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States Stalled on Dental Sealant Programs

A 50-state report

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Overview

Dental care remains the greatest unmet health need among U.S. children.¹ Left untreated, dental disease can lead to emergency room (ER) visits, hospitalizations, and even death.² In 2008, children went to the ER more than 215,000 times for preventable dental issues at a cost of more than \$104 million.³

Children with untreated tooth decay not only suffer pain and infection, they have trouble eating, talking, socializing, sleeping, and learning, all of which can impair school performance.⁴

Low-income children are particularly vulnerable. Their rates of tooth decay are higher, and they are less likely to receive dental care than are their better-off peers.⁵ In 2012, more than 4 million children did not receive needed dental care because their families could not afford it.⁶ The next year, over 16 million children who were enrolled in Medicaid—almost 50 percent—received no dental care.⁷

Dental sealants are a critical preventive service

Tooth decay, one of the most common conditions among children, is largely preventable. According to the Centers for Disease Control and Prevention, dental sealants—plastic coatings placed on the chewing surfaces of teeth—can reduce decay by 80 percent in the two years after placement, and continue to be effective for nearly five years.⁸ Research finds that sealants are safe⁹ and help to shield grooved areas of the tooth where fluoride toothpaste is not as protective.¹⁰ Because sealants are such an effective means of preventing tooth decay, they have been endorsed by the American Dental Association.¹¹

Dental sealants are one-third the cost of a filling, so their use can save patients, families, and states money.¹² Sealant programs based in schools are an optimal way to reach children—especially low-income children who have trouble accessing dental care. Yet despite compelling evidence, a survey conducted between 2011 and 2012 found that only four out of ten 6- to 19- year-olds had even one sealant.¹³

Grading the states

In 2013, the Pew children's dental campaign released a report evaluating all 50 states and the District of Columbia on their performance in sealing the teeth of low-income children. This follow-up report describes whether states have progressed on this goal over the last two years,* with analysis based on surveys of dental directors and state dental boards.

* Pew's assessment reflects state policies as of July 31, 2014.

Pew graded the states and the District of Columbia on four benchmarks that reflect the reach, efficiency, and effectiveness of their sealant programs:

1. The extent to which sealant programs are serving high-need schools, which most states define as schools where at least half of the students participate in the National School Lunch Program.*
2. Whether hygienists are allowed to place sealants in school programs without a dentist’s prior exam.†
3. Whether states collect data and participate in a national database.
4. The proportion of students receiving sealants across the state (marking progress toward reaching the 2010 objectives of Healthy People—a federal initiative to provide science-based, 10-year national goals for improving the health of all Americans).‡

A Note on the Methodology:

In consultation with Pew, the Association of State and Territorial Dental Directors crafted and administered surveys to dental directors and state dental boards in all 50 states and the District of Columbia. Additional data were obtained from the National Oral Health Surveillance System; qualitative interviews were also conducted when survey responses needed clarification. States were given points for each benchmark, and grades were based on the sum of points earned for the four benchmarks. Pew graded states on an A to F scale. For a full discussion of the methodology used, please see Appendix A.

Key findings

Based on Pew’s analysis of the surveys, most states are failing to enact policies that provide sealants to low-income and at-risk children. While several states have made improvements in delivering dental sealants to low-income children over the past two years, the study found that most states are not meeting national goals. Seventy-two percent of states and the District of Columbia received a grade of C or worse. (See the Findings section for state data.)

Specifically:

- Only five states earned an A or A minus for their sealant performance, of which just three—Maine, New Hampshire, and Oregon—received the maximum possible points.

* Benedict I. Truman et al., “Reviews of Evidence on Interventions to Prevent Dental Caries, Oral and Pharyngeal Cancers, and Sports-Related Craniofacial Injuries,” *American Journal of Preventive Medicine*, 23 (2002): 21-54, <http://www.thecommunityguide.org/oral/oral-ajpm-ev-rev.pdf>.

† In this report, we refer to the laws and regulations that determine the scope of practice for hygienists as a state’s “practice act.”

‡ The federal Healthy People initiative was launched to provide science-based, 10-year national objectives for improving the health of all Americans. In the area of dental health, its goal is that 50 percent of the nation’s children would receive sealants by 2010. Note that Pew based the benchmarks for its 2012 and 2014 reports on the Healthy People 2010 sealant objectives, not those from Healthy People 2020. Please refer to the methodology in Appendix A for a larger discussion of this decision.

- Nine states earned a B or B minus. Of these, five continue to reach fewer than half of high-need schools with their sealant programs, and four did not meet the Healthy People goal of providing at least half of their 8-year-olds with sealants.
- Nineteen states received a C or C minus.
- Fourteen states were given a D or D minus.
- Three states—Hawaii, New Jersey, and Wyoming—and the District of Columbia received F's, the same grade they were given in the 2013 report.

Overall, 12 states improved their grades since the 2013 report, 32 states remained unchanged, and seven states lost ground. Our analysis also shows that:

- Two states—Missouri and Wyoming—have no sealant programs in high-need schools.
- Thirty-nine states and the District of Columbia lack sealant programs in most of their high-need schools.
- Thirteen states and the District of Columbia require a dentist to examine a child before a dental hygienist in a school-based program can place a sealant. Known as a prior exam requirement, this rule runs counter to growing evidence that a dentist's exam is not necessary before a sealant is put in place. Six states have abolished the prior exam rule since 2012.
- Twelve states and the District have failed to collect and submit sealant data on school-age children within the past five years to the National Oral Health Surveillance System (NOHSS), a database that informs policymakers on trends and progress. Four of these 12, and the District, have never submitted data.
- Only 13 states have met the Healthy People 2010 goal of sealing the permanent molars of at least half of their 8-year-olds.

This report focuses solely on the performance of sealant programs and the degree to which states can improve access to this treatment for at-risk children. However, many other factors affect a state's overall performance on oral health, such as the extent to which its population has dental insurance, the availability of Medicaid providers, and access to fluoridated water. Therefore, even states that received high grades on sealants may have room for improvement in other areas.

What Are Dental Sealants?

Dental sealants are plastic coatings that are applied to the chewing surfaces of teeth, especially permanent molars (the most likely teeth to get cavities).¹⁴ According to published clinical research, there are no adverse health effects from sealants.¹⁵ Sealants protect the tooth surface from bacteria that can cause decay¹⁶ and can be placed after a visual assessment finds no extensive decay.¹⁷ Sealant material flows onto the enamel and into the crevasses of the tooth, where it bonds and hardens.¹⁸ In 2008, the American Dental Association's Council on Scientific Affairs recommended placing sealants on the teeth of children and adults to lower decay rates.¹⁹ Sealants are most effective if placed shortly after the permanent first and second molars come in, which is usually by ages 5-7 and 11-14, respectively.²⁰ In addition to shielding healthy teeth from bacteria, research shows that placing a sealant on areas of a tooth with early signs of decay can even stop the decay in its tracks.²¹ Further, teeth that have partially or fully lost sealants are at no greater risk for tooth decay than teeth that were never sealed.²²

What Are School-Based Sealant Programs?

School-based sealant programs are typically run by dental hygienists using portable equipment, a mobile dental van, or a clinic to deliver care. Along with sealants, a growing number of programs also provide cleanings, topical fluoride, oral health education, and screenings. Depending on the state and how a particular program works, students are assessed periodically for early signs of tooth decay. If necessary, students are referred to dentists in their community for follow-up treatment.²³ Programs typically target second- and sixth-graders, with wide variation in how many times hygienists visit the children, often depending on other services they may be providing.

Advances in Science Allow More Effective School Sealant Programs

As a result of recent advances in oral health, school sealant programs can address a long-standing problem: What can be done to protect permanent molars that have cavities when a simple sealant will not stop further decay? School sealant program efforts founder when parents do not get their children's cavities filled as advised. Consequently, the molar, which is the most cavity-prone permanent tooth in young children, often remains untreated by the time the child has a return visit to the sealant program.²⁴

To address this issue, a CDC-convened panel recommended that sealant programs temporarily treat teeth with cavities by placing interim restorations, which are fillings placed without the use of anesthesia or drills.²⁵ This type of temporary treatment for cavities has been endorsed by the American Academy of Pediatric Dentistry, which refers to them as interim therapeutic restorations.²⁶

These interim restorations use glass ionomer cement (GIC) as the filling material. Stronger than other options used for temporary restorations, GIC not only adheres tightly to the tooth, but it also releases fluoride. Clinical studies have confirmed the durability of these restorations, noting that they can last more than a year.²⁷

Because they arrest the progression of decay, interim restorations are critical for those children who, for whatever reason, delay seeing a dentist. Such restorations do not prevent a dentist, who may see the child months or even years later, from replacing it with a traditional filling.²⁸ Hygienists can be trained to place interim restorations,²⁹ but state law has lagged behind science and only a few states allow hygienists to provide them in school programs.

By applying these scientific advances, supported by state policies that permit hygienists to place interim restorations in school sealant programs, states could make striking progress in arresting tooth decay in permanent teeth among children.

Benchmark 1: Percentage of high-need schools with sealant programs

For a number of reasons—lack of dental insurance, difficulty finding dentists who accept Medicaid, parents' lack of awareness of opportunities for prevention—millions of low-income children lack a regular dental provider.³⁰ School-based or school-linked dental sealant programs that target low-income children have been found to reduce tooth decay by an average of 60 percent over five years.³¹

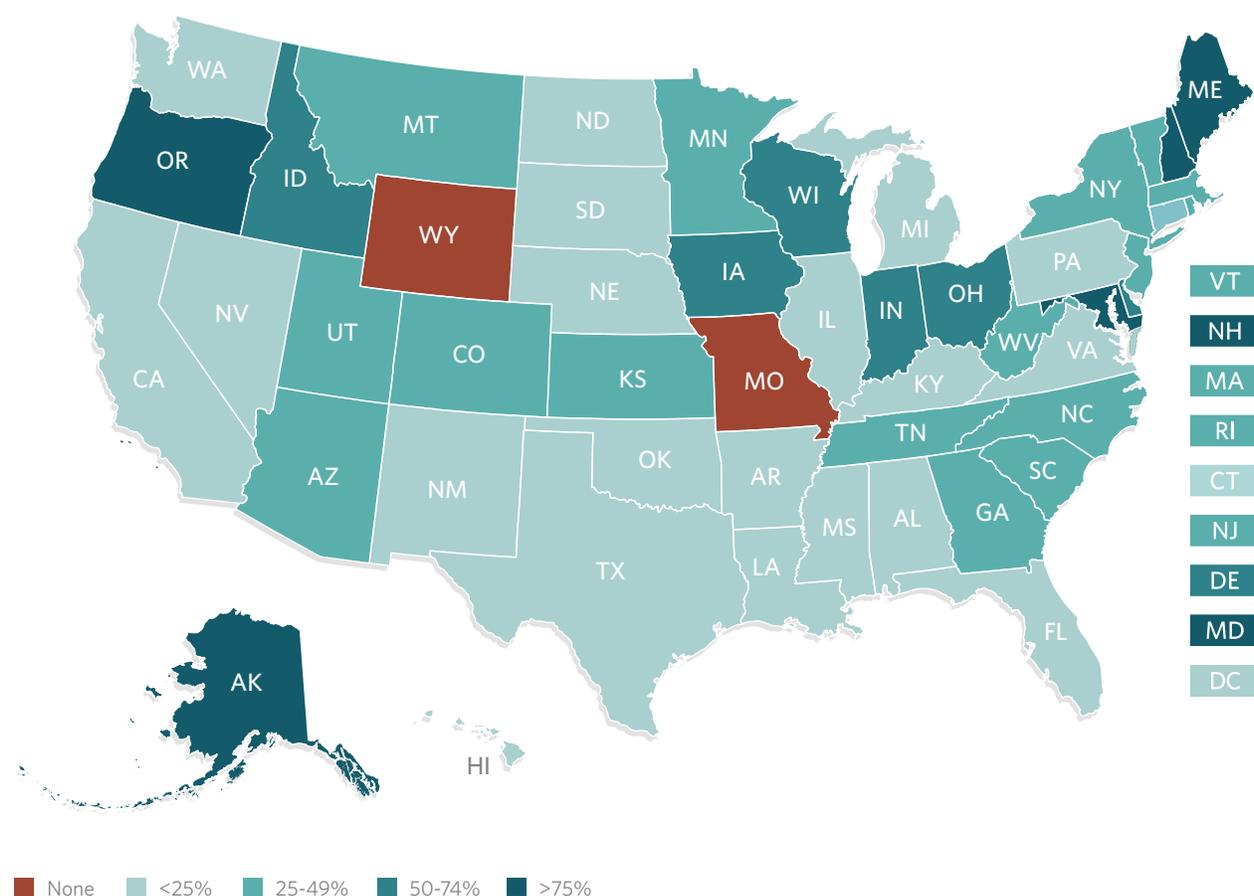
Most school sealant programs are located in high-need schools with large numbers of low-income children, as defined by eligibility for the National School Lunch Program.³² Between 2012 and 2014, seven states increased the percentage of high-need schools with sealant programs, 33 states and the District of Columbia maintained the same percentage, and 10 states reported fewer programs. In addition:

- Two states—Missouri and Wyoming—have no sealant programs in any high-need schools.
- Thirty-nine states and the District of Columbia lack sealant programs in most of their high-need schools, which serve a population that is most at-risk for tooth decay.
- Only 11 states provide sealants to children in more than half of their high-need schools; of these, only five—Alaska, Maine, Maryland, New Hampshire, and Oregon—have sealant programs in at least 75 percent of high-need schools.

Guidance issued in December 2014 by the federal Centers for Medicare & Medicaid Services removes a barrier that has prevented some states from establishing sealant programs in more high-need schools.³³ CMS clarified the policy, known as the “free care rule,”³⁴ by stating that Medicaid would pay for services provided by school sealant programs to Medicaid-enrolled children even if other students were not billed. To put the issue in context, many schools prefer to host sealant programs that serve all children, regardless of ability to pay. However, most state Medicaid programs would not reimburse sealant programs if the non-Medicaid students were not billed. In high-need schools, Medicaid reimbursement is a critical revenue source that allows sealant programs to free up grant funds so they can serve children without any dental coverage who would likely not otherwise receive sealants.

Figure 1

Benchmark 1: Percentage of High-Need Schools With Sealant Programs



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Benchmark 2: Rules restricting hygienists

Most school-based sealant programs employ dental hygienists as the primary care provider. They visually assess for extensive tooth decay that requires a dentist's care. If the teeth are found to be healthy enough, the hygienist will place a sealant. In 2009, a CDC expert panel concluded that a visual assessment alone should be used to decide whether a sealant should be placed.³⁵ Dental hygienists who work in school programs are trained to conduct such assessments.

State rules that require a dentist to examine children before a hygienist can apply sealants make these programs more cumbersome and expensive. Children miss more class time for two appointments instead of one, and dentists have less time to treat students with more complex needs. Indeed, locating and scheduling two providers per child strains limited resources and results in fewer children being served.

Since 2012, six states removed rules requiring a dentist's exam before hygienists can place sealants in schools. In 37 states, a hygienist may place sealants in public health settings such as schools without a prior exam. In 25 of the 37 states, certain conditions must be met to be exempt from the prior exam rule, such as certification as a public health hygienist or a collaborative practice agreement with a dentist.

Despite evidence that it is unnecessary, 13 states and the District of Columbia still require a prior exam by a dentist, and four of these states and the District further require a dentist to be present when a sealant is applied in a school-based program.

While this report focuses on prior exam rules as the major policy impediment to maximizing the reach of school sealant programs, there are unfortunately other factors (such as Medicaid policies that make it difficult or impossible to bill for sealant placement in schools, or dentists' insistence on prior exams that are not required by state law) that have a similar chilling effect. These practices are discussed in more depth in the sidebar on page 14.

Eliminating Prior Exam Rules Pays Off

Overall, school sealant programs save money by preventing the need for fillings and other expensive procedures among children at higher risk for cavities.³⁶ And studies find that programs without prior exam rules are particularly cost-effective.

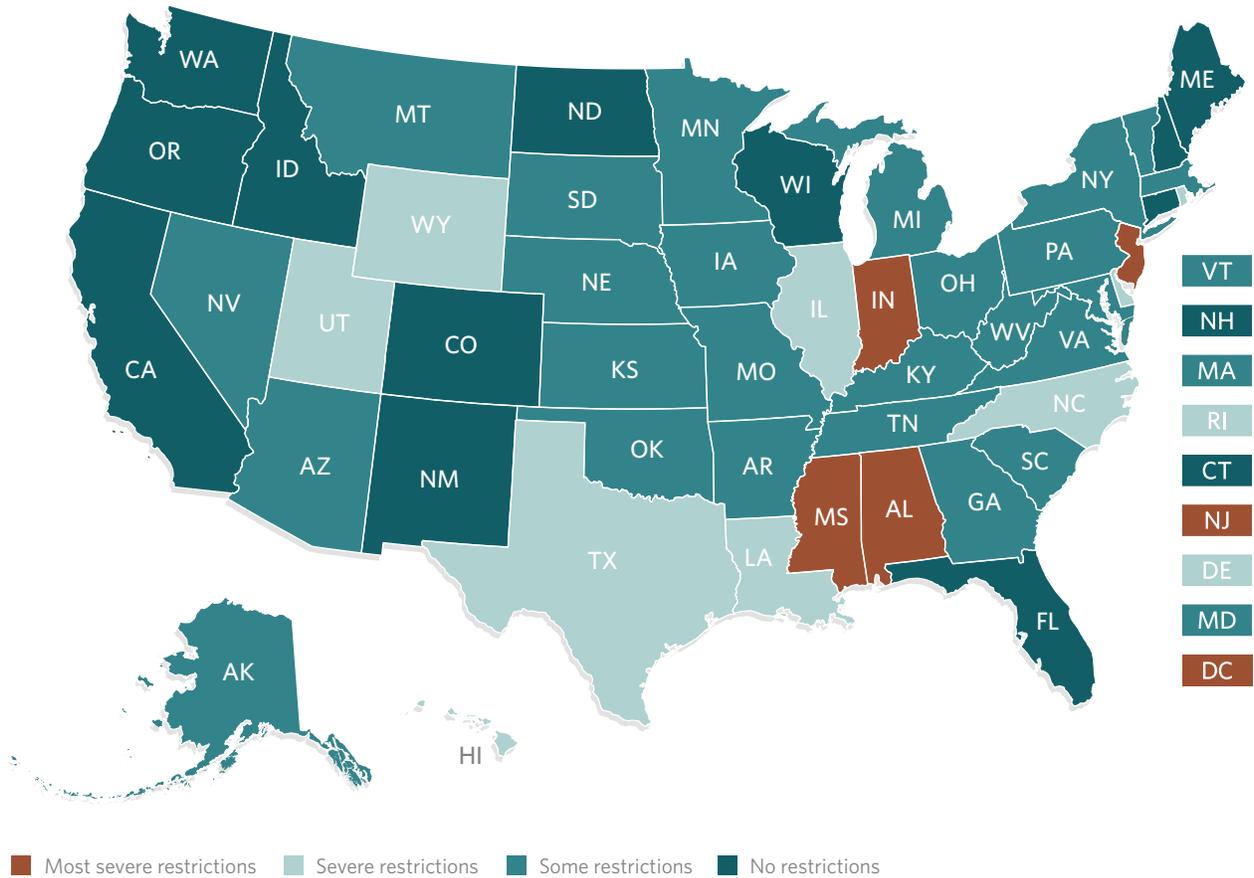
In Colorado, which has no prior exam rule, researchers estimated that every \$1 spent on school-based sealant programs saves \$2 in dental treatment costs.³⁷

In Virginia, allowing public health dental hygienists to place sealants without requiring dentists to first examine the patients lowered costs by 22 percent per child.³⁸

In Maryland, eliminating the law requiring a child to see a dentist before a sealant is applied resulted in three important outcomes: More children received oral health screenings in schools, more children received sealants in schools, and the state spent less money providing sealants.³⁹

Figure 2

Benchmark 2: Rules Restricting Hygienists



Notes: In two instances—Hawaii and Pennsylvania—survey responses to prior exam rules were not consistent with the states’ practice acts; the grades were adjusted to reflect the practice acts.

Utah and New Jersey have passed legislation removing a prior exam requirement; however, as of publication these policies have not gone into effect.

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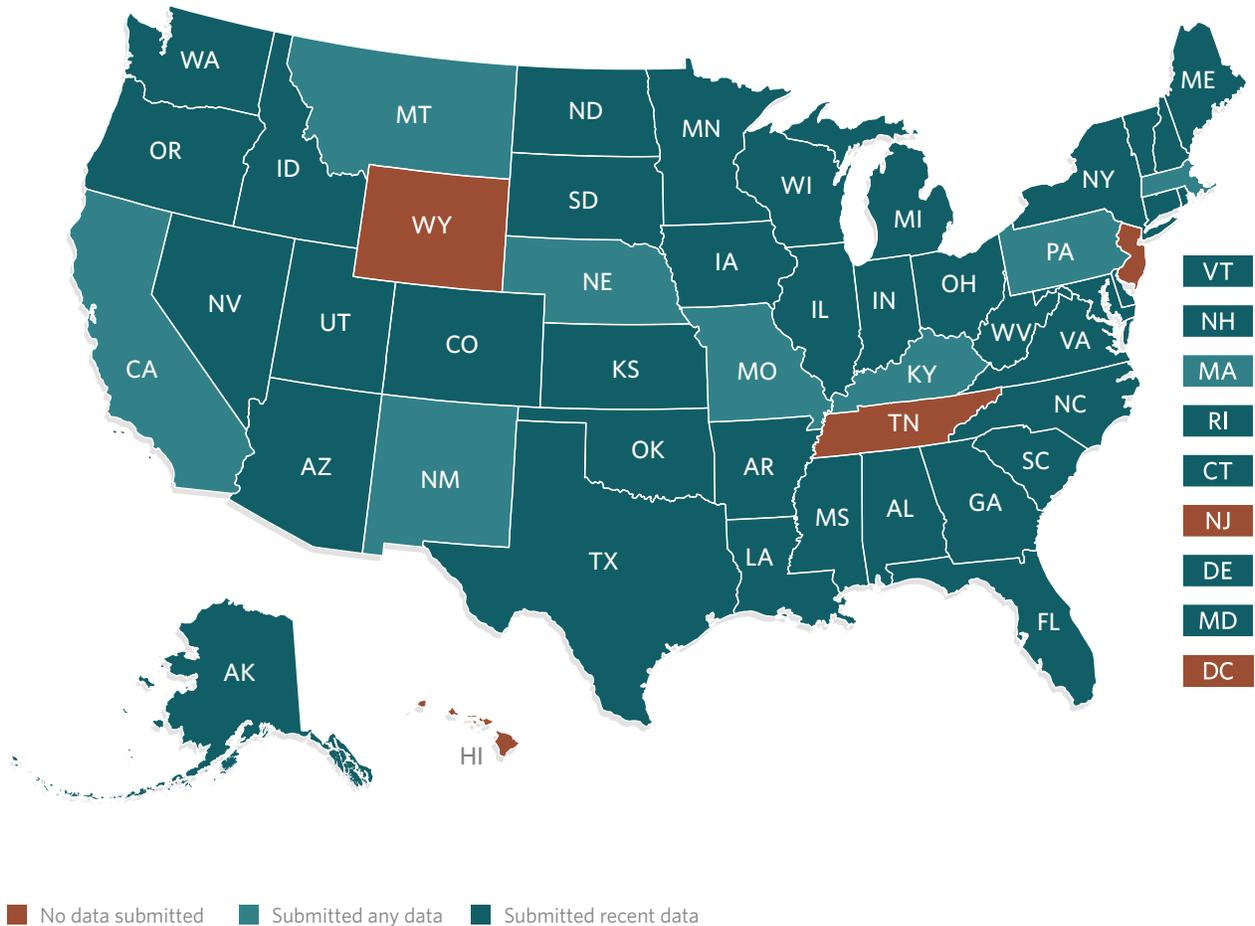
Benchmark 3: Collecting and submitting data to NOHSS

The National Oral Health Surveillance System (NOHSS) is a national database of health indicators used by state health departments, advocates, researchers, and policymakers to assess progress and improve oral health policies and programs, including school sealant programs. NOHSS is a joint effort of the Association of State and Territorial Dental Directors and the CDC. Participating states report a variety of oral health measures, including the percentage of third-graders who receive sealants. This surveillance system provides current data that are consistent with ASTDD recommendations that in order to be useful for policymaking or measuring progress against state and federal goals, information should be no more than five years old.⁴⁰

Thirty-eight states have submitted sealant data to the NOHSS in the last five years, an increase of seven since 2012; three states—Florida, Indiana, and North Carolina—submitted data for the first time. Conversely, eight states have not submitted new data in the past five years, and four—Hawaii, New Jersey, Tennessee, and Wyoming*—and the District of Columbia have never provided data to NOHSS on school-age children.⁴¹

* Although Wyoming conducted a state survey in 2009-10, data have not been submitted to NOHSS.

Figure 3
Benchmark 3: Collecting and Submitting Data to NOHSS



Benchmark 4: Meeting the Healthy People 2010 sealant objective*

The federal Healthy People 2010 initiative[†] set hundreds of objectives to improve overall health and prevent disease. A major objective pertaining to sealants (and used in Pew's grading) is that at least 50 percent of third-graders have their permanent molars sealed.[‡] Thirteen states have achieved this objective, up from 11 in 2012.

New information provided to Pew for this report finds that most of these 13 states have also met an additional Healthy People 2010 sealant objective: elimination of income, racial, and other disparities among children receiving sealants.⁴²

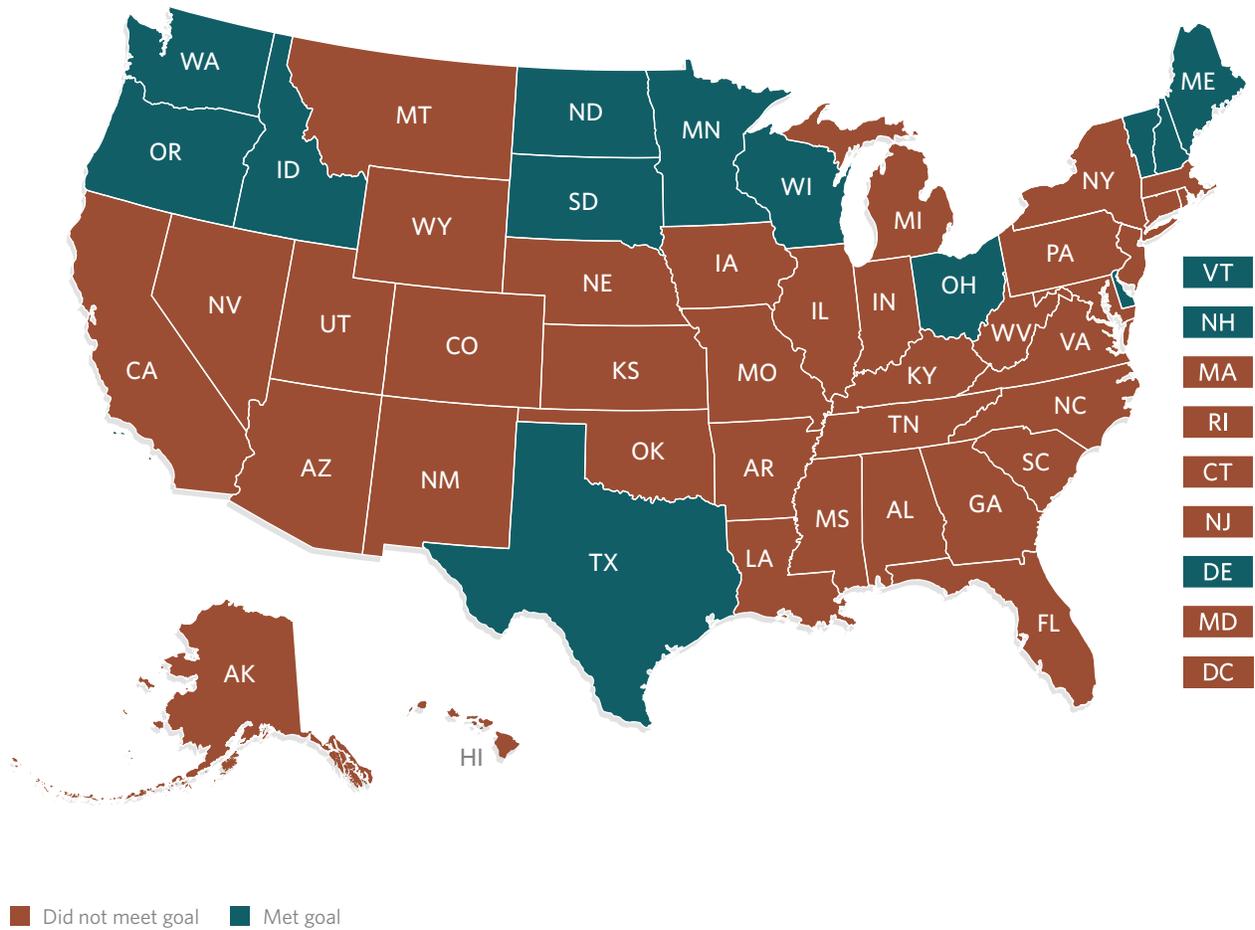
States meeting this additional objective made deliberate efforts to identify and place sealant programs in schools serving large numbers of at-risk children. For more information on state performance on Healthy People 2010 oral health objectives, please refer to the secretary's report.⁴³

* Pew used Healthy People 2010 sealant objectives to set sealant benchmarks for its 2013 and 2015 reports. In 2011 the federal government released its Healthy People 2020 initiative, which included slightly revised measures for state sealant progress. Pew has not adopted the more recent measures because it is too early to tell whether states are meeting them, and we want to allow readers to compare state progress on this benchmark from 2012 to 2014, which requires using the same measure in both reports.

† Healthy People baseline data had revealed large disparities in receipt of sealants and untreated decay. (Source: U.S. Department of Health and Human Services, "Healthy People 2010 Final Review, Chapter 21: Focus Area Oral Health," retrieved Oct. 6, 2014, http://www.cdc.gov/nchs/data/hpdata2010/hp2010_final_review_focus_area_21.pdf.)

‡ NOHSS is designed to track oral health surveillance indicators based on data sources and surveillance capacity available to most states. CDC and ASTDD have determined that monitoring sealant status in third grade is most feasible for states and provides a good estimate of the status of 8-year-olds.

Figure 4
Benchmark 4: Meeting Healthy People 2010 Sealant Objective



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Ohio, Washington Eliminate Racial, Income Disparities Among Children Receiving Sealants

Ohio was an early and persistent advocate for school-based sealant programs, co-sponsoring the first national guidelines issued by the Association of State and Territorial Dental Directors.⁴⁴ In the 1990s, the state eliminated racial/ethnic and income disparities among children receiving sealants. Ohio currently funds 17 sealant programs that reach urban and rural communities, including southeastern Ohio's Appalachia region.

How did they do it? Early on, Ohio collected and analyzed data from the state sealant programs as well as ASTDD's Basic Screening Survey (which captures participation in the National School Lunch Program) to target the schools that most needed access to sealants. Most states determine "high need" as 50 percent or more of the students participating in the lunch program. Ohio performed a sophisticated analysis of which children could benefit most from sealant programs. If the threshold was set at 40 percent, more high-risk children could participate for not much more cost to the state. This kind of analysis informed the policy change that allowed more students to get sealants who otherwise probably would not have gotten them.⁴⁵

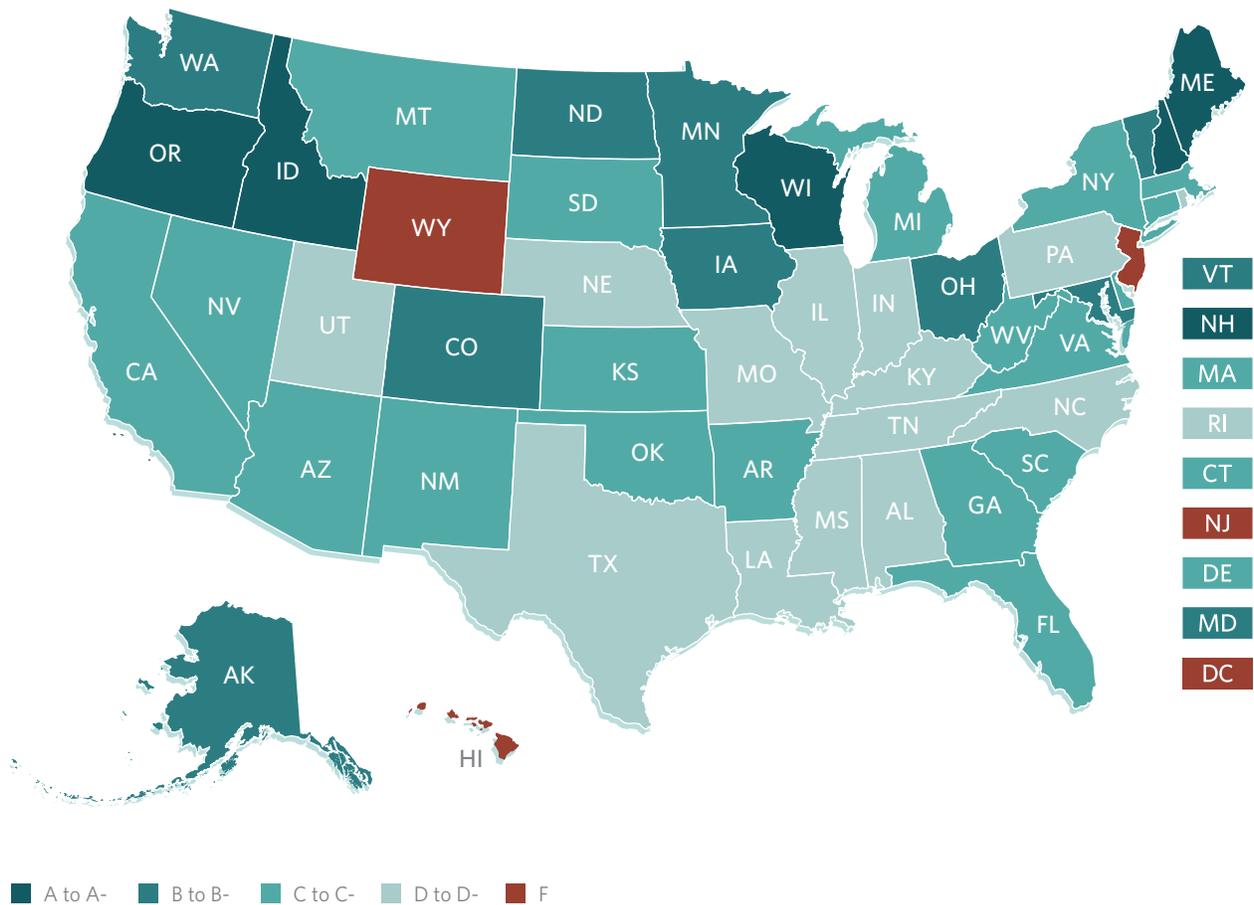
Washington state began to introduce sealant programs in schools over 20 years ago. In 1991, the state oral health program director developed a plan based on evidence that showed sealants were more effective in preventing decay than fluoride rinses were and redirected funding from the school rinse program to a new sealant initiative.⁴⁶ Oral health coordinators in counties throughout the state were trained in surveillance and collected data to identify not only decay rates but also social and economic disparities. Schools with the highest participation rates in the National School Lunch Program were targeted.

Because implementing the school-based sealant program faced several policy challenges posed by Medicaid and the state practice act, the state oral health program director asked the Washington Dental Service Foundation to bring together private and public dentists, school nurses, Head Start, Medicaid, academia, and children's advocates to address these barriers. Medicaid was included as a coalition partner to raise reimbursement rates for sealants. The state Health Department created a school-based dental sealant program (that also offered topical fluoride), and legislation was passed that allowed dental hygienists to work in schools. Together, the coalition's coordinated actions helped to eliminate racial and income disparities and increased sealant rates among third-graders.

Findings: Overall state grades

The grading scale and criteria used in this report are identical to those of the 2013 sealant report, allowing state progress, or lack thereof, to be tracked. Further, this “report card” deals exclusively with state performance on sealants. Because additional factors affect oral health—dental insurance coverage, availability of Medicaid providers, access to fluoridated water, to name just a few—even those policymakers in the states that earned A’s and B’s should review their progress on all policies that can make a difference. For example, while New Hampshire earned an A in this report, 74 percent of the state’s children do not live in homes with fluoridated water.⁴⁷

Figure 5
Overall State Grades



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Other Factors Limit Reach of Sealant Programs

In response to anecdotal evidence gathered in 2012, the Association of State and Territorial Dental Directors and Pew included an open-ended survey question in 2014 to understand how policies or practices beyond Pew's performance benchmarks may be hindering school-based sealant programs.

By far the most common obstacles are Medicaid payment policies that block the ability of hygienists to bill for sealants provided in schools, as is occurring in Oklahoma and Vermont. In addition, Arkansas' Medicaid program does not reimburse for any portable dentistry, and in Oregon managed care organizations do not reimburse for sealants provided in schools. Although Minnesota has no prior exam requirement, Medicaid will not pay for any oral health services provided by a community health center, including school programs run by such centers, unless a dentist sees the child during the visit. And in some states, such as Maine, there is no legal requirement for prior exams per se, but hygienists must find out whether a child has seen a dentist in the past year and, if so, must contact the dentist before placing a sealant. Appendix B lists the 13 states that reported specific challenges other than prior exam laws that Pew identified as barriers to broad implementation of school sealant programs. Because these challenges fall outside of Pew's benchmarks, they were not factored into the grade awarded to each state. Instead, states with additional practices and policies that block the reach of school sealant programs were given a "minus" next to the grade to denote a known and significant hurdle. More states may face challenges such as these, and further research is needed to fully understand the barriers facing school-based sealant programs.

Table 1
Complete 2014 State Benchmark Data and Grades

State	2014 grade	2012 grade	Percentage of high-need schools with sealant programs	Rules restricting hygienists	Collecting, submitting data to NOHSS	Met Healthy People 2010 sealant goal?
Alabama	D	D	<25%	Most severe restrictions	Yes, and submitted recent data	No
Alaska	B minus	A	>75%	Some restrictions	Yes, and submitted recent data	No
Arizona	C minus	D	25-49%	Some restrictions	Yes, and submitted recent data	No
Arkansas	C minus	D	<25%	Some restrictions	Yes, and submitted recent data	No
California	C	C	<25%	No restrictions	Yes, but no recent data	No
Colorado	B	B	25-49%	No restrictions	Yes, and submitted recent data	No
Connecticut	C	B	<25%	No restrictions	Yes, and submitted recent data	No
Delaware	C	C	50-74%	Severe restrictions	Yes, and submitted recent data	Yes
District of Columbia	F	F	<25%	Most severe restrictions	No data submitted	No
Florida	C minus	D	<25%	No restrictions	Yes, and submitted recent data	No
Georgia	C	C	25-49%	Some restrictions	Yes, and submitted recent data	No
Hawaii	F	F	<25%	Severe restrictions	No data submitted	No
Idaho	A	B	50-74%	No restrictions	Yes, and submitted recent data	Yes
Illinois	D	C	<25%	Severe restrictions	Yes, and submitted recent data	No
Indiana	D	D	50-74%	Most severe restrictions	Yes, and submitted recent data	No
Iowa	B	C	50-74%	Some restrictions	Yes, and submitted recent data	No
Kansas	C	C	25-49%	Some restrictions	Yes, and submitted recent data	No
Kentucky	D	D	<25%	Some restrictions	Yes, but no recent data	No
Louisiana	D	D	<25%	Severe restrictions	Yes, and submitted recent data	No

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State	2014 grade	2012 grade	Percentage of high-need schools with sealant programs	Rules restricting hygienists	Collecting, submitting data to NOHSS	Met Healthy People 2010 sealant goal?
Maine	A minus	A	>75%	No restrictions	Yes, and submitted recent data	Yes
Maryland	B	B	>75%	Some restrictions	Yes, and submitted recent data	No
Massachusetts	C	B	25-49%	Some restrictions	Yes, but no recent data	No
Michigan	C	C	<25%	Some restrictions	Yes, and submitted recent data	No
Minnesota	B minus	B	25-49%	Some restrictions	Yes, and submitted recent data	Yes
Mississippi	D	D	<25%	Most severe restrictions	Yes, and submitted recent data	No
Missouri	D	D	None	Some restrictions	Yes, but no recent data	No
Montana	C	F	25-49%	Some restrictions	Yes, but no recent data	No
Nebraska	D	D	<25%	Some restrictions	Yes, but no recent data	No
Nevada	C minus	C	<25%	Some restrictions	Yes, and submitted recent data	No
New Hampshire	A	A	>75%	No restrictions	Yes, and submitted recent data	Yes
New Jersey	F	F	25-49%	Most severe restrictions	No data submitted	No
New Mexico	C	C	<25%	No restrictions	Yes, but no recent data	No
New York	C	C	25-49%	Some restrictions	Yes, and submitted recent data	No
North Carolina	D	F	25-49%	Severe restrictions	Yes, and submitted recent data	No
North Dakota	B	A	<25%	No restrictions	Yes, and submitted recent data	Yes
Ohio	B	C	50-74%	Some restrictions	Yes, and submitted recent data	Yes
Oklahoma	C minus	D	<25%	Some restrictions	Yes, and submitted recent data	No
Oregon	A minus	B	>75%	No restrictions	Yes, and submitted recent data	Yes
Pennsylvania	D	D	<25%	Some restrictions	Yes, but no recent data	No
Rhode Island	D	C	25-49%	Severe restrictions	Yes, and submitted recent data	No

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State	2014 grade	2012 grade	Percentage of high-need schools with sealant programs	Rules restricting hygienists	Collecting, submitting data to NOHSS	Met Healthy People 2010 sealant goal?
South Carolina	C	C	25-49%	Some restrictions	Yes, and submitted recent data	No
South Dakota	C minus	D	<25%	Some restrictions	Yes, and submitted recent data	Yes
Tennessee	D	D	25-49%	Some restrictions	No data submitted	No
Texas	D minus	D	<25%	Severe restrictions	Yes, and submitted recent data	Yes
Utah	D	C	25-49%	Severe restrictions	Yes, and submitted recent data	No
Vermont	B minus	C	25-49%	Some restrictions	Yes, and submitted recent data	Yes
Virginia	C minus	C	<25%	Some restrictions	Yes, and submitted recent data	No
Washington	B	B	<25%	No restrictions	Yes, and submitted recent data	Yes
West Virginia	C	C	25-49%	Some restrictions	Yes, and submitted recent data	No
Wisconsin	A	A	50-74%	No restrictions	Yes, and submitted recent data	Yes
Wyoming	F	F	None	Severe restrictions	No data submitted	No

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Conclusion

School sealant programs have been found to reduce the incidence of tooth decay by an average of 60 percent,⁴⁸ yet the findings in this report reveal that most states are underperforming on this critical opportunity to improve children’s health. While some states have made strides since 2012, the majority of states still lack sealant programs in their high-need schools and fail to reach even half of third-graders with this preventive service. In addition, prior exam rules still exist in a handful of states, and some states do not report sealant data to a national database that allows progress to be tracked.

While the number of states with restrictive prior exam rules is declining, this study found that there are many additional obstacles to progress. Most of these are Medicaid reimbursement policies that make it difficult or impossible for hygienists to be paid for placing sealants in schools. In other cases, the obstacle is dentists’ unwillingness to permit hygienists to place sealants without a prior exam (for example, via collaborative agreements) even though it is allowed by state law and practice acts. Clearly there is substantial room for improvement.

Appendix A: Methodology

Partnership With Dental Directors on Collecting Data

In consultation with Pew, the Association of State and Territorial Dental Directors (ASTDD) crafted and administered surveys of both dental directors and state dental boards. Additional data were obtained from the National Oral Health Surveillance System (NOHSS). In cases where state survey responses were incomplete, ASTDD and Pew referred to state regulations, statutes, and other sources to obtain needed data. States were given points for each benchmark, and grades were based on the sum of points earned for the four benchmarks. Pew graded states on an A to F scale:

Table A.1
Scale for Points Earned and Grades (2012 and 2014)

Grade	Points earned
A	10-11
B	8-9
C	6-7
D	3-5
F	0-2

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Benchmark 1: Percentage of high-need schools with sealant programs

State dental directors were asked what proportion of high-need schools were served by sealant programs. States used sources such as regularly updated databases and staff experts to estimate the percentage of these schools that had sealant programs.* High-need schools were defined as schools with 50 percent or more of student participation in the National School Lunch Program (a few states had slightly different definitions).

Respondents were asked which of the following categories accurately described their state's status:

- Programs reaching 75 percent or more of high-need schools.
- Programs reaching 50 to 74 percent of high-need schools.
- Programs reaching 25 to 49 percent of high-need schools.
- Programs reaching fewer than 25 percent of high-need schools.
- No programs.

States were given 4 points for 75 percent or higher, 3 points for 50 to 74 percent, 2 points for 25 to 49 percent, 1 point for less than 25 percent, and 0 points for no programs.

Benchmark 2: Rules restricting hygienists

State dental directors and dental regulatory boards were asked whether hygienists in school sealant programs are permitted to apply sealants without a dentist's prior examination. ASTDD resolved inconsistent responses through a review of hygienists' rules and discussions with both dental directors and dental boards. Respondents were asked to categorize their state as one of the following:

- A dentist's exam is not required before a hygienist applies a sealant (EN).
- A dentist's exam is sometimes required (e.g., certain classifications of dental hygienists, such as public health hygienists, can place sealants without a dentist's prior exam, but for others a dentist's exam is required) (ES).
- A dentist's exam is always required (EA), but a hygienist can provide sealants later without the dentist being present.
- A dentist's exam and indirect or direct supervision are required (DS).

States were given 4 points for EN, 3 points for ES, 1 point for EA, and no points for DS. Under direct supervision, a dentist is on-site while the hygienist is practicing; the dentist both authorizes sealant placements before the hygienist performs them and checks all patients afterward. Under indirect supervision, an on-site dentist is required to authorize the hygienist's application of sealants but does not check all patients after sealants are placed.⁴⁹

There are many states where rules outside of the practice act hinder the ability of hygienists to place sealants

* Public health surveillance of high-need schools to monitor whether they are being served by sealant programs is essential for guiding policy, private-public partnerships, and targeting resources. According to ASTDD, however, many state oral health programs reported inadequate surveillance, except where they provide direct funding to local school sealant programs. Relatively few state oral health programs provide direct funding, although most play a role in program design, operation, funding, oversight, and/or regulation. Reporting of low numbers of sealant programs may, in some states, be a function of insufficient capacity (resources and authority) to conduct public health surveillance, and a lack of protocols for reporting to the state oral health program, the Department of Education, or the state dental board.

in schools. Information collected by ASTDD and Pew identified a variety of policies that limited program effectiveness. In states where these policies compromised the ability of sealant programs to deploy hygienists to schools, states were given a minus sign next to their grade. The specific circumstances of these are noted in Appendix B.

Benchmark 3: Collecting and submitting data to the NOHSS

States were given credit for any recent sealant data submitted to the National Oral Health Surveillance System using publicly available information provided by the Centers for Disease Control and Prevention.⁵⁰ If states submitted those data, Pew assessed whether they were too outdated (older than the 2008-09 school year) to use for planning programs and strategies. Both the CDC and ASTDD advise states to provide data that are not older than 5 years.⁵¹

States were given no points for never contributing sealant data to NOHSS, 1 point for monitoring sealants but only having data prior to the 2008-09 school year, and 2 points for monitoring sealants and having recent sealant data.

Benchmark 4: Meeting the Healthy People 2010 sealant objective

The Healthy People 2010 objectives for sealants in children included: 1) that at least 50 percent of 8-year-olds have sealants and 2) that disparities in sealant rates among kids that occur by income levels or other factors be eliminated.⁵² The percentage of third-graders with sealants is reported as one measure in NOHSS and was assessed with public data.

States were given 1 point if they had recent data that showed that more than 50 percent of third-graders had sealants.

Please note that Pew used the Healthy People 2010 sealant objectives to set sealant benchmarks for its 2013 and 2015 reports. In 2011 the federal government released its Healthy People 2020 initiative, which included slightly revised measures for state sealant progress. Pew did not adopt these measures for the 2015 report because it is too early to collect and assess meaningful data. In addition, to compare state data from 2012 to 2014 in this area it was necessary to assess against the same goal for both reports.

Appendix B: Other factors limiting the reach of sealant programs

State	Progressive law	Barriers to implementation
Alaska	Hygienists with practice agreements can place sealants in schools without a dentist's prior exam.	<ul style="list-style-type: none"> Dental director reports no collaborative practice agreements exist because no dentists participate. Medicaid does not reimburse for school-based dental services.
Arizona	Hygienists with practice agreements can place sealants in schools without a dentist's prior exam.	Affiliated Practice (public health) hygienists must contract with each of several Medicaid managed care organizations to be able to bill Medicaid.
Arkansas	Hygienists with practice agreements can place sealants in schools without a dentist's prior exam.	Dental board allows use of portable dentistry, but Medicaid does not reimburse for it.
Florida	No practice agreement or prior exam is required for hygienists to place sealants in schools.	Medicaid services must be billed through managed care, which only allows dentists to bill.
Maine	No practice agreement or prior exam is required for hygienists to place sealants in schools.	Hygienists must find out whether a child has seen a dentist in the past year and, if so, must contact the dentist before placing a sealant.
Minnesota	Hygienists with practice agreement can place sealants in schools without a dentist's prior exam.	Minnesota Medicaid requires that a dentist examine a child before reimbursing community center sealant programs.
Nevada	No practice agreement or prior exam is required for public health hygienists to place sealants in schools.	Two of the three state Medicaid managed care organizations have closed panels, therefore hygienists are not able to bill for services delivered to all Medicaid children in schools.
Oklahoma	No practice agreement or prior exam is required for public health hygienists to place sealants in schools.	Hygienists cannot bill Medicaid.

Continued on next page

State	Progressive law	Barriers to implementation
Oregon	No practice agreement or prior exam is required for hygienists to place sealants in schools.	Medicaid managed care organizations do not have a mechanism for reimbursing the statewide sealant program.
South Dakota	Hygienists with practice agreements can place sealants in schools without a dentist's prior exam.	<ul style="list-style-type: none"> ▪ Dental director reports very few, if any, collaborative practice agreements because of low dentist participation. ▪ Hygienists cannot bill Medicaid. ▪ Children who receive sealants in school must see a dentist within 13 months in order to receive further care by the school sealant program.
Texas	Prior exam required.*	State Medicaid program requires that parents be present for any dental services delivered as a condition of reimbursement.
Vermont	Hygienists with practice agreements can place sealants in schools without a dentist's prior exam.	Hygienists cannot bill Medicaid.
Virginia	Prior exam requirement was abolished, but only for hygienists employed by the state.	Most hygienists available to work in schools in Virginia are not state employees.

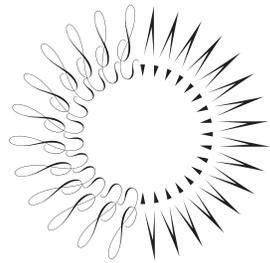
*Texas is the only state in this table that has severe prior exam restrictions. It is included because we call attention to an additional burden—the requirement of a parent's presence—that compounds the restrictive effect of the prior exam rule.

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