

Moving Towards Value-Based Care: Preventive Bundled Payments in School-Based Settings

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Introduction

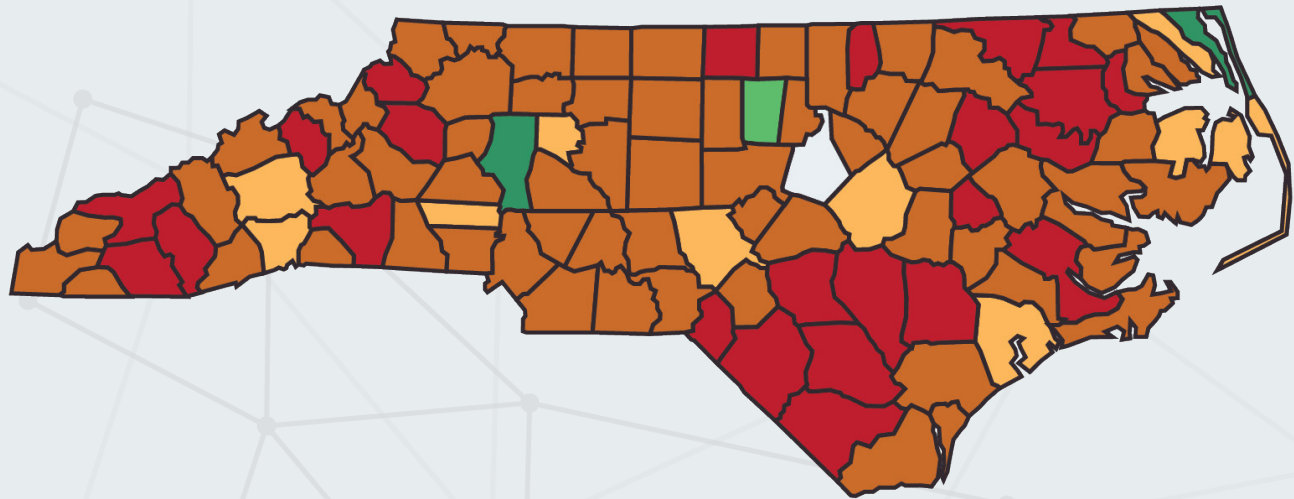
In the United States, the fee-for-service (FFS) payment model has been the dominant dental reimbursement system for decades.¹ Unlike medicine, where it has undergone massive payment reforms to shift the focus towards value-based care since the Affordable Care Act (ACA), there has been little of that change reflected in payment models for dentistry.

The traditional FFS model bases patient pricing on the cost of each individual service or procedure. The bill typically includes these services and their individual prices listed out for the payer and the patient. Providers are compensated for the services they provide the patient. This can lead to billing errors, service inflation, and unnecessary and preventable procedures.² Additionally, this model leads to providers being rewarded for high-cost, complex, and time-consuming procedures.³ Since volume is rewarded in FFS, a provider who completes more high-cost invasive procedures is paid more.³

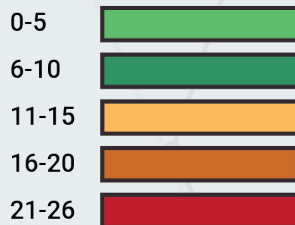
Although access to oral health care has increased as a result of significant investments made since the 2000 Surgeon General Report on Oral Health in America, the prevalence of decay in children over the past few decades is still concerning.⁴ Data from the National Health and Nutrition Examination Survey reported that prevalence of total caries (untreated and treated) was 50.5% for 2015-2016 among children 6-11 years old.⁵ In the same period, the prevalence of untreated caries was 15.3% in the same population.⁵ In 2017, 84.9% of children between 2-17 years old had a dental visit in the past year.⁶ This leaves about 15% of the population who did not have a dental visit in the past year.

North Carolina is a largely rural state with 80 of its 100 counties designated as dental health professional shortage areas (dHPSAs).⁷ Roughly 40% of North Carolina's communities are considered to be rural, which accounts for over 4 million people.⁸ Compared to urban counties, rural counties are more likely to have a shortage of dental health providers and be designated dHPSAs.

Dental HPSAs in North Carolina



Dental HPSA Score



What is a Dental HPSA Score?

Dental HPSA scores, which range from 0 to 26, are used to measure levels of priority for resource and provider allocation, with higher scores signifying greater need for additional dental providers and resources. To learn more, visit bhw.hrsa.gov/.

Find the data at data.hrsa.gov



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Figure 1: Dental HPSAs in North Carolina

With many providers choosing to practice in urban areas over rural areas, the shortage is felt more acutely for children living in rural areas, where there is an additional barrier with accessing a provider for preventive services. In 2016, 2.5% of all visits to North Carolina emergency departments were related to oral health compared with 1-2% in the United States.⁹ Without sufficient providers to address the need, people may go without care until they face an emergency.

Children who live in rural areas experience higher disparities of care than their urban counterparts and are more likely to rely on Medicaid. They may also rely on others to take them to dental appointments. Children in low-income families are disproportionately at higher risk and are twice as likely to have untreated decay compared to children from higher-income neighborhoods.¹⁰ Additionally, there are racial and ethnic disparities in the caries prevalence. Hispanic youth had the highest prevalence of total caries, and non-Hispanic black youth had the highest prevalence of untreated caries.⁵ Native Americans have reduced access to providers, with tribal facilities often designated as HPSAs. Many HPSAs are also located in counties that are predominately African American.⁷

The combination of an outdated FFS model, provider shortages in rural areas, and concerning prevalence rates for caries in children warrants an alternative approach to how oral health prevention is prioritized.

The Program Goal

The goals for the program proposal are to effectively incentivize prevention in school-based populations (K-to-8) and to improve oral health outcomes of children by focusing on the value of preventive services in long-term caries risk reduction. In order to make a truly meaningful impact on reducing caries risk, especially in vulnerable children, it will require an innovative approach for incentivizing providers.

School-Based Preventive Bundled Payments

Value-based care (VBC) is a delivery model that rewards providers for quality health outcomes instead of quantity of care delivered. Bundled payments are a subtype of payment reform under VBC. Under a preventive bundle, providers will be incentivized to complete all the preventive services that are defined in the package in one billing date of service.

Previous attempts of payment reform, such as capitation, did not work in dentistry. With capitation, dentists provide care for a certain population of patients in exchange for a monthly capitation rate and a fixed copayment schedule.¹¹ However, these plans failed to successfully incentivize prevention as the capitation model required for dentists to reap cost-savings. Fixed copayments were relatively low for high-cost services, and prevention was not adequately incentivized for the model to work. As a result, the capitation rates and copayments did not significantly increase over the years, and compensation to participating dentists remained low.¹¹ Inadequate compensation and misaligned prevention incentives resulted in the continuation of rewarding high-volume care without improved outcomes or cost-savings.

In order to effectively incentivize prevention in children, we propose a 2x/year school-based caries prevention program which utilizes the bundled payment model to compensate providers for services administered in K-to-8 populations in North Carolina. The bundle would consist of these dental codes: D9996 + D0150 or D0120 + D1110 or D1120 + D1206 + D1351. Each child would receive an exam, a prophylaxis, topical application of fluoride varnish, and dental sealants at the same date of service. Since evidence shows that sealants reduce the risk of caries by 80%, dental sealants

(D1351) would be incentivized at a higher rate to reward providers to complete the service on the same date.¹² Below is a breakdown of the program logistics:

- Dental Hygienists capture data, perform prophylaxis, apply topical fluoride varnish, and place up to 4 dental sealants on eligible teeth in the school-based setting.
 - o D1110 or D1120 + D1206 + D1351
- Participating dentists would perform the exam asynchronously using the captured data from the dental hygienists. The exam would be completed after the hygiene encounter to ensure that it is billed with the bundle.
 - o D9996 + D0150 or D0120

Cost Analysis

Using the dental fee schedules for FQHCs and general dentists in the private, we calculated a baseline total for reimbursement rates. The baseline total included a dental exam & asynchronous teledentistry service, dental prophylaxis, and topical fluoride varnish application. This ranged between \$99 to \$121 per child (K-to-8), depending on the type of exam (D0150 or D0120) and the type of prophylaxis (D1110 or D1120) provided. Due to the data on sealant efficacy, we recommend a 15-25% incentivized higher rate for FQHCS and 16-26% incentive for general dentists in the private sector as part of the preventive bundled payment. The incentivized rate for up to 4 sealants (D1351) would bring the new reimbursement total between \$245 to \$293 per child (K-to-8).

For dentists, there will be cost savings if sealants are placed in the school-based setting under the preventive bundled payment. Since dental hygienists are placing the sealants in schools, dentists have more chair time in the office for other procedures. If there is an area of decay diagnosed from the exam, the child would be scheduled to visit the dental office to have the treatment completed. Typically, preventive visits at the dental office include the exam, prophylaxis, and fluoride application in the first appointment. If sealants are recommended during the exam, the child is often scheduled for a second appointment. This second visit for sealants would occupy approximately 20 minutes of valuable chair time where the dentist could be using that to treat a more complex case on another patient. Therefore, dentists who participate in the school-based preventive bundles would reap cost-benefits because they would be sufficiently rewarded for providing preventive services and would have more available chair time in their offices. *See Appendices A and B for further breakdown of cost analysis of the program.*

For payers, the initial investment in implementing preventive bundled payments in schools would result in downstream cost-savings. Vulnerable children, especially in

dHPSAs, would have increased access to preventive oral health services because an oral health provider would meet them at schools. Historically, school sealant programs can become cost-saving in just 2 years and saving \$11.70 per sealed tooth over 4 years.¹³ In a 2018 study by Lee et al., they found that if 30% of children 3-6 years old in NC would have received fluoride and sealants, the cost savings would be about \$12.1 million over a 7-year period.¹⁴ A child who has equitable access to preventive services would have a lower risk of developing issues that would be expensive to fix, such as crowns and root canals.¹⁴

In 2019, about 3 in 7 children were covered under Medicaid in NC.¹⁵ Extrapolating this statistic would mean that 3 in 7 children would be an estimated 42.9% of the population ≤ 18 years old. Assuming this percentage, we can assume that an estimated 460,299 children would benefit from the bundled program. The cost to implement this program would range from \$225 million - \$270 million, which is a small percentage of the total NC Medicaid expenditures from FY20.

Stakeholders

A review of existing primary stakeholders engaged around preventive bundled payments in school-based settings showed there would likely be considerable support for the implementation of this program. K-to-8 school-aged children in public and charter schools are the primary stakeholders as they are the direct beneficiaries of the proposed preventive services in the bundled payment model. Specifically, Medicaid eligible children, who might have difficulty accessing a dental office, would especially benefit from this program.

Other key stakeholders include NC Dental Society, NC Dental Hygienists' Association, NC Medicaid, and NC Child. A short survey was sent to 23 grantees from The Duke Endowment asking if a 15% or 25% incentive would be enough for their practice to ensure that sealants were placed on all eligible teeth at the same date of service as the bundle. The response rate was 26% (n=6/23 people), and they reported that a 15% sealant incentive was enough for them to participate in the bundled payment program. Additional information on stakeholders can be found in the Appendix.

Conclusion

Tooth decay can be a debilitating disease that is preventable. Traditional FFS models have paid providers for the volume of services they complete without adequately rewarding for oral health outcomes. Evidence shows the cost benefits of utilizing preventive services for patients, providers, and payers. It is time to truly align payment and outcomes in the state. As such, implementing preventive bundles in

school-based settings is a reasonable solution and first step for increasing rates of access, improving oral health, and reducing short and long-term costs for children.

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Appendices

Appendix A: Cost Analysis for Federally Qualified Health Centers

Federally Qualified Health Centers					
Code	Reimbursement Rate	Scenario 1	Scenario 2	Scenario 3	Scenario 4
D9996	\$23.10	\$23.10	\$23.10	\$23.10	\$23.10
D0120	\$28.90	\$28.90		\$28.90	
D0150	\$48.98		\$48.98		\$48.98
D1110	\$42.69	\$42.69	\$42.69		
D1120	\$30.48			\$30.48	\$30.48
D1206	\$18.53	\$18.53	\$18.53	\$18.53	\$18.53
Baseline Total (ex, prophy, F12)		\$113.22	\$133.30	\$101.01	\$121.09
D1351 (4 teeth)	\$128.01	\$128.01	\$128.01	\$128.01	\$128.01
Sealant Incentive Bump (15%)		\$147.21	\$147.21	\$147.21	\$147.21
Sealant Incentive Bump (25%)		\$160.01	\$160.01	\$160.01	\$160.01
Incentivized Total (15%)		\$260.43	\$280.51	\$248.22	\$268.30
Incentivized Total (25%)		\$273.23	\$293.31	\$261.02	\$281.10
Cost 2x/year/child (15%)		\$520.86	\$561.02	\$496.44	\$536.60
Cost 2x/year/child (25%)		\$546.46	\$586.62	\$522.04	\$562.20
Cost 2x/year/population (15%)		\$239,751,337.14	\$258,236,944.98	\$228,510,835.56	\$246,996,443.40
Cost 2x/year/population (25%)		\$251,534,991.54	\$270,020,599.38	\$240,294,489.96	\$258,780,097.80
#K-8 Total Children in Public and Charters	1,072,959				
#K-8 Medicaid Covered in Public and Charters	460,299				

Appendix B: Cost Analysis for General Dentists

General Rates					
Code	Reimbursement Rate	Scenario 1	Scenario 2	Scenario 3	Scenario 4
D9996	\$23.10	\$23.10	\$23.10	\$23.10	\$23.10
D0120	\$28.31	\$28.31	\$28.31		
D0150	\$48.98			\$48.98	\$48.98
D1110	\$41.82	\$41.82		\$41.82	
D1120	\$29.88		\$29.88		\$29.88
D1206	\$17.61	\$17.61	\$17.61	\$17.61	\$17.61
Baseline Total (ex, proph, F12)		\$110.84	\$98.90	\$131.51	\$119.57
D1351 (4 teeth)	\$125.52	\$125.52	\$125.52	\$125.52	\$125.52
Sealant Incentive Bump (16%)		\$145.60	\$145.60	\$145.60	\$145.60
Sealant Incentive Bump (26%)		\$158.16	\$158.16	\$158.16	\$158.16
Incentivized Total (16%)		\$256.44	\$244.50	\$277.11	\$265.17
Incentivized Total (26%)		\$269.00	\$257.06	\$289.67	\$277.73
Cost 2x/year/child (16%)		\$512.88	\$489.00	\$554.22	\$530.34
Cost 2x/year/child (26%)		\$538.00	\$514.12	\$579.34	\$555.46
Cost 2x/year/population (16%)		\$236,078,151.12	\$225,086,211.00	\$255,106,911.78	\$244,114,971.66
Cost 2x/year/population (26%)		\$247,640,862.00	\$236,648,921.88	\$266,669,622.66	\$255,677,682.54
#K-8 Total Children in Public and Charters	1,072,959				
#K-8 Medicaid Covered in Public and Charters	460,299				

Appendix C: List of Stakeholders and Function

Stakeholder	Function
Federally Qualified Health Centers (FQHCs)	FQHCs establish a set of health services for Medicaid beneficiaries.
The Duke Endowment (TDE)	TDE awards grantees that work to expand opportunities to vulnerable children and improve access to quality health care. There are several grantees who have developed school-based oral health programs in the past. Preventive bundled payment models will be presented to TDE grantees to gauge interest in this program.
NC Dental Society (NCDS)	The preventive bundled payment model in school-based settings is aimed to incentivize dental providers in performing selected services in one episode. Getting the incentives right will help determine provider participation.
NC Dental Hygienists' Association (NCDHA)	The dental hygiene profession centers on prevention and education. NCDHA has previously been in support of expanding scope of practice laws for DH's in the state. They would be a major workforce to utilize in school-based programs by performing the preventive services.
Academic Institutions (UNC, ECU, DH programs)	Academic institutions would have interest in this policy since they are training future oral health care providers. Current educational models are being focused on preventive oral health. ECU Dental School has been hailed as a national model for supplying dentists to rural communities and shifting focus on increasing better access to care for vulnerable populations.
NC Child	Part of their policy agenda is to develop strategies and solutions that promote children's healthy development. They have a history of supporting school-based sealant/prevention programs. They have also been in support of utilizing dental hygienists in school-based settings to perform preventive services.
NC Medicaid	They are one of the key stakeholders that will be involved in this program because they are the main payer in services and reimbursement rates for dental providers. They have been previously invested and interested in innovative methods to improve health outcomes for their beneficiaries.

Public and Charter Schools	These would be one of the primary stakeholders in preventive bundled payments. Services would be offered in public and charter school settings to children pre-k to 8. Children who attend these schools are the priority population for the preventive bundled payment program.
NC School Based Health Alliance	The only NC organization focused exclusively on supporting school-based/linked health centers and school-based health and mental health services. They will be in support of implementing a school-based preventive bundled payment model.
NC Department of Health and Human Services (NCDHHS)	The Oral Health Section (OHS) of NCDHHS utilizes 25 public dental hygienists to cover the state in providing screenings and education aimed to maintain oral health. The OHS has previously developed and supported oral health programs that are focused on prevention in early childhood and school-based preventive services.
NC Oral Health Collaborative (NCOHC)	The NCOHC is in support of value-based care models, which shifts the focus value instead of volume of patients. In their 2020 policy brief, they recommend a move towards value-based oral health care and payment, listing preventive bundled payments as an alternative to incentivize providers towards better patient health outcomes.
Managed Care Organizations	NC has contracted with 5 prepaid health plans (PHPs). The idea is that MCOs will incentivize healthy outcomes and cost savings. They would likely be in support of preventive bundled payments because they are already utilizing an alternative payment model.