

SBHCs in Rural Areas Decrease Absenteeism

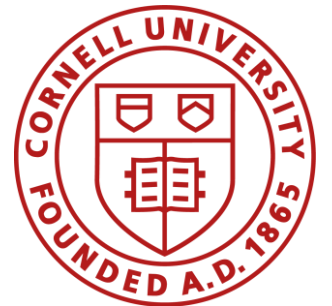
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Bassett Healthcare Network



SBHCs in Rural Areas Decrease Absenteeism

- The authors have nothing to disclose
- The authors have no conflicts of interest

School-Based Health Centers: a few notes

- SBHCs come in many forms and sizes and are present in many geographic locations
- SBHCs are designed to address the somatic, mental health care needs, and in some sites dental health
- SBHC regulations, funding, and governance differ depending on the state in which they are located and by their sponsoring organization
- SBHCs are NOT homogenous, even within a given state
- Some urban schools with SBHCs have previously demonstrated decreased absenteeism

Absenteeism: why is this important

- 72% of US public schools reported increases in chronic absenteeism during the 2021-2022 school year vs pre-COVID years (National Center for Education Statistics)
- 17% of students were chronically absent (missed $\geq 10\%$ of school days) during the 2021-2022 school year
- Chronic absenteeism is associated with both poor health and poor academic outcomes

The Link Between School Attendance and Good Health

AAP, Council on School Health, Policy Statement

Mandy A. Allison, MD, Elliott Attisha, DO; February 2019

- More than 6.5 million children in the United States, approximately 13% of all students, miss 15 or more days of school each year.
- The rates of chronic absenteeism vary between states, communities, and schools, with significant disparities based on income, race, and ethnicity.
- Chronic school absenteeism, starting as early as preschool and kindergarten, puts students at risk for poor school performance and school dropout.

Pediatricians and School Absenteeism: A Survey of Knowledge, Attitudes, and Practices

Asad Bandealy, MD, MPH; Danielle Dooley, MD, Mphil; Nicole Herrera, MPH; Megan M. Tschudy, MD, MPH
Pediatrics (2022) 149 (1 Meeting Abstracts February 2022): 192.

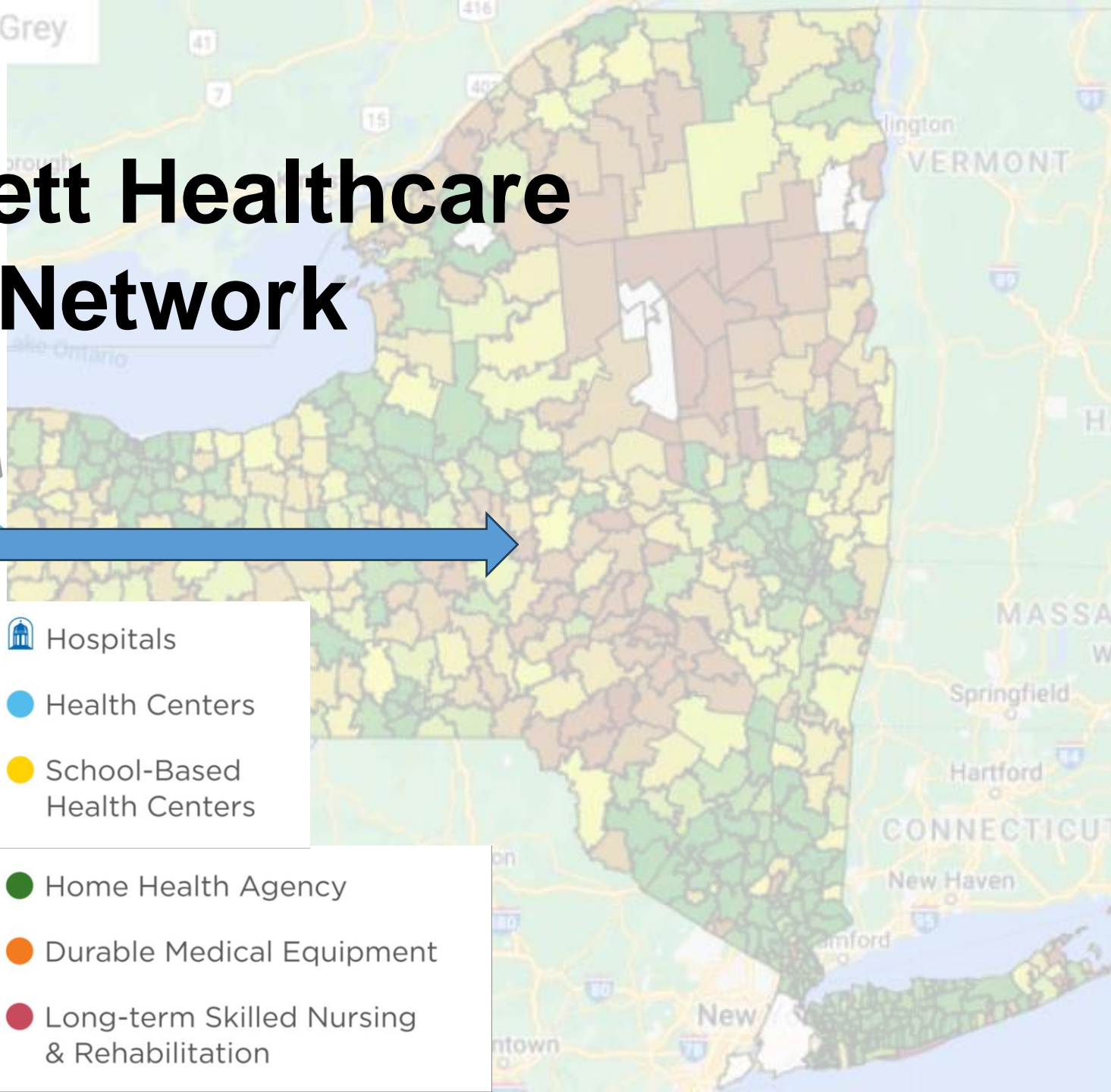
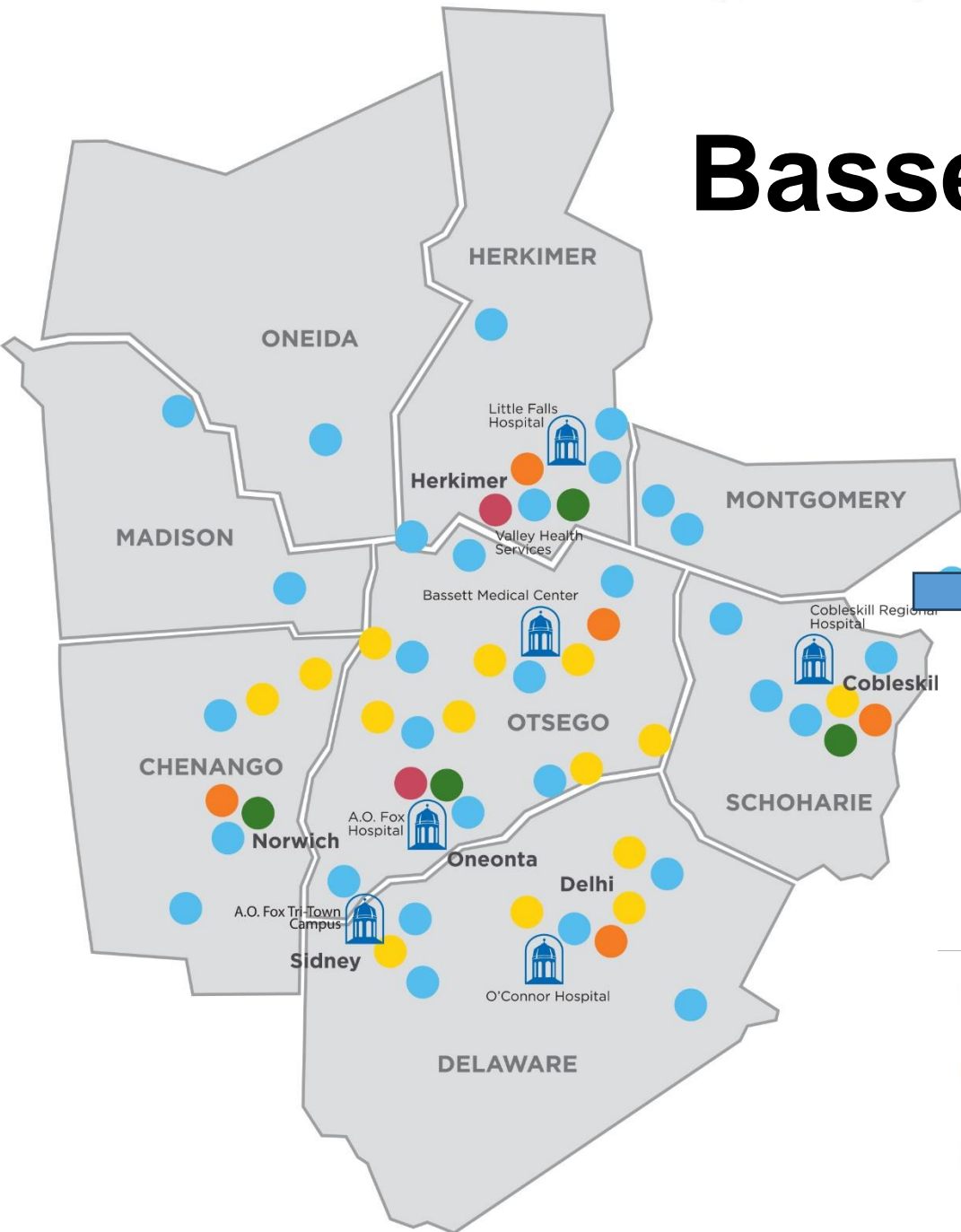
- Chronic school absenteeism is associated with poor educational and health outcomes.
- Causes include acute and chronic illness and social determinants of health.
- Wide acceptability for addressing school attendance in pediatric practice.
- Cross-sector approaches to align resources and support families with school attendance. (editorial note: this is School-Based Health)







SBHCs in Rural Areas Decrease Absenteeism

- Bassett Healthcare Network is a health care delivery system that exists in rural, upstate New York.
- The Network includes 5 hospitals, multiple outpatient offices and 21 SBHCs in 17 school districts, in 4 rural counties.
- About 85% of students enrolled in schools with a SBHC are enrolled in the SBHC.
- In the 2017-18 School Year, total school enrollment was 8830, SBHC enrollment was 7413; total SBHC visits were 37,675.
- SBH Program users health insurance: Medicaid/Medicaid MC =60%, Private insurance = 35%, and Unknown = 5%
- All Bassett SBHCs are Patient Centered Medical Home recognized.



Bassett Healthcare Network



-  Hospitals
-  Health Centers
-  School-Based Health Centers
-  Home Health Agency
-  Durable Medical Equipment
-  Long-term Skilled Nursing & Rehabilitation

SBHCs in Rural Areas Decrease Absenteeism

- Anecdotal reports were the first indication of an effect of SBHCs on absenteeism; a superintendent's remarks piqued our interest.
- Maureen VanCura, "The relationship between school-based health centers, rates of early dismissal from school, and loss of seat time", *Journal of School Health* 2010; this was an early published report.
- Previous, unpublished analyses from our data when comparing 2 SBHC schools with 3 comparable schools without SBHCs showed that the median percent of days absent was lower for students in SBHC schools than that for the non-SBHC schools.

SBHCs in Rural Areas Decrease Absenteeism



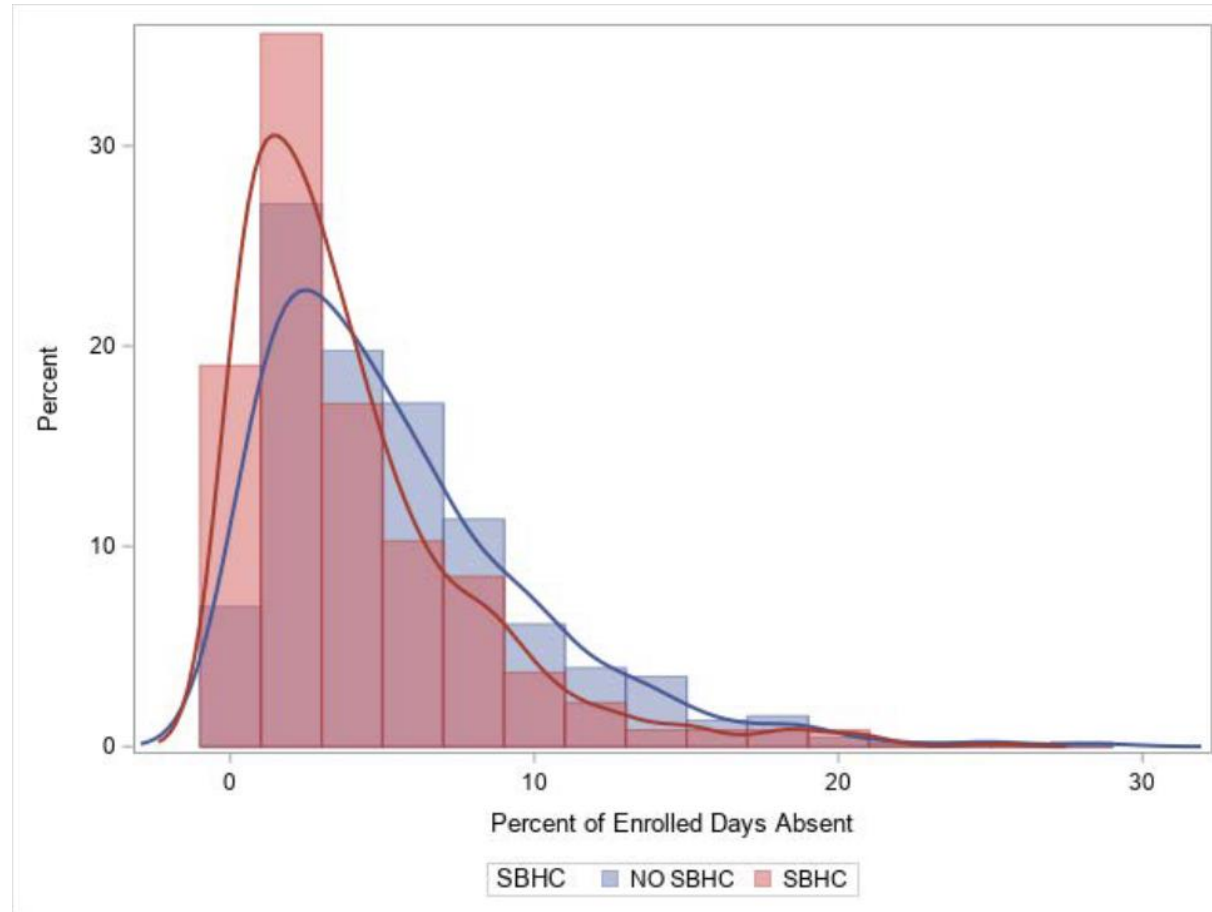
SBHCs Decrease Absenteeism: Methods

- We used student attendance data submitted to the NY State Education Department in a standard format for the 2015-2018 school years.
- We accessed the data from the Board of Cooperative Educational Services (BOCES) district office for 29 school districts in rural central upstate NY.
- Thirteen districts had SBHCs and 16 districts did not.
- Percent absence was calculated as $(\text{days absent}) / (\text{total days enrolled})$.
- Student absence was compared between SBHC and non-SBHC schools.
- We compared quartiles of absence and we compared NYSED-defined categories 'not at-risk' (<5% days absent), 'at-risk' (5-9%), 'chronically absent' ($\geq 10\%$).

SBHCs Decrease Absenteeism: Methods

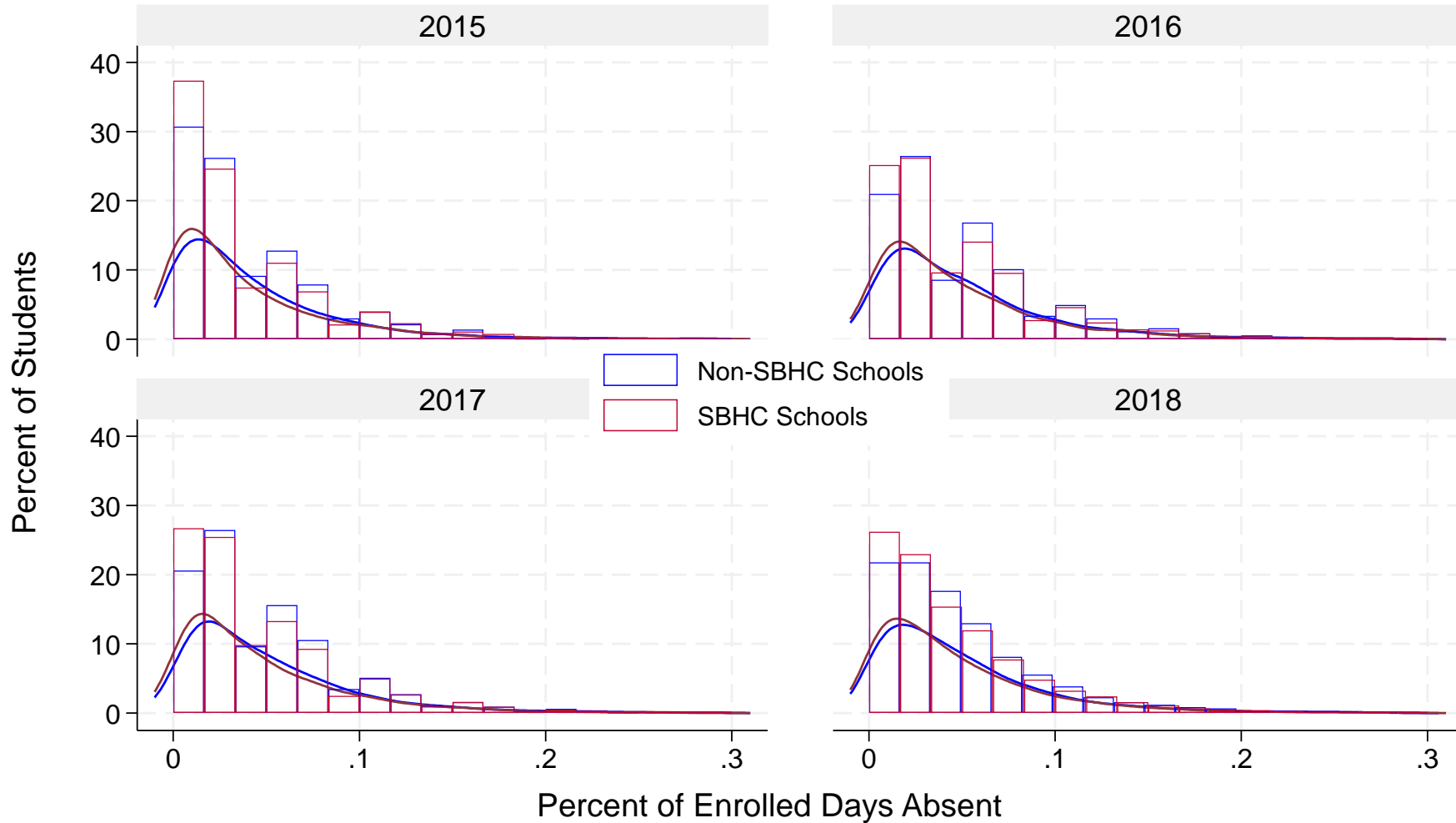
- We excluded students who were enrolled in school less than 75% of school days and students absent for more than 30% of their total enrolled days.
- Using 2018-19 school year data, total school population for all 29 school districts were used to define quartiles of absenteeism.
- This definition was then applied to the distribution of absenteeism for SBHC schools and compared to the distribution of non-SBHC schools.
- NY State Education Department categories, 'not at-risk', 'at-risk' and 'chronically absent', were also compared between the schools.
- Additional analyses of medians included linear and logistic regression, resulted similar results.

SBHCs Decrease Absenteeism: Results



Earlier study of 5 schools, 2 with and 3 without SBHCs

SBHCs Decrease Absenteeism: Results



Current analyses of 29 schools, 13 with and 16 without SBHCs

Graphs by Year

Descriptive Stats for Sample

	No SBHC	SBHC	Total
N	9,901 (54.8%)	8,174 (45.2%)	18,075 (100.0%)
N Days Enrolled	165.7 (34.741)	167.9 (31.237)	166.7 (33.219)
N Days Absent	8.995 (9.937)	8.427 (9.536)	8.738 (9.762)
Pct Days Absent	0.063 (0.102)	0.056 (0.085)	0.060 (0.095)
Community Wealth Ratio	0.776 (0.482)	0.664 (0.291)	0.726 (0.411)
% Econ Disadvantaged	0.524 (0.119)	0.518 (0.131)	0.522 (0.125)
% Female	0.493 (0.500)	0.487 (0.500)	0.490 (0.500)
% Primary	0.444 (0.497)	0.511 (0.500)	0.474 (0.499)
% Middle	0.323 (0.468)	0.290 (0.454)	0.308 (0.462)
% Secondary	0.233 (0.423)	0.199 (0.399)	0.218 (0.413)
% Chronically Absent (CA)	0.153 (0.360)	0.138 (0.344)	0.146 (0.353)
% Not at Risk of CA	0.588 (0.492)	0.622 (0.485)	0.603 (0.489)

Inclusion Rules:
Must attend at
least 135 days &
be absent less
than or = to 30%
of enrolled days.

SBHCs & Absents: Quartiles & Chronic Absenteeism

		2015/16		2016/17		2017/2018		2018/2019	
		No-SBHC	SBHC	No-SBHC	SBHC	No-SBHC	SBHC	No-SBHC	SBHC
Low Quartile	%	30.8	37.3	35.4	40.3	35.5	41.5	27.8	32.3
2nd Quartile	%	26.2	24.7	20.6	20.8	21.1	20.4	20.5	20.9
3rd Quartile	%	22.0	18.5	22.9	20.1	21.3	18.3	25.9	23.2
High Quartile	%	21.1	19.5	21.0	18.9	22.1	19.8	25.7	23.6
Chi Sq.			84.55***		51.71***		69.26***		46.79***
No Risk of CA	%	66.1	69.5	56.1	61.1	56.7	62.0	61.3	64.6
At Risk of CA	%	23.8	20.1	30.4	26.5	29.7	25.1	26.9	24.6
Chronic Abs	%	10.2	10.4	13.5	12.4	13.6	12.9	11.8	10.9
Chi Sq			31.25***		43.31***		52.77***		19.21***
N		9,063	7,411	9,149	7,652	9,260	7,563	9,044	7,529

Similar findings testing with Anovas

SBHCs & Absents: Quartiles & Chronic Absenteeism

		2015/16		2016/17		2017/2018		2018/2019	
		No-SBHC	SBHC	No-SBHC	SBHC	No-SBHC	SBHC	No-SBHC	SBHC
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Similar findings testing with Anovas

SBHCs Decrease Absenteeism: Results 2018/19

Quartiles Defined by total population definition	School-Based Health Center schools	Non-School-Based Health Center schools
Highest absence quartile	23.6%	25.7%
Total number of students	7,460	9,112

SBHCs Decrease Absenteeism: Results 2018/19

USDOE & NY State Education Department definition for chronic absenteeism	School-Based Health Center Schools	Non-School-Based Health Center Schools
No risk (<5%)	65%	61%
At risk (5-9%)	27%	24.6%
Chronically absent (10+%)	11%	12%

Multivariate Modeling (OLS) - % Days Absent

Relationship
to % Days
Absent –
above and
beyond other
variables in
model

Model	All	Analytic
SBHC	-	
Year	+	+
Female	+	+
% Econ Disadvantage		
Primary vs. Middle	+	+
Secondary vs. Middle	+	+
BassetXFemale		
BassetXEconDis	-	
BassetXPrimary	-	-
BassetXSecondary		
	n=64,936	n=60,031

MultiVariate Modeling (Logistic)

Likelihood of membership in At-Risk or Chronically Absent groups vs. No Risk group

Model	All	Analytic
SBHC	6% Less	6% Less
Year (15/16-18/19)	More	More
Female	5% More	4% More
% Econ Disadvantage	16% More	
Primary vs. Middle		8% More
Secondary vs. Middle	50% More	53% More
BassettXPrimary	16% Less	18% Less
BassettXSecondary	8% Less	11% Less

n = 72,433

n=66,302

Discussion

- In a review of the literature, 3 of 6 studies showed a positive association between SBHCs and school attendance while 3 others did not (Geierstanger, 2004)
- A controlled longitudinal study comparing SBHC users vs nonusers in an urban district showed that use of SBHC was associated with significant increase in school attendance (Walker, 2009)
- In a study of 3 schools in an urban area, SBHC users did not have significantly higher attendance rates than nonusers (Strolin-Goltzman, 2014)

Discussion

- What could account for the findings of differences in attendance by SBHC status?
 - Role of school connectedness was proposed by Geierstanger, (2004).
 - Onsite health care may result in less missed class time, 'absences', since no travel is needed.
 - By providing access to health care (preventive and mental health services) for students, who might not have access elsewhere, SBHCs lead to better health outcomes, which may decrease absenteeism.
 - Broader impact on families and communities shaping expectations and behaviors. (Tennyson, Sipple, Fiduccia, Brunner, Lembo & Kjolhede, 2023)

Conclusion

Students (n= 16,500 students over 4 years) in schools with SBHCs in rural upstate NY were absent at lower rates than their peers in schools without SBHCs

Questions



A photograph of two young women looking out of a window in a yellow school bus. They are both making peace signs with their hands. The bus has a blue stripe and rivets along the window frame. The background is blurred greenery.

School Attendance following visit to SBHC in Los Angeles

Maryjane Puffer, BSN, MPA, Executive Director, The L.A. Trust
Ron Tanimura, Ed.D, Director, LAUSD Student Medical Services & Medi-Cal Programs
Alex Zepeda, MPH, Senior Data and Research Analyst, The L.A. Trust



**The Los Angeles Trust
for Children's Health**

Putting the care in student healthcare

The L.A. Trust

Founded in 1991 by Los Angeles Unified School District Board

Backbone agency for student health in Los Angeles

Supporting Los Angeles Unified School District's Wellness Initiative

- Facilitates health partnerships, manages Student Advisory Boards and student-led health campaigns, and Wellness Center Coordinating Councils
- Operates system-wide Learning Collaboratives on Wellness and Oral Health
- Collects data from 26 school sites through the Data xChange and reports annually to school and community
- Convenes county-wide School Health Policy Roundtable

Los Angeles Unified School District



Student Health and Human Services

- Providing support services to students and their families
- Promoting good attendance
- Addressing mental health and health-related barriers to learning
- Providing support to district staff to increase family and community engagement
- Strengthening partnerships with community organizations

Office of Chief Medical Director (2021)



Community Context

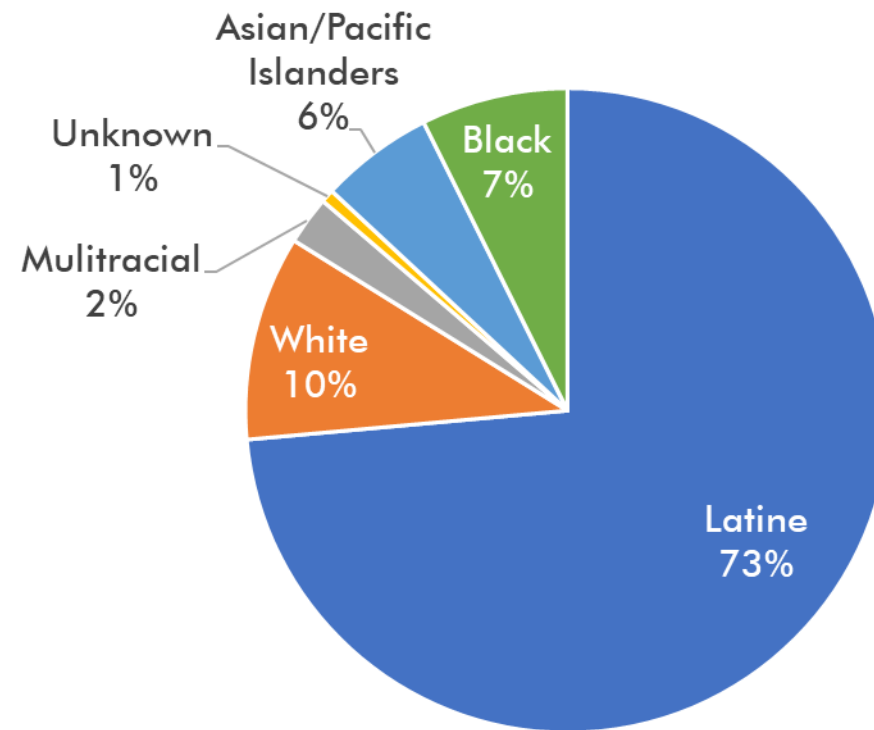
Starting in 2012, The L.A. Trust for Children's Health and Los Angeles Unified School District (LAUSD) worked with FQHCs across Los Angeles to establish full-scope school-based health centers, called Wellness Centers, on 16 school campuses (now 19). The Wellness Centers serve students, their families, and the community.



Community Context

Sites were prioritized for the highest-need students and surrounding communities as determined by mapping of public health, demographic and academic data.

- 83% economically disadvantaged
- 90% identify as Black, Indigenous, or People of Color

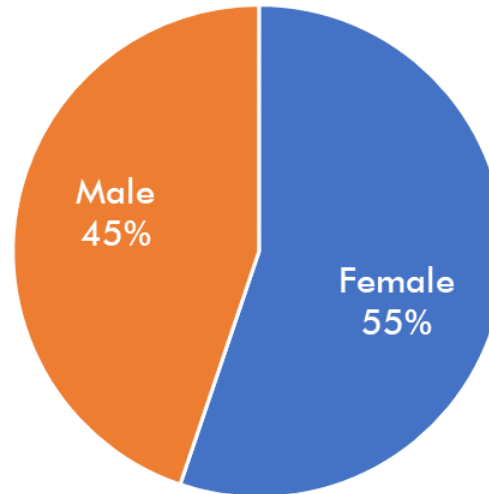
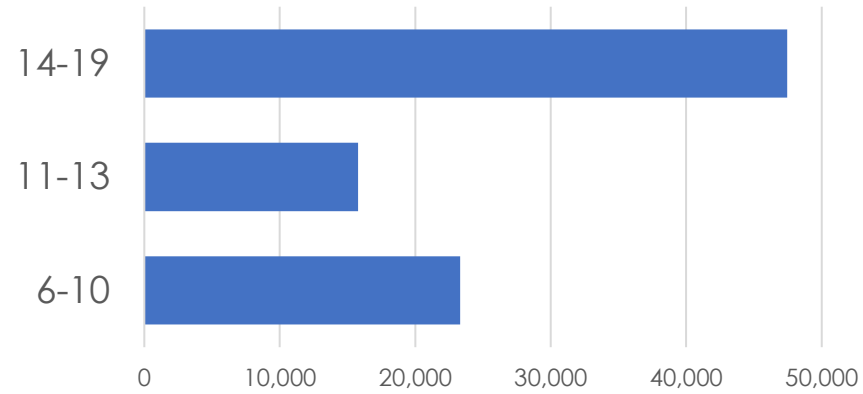
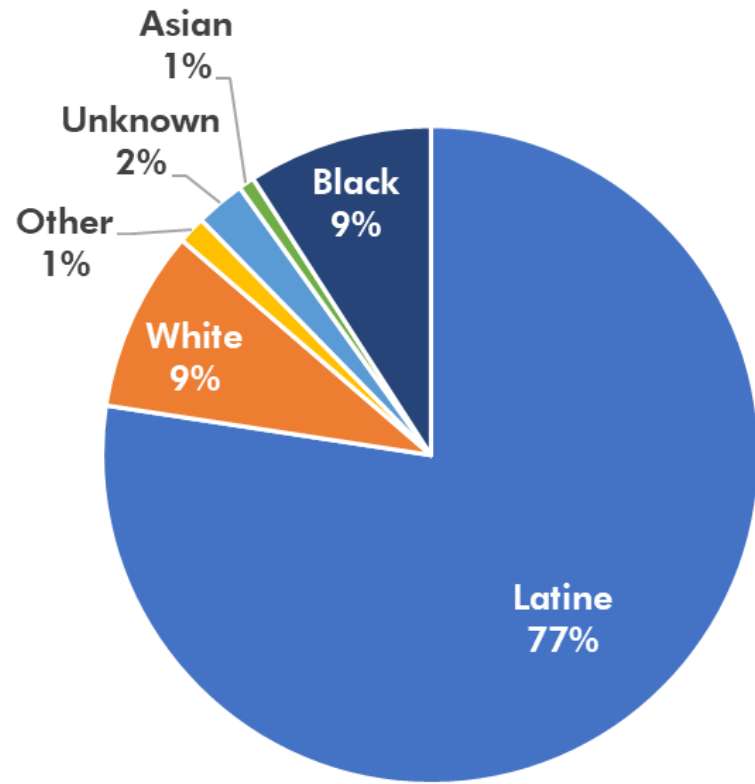


2020-2021



**The Los Angeles Trust
for Children's Health**

Wellness Center Student Demographics



Types of services 2021-2022

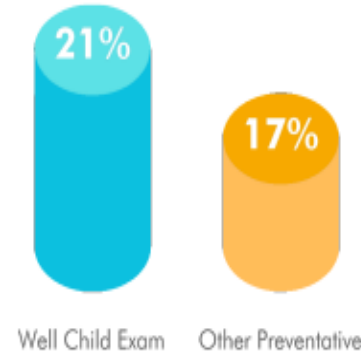


Patients aged 6 to 19
visited the Wellness
Center at least twice

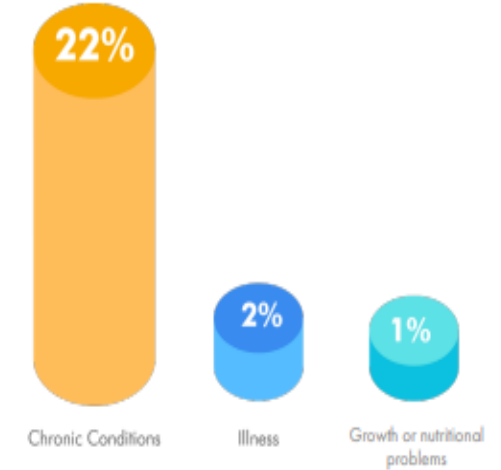


Received their annual
well-child exam at the
Wellness Centers

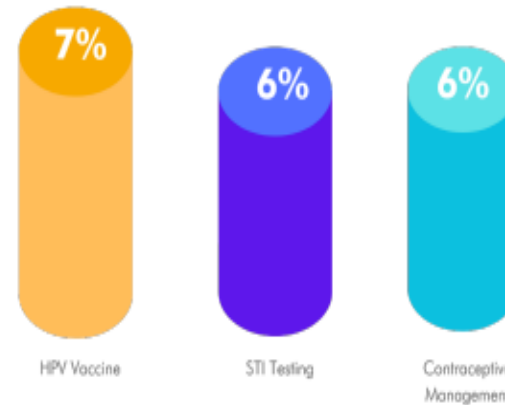
**38% of primary care visits
provided preventive services.**



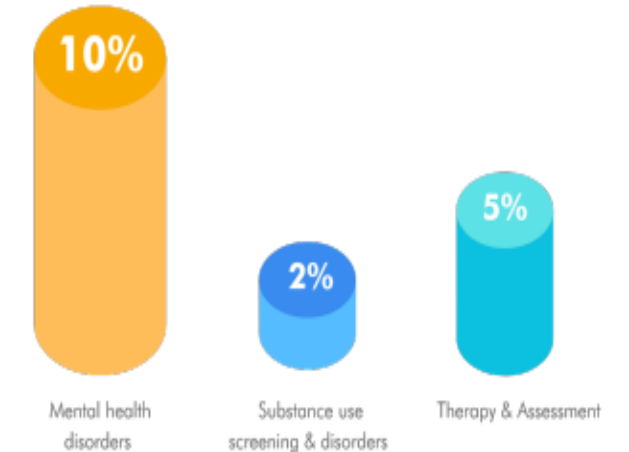
**25% of primary care visits included
diagnosis and treatment.**



**19% of primary care visits included
reproductive health services (ages 11-19).**



**17% of primary care visits included
behavioral health services (ages 11-19).**



Objective of study

This study examines whether school attendance improved after students visited a Wellness Center.

- **Examined changes in attendance for students who visited an SBHC for any reason and for a specific mental health-related concern**
- **Critical for estimating potential academic and health returns on investment for school-based health centers**

Methods

De-identified data from the Data xChange

- **Single large urban school district**
- **Includes:**
 - Encounter data from 17 Wellness Centers and SBHCs
 - Demographic data
 - Attendance data on all district-enrolled students from August 2015-February 2020
- **Academic and health outcomes are linked at the individual student level**

Methods

Attendance rate

- % full school days present per month over a 9-month school year

Time was measured as continuous relative to the students' first visit

- Same for mental health visits
- **For non-users, a proxy date for the first visit was applied**
 - Proxy (fake) dates set were based on matching the distribution of sex and date (month and year) when they first appeared in the attendance dataset to those who visited a Wellness Center.

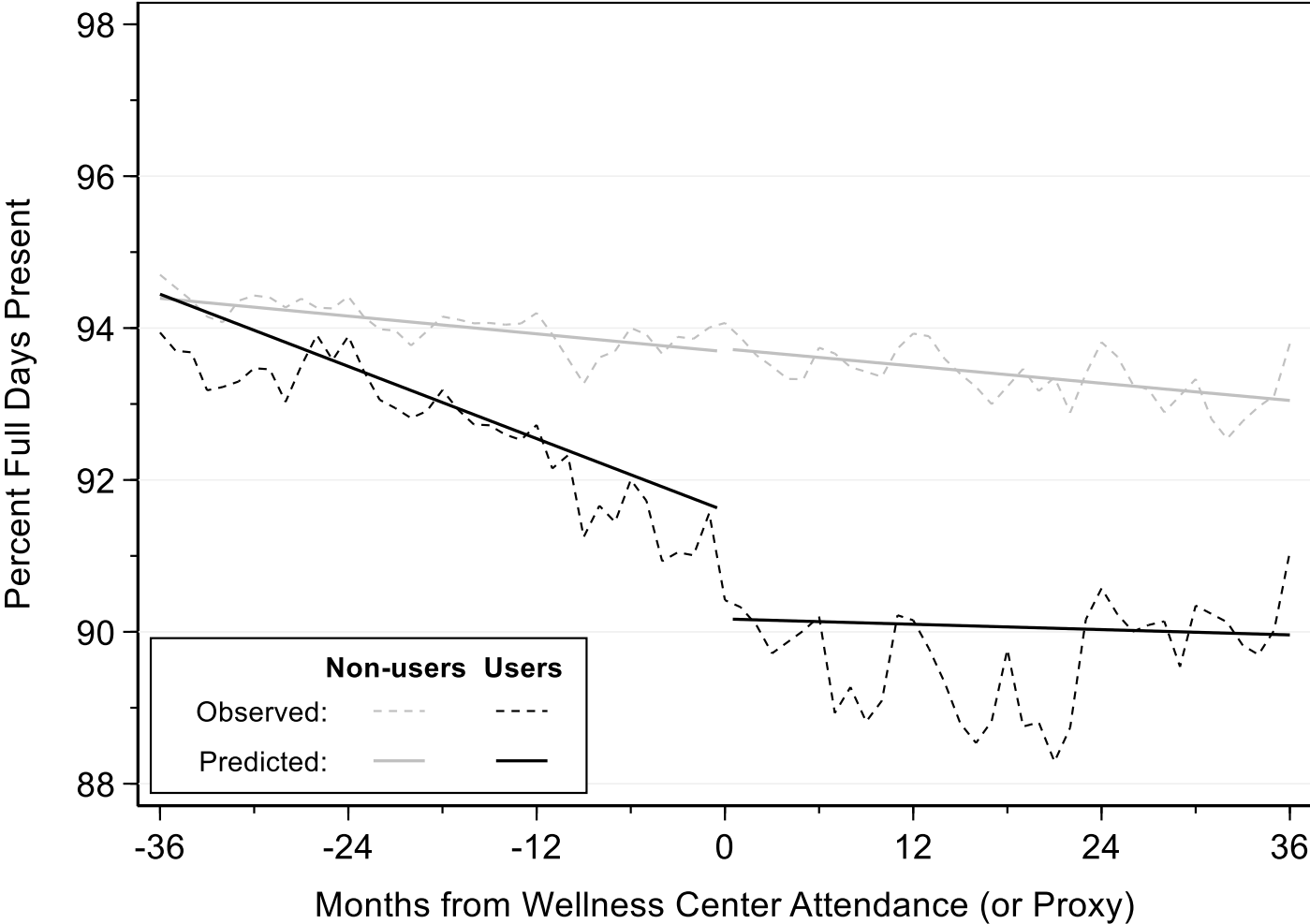
Results

Characteristics of Wellness Center Users and Non-Users

	First Visit		First Mental Health Visit	
	<i>Non-users</i> N=230,046	<i>Users</i> N=14,030	<i>Non-users</i> N=111,448	<i>Users</i> N=983
Sex, %				
Female	56.6	56.5	54.7	54.5
Male	43.4	43.5	45.3	45.5
Race/Ethnicity, %				
Asian	5.9	5.9	5.9	5.6
Black	6.0	6.2	5.4	5.7
Latine	76.6	76.4	77.0	77.8
White	10.5	10.5	10.9	10.4
Two or more	0.2	0.3	0.0	0.0
Unknown	0.7	0.7	0.8	0.5

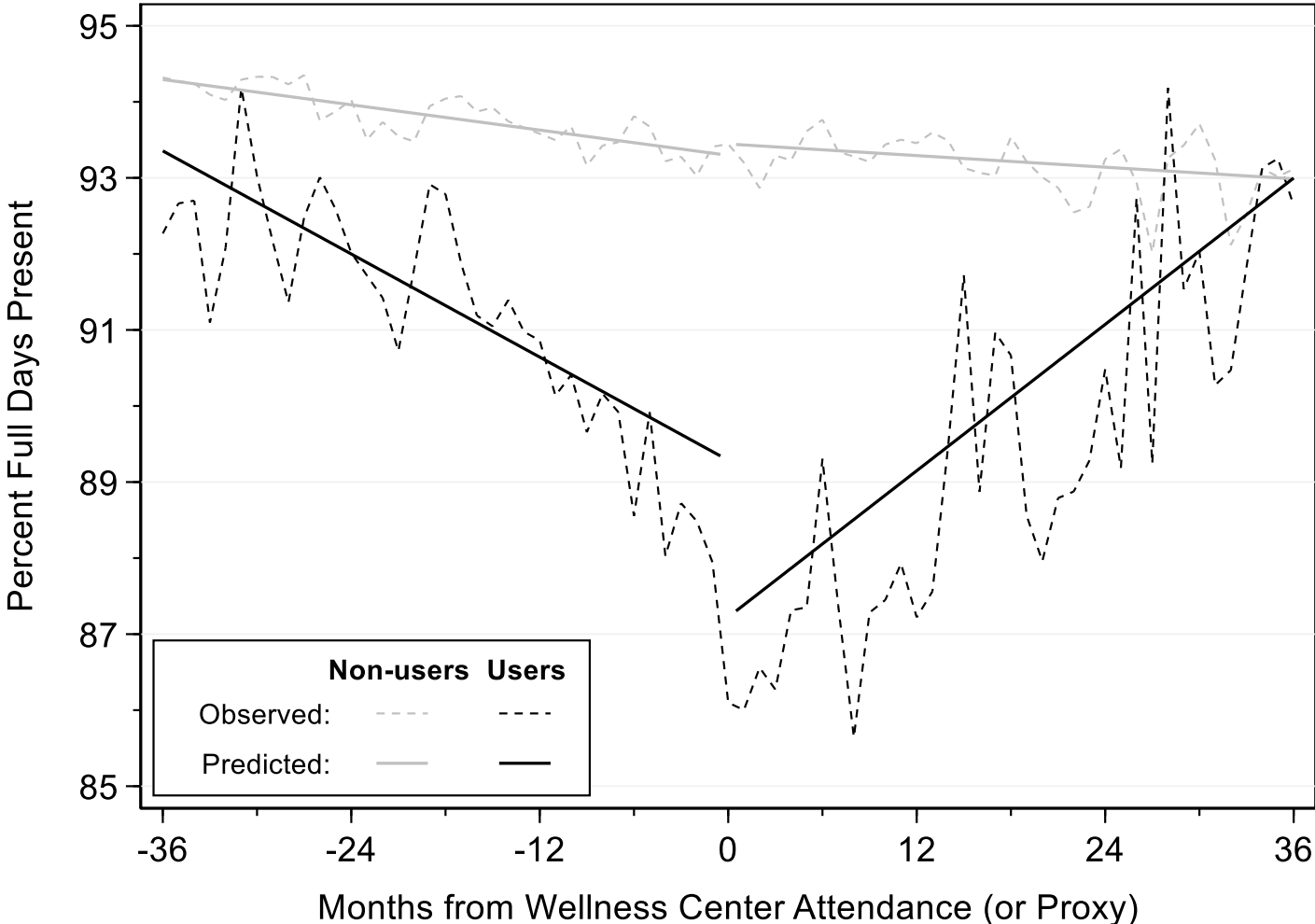
Results

Change in attendance following the first SBHC visit for SBHC Users or proxy date for Non-Users



Results

Change in attendance following the first SBHC mental health visit for SBHC Users or proxy date for Non-Users



Summary

- **Students had declining school attendance before visiting a Wellness Center.**
- **Visiting a Wellness Center is significantly associated with improved attendance over time.**
- **More dramatic improvement was observed for students with a mental health diagnosis.**

Implications

- Continued investment in SBHCs may help to address health needs of students and improve academic outcomes, particularly for underserved groups and students with specific mental health needs.
- This data was pre-pandemic. Post-pandemic attendance decreased, and MH needs increased. SBHC saw similar numbers of patients throughout the pandemic serving as trusted sources of care

Possible next steps

School Administrators can use this data to support investment and engage health partnerships

Cost analysis on attendance day savings is possible

Using integrated data to report between internal/external partnerships can help improve care, increase access to care, and aid in transparent system monitoring

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Methods - stats

Propensity Weighting:

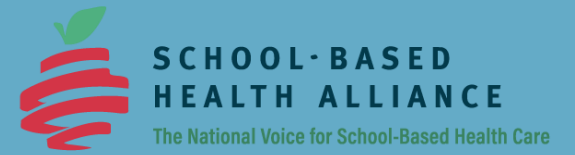
- Propensity score weight based on race, sex, and their interaction in predicting their use of a SBHC. Propensity score was converted to an inverse probability weight and used in all subsequent analyses.

Statistical Analysis:

- To examine if the rate of change in attendance differed between SBHC users and non-users, we utilized a linear regression model with clustered robust standard errors to account for within-student correlation over time.

Limitations

- Study data is limited to a single large urban school district FQHC-sponsored SBHCs and may not generalize to other contexts.
- Limited characteristics for propensity matching to account for selection bias.
- Cannot account for concurrent attendance interventions or rule out regression to the mean.
- Did not explore other types of services, intensity of SBHC use, or moderation by student characteristics or baseline attendance.



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THE
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