Impact of Dental Therapists on Productivity and Finances: III. FQHC-Run, School-Based Dental Care Programs in Connecticut


Abstract: In many developed countries, the primary role of dental therapists is to care for children in school clinics. This article describes Federally Qualified Health Center (FQHC)-run, school-based dental programs in Connecticut and explores the theoretical financial impact of substituting dental therapists for dentists in these programs. In schools, dental hygienists screen children and provide preventive services, using portable equipment and temporary space. Children needing dentist services are referred to FQHC clinics or to FQHC-employed dentists who provide care in schools. The primary findings of this study are that school-based programs have considerable potential to reduce access disparities and the estimated reduction in per patient costs approaches 50 percent versus providing care in FQHC dental clinics. In terms of substituting dental therapists for dentists, the estimated additional financial savings was found to be about 5 percent. Nationally, FQHC-operated, school-based dental programs have the potential to increase Medicaid/CHIP utilization from the current 40 percent to 60 percent for a relatively modest increase in total expenditures.

The first article in this series reviewed the literature associated with the use of dental therapists in developed countries.1 The second article estimated the financial impact of dental therapists’ providing care to children within the four walls of Federally Qualified Health Centers (FQHCs).2 The results suggested only modest cost reductions because most children require relatively few dental therapist services (e.g., restorations and extractions) and because dentist salaries and fringe benefits only account for about 25 percent of clinic expenses. Thus, substituting lower paid dental therapists to provide some percentage of dentist services saves relatively little money: the estimated maximum cost reductions were less than 5 percent of total child expenses.2 Further, because even large clinics (e.g., four FTE dentists) do not have enough child patients to employ dental therapists full-time, the cost reductions per dentist were a maximum of $10,400/year.

Furthermore, because even large clinics (e.g., four FTE dentists) do not have enough child patients to employ dental therapists full-time, the cost reductions per dentist were a maximum of $10,400/year. The review of the international literature found that dental therapists are mainly employed in school dental clinics rather than private practices or community clinics.1 This article describes FQHC-run, school-based dental programs in Connecticut and, since no empirical data are available, explores the theoretical financial impact of substituting dental therapists for dentists in these programs. The article also examines the number of dentists or dental therapists needed to staff school programs for low-income children to increase utilization rates from the current 40 percent to 60 percent, the rate seen among upper-income children.

School-Based Dental Programs

The literature on public school-based dental delivery systems consists mainly of descriptions of screening and preventive programs (e.g., topical fluoride and sealants).3–9 Few school programs provide restorative and other services. In some communities, dental vans or fixed school clinics are used to provide general dental care to low-income children. For example in Connecticut, some forty schools have fixed
Some low-income children in schools, using portable equipment. Medicaid/CHIP-enrolled children are considered regular FQHC patients, and Medicaid/CHIP reimburses FQHCs at their usual per visit reimbursement rate ($150/visit). These supplemental Medicaid funds plus the federal 330 grant that all FQHCs receive give these programs a stable source of financial support to care for Medicaid/CHIP and non-insured low-income school children.

In these school programs, FQHC-employed dental hygienists and support staff provide screening and preventive services and identify children who need treatment by dentists. Care is delivered using portable equipment and temporary space (e.g., assembly halls). The hygienists work under the general supervision of dentists: that is, dentists are not physically present but are available electronically or on call in case of emergencies.

Connecticut FQHCs have tried two approaches to providing care to the approximately 35 percent of screened children who need restorations and other dentist services. Initially, FQHC-employed case managers contacted caregivers and tried to arrange dental appointments in FQHC clinics. This method resulted in about 30 percent of the referred children receiving restorative services. A more successful strategy was having FQHC-employed dentists provide the services in schools using portable equipment. The problem with this approach was difficulty recruiting dentists willing to treat children in schools using portable equipment. According to dentist informants, only a small percentage of children (e.g., 10 percent of those with untreated caries) have behavioral, medical, and dental problems that do not allow dental treatment using portable equipment. Case managers try to schedule visits for these children in FQHC dental clinics.

There are a number of operational challenges in running school-based programs, using portable equipment:  

Enrollment. Parents or legal guardians have to give their permission to treat their children. It takes several years before the majority of Medicaid/CHIP-eligible children (who do not have private or other dentists) sign up for the program. It is important to work with the school nurse and administration to make caregivers aware of the program and its advantages.

Clinic productivity. Working with support staff, dental hygienists should treat ten to twelve children per day to cover operating costs. This workload is not always possible because of conflicts with school activities.

Non-Medicaid or CHIP children. Some low-income children who are Medicaid/CHIP-eligible are not enrolled, and others are not Medicaid-eligible for a variety of reasons (e.g., being undocumented). The former group should be enrolled in Medicaid/CHIP, and the latter group should be given the option of receiving reduced-fee services.

Relationships. It is important to have the support of teachers, school administrators, parents, and community leaders for such programs. Likewise, the support of local dental societies is a key success factor. An organized effort by skilled community-based staff and program leaders is needed to maintain these relationships.

Non-school time. Program staff may have to work part-time since schools do not operate twelve months a year and not always five days every week. Another option is to run the program in after-school centers, Head Start facilities, summer camps, etc., where low-income children spend time when schools are closed.

Recruiting dentists. Based on anecdotal evidence, we found that few general dentists appear interested in working full- or part-time providing care to children in schools using portable equipment. This problem goes beyond the issue of competitive salaries and needs further investigation.

School costs. Participating schools have to make children available to the program and to provide the necessary space and utilities—an added responsibility for hard-pressed school administrators and teachers. These challenges have to be weighed against the advantages of providing basic dental services to low-income children. Recent evidence suggests that children participating in the school program (versus non-participants) may lose less time from class because of dentally related illness or visits to dental clinics and, as a result, have higher academic achievement. Since FQHCs have little difficulty
identifying schools to participate, most schools appear to view the program trade-offs positively.

The financial impact of the Connecticut model has not been formally evaluated, but Bailit and Beazoglou estimated that in 2007 dollars the cost per child is about $250. This cost can be compared to about $439 for Medicaid children treated in FQHC clinics. Per patient costs are lower in schools because the majority of children (65 percent) who do not have untreated caries are cared for by dental hygienists (not dentists); many facility costs are covered by the schools (e.g., utilities, rent); and long-term, preventive services reduce the incidence of tooth decay. As expected, this delivery model increases aggregate Medicaid expenditures since more children receive care.

In 2011, nine Connecticut FQHCs provided dental care in over 200 schools to thousands of children. The FQHC school programs have the active support of the Connecticut State Dental Association. In fact, the association has worked with the FQHCs to recruit dentists to provide restorative services in schools.

In some states, FQHCs cannot operate school dental programs. A few (e.g., California) do not allow FQHCs to provide care outside their four walls (except under special conditions) and still get reimbursed their usual per visit Medicaid reimbursement rate. In these states, FQHCs can provide care in schools, but they only receive fee-for-service Medicaid payments, which are often inadequate to cover program expenses.

Another program barrier is seen in several states that do not allow dental hygienists to work in school systems under general dentist supervision. Rather, they require dentists to be physically present and to examine all patients. This requirement increases program costs substantially, reducing the financial feasibility of school programs. However, the trend is for more states to allow FQHCs to operate outside their four walls and to allow dental hygienists to work under general dentist supervision. As of 2010, FQHCs can run the Connecticut model school dental program in thirty-five states.

**Evaluation of the Connecticut Program**

The Connecticut FQHC-run, school-based dental care system described in this article has not been formally evaluated, so no empirical data are available on program health outcomes, quality, or finances. Estimating the impact of substituting dental therapists for dentists in these school programs assumes that the only major difference between the use of dental therapists within the four walls of FQHCs and in school systems is that dental therapists can be employed full-time delivering care in schools. Dental hygienists screen all the children and identify those needing restorative and other dental therapist services. Dental therapists provide care in schools when there are adequate numbers of children available who need their services. They are employed full-time because they care for children in multiple schools. The theoretical cost reduction is based on the difference in dental therapist versus dentist wages and fringe benefits for the time that dentists spend in schools treating children.

To estimate the potential national impact of FQHC-run school dental programs using dental therapists, the number of dental therapists needed to provide care to 6.7 million children was determined. As described in our literature review article in this series, this is the number of additional Medicaid/CHIP children that need to receive care to reach a utilization rate of 60 percent. Data on the percentage of children with untreated caries and the number of carious teeth in children with untreated caries come from the most recent NHANES report. Data on the average time (thirty minutes) needed by dental therapists to complete a two-surface restoration come from discussions with clinical dentists.

The substitution of one full-time equivalent (FTE) dental therapist for one FTE dentist working in schools results in annual cost reductions, based on the difference in the annual income of a dental therapist and a dentist employed by FQHCs. Assuming a difference of $40 per hour, the maximum possible cost reduction is $80,000, but the actual reduction is likely to be substantially less for several reasons: 1) the difference in dentist and dental therapist wages may be less than $40 per hour; 2) dentists have to spend some time supervising dental therapists; and 3) dental therapists may not have the necessary clinical knowledge and skills to provide all restorative, surgical, pulpal, and other services to patients assigned to them. That is, some percentage of services will require dentists. The percent cost reduction from the substitution of dental therapists for dentists thus remains about 5 percent.

To increase Medicaid/CHIP utilization rates from the current 40 percent to 60 percent, another 6.7 million children need to obtain dental care annually.
If the care is delivered in schools, dental hygienists can screen and provide preventive services to the 65 percent of children who do not need restorative and other dentist-level services. Dentists or dental therapists, using portable equipment, can treat the remaining 35 percent (2.3 million) with untreated decay and other service needs. Assuming children who need to see a dentist have an average of two unrestored (or equivalent services) teeth, it would take about 2.3 million hours of provider time to restore the 4.6 million teeth. This assumes one FTE provider working 2,000 hours per year. Another assumption is that dental therapists and dentists will be equally productive.

At $250 per child, the cost of caring for another 6.7 million children is less than 2 billion dollars. The cost reduction from using dental therapists rather than dentists to provide most of the restorative care is a maximum of 5 percent of program costs.

Discussion

This analysis indicates that FQHC-run, school-based dental programs have considerable potential to reduce access and oral health disparities. These programs have many advantages. First, they reduce access disparities for children that are least likely to visit FQHC clinics or private practices. Many low-income children come from families that do not speak English, have limited education, and have hourly jobs that make it difficult to take children to dental clinics/offices during work hours. These social barriers are major reasons for low-income children not receiving care, even when it is economically and physically available.

Second, FQHCs receive their usual per visit reimbursement rate treating children in schools. In most states, this reimbursement rate is substantially higher than the rates available in fee-for-service Medicaid programs. As such, FQHCs provide a stable source of revenues to cover program costs. Third, school programs are able to periodically apply preventive agents to high-risk children, which should lead to significant reductions in the incidence of decay. Reports from other school preventive programs claim reductions of 50 percent or greater in the incidence of decay. Fourth, FQHC dental clinics are a scarce resource that should be used to care for patients who need the clinical expertise and technology available in these facilities. On average, children make up 50 percent of FQHC dental clinic patients, and most children do not have complex dental problems. They can be safely treated in schools, using portable equipment and temporary space.

Finally, the capital needed to develop school-based dental care programs is much less than building additional operatories in existing or new FQHC dental clinics. The portable equipment costs about $30,000 per dental hygiene team. No construction funds are needed for fixed dental facilities. In other words, school programs offer FQHC dental programs the opportunity to expand rapidly and have a major impact on access disparities.

The substitution of dental therapists for dentists in school dental care systems has at least two potential advantages: first, a modest reduction in program costs (around 5 percent) because dental therapists have lower salaries than dentists; and second, it may be easier to recruit dental therapists than dentists to work in schools using portable equipment. Anecdotal evidence suggests that some general dentists appear reluctant to spend the day in schools caring for children, especially younger children, and others have reservations about working with portable equipment in temporary space. It is difficult to judge the validity of this evidence, indicating the need for more research.

Another issue that needs attention is the feasibility of having dental therapists rather than dental hygienists screen children, perform preventive services, treat coronal caries, etc. There may be efficiencies in having dental therapists provide all these services in one visit. This option will depend on the relative salaries of dental hygienists and dental therapists and the services dental therapists are trained to provide.

In terms of national efforts to reduce access disparities, this analysis estimates that fewer than 1,200 full-time equivalent dentists or dental therapists are needed to staff school-based programs aimed at providing care to another 2.3 million children who require dentist services (35 percent of the 6.7 million children needed to reach a 60 percent utilization rate). Since it is unclear if and when dental therapists will be able to practice in most states, this uncertainty is a compelling reason for currently operating FQHCs to recruit dentists to staff their school-based programs.

The development of FQHC school-based dental programs assumes that federal and state governments will provide the funds necessary to provide care to millions of additional children. The analysis estimated that less than 2 billion dollars in new Medicaid/CHIP expenses are required to provide dental care to another 6.7 million children. This does not
include hospital costs for children requiring general anesthesia to have their dental treatments completed.

A major limitation of this analysis is the lack of data from operating school programs. With the maturing of the Connecticut FQHC school programs, data should soon be available to obtain a more precise estimate of patient outcomes and program finances.

### Conclusions

FQHC-operated, school-based dental delivery systems have the potential to significantly reduce access disparities and per patient costs. In the majority of states, FQHCs can now initiate school-based care systems using dental hygienists to screen children and provide preventive services and dentists to perform restorative services. If and when dental therapists become available for care delivery, they could also be employed to provide restorative care in schools.

### Acknowledgments

This study was supported by a grant from the Pew Center for the States. We want to thank the FQHCs that provided data for this study, the Board of the National Network for Oral Health Access (a strong supporter of this effort), and the many people who reviewed drafts of the project report and manuscripts, including Drs. William Maas, Norman Tinanoff, Wayne Cottam, Gregory Nycz, Scott Wetterhall, Tim Brown, and Beth Mertz. We also recognize and appreciate the significant time and effort that Pew staff members Ms. Shelly Gehshan and Mr. Andrew Snyder put into all phases of this study.

### REFERENCES


11. Personal communication with Dr. Cyril Meyerowitz, Eastman Dental Center, 2011.


13. Personal communication with Dr. Margaret Drozdowski-Maule, Chief Dental Officer, Community Health Center Inc., New Britain, CT, October 2011.


