **50,582**

Sealant-Focused Efforts:

- Facilitated six Community of Practice sessions and webinars, while responding to ongoing technical assistance requests through the national sealant listserv.
- Released new guidance on Mobile and Portable School-Based/School-Linked Oral Health Programs and updated the Best Practice Approach Report on integrating oral health into school health education.
- Provided tailored support to three states to strengthen their sealant programs and outreach.
- Collaborated on updates to Seal America and contributed to the Centers for Disease Control and Prevention's (CDC) fluoride varnish guidance, supporting the Community Preventive Services Task Force's (CPSTF) updated recommendation endorsing its use in school programs.



Conclusion and Next Steps

ASTDD's work in caries prevention demonstrates the power of collaboration to drive meaningful change. By equipping state and territorial oral health programs with expert guidance, evidence-based resources, and responsive technical assistance, we help ensure that proven preventive strategies reach the communities that need them most. As we look to the future, continued partnership and investment will be essential to prevent tooth decay, reduce disparities, and strengthen public health systems nationwide.

¹These figures are likely underestimates, as most states do not require reporting from all school sealant programs, and access to data is typically limited to programs with formal ties to state oral health agencies.

²Nineteen states shared that they could not report this data. One state did not submit any response, and one state does not have an oral health program, so it too did not respond.

³Seventeen states shared that they could not report this data.