healthy AND READY TO learn

Children's Health Fund

Healthy and Ready to Learn Oral Health Services Bring Access to Elementary Schools

With support by a grant from Guardian®

TABLE OF CONTENTS

Acknowledgements

This report was researched and written by Luke Gerber, M.A., Director of Research, Evaluation, and Learning at Children's Health Fund. The author thanks the Healthy and Ready to Learn team of Emanuela Acquafredda, Ginelle Wynter, Angie Vega, May Erouart, Lisbeth Guzman, Wenimo Okoya, and Karen Redlener; the research assistance of Chantal Hoff, John Decarvalho, and Sandhya Sewnauth; and the editorial assistance of Susan Spalding. Finally, we would like to thank The Guardian Life Insurance Company of America for their generous support for this project.

Children's Health Fund is committed to ensuring high-quality healthcare for children living in this country's most marginalized communities. We understand the role that racism and systems of oppression play in shaping health and are committed to addressing the root causes that perpetuate inequities. The programs we support bring comprehensive primary care directly to children and families where they live, learn, and play; we partner with communities to create a supportive environment to decrease the impact of trauma on children; and we work to improve the quality of life for families through policy and advocacy efforts that drive systems change. Collectively, these efforts help to advance health equity. We support 25 programs that comprise a National Network of local partners located in 15 states, Puerto Rico, and Washington, D.C. For more information about Children's Health Fund, visit www.childrenshealthfund.org.

Children's Health Fund
215 West 125th Street, Suite 301
New York, NY 10027
Telephone: 212.535.9400
www.childrenshealthfund.org

Why School-Based Dental Services Improve Overall Health

Elementary schools are anchors in many communities and young children's lives. A child spends on average one-sixth of each year in school, perhaps the most influential institution they interact with outside of their family. School staff have relationships with children and their caregivers and are often a critical source of trusted information for caregivers. Teachers and educational staff are trained to support students' well-being and to recognize signs and symptoms of medical, dental, and mental health issues. Because of these factors, integrating health services into schools remains an effective strategy to support the emotional and physical aspects of students' learning.

Oral health issues impinge on students' abilities to learn; one figure estimates students in the U.S. lose 51 million school hours annually because of dental-related illness. Dental caries—otherwise known as tooth decay—are the second most common chronic condition in children and adolescents yet are largely preventable. An estimated 19% of children between the ages of 5 and 19 years old have untreated dental caries. When dental decay begins early in life, it can damage children's growth, development, and school performance. Dental pain can also affect eating and sleeping, leading to inattention in school and under performance. Students with toothaches are nearly six times more likely to be absent from school and four times more likely to have lower grades compared to their peers without dental pain. Poor oral health can also affect psychosocial factors such as self-esteem, confidence, and social skills, as well as future employment.

Poor nutrition and lack of preventative oral healthcare are two primary reasons that tooth decay begins, both of which are influenced by social determinants of health. Social determinants of health are the conditions in which people are born, grow, live, work, and age. Examples of social determinants that can impact children's oral health include housing stability, financial resources, quality of education, structural racism, xenophobia, and community safety. In addition to cost and insurance coverage, many barriers—transportation, parental work schedules, competing priorities, lack of oral health education, among others—can obstruct access to dental care. Because of these factors, data show oral health inequities exist for children in households living below the federal poverty threshold, individuals without dental and health insurance, communities of color, and rural communities.

Community-based dental services, especially school-based services, are an essential component of oral health promotion for marginalized communities and populations. School-based dental services help eliminate access barriers of transportation, parental availability, and greatly reduce missed appointments. Comprehensive dental care offered through schools is more effective than screening and referral programs or traditional dental services in achieving oral health equity for children living in under-resourced communities. By promoting children's oral health and preventing common chronic conditions like tooth decay, school-based dental services improve children's overall health and well-being.

The Healthy and Ready to Learn Initiative

Integrating Oral Health Services in Schools

The Healthy and Ready to Learn Initiative (HRL) was developed by Children's Health Fund (CHF) to address health issues that impact student learning and attendance, termed "health barriers to learning."[1] HRL addresses health needs rooted in social, racial, and economic inequities by managing the provision of health screening services within two New York City (NYC) elementary schools and creating content to promote health and well-being in the school community. The program has expanded in recent years to include technical assistance, training, and an online resource center (healthyandreadytolearn.org).

CHF staff worked closely with the NYC Office of School Health and relevant stakeholders to develop this program over multiple years. In 2013, CHF partnered with a local education union to conduct a survey on health barriers to learning with over 400 principals and assistant principals in New York City public elementary and middle schools.[2] Results from the survey identified the health resources that principals deemed most important to students' learning and guided the program's initial design. The program's advisory committee includes key stakeholders from community-based organizations, school staff, parents, the NYC Department of Education, and the NYC Department of Health and Mental Hygiene.

[1] See CHF's white paper on the topic at https://www.childrenshealthfund.org/hbl-literature-review/ .
[2] See "Health Barriers to Learning: A Survey of New York City Public School Leadership," Gracy et al, 2014, as listed in the references.

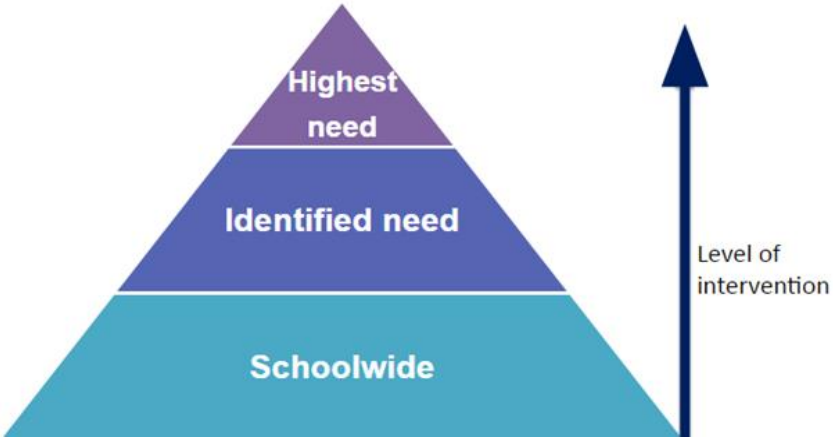
Since 2014, HRL has partnered with two New York City (NYC) elementary schools—P.S. 36 in Harlem and P.S. 49 in Mott Haven in the South Bronx—to implement a comprehensive school-based model that provides the school community with health services, education, resources, and protocols. Both neighborhoods face significant challenges to health and well-being that result from long histories of racial and ethnic discrimination that continue today. Of all 59 NYC community districts, Mott Haven is ranked the highest risk to child and family well-being based on indicators of economic security, housing, health, education, family support resources, and others.[3] Across the two schools, students are 99% children of color, primarily Black and Latinx students, and over 90% are from families with limited financial resources.[4] In the 2018-2019 school year, 43% and 32% of students at P.S. 36 and P.S. 49 respectively were chronically absent, meaning they missed 10% or more of their school days (an equivalent of 19 days).[5] By comparison, 23% of NYC elementary school students overall were chronically absent that year.[6]

HRL strives to promote student success by increasing access to health resources, promoting trauma sensitivity training for teachers and staff, and building positive attendance culture. In each school-based program, a two-person HRL team is assigned to the school; the team includes a site manager, whose responsibilities include case management and coordination of health providers, and a mental health clinician. Each team works with school staff and families to identify and address health barriers to learning throughout the school. The team provides case management to support students who are chronically absent, coordinates vision and dental services, expands access to school-based behavioral health counseling services to students with identified needs, and provides professional development and learning opportunities for staff and families.

[3] See the data at https://data.cccnewyork.org/riskranking .
[4] NYC's Department of Education defines "poverty" as students who either qualify for free or reduced price lunch, or are eligible for benefits through the NYC Human Resources Administration. See data at https://infohub.nyced.org/docs/default-source/default-document-library/demographic-snapshot-2015-16-to-2019-20-(public).xlsx .
[5] For a definition of chronic absenteeism, see https://www.attendanceworks.org/chronic-absence/the-problem/.
[6] Data source is https://infohub.nyced.org/reports/school-quality/information-and-data-overview/end-of-year-attendance-and-chronic-absenteeism-data .

The school-based program uses a three-tiered approach. Beginning with school-wide interventions at the first tier, HRL applies additional strategies to meet students' and families' needs.

Tier 1 interventions are proactive and target the whole school; for oral health services, this tier comprises twice annual no-cost[7] preventive oral health examinations for every child whose parents provide consent. In order for students to receive services, parents must return a signed opt-in consent form. An oral health services provider sets up dental hygienist stations in each school for two weeks in the fall and spring, providing oral health care for all children with consent. The hygienists perform an oral exam, cleaning, and apply fluoride varnish. Depending on the students' needs, the hygienist may provide additional services including x-rays and applying sealants.



The second and third tiers provide greater levels of support to students with needs identified during school-wide interventions or through school staff referrals. At the preventive visit, the dental hygienist records whether the child [a] does not need follow-up treatment, [b] needs follow-up treatment, or [c] needs urgent follow-up treatment. With oral health services, *Tier 2* interventions occur where the child needs non-urgent follow-up treatment. The parent is notified that their child needs additional care and can either visit an external dental provider or have follow-up treatment provided when the dental team returns to the school. Typically, the dental provider returns to the school a month or two after the preventive visits to provide restorative dental services—primarily fillings—for those students with identified non-urgent treatment needs.

Tier 3 interventions provide the highest levels of support to those with the greatest need. Administrators and school team members collaborate to provide intensive case management to students and families in this tier. The result is often referral and connection to resources beyond the school. Specific to oral health services, the highest tier occurs when the dental provider refers students who have an urgent treatment need—identified during the preventive visit—to an external provider, like oral surgery or other hospital-based interventions. The HRL site manager then supports the family by providing a referral, making regular contact, and troubleshooting financial and insurance issues that arise in getting additional dental care.

[7] The dental provider bills Medicaid or private insurance where possible but does not charge students. Read more at https://www.smilenyoutreach.com/ .

Through the team's experience partnering with the schools, the program has gained a unique understanding of the intersection of health and education. This perspective drives their work creating resources and content that are responsive to the needs of their school partners. HRL facilitates collaboration between the health and education sectors, and the team furthers these efforts by convening local partners in NYC and through advocacy at the state and national levels.

Oral Health Services Reach 1,500 Students

In total, the team provided preventive oral health services to nearly 1,500 students over the last four school years. Prior to the most recent school year which was impacted by the COVID-19 pandemic, the HRL team's dental provider conducted preventive visits with approximately 430 students each year, reaching on average 36% of all students enrolled at the two schools annually. The remaining students' parents did not consent to receive services; possible reasons include the family already had a pediatric dental provider, did not receive or understand the communication about the services, or failed to complete and return the consent due to competing priorities or loss of paperwork. Because the COVID-19 pandemic forced closures of New York City public schools during the 2019-2020 school year, the team only provided oral health services during the fall semester and canceled additional preventive and restorative care planned for the spring semester. Below we discuss the services provided during the 2019-2020 school year as, other than the lower service volume, the trends are consistent with prior school years.

During the 2019-2020 school year, the HRL team's dental provider conducted preventive visits with 273 students during the fall semester, representing a quarter of all students enrolled at the two schools. These students generally received preventive services including an oral exam, cleaning, and fluoride varnish. Of these 273 students, 63% had x-rays taken and 41% had sealants applied to their back teeth or molars. One student had a filling placed during the initial preventive visit.

In addition to oral health services provided at the preventive visit, the dental hygienists recorded that 133 (49%) students did not need follow-up treatment, 102 (38%) students needed non-urgent follow-up treatment, and 35 (13%) students needed urgent follow-up treatment.[8] This was similar to the findings from prior years, but contrasts with the data from New York state oral health surveys that identified only 2% to 10% of elementary school children as having oral pain or serious oral infection.[9] Of the 102 students with non-urgent follow-up treatment needed, 17 students later received on-site restorative care services where all, except one student, received a filling. The students with urgent needs received referral packets and case management from the HRL team to ensure treatment was obtained.

For 221 of the 273 students who received services, their caregiver provided HIPAA consent for CHF to view additional data items. Dental hygienists noted, in the preventive visits, that 110 (50%) of these students had dental decay present. Hygienists also rated the student's level of dental hygiene as either "good," "fair," or "poor." Only 15% of the students were rated as having "good" dental hygiene, while 62% were rated "fair," and 23% were rated "poor."

Program Outcomes: Decline in urgent dental issues by engaging families

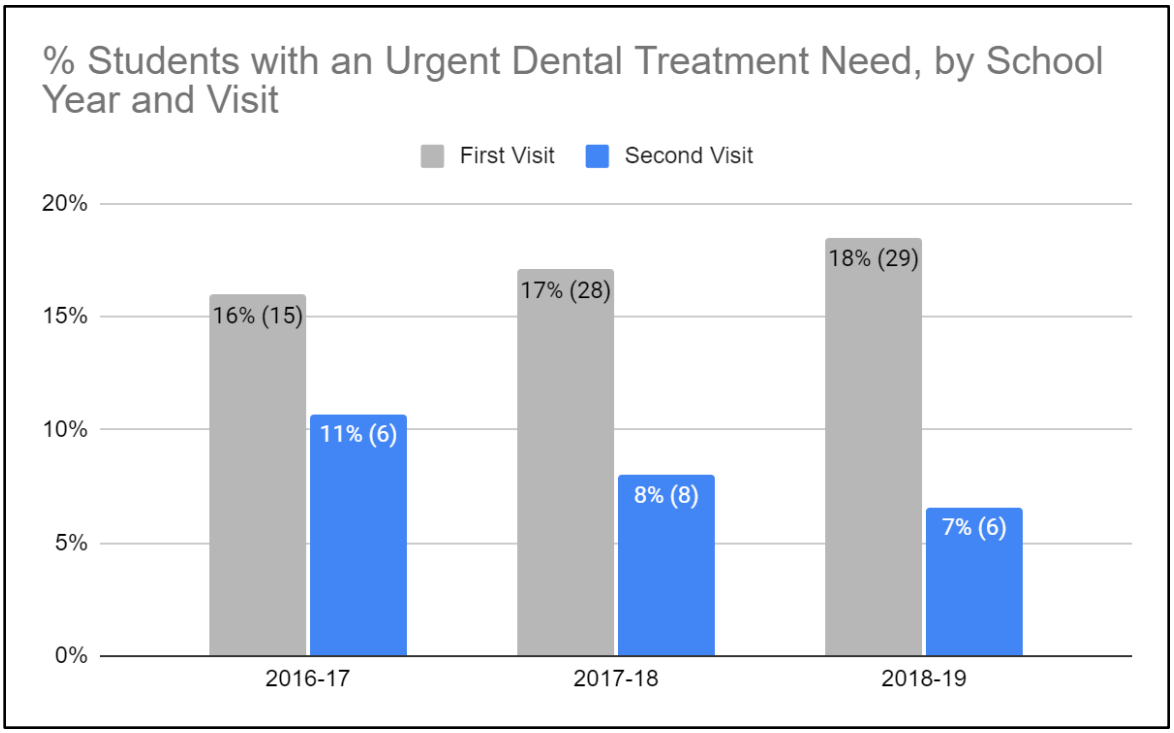
Critical oral health services reached many students who otherwise would not have received regular oral health care. One third grader at P.S.49, for example, had a painful abscess identified in his mouth and received care for the issue at his initial visit. A pre-k student who had never visited a dentist before was found to have all her baby teeth rotten; she received a cleaning, and the team supported her parents to identify a dentist to provide the urgent follow-up care she needed.

Consistent with these anecdotal student experiences, the data suggest that the routine preventive oral health services the program provided in the fall reduced urgent dental treatment needs over the school year. Dental data from the HRL school-based program at P.S. 36 for the three school years prior to 2019-2020 show declines in students identified with urgent dental treatment needs at their subsequent preventive visit as compared to their first preventive visit (see chart below). For example, for the 2018-2019 school year, 18% of students at P.S. 36 had urgent follow-up treatment needs noted at their first preventive visits, while only 7% of students had urgent follow-up treatment needs at their subsequent preventive visits.

In addition to boosting health and well-being, we know that reductions in untreated urgent dental needs are linked with improvements in school attendance and school performance. As cited

[8] Three students were excluded from these numbers due to missing data.
[9] See https://www.astdd.org/docs/dental-screening-considerations-for-school-nurses-in-return-to-school.pdf .

above, findings from numerous studies document that untreated dental problems are linked to more absenteeism, diminished school performance, loss of sleep, and inability to pay attention in class, as well as reduced psychosocial well-being.



Implications: Expand In-School Dental Services to Address Access

Our experience with the HRL oral health services program model suggests bringing oral health services directly to children in school effectively reaches students who otherwise may not receive routine preventive oral healthcare. Of students who received oral health services, we consistently identified between 13% and 18% of students each year had an untreated urgent dental issue, and an additional 35% to 41% had an untreated non-urgent dental issue that could have escalated into a more serious health risk. Critically, data show that children from families with limited financial resources and children of color are less likely to have access to oral healthcare. This program helps to reduce racial, ethnic, and economic inequities in oral care access by bringing oral health services to students at two NYC elementary schools whose students are primarily Black and Latinx, and from families with limited financial resources.

We recommend that school administrators, particularly in NYC, look to partner with local community organizations who provide in-school oral health services. In some school communities, especially in urban areas, no-cost or low-cost in-school dental services exist but schools either are unaware or do not have the staff or funding resources to coordinate them. Philanthropic and corporate social responsibility support can provide seed funding to expand programs with a proven track record of success. For example, NYC's implementation of the "Community Schools" model provides an archetype for a holistic education model that supports the whole child and their family. These supports include dental care. An evaluation found that this model increases graduation rates and student achievement and reduces chronic absenteeism and disciplinary incidents.

Our Future Direction with Schools

The Healthy and Ready to Learn oral health services model developed by Children's Health Fund brings oral health services directly to students in schools, effectively reaching students who otherwise may not receive routine preventive oral health care. Investing in on-site preventive oral health services in schools provides access in communities of color and neighborhoods with limited financial resources, which promotes oral health equity. In-school oral health services support children's overall health and well-being, and their educational success by reducing absenteeism and distractions from oral pain. In addition to localized solutions to addressing oral healthcare access inequities, we continue to advocate for a set of federal policy priorities to improve access to oral healthcare for children across this country.

Throughout our time working in these two NYC elementary schools, and particularly as the 2020-2021 school year winds down, our HRL staff has taken stock of the learnings and assets built over the years. Recently, the team has invested heavily in offering technical assistance to cohorts of schools, conducting trainings with school staff and community members, and developing an online resource center for schools. Using the lessons learned from years of providing a comprehensive school model to the two schools, our next steps will concentrate on advocacy and disseminating the critical parts of this oral health services model. This direction will take what we have learned from the comprehensive school model and chart a national footprint that focuses on building lasting changes toward health and well-being in schools and their communities.

References

Burgette, J. M., Preisser, J. S., & Rozier, R. G. (2018). Access to Preventive Services Following the Integration of Oral Health into Early Childhood Education and Medical Care. Journal of the American Dental Association (1939), 149(12), 1024-1031.e2. https://doi.org/10.1016/j.adaj.2018.07.019

Cruz, G. D., Chen, Y., Salazar, C. R., Karloopia, R., & LeGeros, R. Z. (2010). Determinants of oral health care utilization among diverse groups of immigrants in New York City. Journal of the American Dental Association (1939), 141(7), 871–878. https://doi.org/10.14219/jada.archive.2010.0286

Gargano, L., Mason, M. K., & Northridge, M. E. (2019). Advancing Oral Health Equity Through School-Based Oral Health Programs: An Ecological Model and Review. Frontiers in Public Health, 7. https://doi.org/10.3389/fpubh.2019.00359

Gracy, D., Fabian, A., Roncaglione, V., Savage, K., & Redlener, I. (2017). Health Barriers to Learning. Children's Health Fund. https://www.childrenshealthfund.org/wp-content/uploads/2017/02/HBL-Literature-Review-2-2-2017.pdf

Gracy, D., Grant, R., Goldsmith, G., Fabian, A., Peek, L., & Redlener, I. E. (2014). Health Barriers to Learning: A Survey of New York City Public School Leadership. SAGE Open, 4(1), 2158244013520613. https://doi.org/10.1177/2158244013520613

Guarnizo-Herreño, C. C., Lyu, W., & Wehby, G. L. (2019). Children's Oral Health and Academic Performance: Evidence of a Persisting Relationship Over the Last Decade in the United States. The Journal of Pediatrics, 209, 183-189.e2. https://doi.org/10.1016/j.jpeds.2019.01.045

Jackson, S. L., Vann, W. F., Kotch, J. B., Pahel, B. T., & Lee, J. Y. (2011). Impact of poor oral health on children's school attendance and performance. American Journal of Public Health, 101(10), 1900–1906. https://doi.org/10.2105/AJPH.2010.200915

Jung, M., Kwon, S. C., Edens, N., Northridge, M. E., Trinh-Shevrin, C., & Yi, S. S. (2017). Oral Health Care Receipt and Self-Rated Oral Health for Diverse Asian American Subgroups in New York City. American Journal of Public Health, 107(Suppl 1), S94–S96. https://doi.org/10.2105/AJPH.2017.303661

Maserejian, N. N., Trachtenberg, F., Hayes, C., & Tavares, M. (2008). Oral Health Disparities in Children of Immigrants: Dental Caries Experience at Enrollment and during Follow-Up in the New England Children's Amalgam Trial. Journal of Public Health Dentistry, 68(1), 14–21. https://doi.org/10.1111/j.1752-7325.2007.00060.x

Mason, M., Gargano, L., Kumar, A., & Northridge, M. E. (2019). Implementing a Patient-Centered and Cost-Effective School-Based Oral Health Program. The Journal of School Health, 89(12), 1024–1027. https://doi.org/10.1111/josh.12842

Northridge, M. E., Kumar, A., & Kaur, R. (2020). Disparities in Access to Oral Health Care. Annual Review of Public Health, 41, 513–535. https://doi.org/10.1146/annurev-publhealth-040119-094318

Northridge, M. E., Schrimshaw, E. W., Estrada, I., Greenblatt, A. P., Metcalf, S. S., & Kunzel, C. (2017). Intergenerational and social interventions to improve children's oral health. Dental Clinics of North America, 61(3), 533–548. https://doi.org/10.1016/j.cden.2017.02.003

Seirawan, H., Faust, S., & Mulligan, R. (2012). The impact of oral health on the academic performance of disadvantaged children. American Journal of Public Health, 102(9), 1729–1734. https://doi.org/10.2105/AJPH.2011.300478

Tiwari, T., & Albino, J. (2017). Acculturation and Pediatric Minority Oral Health Interventions. Dental Clinics of North America, 61(3), 549–563. https://doi.org/10.1016/j.cden.2017.02.006

Willis, M. S., Esqueda, C. W., & Schacht, R. N. (2008). Social perceptions of individuals missing upper front teeth. Perceptual and Motor Skills, 106(2), 423–435. https://doi.org/10.2466/pms.106.2.423-435