



# Student Health Index

Advancing Student Health and Education Equity Through  
School-Based Health Centers

FALL 2021



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# Executive Summary

The fall of 2021 has been an extraordinarily challenging time for California’s students, families and schools as in-person learning resumes against the backdrop of continued COVID risks and ongoing concerns for the physical and mental health of students, which have been exacerbated by the isolation and academic challenges of over a year of distance learning.

The twin pandemics of COVID and racial reckoning have laid bare the increasing need for health and mental health supports, as well as the low access to those services—visits to pediatricians’ offices fell by 58% for all age groups in March 2020<sup>1</sup>; rates of suicidal thinking and behavior are up by 25 percent or more from similar periods in 2019<sup>2</sup>; by the end of the 2020/21 school year, students were, on average, five months behind from the previous year.<sup>3</sup> And for each indicator, the disproportionalities in historically marginalized communities are glaring.

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**“Now is the time to invest in what we know works. School-based health centers, especially those that focus on both physical and mental health, are a proven path to better health outcomes for students, and we know that translates into better education outcomes.”**

**Tony Thurmond, State Superintendent for Public Instruction**

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And yet, California lags behind other states in supporting the value of school-based health centers (SBHCs). For example, we are one of only fifteen states that does not provide state-level funding and support for SBHCs. The result is that fewer than 3% of California’s six million students<sup>4</sup> have access to school-based health centers on their school campus. Looking deeper into the data shows that children in communities of color, where access to healthcare is more challenging, are even less likely to have access to an SBHC.

**The Student Health Index is the first comprehensive analysis to show the counties, districts, and schools where new SBHCs will have the greatest return on investment for improving student health and education.**

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<sup>1</sup> AAP, [Action on Childhood Vaccinations, July 21, 2021](#)

<sup>2</sup> [Journal of the American Academy of Pediatrics, September 2021](#)

<sup>3</sup> [COVID-19 and education: the lingering effects of unfinished learning, McKinsey & Company, July 2021](#)

<sup>4</sup> <https://www.schoolhealthcenters.org/>

## The Goals of the Student Health Index

In 2020 the California School-Based Health Alliance (CSHA) launched a three-year strategic plan with an intentional focus on developing and supporting more SBHCs across the state to reach students facing the greatest health and education disparities. The goals of the Student Health Index are to:

- **Provide a quantitative analytical tool** to support and intensify statewide advocacy to increase the number of SBHCs—especially in the counties and districts identified as having students with the highest need—and to help advocate for state investment in the ongoing development and maintenance of SBHCs across California.
- **Build awareness of the ways in which health and education are reciprocally related**, and how health conditions, community socioeconomic characteristics and school demographics overlap to influence wellbeing and academic outcomes.
- **Provide publicly available, local data** in a comparative way to communities and stakeholders across California to help them identify opportunities to improve health care access in schools.

This effort is vital given there are currently only 291 SBHCs in California<sup>5</sup> but over 10,000 K-12 schools. Moreover, the development and location of SBHCs is not a coordinated, state-wide effort. Instead, local districts, community organizations, healthcare providers and school leaders are at the forefront of this decision-making and implementation process, placing the burden to seek funding onto communities already most impacted by barriers to healthcare access.

## Key Findings of the Student Health Index

- **Existing SBHCs are located at higher need schools but not consistently at the highest need schools.**
- **Highest need schools** serve significantly more low-income students of color than lower need schools.
- **There are counties and districts with significant levels of unmet need and very few SBHCs**, particularly in the Central Valley and Inland Empire.
- **There are key data limitations** that cannot be addressed without the state improving data collection and reporting, particularly around student mental health.

## The Unique Value of the Student Health Index Dashboard

The Dashboard accompanies the Index and provides a new way to look at health and educational data to help advocate for SBHCs in local school districts and schools. The Dashboard is unique because:

- **It is a public, interactive mapping tool** that spans K-12 public schools in the state of California, and allows users to view, download and explore school-level data on health, socioeconomic, and school demographics and outcomes.
- **It enables the retrieval, visualization, exploration and download of uniformly defined data** across California for health conditions, school characteristics and risk factors that can be improved through access to school-based health centers and have been associated with impacts on educational outcomes.
- **It can be used by school staff, state legislators, parents, and the general public** to assess opportunities for expanding school-based health care access in California.

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**“Access to SBHC services personally changed my life and I saw how it changed the lives of my peers that struggled with depression, anxiety, and trauma. Services helped us learn how to control our emotions, what our emotions mean, and how to have healthier interactions with others. I can go back to my family and know that even though I didn’t grow up getting what I need, that’s not how my story will end. It flipped the script for me and many others.”**

**Irma Rosa Viera, Youth Board Member, California School-Based Health Alliance**

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## Recommendations

Use the [Student Health Index and Dashboard](#) to:

- **Further build the case for SBHCs in high need locations.**
- **Advocate for state-level funding for SBHCs.**
- **Advocate for better state- and school-level health related data collection and sharing.**



# Using This Report

This report serves as a guide to understanding **the Student Health Index and Dashboard**, a model that aims to quantitatively measure need for school-based health care in California's public schools.

This guide serves to:

- (1) help the California School Health Alliance (CSHA) and their partner organizations explain how the Student Health Index can help stakeholders make data-driven decisions about what schools to target for additional resources,
- (2) help the CSHA communicate the importance of collecting and reporting school-level health outcomes and access indicators to allow for a state-wide understanding of the distribution of relative need for additional health supports at the school-level,
- (3) identify opportunities to improve access to care at California public schools.

## **Part I of this report includes:**

- An explanation of the existing landscape of school-based care in California
- An explanation of the report's primary aim of identifying public schools in California that would most benefit from the establishment of a new SBHC

## **Part II of this report includes:**

- An overview of comparable indices
- An explanation of the calculation methodology behind the Student Health Index
- Literature driven rationales for the included indicators

## **Part III of this report includes:**

- Summary statistics providing an overview of the highest need schools
- Lessons for reproducibility and future use of the index

## **Part IV of this report includes:**

- Guiding questions on how to use the Student Health Index and Dashboard alongside qualitative analysis and stakeholder engagement

## **Part V of this report includes:**

- An overview of all findings

- Recommendations for next steps

# Part I: Introduction

## Report Objectives

This report is prepared for the CSHA, who work directly with districts, schools, health providers, non-profits, and state agencies to advocate and support the construction of school-based health centers, with a focus on areas facing disparities in access to health care, and high need areas.

School-Based Health Centers (SBHCs) have been implemented in schools across the country with the aim of providing low cost, easily accessible health care to students. SBHCs are seen as potentially efficient use of government resources because they make use of school buildings during non-school hours, thus eliminating the need for government spending on additional infrastructure and allow school staff to partner directly with health care workers, to provide more holistic wraparound services for students.

CSHA is a California-wide nonprofit leading effort to put health care in schools. They do so by providing technical assistance and training on how to launch and improve SBHC's. CSHA also does state-level analysis and advocacy to pass policies that support and incentivize more and better SBHCs.

CSHA is launching a three-year strategic plan with an intentional focus on supporting more SBHCs across the state. The aim of this report is to provide evidence that CSHA can use to assess the need for school-based health centers to serve California students equitably.

The goal of this report is to take advantage of currently available quantitative evidence to create a Student Health Index to evaluate the need for health centers across all schools in California. This project will aim to answer the following questions:

- 1. How should a Student Health Index be constructed to assess the need for SBHCs across California?**



## 2. Based on these metrics, what schools and districts have the greatest relative need for additional SBHCs?

### Context

As the COVID-19 crisis laid bare, Californians across the state are faced with serious inequities in their access to health care and health outcomes. Many vulnerable children and their families must overcome barriers to access health care, including traveling long distances, long wait times at local, overcrowded facilities, or finding providers that accept their insurance (*Health Disparities, by Race and Ethnicity, California, 2020*).

In addition, evidence from the California Communities Environmental Health Screening Tool indicates that low-income residents, communities of color, immigrants, and indigenous communities experience a disproportionate burden of environmental pollution and related health problems (Eng & Vanderwarker, 2018).

These inequities mean that many of California's low-income communities, immigrant communities, indigenous communities, and communities of color face serious gaps in health outcomes. Because health and education are reciprocally related, these gaps impact young Californian's educational experiences as well. Evidence shows that students who face health access barriers and have disparate health outcomes are also more likely to be absent from school, are more likely to be suspended, and have lower GPAs and test-score outcomes. However, providing access to health care through community-based centers, in particular health centers directly located in schools, has shown to mitigate some of these impacts (Crosnoe, 2006; Denny et al., 2019; J. J. Guo et al., 2008; Rochmes, 2016; Van Cura, 2010; Walker et al., 2010; Wallace et al., 2016).

In 2015, the Center for Disease Control's Community Preventive Services Task Force recommended the implementation and maintenance of school-based health centers in low-income communities, based on evidence that these centers promote health equity, and improve educational outcomes for low-income populations (*Health Equity, 2015*). Studies on health outcomes for students largely indicate that these centers have positive health outcomes, both on the receipt of preventative services, as well as mental health services, and reducing hospitalizations (Allison et al., 2007, p.; Bersamin et al., 2017; J. J. Guo et al., 2008; Ma et al., 2007; McNall et al., 2010).

Aside from their health outcomes, researchers and district leaders have spent significant time interrogating how access to SBHC improves academic outcomes for students. Because SBHCs are located in schools they are regularly expected to demonstrate their impacts on youth's educational achievements - a level of accountability that is rare for other health care providers. Showing that these services not only improve student health but also improve attendance, grades, and satisfaction with school, provides additional impetus for policymakers to justify the funding of SBHCs. Studies have shown that SBHCs have a positive impact on the amount of time students spend in the classroom, student GPA, as well as the satisfaction parents have with their children's educational environment (Rochmes, 2016; Strolin-Goltzman, 2010; Van Cura, 2010; Walker et al., 2010).

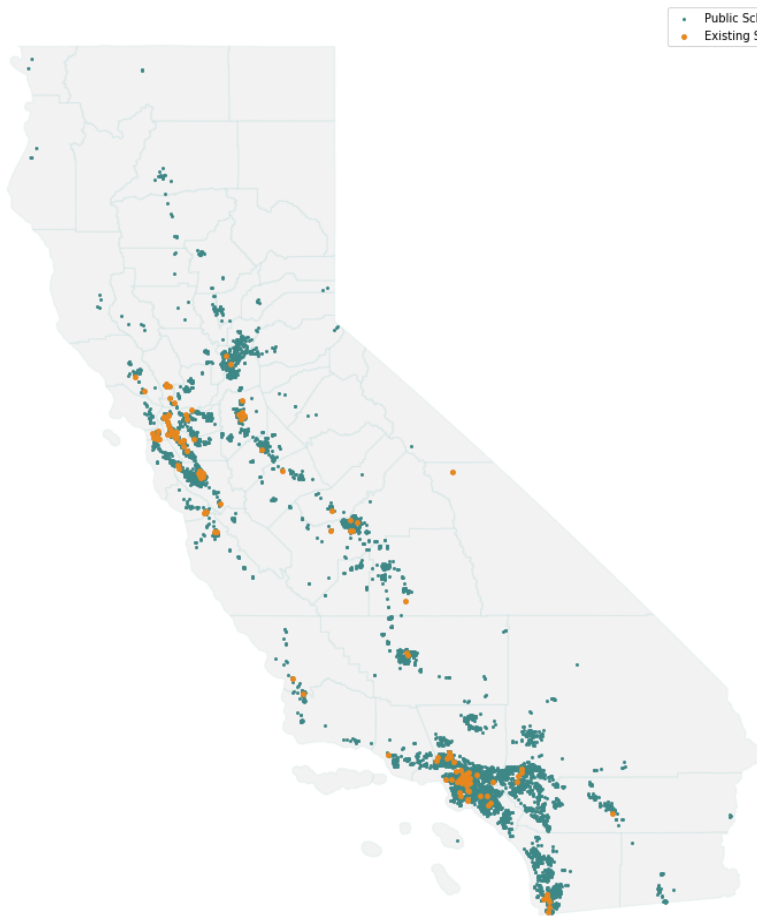
California lawmakers and the federal government have long recognized the value of School-Based Health Centers (SBHCs) as an avenue to increasing health care access for young adults. California's AB 2560 was signed into law in 2006 and created a Public-School Health Center Program jointly administered by the Department of Health Services and the Department of Education. The program was designed to collect school health center data, facilitate the development of comprehensive health centers in partnership with California public schools, and address the programmatic, clinical, finance, and policy needs of California's school health centers.

## Opportunity

As of spring 2021, there are 293 SBHCs in California, but over 10,000 schools. Currently, their distribution is not a coordinated, state-wide project, although individual districts have strategically worked to increase access to care. Many SBHCs are located in schools serving some of the state's most vulnerable children - 70% of students attending schools with an SBHC receive free and reduced-priced lunches (*California School-Based Health Alliance*, n.d.). Thus, the existing SBHCs primarily serve low-income students and reduce health disparities for young people by increasing access to comprehensive health care. They also improve educational equity by reducing barriers to learning (e.g. missed school days due to illness), often disproportionately experienced by low-income students and students of color.

School-based healthcare can only be provided in locations that have sufficient funding to not only support the initial construction of the clinic, but to maintain it. California is one of the few states that does not provide state-level funding and support for school-based healthcare.

The state-mandated Public School Health Center Program has not been implemented because neither state funding nor staff was made available for the



Public Schools  
Existing SBHCs

program. Instead, local districts, community organizations, healthcare providers, and school leaders are at the forefront of this decision-making and implementation process.

The importance of School-Based Health Centers was recognized in the Affordable Care Act (ACA) through a \$200 million investment over four years to fund construction, renovation, and expansion of in-school healthcare services. Federal programs like the ACA have specifically assisted in the financing of California SBHCs. Between 2011 and 2012, California received \$30 million through 70 grants to build and expand SBHCs

*(Funding | California School-Based Health Alliance, 2011).*

Currently, the most common organizations serving as the health care providers and sponsors of SBHCs in California are community health centers and school districts. Other sponsoring organizations include county health departments, hospitals and medical centers, mental health agencies, nonprofit community-based organizations, and private physician groups. They are also funded through third party reimbursement from state-sponsored programs such as Medi-Cal *(Funding | California School-Based Health Alliance, 2011).*

This grassroots funding model places the burden to seek funding for a health center onto communities already most impacted by barriers to healthcare access. In this way, the lack of funding and support from the state-level does not consistently optimize the placement of health centers in locations that most need them.

# Part II: The Student Health Index

The goals of the Student Health Index are to harness the opportunity provided by publicly available data to:

- Create a dataset and dashboard that can be used to build awareness of the ways in which health and education are reciprocally related, and how health conditions, community socioeconomic characteristics and school demographics overlap to influence wellbeing and academic outcomes.
- Provide the CSHA and their partner organizations, as well as local communities and stakeholders across California publicly available, localized data to help them identify opportunities to improve health care access in schools.

This section of the report provides an overview of the methodology used to determine a set of indicators and a model to calculate relative need. Each section provides an overview of different decisions that went into the creation of the final Student Health Index.

**Section 1** provides an analysis of the landscape of existing indices, analysis, and public datasets used as models for the Student Health Index.

**Section 2** provides criteria for indicator selection.

**Section 3** explains the calculation methodology, as well as the inclusion and exclusion criteria for the analyzed public schools.

**Section 4** explains the rationale for inclusion of each indicator, using available literature.

**Section 5** provides a user guide to the Student Health Index Dashboard.

**Section 6** provides an overview of data availability and limitations.

# 1. Model Indices

The development of the Student Health Index was informed by an analysis of the landscape of existing indices, analysis, and public datasets. There are currently no California-specific indices that merge health data with educational data and only very few tools and indicators that do so nationally.

Below is an overview of the indices that were used to inform the Student Health Index. These indices were most similar in method and intent to the Student Health Index. Table 1 summarizes these as well.

## **Public Health Alliance of Southern California’s Healthy Places Index (HPI)**

*Focus: Health, Asset-Based*

*Geography: California*

*Smallest Geographic Unit: Census Tract*

The index was created using statistical modeling techniques that evaluated the relationship between these Policy Action Areas and life expectancy at birth.

The index uses 25 indicators based on eight domains (i.e., economic; education; housing; health care access; neighborhood; clean environment; transportation; social factors) to create an HPI score. The final HPI scores are assigned a percentile rank, with ranks closer to 100 indicating healthier community conditions and ranks closer to 0 indicating less healthy community conditions.

## **Colorado Health Institute’s Needs Assessment for SBHCS**

*Focus: SBHC Need, Deficit-Based*

*Geography: Colorado*

*Smallest Geographic Unit: School-Level*

The index calculates schools’ relative need for improved access to health services based on 14 indicators across four dimensions (i.e., health outcomes and risk factors; health insurance coverage; access and utilization of care; student need). See Table 1 below for more details.

For each indicator, schools were assigned a score based on quartile. A composite score was then calculated for each school based on the weighted average of quartile scores across all indicators. Data available at the school and county level were weighted more heavily than data available at the Health Statistics Region level because more geographically granular data allow for more nuanced distinctions between schools within a given region.

### **Los Angeles Trust for Children’s Health Wellness Needs**

*Focus: SBHC Need, Deficit-Based*

*Geography: Los Angeles County*

*Smallest Geographic Unit: LAUSD High School Attendance Areas*

The index calculates schools’ relative need for improved access to health services based on 9 indicators synthesized into a composite score. The indicators are based on health, economic, and neighborhood data collected by the Los Angeles County Department of Public Health. See Table 1 below for more details.

### **National School-Based Health Alliance’s Children’s Health and Education Mapping Tool**

*Focus: SBHC Locations, Deficit-Based*

*Geography: National (Includes California)*

*Smallest Geographic Unit: County*

The mapping tool does not calculate or index needs, but instead allows users to overlay SBHC location on layers of county data (*School-Based Health Alliance Mapping Tool*, 2019). The tool thus allows users to layer child health and education indicators at the county level onto SBHC and their school characteristics. The purpose is to “enable you to compare a community to its surrounding areas based on health and social determinants of health. Users can select indicators across multiple dimensions of need—such as the educational, demographic, and socioeconomic factors linked to population health.” See Table 1 below for more details.

### **The Opportunity Index (jointly developed by Child Trends and Opportunity Nation)**

*Focus: Economic Opportunity, Asset-Based*

*Geography: National (Includes California)*

*Smallest Geographic Unit: County*

The Opportunity Index draws upon statistics from a variety of sources, including the U.S. Census Bureau, U.S. Department of Labor Statistics, and the U.S. Department of Justice. Each state or county’s performance on an indicator is compared with the highest and lowest scores obtained on that indicator, excluding outliers (extreme values). The Opportunity Index is made up of 17 indicators across four dimensions (Economy, Education, Health and Community). In each dimension, the rescaled values for indicators are averaged to create dimension-level Opportunity Scores, also ranging from 0 to 100.

**Table 1:** Indicators Used in Comparative Mapping Tools

	LA Trust	Colorado Health Institute	SBHA National Mapping Tool
<b>Health Outcomes and Risk Factors</b>	Obesity Rates		x
	Chlamydia	x	x
	Teen Birth Rates	x	x
	Fitness Test Results	x	
	Asthma Rates		x
	Depression Rates		x
	Electronic Vaping Rate		x
	Access to a Medical Home		x
	Physician to Child Ratio by County		x
<b>School-Level Data</b>	Enrollment in Free and Reduced Priced Lunch	x	x
	English Learner Percentage		x
	Truancy Rate		x
<b>Socio-Economic</b>	Food Insecurity		x
	Child Poverty Rate		x
	Housing Insecurity		x
	Single Parent Household Rate		x
	Medicaid Enrollment	x	x
	Uninsured Rate		x
	Violent Crime Rates	x	x
	Urban Hardship Index	x	



## 2. Criteria for Indicator Selection

The decision to include a metric was guided by the criteria outlined here:

- **Publicly Available:** The index needs to be reproducible, so using data that is publicly available and up to date is essential to this project.
- **Evidence-Based:** The indicator needs to be backed by evidence that it is suggestive of high need for additional health care or specific health services that SBHCs may provide, as supported by literature on SBHCs, youth public health outcomes, and social determinants of health (see Table 3).
- **Non-Duplicative:** Multiple indicators may tell the same story (ex: poverty rates and income levels likely do not both need to be included). In this case the most salient indicator should be selected.
- **Geographically Specific:** Indicators should be chosen that home in on the geographic area around a school as closely as possible. School-level data will be most effective. Census tract level data is preferred to county level where possible. The data must also be available for the entire state.

Data inclusion decisions were made in consultation with the CSHA, and were informed by available literature, as well as by consulting other needs assessments, including the mapping tools completed by the LA Trust for Children’s Health and the Colorado Health Institute, as well as the National School-Based Health Alliance.

## 3. Overview of Calculation Methodology

### A. The Model for the Index

The Student Health Index incorporates information gleaned from the analysis of the landscape of existing indices and publicly available datasets.

The Student Health Index:

- Provides information for all included public schools in California using school-level and geographic data and is place-based.
- Is made up of 12 indicators that are available for at least 99% of the included schools and characterize both population characteristics and health care access.
- Uses percentiles to assign scores of 1-4 for each of the indicators in a given school. The percentile represents a relative score for the indicators, with 4 indicating the highest scores for an indicator.
- Combines the component scores into a Need Score, while double weighting all school-level data, and uses percentiles to assign a score of 1-4 to each score. This creates a relative score of 1 to 4 for each school. Schools in the 4th quartile (score of 4) have the highest Need Scores, relative to all schools.

The Index draws upon statistics from a variety of sources, including the University of California San Francisco School of Medicine, the American Community Survey, the U.S. Census Bureau, the California Department of Education, and the CDC.

Calculating Need Scores for schools entails three steps:

1. Merging and Spatially Linking Datasets
2. Rescaling Indicators
3. Calculating Relative Need Scores

#### *Merging and Spatially Linking Datasets*

Data in the model comes from a variety of sources. To simplify reproducibility, all census-tract level data is sourced from the UCSF Health Atlas, an interactive population health mapping website that curates publicly available data and displays

it at the census tract level in California. All school-level data comes from the California Department of Education's (CDE) Downloadable Data Files site.

The CDE data is available in distinct data files that must be merged using the 14-digit school code that uniquely identifies each school within California. For example, data on suspension rates, race and ethnicity, chronic absenteeism, school location, and free and reduced-price lunch eligibility are available in separate data files. In total, this analysis required the merging of seven different CDE datasets.

The CDE Public Schools and Districts Data Files contain a latitude and longitude for each school location, which were spatially joined with the data from their underlying census tracts using Python's spatial data analysis package, GeoPandas. Thus, the final, cleaned dataset contains information on each school's characteristics, as well as underlying census tract characteristics.

### *Rescaling Indicators*

The diverse indicators that comprise the Student Health Index include percentages, rates, and index values. To include them in a composite measure, each is transformed to enable comparisons on a common scale, using percentiles. Thus, performance on an indicator is compared with the highest and lowest scores obtained on that indicator.

Specifically, the index draws on 12 indicators related to socioeconomic factors and health outcomes at the school and neighborhood (census tract) level (see Table 3). Each school is given a score of 1-4 for each indicator, based on the quartile that indicator falls into relative to all other schools. For example, a school with a very high percentage of students eligible for free or reduced-price meals would receive a score of 4, while a school with few such students would receive a score of 1.

### *Calculating and Weighting the Opportunity Scores and Grades*

The calculation methodology was based off the methodologies used by the model indices (see section 1). Because school-level data is more specific to the individual school context than community-level data, it is double weighted for the purpose of this analysis. All school-level scores are doubled, creating scores of 2-8 for school data. All scores are then added up across all 12 indicators, creating a Need Score ranging from 16 to 64. This score is again broken into four categories using quartiles, which allowed for the creation of the Student Health Index. Each school is thus designated as either highest need, higher need, lower need, and lowest need.

## B. Inclusion/Exclusion Criteria

The schools included in the index were selected intentionally based on specified inclusion criteria. California had over 10,000 active public schools at the start of the 2020-21 school year, according to data from the California Department of Education. The goal of this analysis was to create a list of locations to target for additional health care services, and thus for the purpose of this analysis, schools that met certain criteria were excluded from the list of schools that were statistically analyzed. The exclusion criteria are as follows:

- **Virtual Instruction Schools:** Schools that are primarily virtual or all virtual were excluded.
- **Small Schools:** In consultation with the CSHA it was determined that schools with enrollment under 100 be excluded from the statistical analysis.
- **Certain Special Educational Options:** Schools that serve only adults were excluded from this analysis, as were occupational centers, Youth Authority Facilities and County Community Schools.
- **Preschools and Kindergartens:** The analysis is focused on schools serving grades 1-12.

Using these criteria, a little over 8,000 public schools were selected for relative needs analysis. Schools with existing SBHCs were included in the index, in part so that the CSHA can determine whether these centers are currently located at relatively high need schools. These schools can be filtered out of the online resource and associated dataset according to data users' interests and needs.

While over 8,000 schools were used to determine relative need, the final dashboard and dataset includes 4,821 schools. Because the goal of this analysis was to focus on schools with large enough populations to warrant the construction of a School-Based Health Center, once the statistical analysis was complete, schools that did not meet the following enrollment targets were also excluded from the final list and dashboard of schools:

- Rural schools (in a census tract designated "small town" or "rural" by the USDA) with enrollment under 500 students
- Urban schools not serving a high school population with enrollment under 500 students
- Urban high schools with enrollment under 1000

**Table 2:** Number and Type of Schools in Final List

School Type	Number		Average Enrollment	
	Urban	Rural	Urban	Rural
<b>Elementary</b>	2,897	34	677	632
<b>Elementary-High Combination</b>	113	2	1,235	511
<b>Junior High / Middle</b>	992	20	897	565
<b>High School</b>	750	13	1,995	669
<b>Total</b>	<b>4,752</b>	<b>69</b>	<b>944</b>	<b>626</b>

A strategic decision was made to exclude smaller schools only after doing the statistical analysis. If school size were to be predictive of school need, then the final list would still allow for relative comparisons across all schools in California. If, for example, only very large schools have high relative need, then excluding small schools in the final list and map would generate a set of schools in which significantly more than a quarter of the remaining schools are ranked as highest need.

The complete data set associated with this analysis, including a list of schools included in the index, is available for download on the CSHA website.

### C. Differentiating Rural and Urban Schools

Because rural schools generally are smaller and serve a population with different access to urban infrastructure such as health clinics and public transit, urban and rural schools were analyzed separately. The same indicators were used, but each indicator was given a relative score based on all other schools in the same rural or urban classification. Thus, a high need urban school is ranked only in comparison to other urban schools, and a high need rural school is high need relative to other rural schools.

## 4. Individual Indicator Selection

According to the CDC, health is determined largely by the environment in which an individual resides. The CDC estimates that 60% of an individual's health status is determined by “social determinants of health”, including income, social supports, and neighborhood amenities. Another 20% is determined by medical care, and the final 20% is the result of health behaviors like lifestyle choices, substance use, and risk-mitigating decisions such as use of contraceptives (*Social Determinants of Health*, 2019). For this reason, the indicators included in the Index are all either:

- directly associated with lacking access to health services that can be provided at a school level (e.g., chronic absenteeism or high rates of asthma related ER admissions);
- are proxies for health behaviors (e.g., diabetes or teen pregnancy);
- or are indicators of social determinants of health that can be mitigated through access to school-based health services (e.g., poverty and eligibility for free or reduced-price school meals).

The health specific indicators were selected in accordance with recommendations from the Research Initiative of the Campaign for Educational Equity at Columbia Teachers College. The Initiative investigated which health disparities should be addressed in a school-context, by considering their prevalence, the evidence of causal effects on educational outcomes, and the feasibility of implementing proven school-based interventions. They found seven educationally relevant health disparities affecting school-aged youth that can be feasibly and effectively addressed through school health programs: (1) vision, (2) asthma, (3) teen pregnancy, (4) aggression and violence (including bullying), (5) physical activity, (6) hunger, and (7) inattention and hyperactivity (Basch, 2011). However, school-level data on health indicators is largely missing, and there is currently no system in place in California for the collection and public dissemination of geographically granular or school-specific data for children's health markers. For this reason, the included indicators at times must serve as proxies for the health outcomes that the Initiative recommends, and some indicators included in the Student Health Index are not school-specific, but geographically linked to a specific school through the census tract in which the school is located.

Three separate indicator categories were included in the Index:

- **Health indicators** include data on asthma, teen pregnancy, and proxies for physical activity. These are collected at the census-tract level.

- **School-level indicators** allow for inclusion of demographic characteristics at the individual school-level, which also serve as proxies for hunger rates, as well as inattention and disciplinary data. They also include indicators of social determinants of health. These are collected at the school-level.
- **Socioeconomic indicators** represent each school’s underlying community characteristics and serve to further provide evidence for social determinants of health in the school’s community. These are collected at the census-tract level.

An overview of the indicators is provided in Table 3, and more granular descriptions and rationales are provided in the following section.



**Table 3:** Indicators Included in Student Health Index

Category	Indicator	Description	Geography	Source and Year	Available through UCSF Health Atlas
<b>Health and Health Care</b>	<b>Diabetes</b>	Diagnosed diabetes rate among adults over 18 at the census-tract level.	Census Tract	PLACES Project. CDC, 2020.	Yes
	<b>Asthma ED admissions</b>	Age-adjusted rate of emergency department visits for asthma per 10,000 people at the census-tract level.	Census Tract	CalEnviroScreen, 2018	Yes
	<b>Teen birth</b>	Percent of women who grew up in this census tract who ever claimed a child, born when they were 13-19 years old, as a dependent.	Census Tract	Opportunity Atlas	Yes
	<b>Health Professional Shortage Areas (HPSA)</b>	Primary Care Health Professional Shortage Area Score indicates shortage of primary care providers and priority for assignment of clinicians (0 to 26 where the higher the score, the greater the priority).	Census Tract	Health Resources and Services Administration	Yes
<b>Socio-economic</b>	<b>Poverty among individuals under 18</b>	Percent of the census tract population under 18 living in households with income below poverty level in the past 12 months.	Census Tract	American Community Survey 5-Year Estimates, 2015-2019	Yes
	<b>Uninsured among under 19</b>	Percent of the census tract population under 19 with no health insurance coverage.	Census Tract	American Community Survey 5-Year Estimates, 2015-2019	Yes
	<b>Healthy Places Index</b>	Census tract-level percentile score where higher percentile indicates more healthy neighborhood conditions based on 25 community characteristics within 8 Policy Action Areas.	Census Tract	The California Healthy Places Index, 2018 - 2020 Public Health Alliance of Southern California.	Yes
<b>School-Level Indicators</b>	<b>Percent FRPL</b>	The percent of students eligible for free or reduced-price meals (FRPM). Calculated as FRPM Count (K-12) divided by enrollment.	School-level	2019-20, CDE Student Poverty - FRPM Data	No
	<b>Percent English Learners</b>	The percent of students who identify as English Learners. Calculated as total EL population divided by Enrollment (K-12).	School-level	2019-20 CDE EL's Data	No
	<b>Percent Chronically Absent</b>	The unduplicated count of students determined to be chronically absent divided by the enrollment at each school.	School-level	2018-19 Chronic Absenteeism Data	No
	<b>Percent experiencing homelessness</b>	The percent of students who are experiencing homelessness.	School-level	2019-20 CDE Cumulative Enrollment Data	No
	<b>Suspension rate</b>	The unduplicated count of students suspended divided by cumulative enrollment.	School-level	2018-19 CDE Suspension Data	No
<b>Other Data Not</b>	<b>Mental health hospitalization rate</b>	The number of hospital discharges for mental health issues per 1,000 children ages 5-19 was used.	County	kidsdata.org, Estimate for 2015-2017.	No

<b>Included in Index</b>	<b>Percent in foster care</b>	The percent of students who are in foster care. Total foster population divided by enrollment.	School-level	2019-20 CDE Cumulative Enrollment Data	No
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## A. Health and Health Care Indicators

Disparities in health care access and health outcomes are used as indicators of need for additional services. While there are a variety of data points that can be used to show health outcomes, the data selected for the model are specifically related to health concerns that SBHC’s have been shown to be able to effectively intervene in or reduce.

While California does measure some school-level health data via the California Healthy Kids Survey, these data are not publicly available and do not measure specific health diagnoses or outcomes. In addition, educational data is typically collected and managed separately from health data, making it hard for agencies to compare data across domains. For this reason, some indicators included in the model are not school-specific, but geographically linked to a specific school through the census tract that the school is in.

The selected indicators address the asthma, teen pregnancy and physical activity domains of the Columbia Research Initiative’s findings. In addition, the indicators include information about the access to health professionals in the neighborhood surrounding the school.

### Diabetes

**Indicator:** Diagnosed diabetes rate among adults over 18 at the census-tract level.

**Data Source:** PLACES Project. Centers for Disease Control and Prevention, 2020.

**Rationale:**

There are two main pathways by which high diabetes rates indicate need for additional school-based health care. The first is one of diabetes management: SBHCs can provide insulin therapy and education to families with diabetes patients, which has been shown to significantly improve diabetes management for children (Faro et al., 2005; Pansier & Schulz, 2015). The second is through diabetes prevention. Multiple studies, including a collaborative research project across eight large research universities and the National Institute of Diabetes and Digestive and Kidney Disease found that school-based programs aimed at addressing risk factors for diabetes among children decrease various biometric markers that put children at

higher risk for diabetes (Grey et al., 2009; Rosenbaum et al., 2007; The HEALTHY Study Group, 2010).

Diabetes rates can also serve as a proxy for physical activity levels, although it is important to recognize that a variety of factors are predictive of diabetes rates, many of which are not behavioral in nature (e.g., income, education, housing, and access to nutritious food). Some of these factors are included in other indicators in the model.

It is additionally important to note that these levels are measured among adults in the neighborhood surrounding each school. There is currently no geographically granular data available for children. However, since diabetes frequently begins in childhood, and childhood health is a significant predictor of diabetes in adulthood, adult diabetes levels likely serve as a proxy for childhood health risks.

### **Asthma ED Admissions**

**Indicator:** Age-adjusted rate of emergency department visits for asthma per 10,000 people at the census-tract level.

**Data Source:** CalEnviroScreen 2018

**Rationale:**

High rates of asthma emergency department visits provide evidence that a community or population lacks access to vital asthma management care that prevents asthma-related emergencies. Black and poor children in the United States are at the highest risk of morbidity for asthma-related causes yet have some of the lowest level of asthma management care (Akinbami et al., 2002). There is significant evidence that access to a school-based health center reduces the days a child misses from school due to asthma complications, as well as the likelihood that a child will be hospitalized for asthma (Webber et al., 2003). A 2010 study by Guo et al. found that students with asthma in Ohio schools with SBHCs had a lower risk of hospitalization and emergency room visits compared with that of students with asthma in schools without SBHCs. They estimated that school-based health centers saved the health care sector approximately \$970 per student with asthma (J. J. Guo et al., 2010).

It is additionally important to note that these levels are measured among all individuals in the neighborhood surrounding each school. There is currently no geographically granular data available for children only.

## Teen Birth

**Indicator:** Percent of women who grew up in this census tract who ever claimed a child, born when they were 13-19 years old, as a dependent.

**Data Source:** Opportunity Atlas

### Rationale:

While there has been a dramatic decline in teen pregnancy in the last decade, the rate of teenage pregnancy still varies widely across California, especially among racial and ethnic groups. For every 1,000 girls aged 15-19 in California, there are 51 births to Latinas, 37 to African American, 12 to White and 9 to Asian girls (*Teen Pregnancy Prevention at School-Based Health Centers: Challenges & Opportunities*, 2015). Teen pregnancy is associated with substantial long-term economic costs for the teen mothers: higher levels of high school dropout, higher levels of incarceration, and lower lifetime incomes (*CDC: Teen Pregnancy*, 2020).

Research by Brookings shows that SBHCs can significantly increase the number of teenagers using contraceptives, and that SBHCs that provide access to contraceptives, especially long-acting reversible contraceptives such as IUDs, have significantly lower rates of unplanned pregnancies (Krause, 2016). Adolescent girls with access to SBHCs are more likely to get reproductive preventative care, use hormonal contraception, and to have been screened for an STI than girls without access to an SBHC (Ethier et al., 2011).

In addition, schools with high levels of pregnant and parenting teenagers benefit from access to school-based health. A study by Weinman et al. found that pregnant and parenting students at schools with SBHCs had higher passing rates, higher rates of timely care for infants, and were less likely to miss school (Weinman et al., 1999).

## Health Professional Shortage Areas

**Indicator:** Primary Care Health Professional Shortage Area (HPSA) Score indicates shortage of primary care providers and priority for assignment of clinicians.

**Data Source:** Health Resources and Services Administration, National Health Service Corps

### Rationale:

HPSAs are federally determined geographic areas of populations that lack enough health care providers to meet the health care needs of that population, indicating need for additional primary care provision.

A report by the Center for Health and Health Care in Schools identified two models that SBHCs may adopt: the medical home model and the health care linking model (*Nine State Strategies to Support School-Based Health Centers*, 1992). Under a health care linking model, SBHCs identify and respond to only specific health problems within the school community. Under a medical home model, the primary model used by SBHCs in California, school-based health centers are identified as providers of primary care and preventive services. Funding the centers is thus a way for the government to expand child health care delivery.

The federal government provides significant financial support to expand care in HPSA designated communities, signifying that this designation indicates significant need for expanded care. Specifically, The Centers for Medicare & Medicaid Services (CMS) pays a ten percent bonus when you deliver Medicare-covered services to patients in a geographic HPSA (*CMS: Physician Bonus*, 2021).

## B. School-Level Indicators

The school-level indicators are in part based on indicators used to determine the California Local Control Funding Formula (LCFF) because there is significant evidence that these indicators can be used to determine whether a school requires additional resources. The LCFF allows the Department of Education to calculate the amount of additional funding schools receive from the state-based eligibility for free and reduced priced meals, English language learner numbers, and foster care students (*Updated: An Overview of the Local Control Funding Formula*, 2013).

The selected indicators attempt to proxy the hunger, aggression and violence, and inattention and hyperactivity domains of the Research Initiative of the Campaign for Educational Equity's recommended indicators. In addition, the indicators include information about chronic absenteeism, and demographic data on English language learner status, homelessness, and foster care status.

Inattention and hyperactivity diagnoses should ideally be collected and analyzed as indicators for additional SBHC needs. Problems with inattention and hyperactivity are the most common type of mental and behavioral health problems that affect youth (Pastor and Reuben 2008). However, there is little data collected at the school level or even geographically granular level that accounts for inattention or hyperactivity diagnosis or treatment. Because absenteeism and suspensions are associated with these mental health diagnoses, these two indicators serve as proxies, albeit imprecisely.

### Percent Free and Reduced Priced Lunch

**Indicator:** The percent of students eligible for free or reduced-price meals (FRPM). Calculated as FRPM Count (K-12) divided by Enrollment (K-12).

**Data Source:** 2019-20, California Department of Education Student Poverty - FRPM Data

**Rationale:**

Access to school-based health is particularly important for low-income families, for whom the barriers to accessing services outside of the school can be high. In 2015, the CDC's Community Preventive Services Task Force recommended the implementation and maintenance of school-based health centers in low-income communities, based on evidence that these centers promote health equity, and improve educational outcomes for low-income populations (*Health Equity*, 2015). The California Department of Education uses FRPM counts as a proxy for low-income

status. It is the only annually collected school-level indicator for income and thus is included in the Need Score alongside community-level poverty rates (see “Poverty among individuals under 18” indicator).

### Percent English Learners

**Indicator:** The percent of students who identify as English Learners. Calculated as total EL population divided by Enrollment (K-12).

**Data Source:** 2019-20, California Department of Education EL Data

**Rationale:**

English language learners and their families face additional barriers in their access to health care. In California, immigrant children, many of whom make up the EL population, are significantly more likely to not have health insurance, in particular because undocumented immigrants, including young adults with Deferred Action for Childhood Arrivals (DACA) status, are not eligible to purchase health insurance on Covered California (Cha, 2019). Community health centers play a critical role in caring for uninsured patients (Wallace et al. 2016). Patients at school-based health centers are more likely to be uninsured than patients at nearby community clinics, indicating that SBHCs are particularly important sources of care for uninsured populations (Allison et al. 2007).

### Percent Chronically Absent

**Indicator:** The unduplicated count of students determined to be chronically absent (Chronic Absenteeism Count) divided by the Chronic Absenteeism Enrollment at each school for the entire student body.

**Data Source:** 2018-19 Chronic Absenteeism Data

**Rationale:**

Chronic absenteeism is caused by a variety of factors, including poor physical and mental health, bullying or disconnectedness from school, and family difficulties meeting student basic needs (Black et al., 2014). There is significant evidence that students who attend schools with SBHCs are less likely to miss school, and thus SBHCs reduce chronic absenteeism (Basch, 2011; Ma et al., 2007; Rochmes, 2016; Walker et al., 2010, 2010; Webber et al., 2003).

### Percent Experiencing Homelessness

**Indicator:** The percent of students who are experiencing homelessness. Total homeless population divided by Enrollment (K-12).

**Data Source:** 2019-20 CDE Cumulative Enrollment Data



**Rationale:**

Students experiencing homelessness often experience more health and mental health problems than other students. Additionally, they experience serious disruptions in their health care utilization, as they often are moving between homes and shelters, and may not have access to a consistent source of care. Fortunately, youth experiencing homelessness, especially under age 13, regularly attend school (Sulkowski & Michael, 2014). By providing care at the school-level, unhoused students are able to access care during school hours.

Literature supports the use of school-based health interventions as a part of a multi-tiered system of support for unhoused students. A report by the University of California Los Angeles found that nearly 270,000 students in California were experiencing homelessness at the end of 2020 (*State of Crisis*, 2020). The report's major findings indicate that these students require better coordination between welfare programs, housing, health care and educational stakeholders to ensure efficient service delivery and access to basic needs.

### Suspension Rate

**Indicator:** The unduplicated count of students suspended divided by the cumulative enrollment at the selected entity for the selected student population.

**Data Source:** 2018-19 CDE Suspension Data

**Rationale:**

Low-income students and students of color are significantly more likely to be suspended, often for behavioral reasons that could be mitigated through mental health support, ensuring that students feel connected to an adult at school, and ensuring that students' basic needs are met. SBHCs are associated with improved educational outcomes, including reduced suspension rates, and increased grade point averages and graduation rates (Knopf et al., 2016; Love et al., 2019).

## C. Socioeconomic Indicators

Health is influenced by a range of social determinants, including poverty, access to and quality of housing, the availability of transportation, and neighborhood resources such as parks and supermarkets (*Social Determinants of Health*, 2019). In addition, there is significant evidence linking environmental factors to health outcomes. Including these indicators ensures the Index reflects whether schools are located in socioeconomically vulnerable communities.

In addition to serving the students enrolled in the school, school-based health centers often also serve the surrounding community. Data from Los Angeles Unified School District's (LAUSD) School-Based Wellness Centers showed that despite school closings and stay-at-home orders, six of the district's eleven Wellness Centers remained open throughout the height of the COVID-19 pandemic related lockdowns in 2020. From March to June alone, LAUSD's Wellness Centers saw over 12,000 visits from predominantly Latinx and Black patients in marginalized neighborhoods where health and social inequities put them at disproportionately greater risk of illness. In addition to clinical visits, the clinics have provided critical COVID-19 testing to the communities they served.

The indicators in this category were informed by the CDC's PLACES project and the California Healthy Places Index ("California Healthy Places Index" 2020; CDC 2021).

### Poverty Among Individuals Under 18

**Indicator:** Percent of the census tract population under 19 with no health insurance coverage.

**Data Source:** American Community Survey 5-Year Estimates, 2015-2019

**Rationale:**

Access to school-based health is particularly important for low-income families or whom the barriers to accessing services outside of the school can be high. Accessing care at school prevents parents from needing to take off work to bring their child to a physician and decreases travel expenses and barriers created by transportation access. Guo et al.'s 2010 study in Ohio estimated that over the 7,572 SBHC visits they studied, the SBHCs saved parents between \$542,761 (4 hours work time per parent) and \$1,085,522 (8 hours work time per parent), because they did not have to leave work to take their child to a health care provider. They also found that parents saved travel expenses. From parent survey data, the average time to a physician's office

was 28 minutes round trip in an urban area and 46 minutes round trip in a rural area. With the rate of \$0.35 per mile, they estimated total travel expenses to be \$42,956.

### Uninsured Among Individuals Under 19

**Indicator:** Percent of the population under 18 living in households with income below poverty level in the past 12 months

**Data Source:** American Community Survey 5-year estimates, 2015-2019

**Rationale:**

Health insurance coverage is highly predictive of access to and use of preventative care services (Hsia et al., 2000). In addition, health insurance coverage is an important determinant of health outcomes (*Health Insurance and Access to Care*, 2017).

Community health centers have played a critical role in caring for the remaining uninsured since the expansion of the ACA (Wallace et al., 2016). In California, nearly 30% of all patients at community health centers are uninsured. Similarly, research in Colorado indicates that patients at school-based health centers are more likely to be uninsured than patients at nearby community clinics, indicating that SBHCs are particularly important sources of care for uninsured populations (Allison et al., 2007).

### Healthy Places Index

**Indicator:** Census tract-level percentile score where higher percentile indicates more healthy neighborhood conditions based on 25 community characteristics within 8 Policy Action Areas.

**Data Source:** The California Healthy Places Index, 2018 – 2020 Public Health Alliance of Southern California

**Rationale:**

The California Healthy Places Index (CHPI) is a tool created by the Public Health Alliance of Southern California that creates a relative health indicator for each census tract in California. The HPI combines 25 community characteristics into a single score that allows for comparisons across communities to paint a picture of health and well-being. Figure 1 shows the included indicators and their respective weights. The HPI is designed to provide information on factors at the local level that are known to predict health outcomes and life expectancy, including social determinants of health.

The state has already set a precedent of using it to determine where and how to distribute funding for health care across California, when it decided to allocate 40% of available COVID-19 vaccinations to residents in communities in the lowest quartile

of the HPI (Rong-Gong and Money 2021), as well as incorporating it into the state-wide reopening plan that includes metrics of health equity (“California Department of Health: California’s Commitment to Health Equity” 2021).

**Figure 1:** California Healthy Places Index Metrics

Action Areas	Economic	Social	Education	Transportation	Neighborhood	Housing	Clean Environment	Healthcare
Weight (fraction)	.32	.10	.19	.16	.08	.05	.05	.05
Indicators	Employed	Two Parent Households	In Preschool	Automobile Access	Retail Density	Low-Income Renter (Severe Housing Cost Burden)	Ozone	Insured
	Income	Voting in 2012	In High School	Active Commuting	Park Access	Low-Income Homeowner (Severe Housing Cost Burden)	PM 2.5	
			Bachelor’s Education or Higher		Tree Canopy	Housing Habitability	Diesel PM	
					Supermarket Access	Uncrowded Housing	Water Contaminants	
					Alcohol Outlets	Homeownership		

## D. Indicators Not Included

The following data points are included in the final dataset and are available in the dashboard but are not included in the Student Health Index calculation. The reasons for why they are excluded are explained below.

### Mental Health-Related Hospitalization Rate

**Indicator:** The number of hospital discharges for mental health issues per 1,000 children ages 5-19 was used.

**Data Source:** kidsdata.org, via WestEd, California Healthy Kids Survey (CHKS) and Biennial State CHKS. Estimate for 2015-2017.

#### Rationale for Reporting:

High levels of hospital discharges for mental health concerns indicates a lack of mental health support services at the community level. It is therefore important to focus on mental health indicators when assessing the need for additional health care providers.

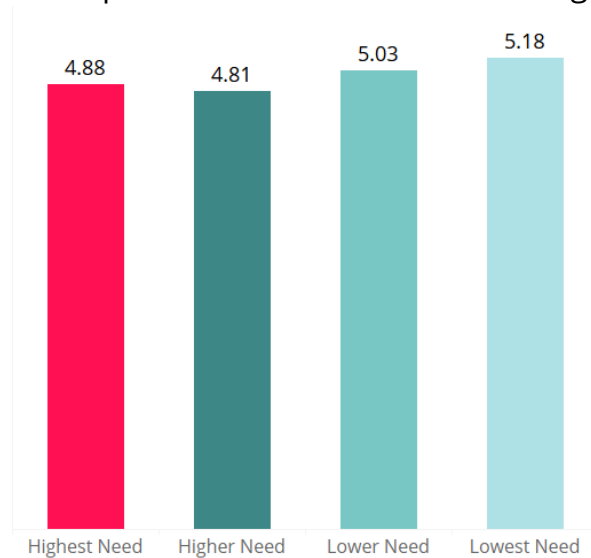
Findings show that there are significant disparities in teenage mental health treatment access. Research indicates that fewer Black and Latino children with recent symptoms of attention-deficit/hyperactivity disorder and fewer Black children with symptoms of depression had ever utilized services compared with white children (Coker et al. 2009). In addition, community-based crisis services and health options have been shown to significantly lower mental health hospitalization rates (S. Guo et al. 2001) and increase the proportion of students receiving mental health services (J. J. Guo, Wade, and Keller 2008).

#### Rationale for Excluding from Calculation:

This indicator is only available at the county level, meaning all schools in a county receive the same score. When this indicator was initially included in the Student Health Index, it made little impact on differentiating schools, since the data was not granular enough. As can be seen in Figure 2, the average county level mental health hospitalization rate was quite consistent across need categories, and higher rates were associated with lower need schools, likely because of the large geographic areas that are all assigned the same score. For example, if a high need school is located in a county that, on average, has very positive mental-health outcomes, this indicator might have pulled that school into a lower need category. County-level data is particularly unrepresentative of parts of California that are very segregated and have significant income gaps. For example, Alameda County has some very high need

schools, and some very affluent low need schools. For this reason, through collaborating with the CSHA, the decision was made to include the indicator as a data point for decision makers, but not use it in the calculation.

**Figure 2:** Mental Health Hospitalization Rate and Need Category



There is currently no geographically granular, publicly-available mental health data source for children. The California Healthy Kids Survey (CHKS) could potentially be used instead, since it collects mental health data at the school-level. However, it is not publicly available and therefore could not be included in the Index. Individual schools do receive their CHKS data, and this should be used to supplement decision-making at the school level.

### Percent in Foster Care

**Indicator:** The percent of students who are in foster care. Total foster population divided by Enrollment (K-12).

**Data Source:** 2019-20 CDE Cumulative Enrollment Data

#### Rationale for Reporting:

Students in foster care often face similar barriers to students experiencing homelessness, and benefit from stability in their medical home. Similar to the interventions needed for students experiencing homelessness, the US Department of Education recommends “a coordinated effort by education agencies and child welfare agencies ... to improve the educational outcomes for students in foster care” (*Students in Foster Care*, 2016). Similarly, the California Association of Health Plans’ 24-member Medi-Cal managed care plans (MCP’s) proposed school-based health clinics

in MCP networks to allow children in foster care to get the care they need at school, and to increase access. Specifically, if the SBHCs are affiliated with federally qualified health centers, then they are able to share data on what services they have provided with the foster student's Interdisciplinary Care Team, and SBHC staff can be included in Team meetings.

**Rationale for Excluding from Calculation:**

On average, California schools have foster care student populations that make up less than 0.5%. In fact, 3,636 of the included 4,821 schools have no foster care students at all. For this reason, the variable was not included in the final calculations, but the variable is available for comparison and use within the dashboard and dataset.

## 5. Student Health Index User Guide

To make the Student Health Index data more accessible, a dashboard was created that allows users to view and explore the data through a variety of maps and tables.

A four-page user guide is provided, and available in Appendix A. The dashboard is available [here](#).

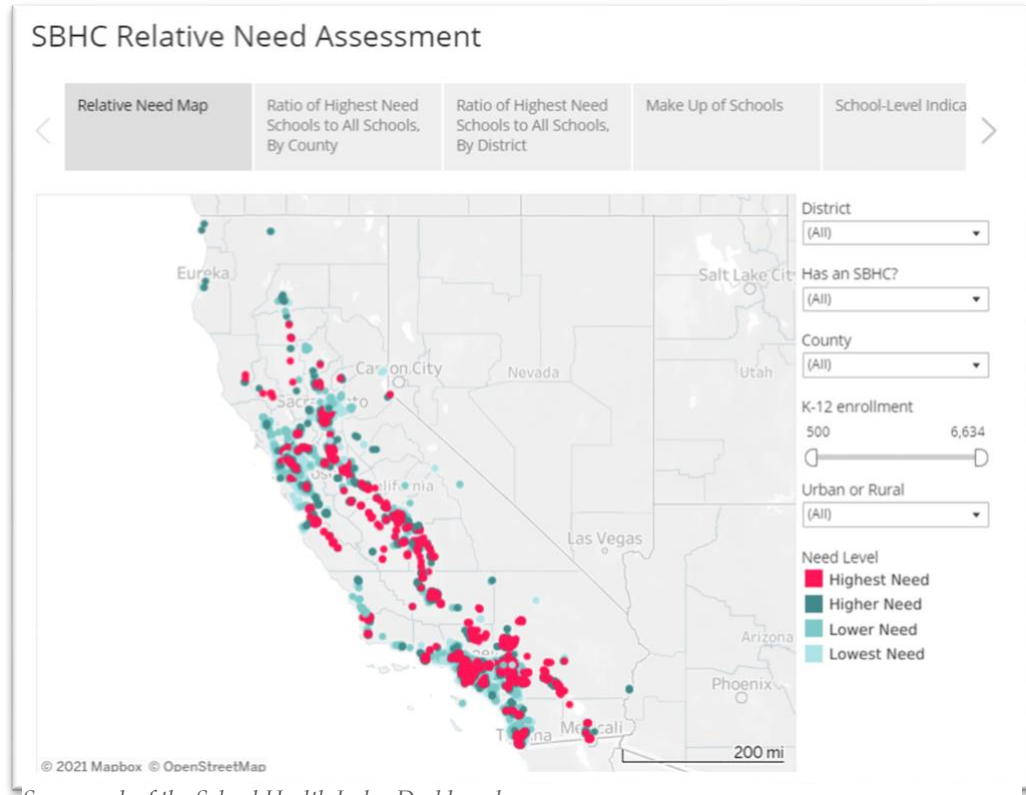
The goals of the Student Health Index Dashboard are to:

- Build awareness of the ways in which health and education are reciprocally related, and how health conditions, community socioeconomic characteristics and school demographics overlap to influence wellbeing and academic outcomes.
- Provide publicly available, local data in a comparative way to the CSHA, as well as to communities and stakeholders across California to help them identify opportunities to improve health care access in schools.

### Unique Value of the Student Health Index and Dashboard

The Dashboard provides a new way to look at health and educational data in concert. It is unique because:

- It is a public, interactive mapping tool that spans all large K-12 public schools in the state of California, and allows users to view, download and explore school-level data on health, socioeconomic and school demographics and outcomes
- It enables the retrieval, visualization, exploration and download of uniformly defined data across California for conditions, school characteristics and risk

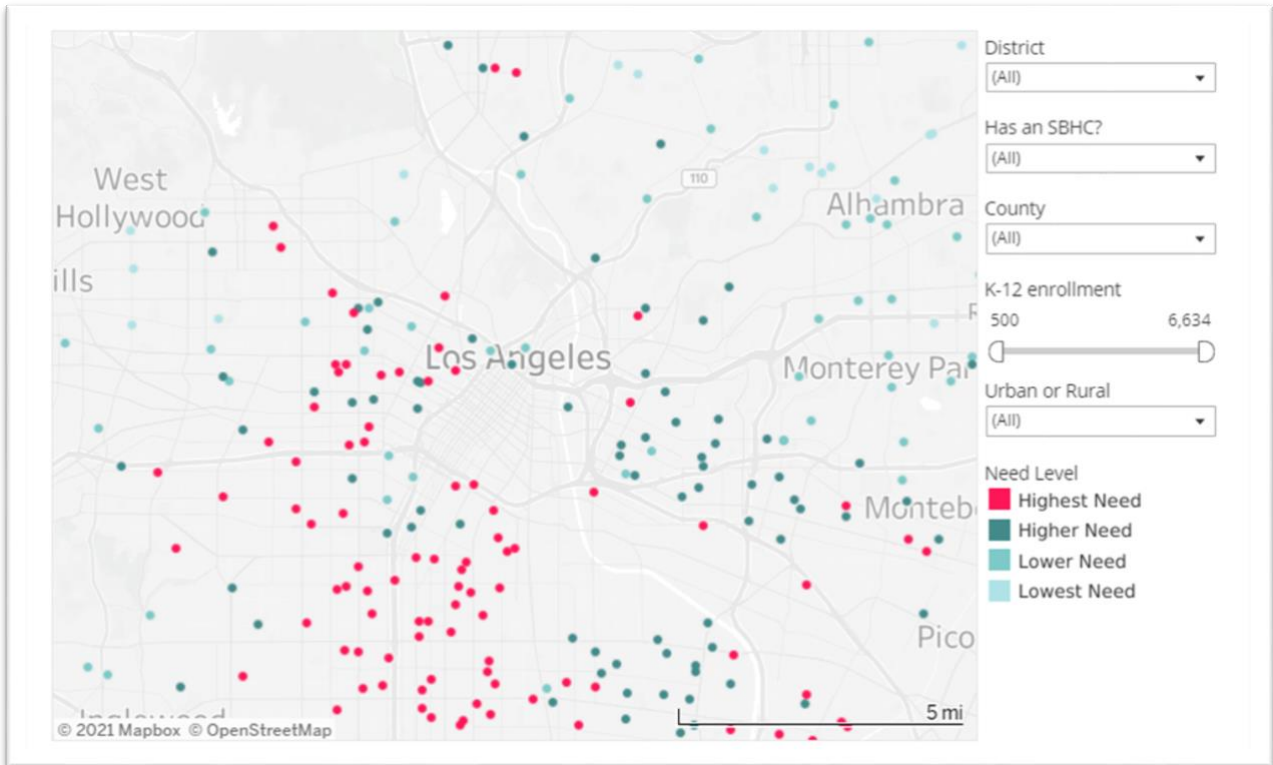


*Screengrab of the School Health Index Dashboard*

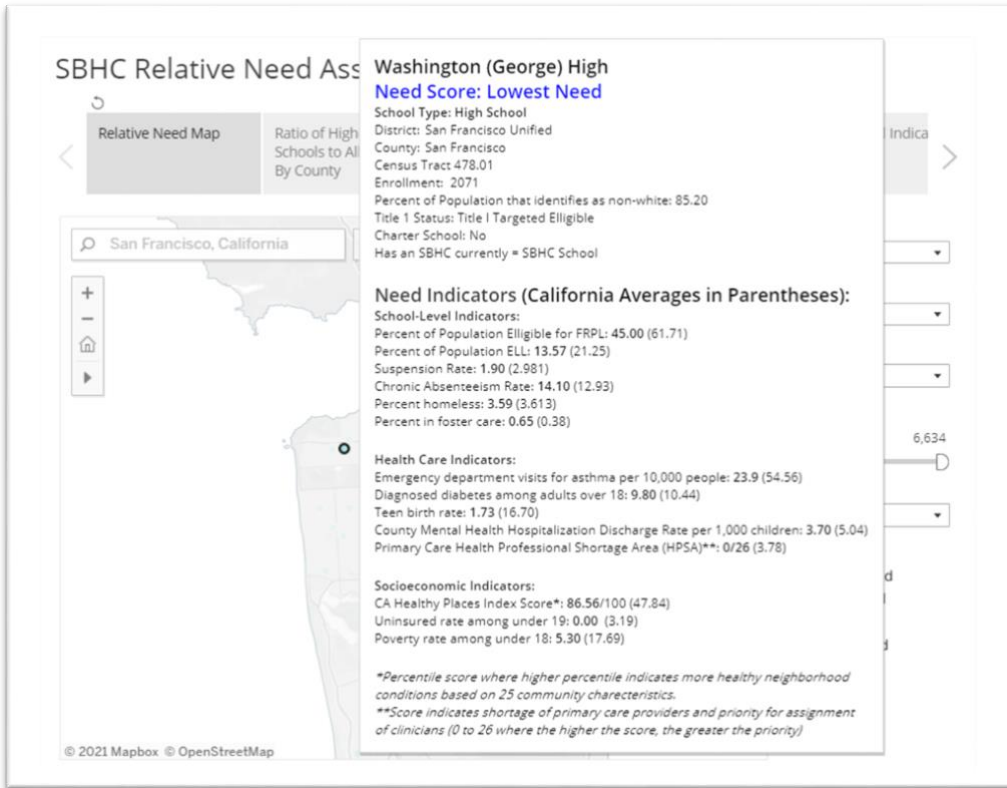


factors that can be improved through access to school-based health care and have been associated with impacts on educational outcomes.

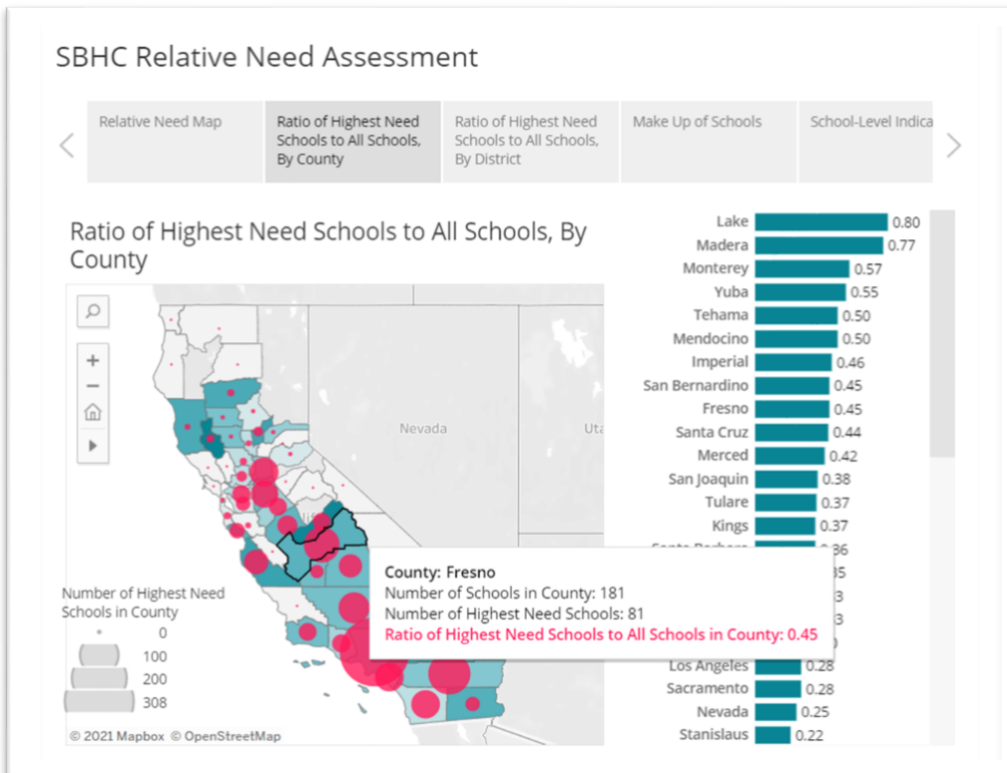
- It can be used by the CSHA as well as school staff, state legislatures, parents, and the general public to assess opportunities for expanding school-based health care access in California.



The dashboard also allows users to zoom in and out to focus on certain areas, using the search bar or their mouse.



The dashboard allows users to click on any school, which opens a tooltip that allows users to read about its characteristics



The dashboard also allows users click through a variety of graphs and displays, and interact with them.

## 6. Data Availability and Limitations

The following summarizes key data limitations and concerns.

### **The data used is publicly available and easy to obtain but requires combining multiple datasets.**

The data used in this analysis primarily comes from the California Department of Education, as well as census-level health data downloaded from the UCSF Health Atlas (*UCSF Health Atlas, 2020*).

Datasets are all publicly available and easy to obtain. The CDE data requires merging multiple datasets because suspensions, English learners, ethnic and racial demographics, FRPM, chronic absenteeism and school location are all stored in separate datasets. The community level indicator data is much easier to obtain because the UCSF Health Atlas allows for data downloads that create one file, with all relevant data reported by census tract.

### **Not all data points used are the most current, due to data collection issues and limitations.**

Because of the educational disruptions due to COVID-19, some of the CDE data used comes from the 2018-19 school year. Specifically, data on suspensions and chronic absenteeism come from the 2018-19 data, since school closures prevented their collection in the 2019-20 school year.

UCSF sources their data from a variety of publicly available datasets, which are described in Table 3. UCSF regularly updates their data, but the teen birth data is no longer updated. Specifically, births to teen mothers are reported as the percent of women born between 1978 and 1983 within a census tract who claim giving birth to a child when they were between ages 13 and 19 and still a dependent. Data on births to teen mothers comes from the Opportunity Atlas, a project that traces social mobility from childhood to the mid-30s but does not include updated data from women born after 1983.

### **There are limitations in how accurately community-level data reflects the school's population.**

Schools were assigned community data based on the census tract where they are located. This creates important limitations because children do not necessarily reside in the census tract immediately surrounding their schools. Census tracts in rural areas can be quite large, while census tracts in high density urban areas can be the

size of a city block. For this reason, school-level indicators were weighted more heavily than community-level indicators.

**Indicators were intentionally chosen to ensure that they were available for all schools.**

Indicators were available for over 99% of schools. 24 schools out of 4,821 are missing one indicator. One school (Tamarisk Elementary School in Palmdale) is missing 3, but still marked higher need. If an indicator was missing, schools were assigned a score of one on that indicator.

# Part III: Findings from the Student Health Index

This section provides an overview of the findings of the Student Health Index.

**Section 1** provides an overview of the indicators at schools that currently have a SBHC.

**Section 2** provides summary statistics for every indicator by need category and provides a map of the location of schools by need category.

**Section 3** provides a discussion of the racial makeup of schools, and how it correlates with the Need Score.

**Section 4** analyzes which counties and districts in California are hot spots of need - meaning they have a high ratio of high need schools to all schools.

**Section 5** provides an overview of ways in which this analysis could be simplified to only use one indicator, and what the impact of such a simplification would be.

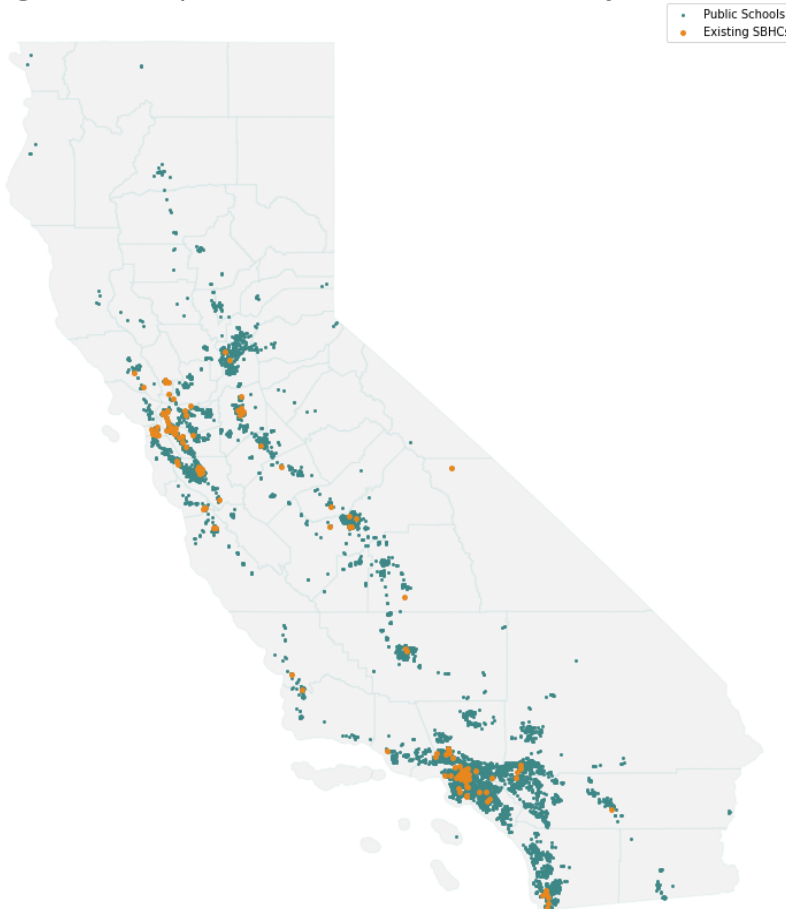
**Section 6** summarizes the findings of this analysis.

In addition to providing these results, a data dashboard is available [here](#). This dashboard allows users to interact with the data, including and excluding schools based on location and size. A user guide is available in the Appendix.

# 1. Current State of SBHCs in California

Using the indicators above, as well as the inclusion criteria, 4,821 schools were included in the final list of schools. Of these, 132 had active SBHCs, as can be seen in Figure 3 below.

**Figure 3:** Map of Schools Included in Analysis, and Existing SBHCs.



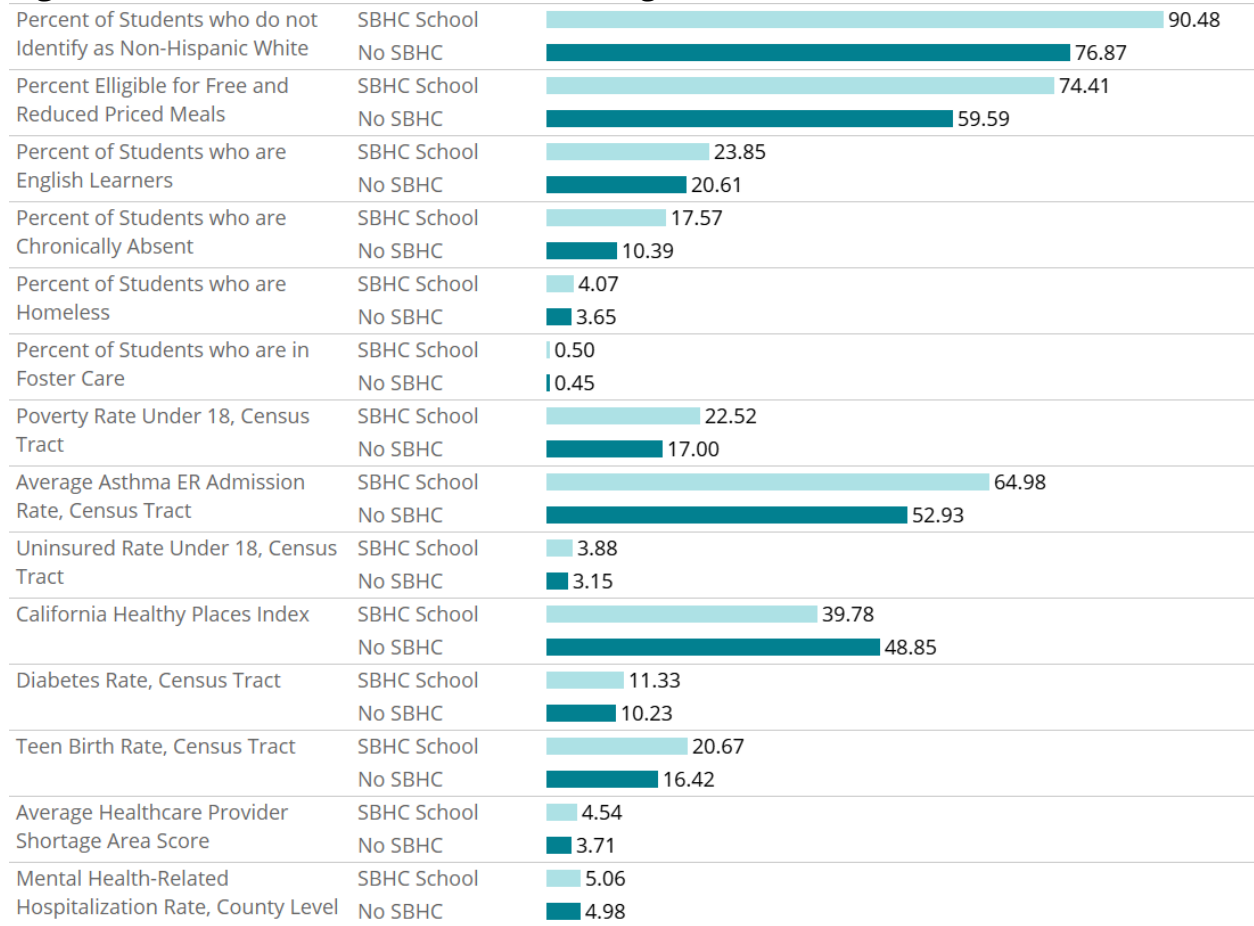
The schools that have SBHCs in California are statistically significantly different from the average school in California, having, on average, a need score that is 5 points higher than average, with an average relative score of 47. The SBHC schools with the highest Need Scores are Rosa Parks Elementary and Clark Middle, which are both in the San Diego Unified School District. The SBHC school with the lowest need score is Palo Alto High, with a Need Score of just 17.

Importantly, the schools in the highest need quartile had average scores of 57, and the cutoff point was a score of 49 or higher. This indicates that the average school with an SBHC would not have made it into the final list of highest need schools. This

may indicate that the health center is mitigating need at that school or could be a sign that SBHCs have not been targeted at highest need schools.

Table 4 below summarizes the differences between all schools and the schools in California that currently have an active SBHC. Notably, schools with SBHCs are 13% less White than all included public schools and serve students that are about 15% more likely to be eligible for free and reduced priced lunches.

**Figure 4: Indicators at Schools with Existing School-Based Health Centers**



The counties with the greatest number of SBHCs are Los Angeles (38), Alameda (15) and Santa Clara (10). Inyo, Napa and San Francisco have the highest ratio of SBHCs to all schools that match the inclusion criteria noted above. Twenty-three counties have no School-Based Health Centers despite having schools large enough to meet the inclusion criteria.

**Table 4:** SBHCs and Schools Per County

County	Total Schools	Schools With SBHCs	Percent of Schools with an SBHC	County	Total Schools	Schools With SBHCs	Percent of Schools with an SBHC
Inyo	2	1	50%	Riverside	376	2	1%
Napa	11	4	36%	Butte	14	0	0%
San Francisco	37	7	19%	Calaveras	4	0	0%
Santa Cruz	34	4	12%	Colusa	3	0	0%
Alameda	178	15	8%	Del Norte	2	0	0%
Sonoma	29	2	7%	El Dorado	14	0	0%
Contra Costa	141	8	6%	Glenn	3	0	0%
Santa Clara	193	10	5%	Humboldt	3	0	0%
San Luis Obispo	20	1	5%	Imperial	28	0	0%
San Joaquin	125	6	5%	Kings	30	0	0%
Madera	26	1	4%	Lake	5	0	0%
Los Angeles	1088	38	3%	Marin	24	0	0%
Monterey	67	2	3%	Mendocino	4	0	0%
Fresno	181	5	3%	Mono	1	0	0%
San Diego	393	9	2%	Nevada	4	0	0%
Santa Barbara	55	1	2%	Placer	53	0	0%
Solano	55	1	2%	San Benito	10	0	0%
Merced	60	1	2%	San Mateo	69	0	0%
Kern	175	2	1%	Shasta	15	0	0%
Stanislaus	92	1	1%	Siskiyou	2	0	0%
Tulare	92	1	1%	Sutter	15	0	0%
Sacramento	189	2	1%	Tehama	6	0	0%
Orange	395	4	1%	Tuolumne	2	0	0%
Ventura	106	1	1%	Yolo	22	0	0%
San Bernardino	357	3	1%	Yuba	11	0	0%



## 2. Summary Statistics

The Student Health Index assigned the top quartile of schools to the highest need level, but the final list of schools was then cut down to only include schools that met the enrollment inclusion criteria (see Part II, Section 3: Inclusion/Exclusion Criteria). Ultimately this meant that 1,195 schools were rated as highest need, 1,085 schools were rated higher need, 1,111 schools were rated lower need, and 1,361 were rated lowest need.

Table 5 breaks down the number of schools that fall into each category. By limiting school size using the exclusion/inclusion criteria, about a thousand schools are removed from the final list in each of the categories for need in urban contexts, which is about half of the schools. In the rural context, nearly 70 percent of schools are removed by cutting the list down based on enrollment indicators. This might indicate that a lower enrollment threshold should be used in the rural context.

**Table 5:** Breakdown of Need Score Bounds

Need Status	Urban		Rural		Need Score Bounds	
	All Schools <sup>1</sup> (average enrollment)	Schools meeting size cut-off	All Schools <sup>1</sup> (average enrollment)	Schools meeting size cut-off	Low Score	High Score
<b>Highest Need</b>	1,940 (650)	1,195	71 (390)	21	49	68
<b>Higher Need</b>	2,116 (663)	1,085	71 (343)	17	43	51
<b>Lower Need</b>	2,106 (690)	1,111	77 (315)	12	32	42
<b>Lowest Need</b>	2,110 (785)	1,361	80 (367)	19	17	33

A cursory look at the map in Figure 4 highlights the disparities between the Central Valley region and the coastal cities. While there is significant need in coastal urban

<sup>1</sup> This column shows the count of all schools that fit into these categories. The column to the right shows the number of schools once schools were excluded based on these enrollment limits:

- Rural schools with enrollment under 500 students
- Urban schools not serving a high school population with enrollment under 500 students

Urban high schools with enrollment under 1000

areas, these are also the regions with higher concentrations of existing SBHCs. Fresno and San Bernardino jump out as regions with large amounts of need, as does Riverside.

**Figure 4:** Map of the Highest Need Schools

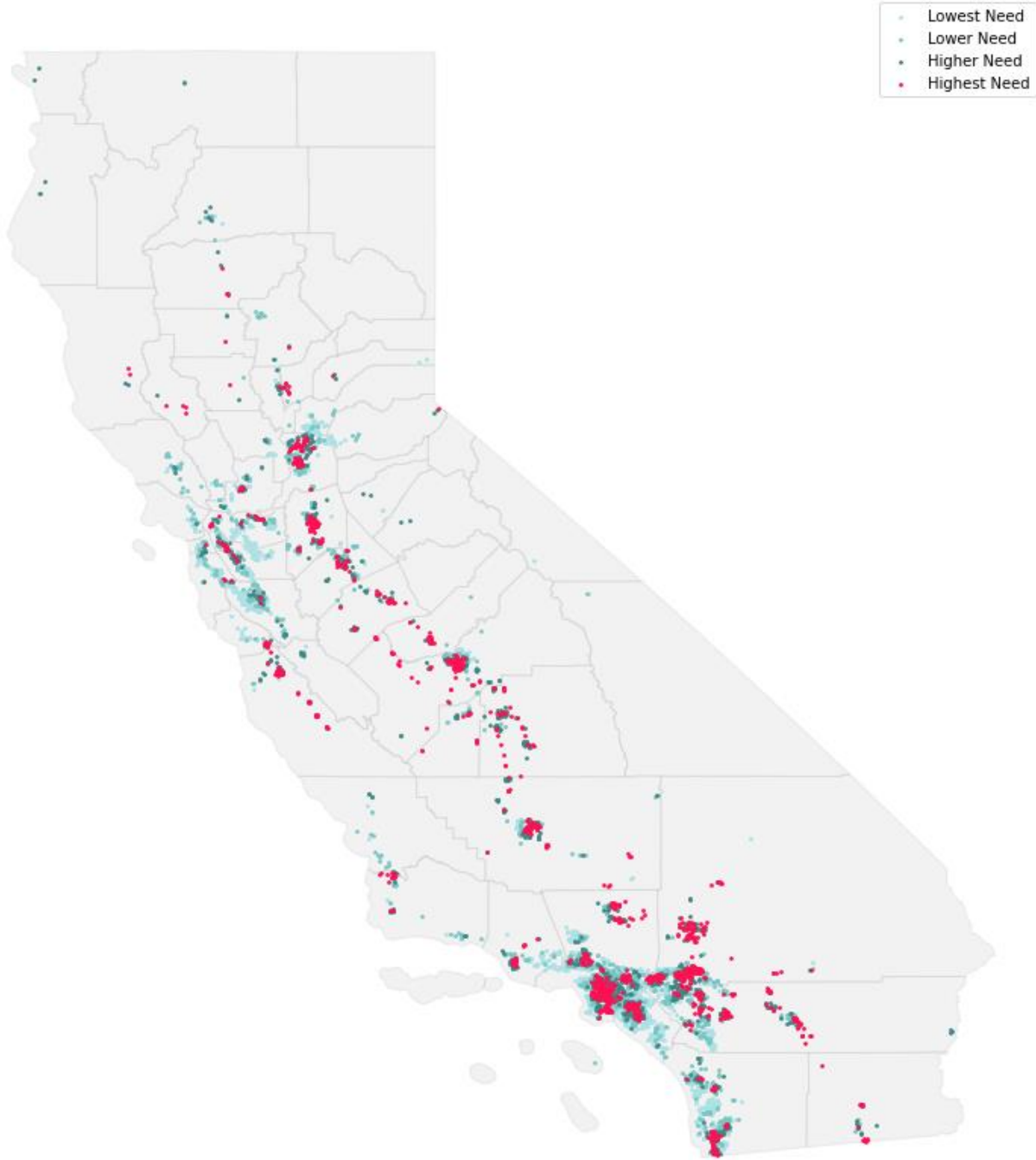


Table 5 shows the statistical significance of the difference among the indicators between all schools and the schools designated highest need. Importantly, highest

need schools serve nearly 30% more students eligible for free and reduced meals than the average public school.

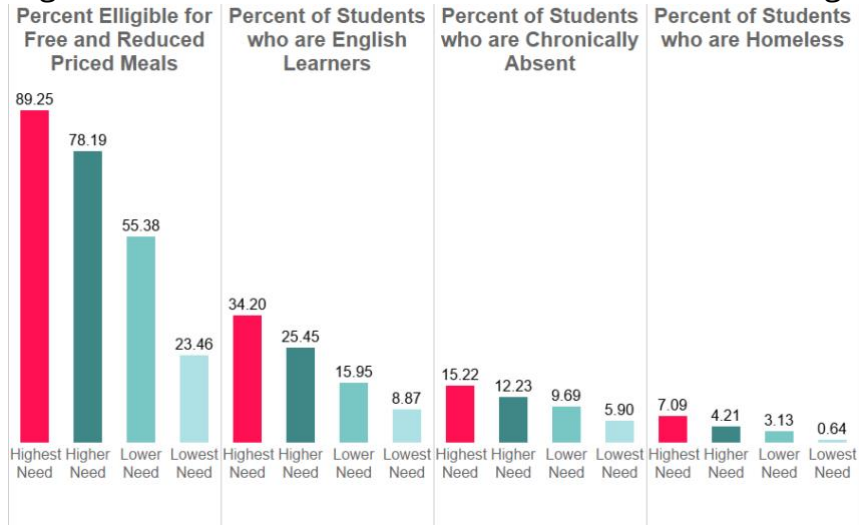
**Table 5:** Indicators Across Highest Need Schools

Category	Indicator	Mean	
		All	Highest Need
School-Level Indicators	Percent FRPL***	60%	89%
	Percent English Learners***	21%	34%
	Percent Chronically Absent***	11%	15%
	Suspension Rate***	3.1%	4.2%
	Percent Non-White***	77%	92%
	Percent Homeless***	3.7%	7.1%
	Percent in foster care***	.45%	.93%
Socioeconomic	Poverty among under 18***	17%	32%
	Uninsured among under 19***	3.2%	4.4%
	Healthy Places Index***	49	17
Health and Health Care	Diabetes Rate***	10%	13%
	Asthma ED Admissions Rate***	53%	78%
	Teen birth***	17%	27%
	Health Professional Shortage Area Score***	3.73	8.32
	Hospitalization Mental Health***	4.98	4.87
Total Need Score*** (max=48)		32.9	44.9

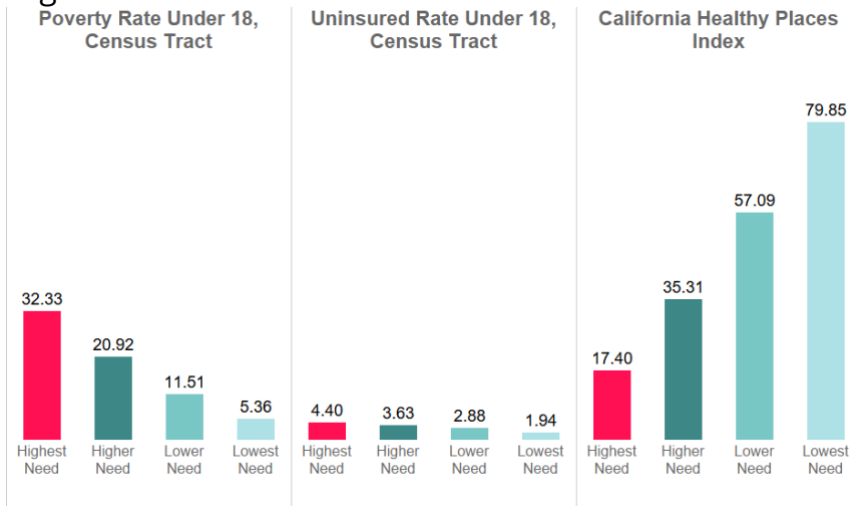
\*\*\*Indicates statistical significance at  $p < .05$

Figures 5-7 visualize these differences. Of note, every single indicator is statistically different for high needs schools than all schools, including data that was not included in the calculation of the Need Score - namely the percent of students who identify as non-white, the percent of enrolled students in foster care, and the county-level mental health hospitalization rate. Given that the Student Health Index was created using the other twelve indicators, it should not come as a surprise that they are statistically different for different need categories. However, it is still helpful to understand the extent to which these indicators differ across different need categories.

**Figure 5: Average Rates of School-Level Indicators Across Need Categories**

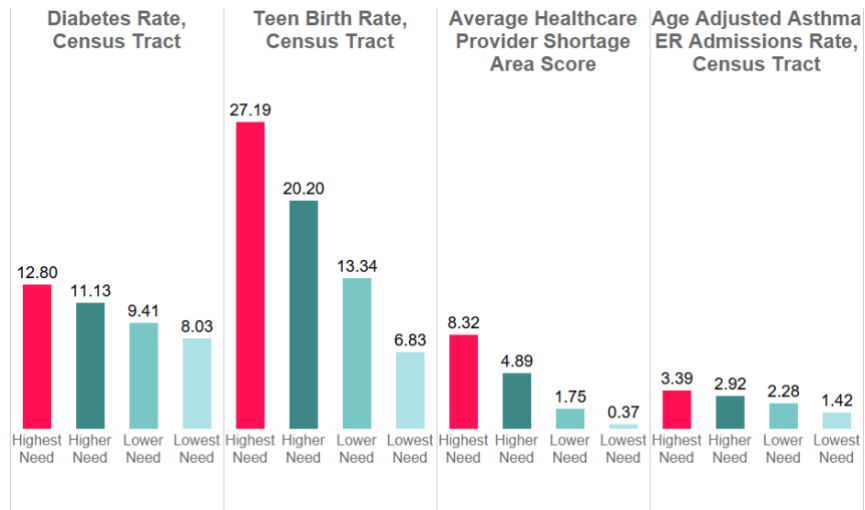


**Figure 6: Average Rates of Socioeconomic Indicators Across Need Categories**



**Figure 7: Average Rates of Health and Health Care Indicators Across Need Categories**

# California Student Health Index



### 3. Race

Race plays a significant role in health outcomes for communities. This is due to systemic and structural factors that have long meant that minority populations in the United States and in California live in areas with significantly less government investments, less resourced schools, higher poverty rates, higher pollution rates, and less access to stores selling fresh food (National Academies of Sciences et al., 2017).

However, race was not included in any of the measures that make up the Student Health Index because California's Proposition 209 prohibits allocating certain kinds of public resources based on race and ethnicity. In order to ensure that race can be used in a variety of applications, the dataset does contain the percent of non-white students at each school, as well as a flag for schools that serve over 90% students of color.

Despite not including race in any of the indicators, race is highly correlated with the final need score. In fact, highest need schools on average served student populations that were made up of 91% students of color, while lowest need schools served on average 60% students of color (see Figure 8).

**Figure 8:** Percent of Students Who Identify as Non-White, By Need Category

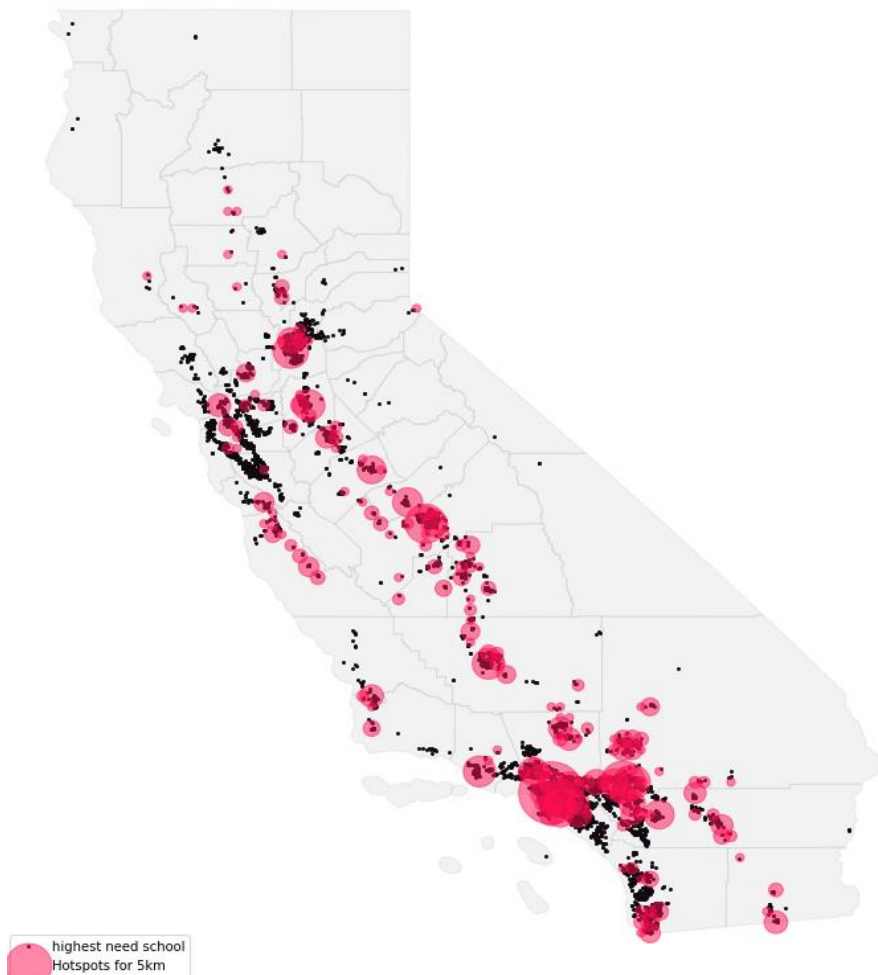


## 4. Hot Spot Analysis

Significant unmet needs persist among schools concentrated in certain regions of California. Figure 9 shows a hot spot analysis of concentration of need. At each high need school location, the Euclidean distance to all high need schools was calculated. At each location, a rate of high need incidence was calculated within a radius of 5 km, using a uniform kernel estimation technique. By mapping lambdas as circles around each point, this analysis allows for visual detection of hot spots.

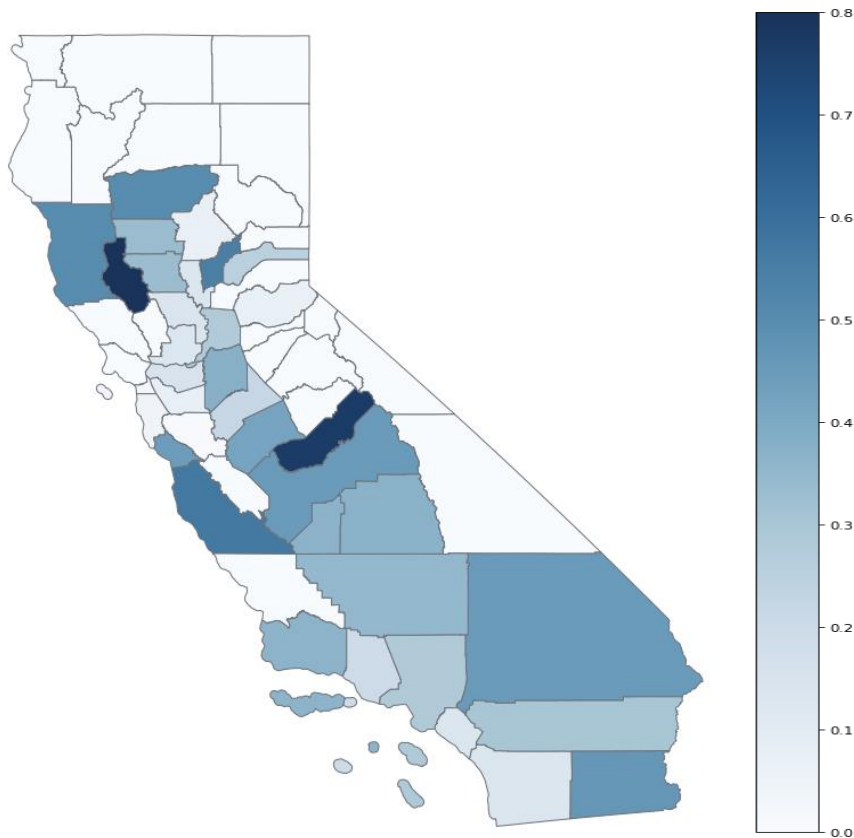
The map in Figure 9 shows the concentration of need in the greater Los Angeles area, as well as San Bernardino and the Central Valley and Fresno area. Northern California has less concentrated need, although Sacramento is a hot spot.

**Figure 9:** Hot Spot Map of High Need School Locations (Bandwidth 5 km)



To further investigate the location of unmet need, the top ten counties and districts with the highest need are shown in Figure 10 and Tables 6 and 7 below. The ratio of need was calculated as a ratio of the total number of schools in a county or district to the total number of highest need schools.

**Figure 10:** Map of Counties, Darker Counties have a Higher Ratio of High Need Schools to All Schools



This map also shows a concentration of need in the central valley. Important to note is that the concentration of need in the northern part of the state only represents a much smaller proportion of schools and students. Lake County, for example, has only five schools, four of which are high need, making it the darkest shaded county on the map.

When deciding where to allocate resources, it is therefore also important to consider the number of schools in each county. Table 6 provides an overview of the top ten highest need counties that have ten or more schools. San Bernardino County, Fresno County, San Joaquin County, Kern County, Riverside County and Los Angeles County all have over 100 schools and more than 25% of those schools have the highest relative need level.



**Table 6:** Top Ten Counties with Highest Ratio of High Need Schools to All Schools

County	Number of Schools	Number of Highest Need Schools	Ratio of High Need to All	Average Enrollment in Highest Need Schools	Percent of Schools Serving >90% Students of Color
Madera	26	20	0.77	884	61.54%
Monterey	67	38	0.57	866	74.63%
Yuba	11	6	0.55	663	0.00%
Imperial	28	13	0.46	965	78.57%
San Bernardino	357	160	0.45	944	43.98%
Fresno	181	81	0.45	901	45.86%
Santa Cruz	34	15	0.44	778	50.00%
Merced	60	25	0.42	817	30.00%
San Joaquin	125	47	0.38	909	32.80%
Tulare	92	34	0.37	832	35.87%
Kings	30	11	0.37	737	26.67%
Santa Barbara	55	20	0.36	943	45.45%
Kern	175	61	0.35	914	45.71%
Riverside	376	113	0.30	1012	30.59%
Los Angeles	1088	308	0.28	951	63.33%

Unsurprisingly given the findings in Figure 10, San Bernardino and Los Angeles jump out as the two counties with the greatest number of high need districts. Lynwood Unified in Los Angeles has only high need schools, all of which serve greater than 90% students of color. The majority of the top ten districts with highest need are located inland, in the central valley and southern counties east of Los Angeles and San Diego.

**Table 7:** Top Ten Districts with Highest Ratio of High Need Schools to All Schools\*

County	District	Number of Schools	Number of Highest Need Schools	Ratio of Highest Need to All	Average Enrollment in Highest Need Schools	% Serving >90% Students of Color
Los Angeles	Lynwood Unified	15	15	1.00	806	100%
Madera	Madera Unified	20	18	0.90	957	80%
Los Angeles	Pomona Unified	19	16	0.84	763	95%
San Joaquin	Stockton Unified	36	30	0.83	897	81%
San Bernardino	Rialto Unified	24	20	0.83	980	96%
Riverside	Coachella Valley Unified	17	14	0.82	947	100%
San Bernardino	San Bernardino City Unified	49	40	0.82	833	84%
Fresno	Fresno Unified	71	54	0.76	864	69%
Monterey	Salinas City Elementary	12	9	0.75	655	67%
San Bernardino	Hesperia Unified	20	15	0.75	1053	5%

\*Only includes districts with more than 10 schools

## 5. Principal Components Analysis and Lessons for Reproducibility

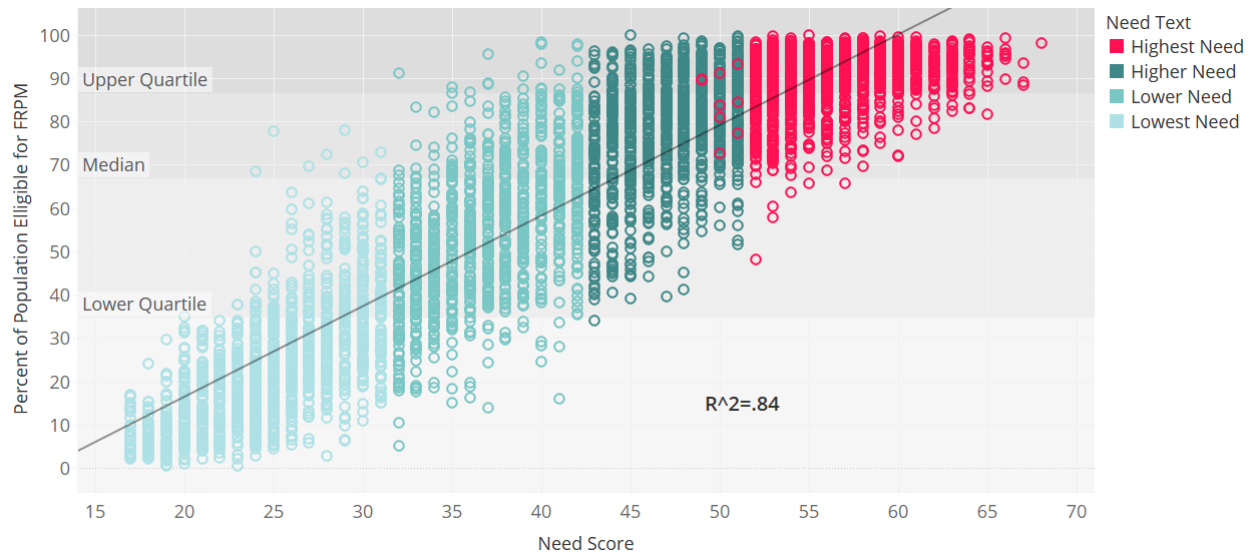
To easily reproduce this analysis in future years, it is important to consider whether there is a way to use just one metric to approximate relative need, so as to reduce data collection burden. This simplified methodology is possible since the indicators included in this analysis are all relatively correlated with one another. After completing a principal components analysis however, no one indicator stands out as the driver of the need score. However, as Table 8 demonstrates, three indicators are highly correlated with the need score: the percent of students eligible for FRPM, the California Healthy Places Index, and the Teen Birth rate.

**Table 8:** Correlation of Indicators with Final Score

	Asthma ER Rate	Chronic absenteeism	Diabetes Rate	HPI	HPSA	Poverty Rate	Teen Birth Rate	Uninsured Under 19	Percent EL	Percent FRPM	Percent Homeless	Suspension Rate
Correlation with need score	0.59	0.40	0.68	<b>0.79</b>	0.46	0.66	0.78	0.27	0.57	<b>0.89</b>	0.41	0.31

Because teen birth rate is based on historical data and does not allow for regular updates, only HPI and percent eligible for FRPM can be considered for this analysis. Figure 11 is a scatter plot of each school's score and the percent of students eligible for FRPM.

**Figure 11:** Scatter Plot of Relative Need Score and Percent of Population Eligible for FRPM



It is important to note that the percent of students eligible for FRPM explains 84% of the variation in the Need Score making it a fairly accurate proxy for need. However, as can be seen in the graph, there are quite a few highest need schools that do not fall into the upper quartile of FRPM percentage.

Table 9 below shows the breakdown of need score and number of schools in each quartile based solely on free and reduced-price meal eligibility.

**Table 9:** Need Scores and Percent FRPM Quartile Breakdown

Need Score	Percent Eligible FRPM Quartile			
	First (Lowest) Quartile	Second Quartile	Third Quartile	Fourth Quartile
Lowest Need	1,207	167	6	0
Lower Need	156	744	203	20
Higher Need	3	214	583	302
Highest Need	0	12	327	877

As can be seen in Table 9, if efforts to build health centers were focused solely on highest need schools based on FRPM eligibility, about 340 highest need schools would be missed (27%).

Repeating this analysis for the California HPI, we see similar if slightly less precise results. The HPI predicts about 72% of the variation in the need score (see Figure 12).

**Figure 12:** Scatter Plot of Relative Need Score and HPI Index

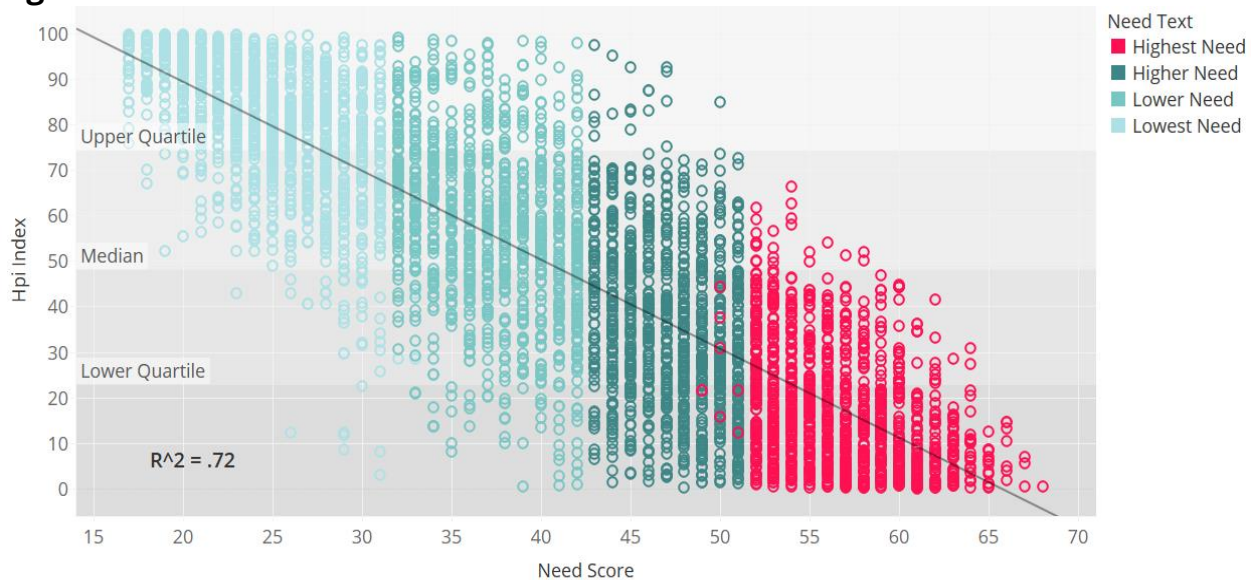


Table 10 below shows the breakdown of need score and number of schools in each quartile based solely on the HPI.

**Table 10:** Need Scores and HPI Quartile Breakdown

Need Score	HPI Quartile			
	First (Lowest) Quartile	Second Quartile	Third Quartile	Fourth Quartile
<b>Lowest Need</b>	1,565	521	30	8
<b>Lower Need</b>	480	1,011	279	57
<b>Higher Need</b>	77	519	519	302
<b>Highest Need</b>	4	69	335	850

As can be seen in Table 10, if efforts to build health centers were focused solely on the highest need schools based on the HPI, about 408 highest need schools would be missed, which is about 32% of highest need schools.

## 6. Findings based on Analysis

The following summarizes key findings based on the analysis presented here.

### **Currently existing School-Based Health Centers are located at higher need schools but not consistently at the highest need schools.**

Schools with existing SBHCs had statistically significantly higher need across all indicators. Notably, they served students who were 15% more likely to be eligible for FRPM than the average California School. However, the average need score for SBHC schools was 47, while the average for highest need schools based on the Student Health Index was 57, and the cutoff was 49. This means that the average school with a SBHC would not have made the list of highest need schools. Notably, this dataset has no information on how long the SBHC has been active or a measure of its effectiveness. It is possible that its existence is the reason the school does not fall into a higher need category.

### **Race was highly correlated with the Need Score of a school.**

Despite not being included in the index, highest need schools serve significantly more students of color than lower need schools. On average, high need schools served populations where 91% of the student body identified as non-white and non-Hispanic.

### **There are counties and districts with significant levels of unmet need.**

In three counties - Yuba County, Monterey County and Madera County - over half of the included schools were highest need schools. San Bernardino County, Fresno County, San Joaquin County, Kern County, Riverside County and Los Angeles County all have over 100 schools and between 25% and 45% of those schools have the highest relative need level. There are many districts with high concentrations of need as well. San Bernardino County and Los Angeles County have many high need districts. Lynwood Unified in Los Angeles has only high need schools, all of which serve greater than 90% students of color. The majority of the top ten districts with highest need are located inland, in the Central Valley and southern counties east of Los Angeles and San Diego.

### **This analysis can be done with a simplified metric looking at just FRPM eligibility, but precision is lost, and some schools will be missed.**

Based on this analysis, FRPM count can be used as a proxy for need score, but it is important to note that using only FRPM eligibility will miss about 27% of highest need schools.

# Part IV: Additional Questions for Consideration

While a quantitative Student Health Index can be used to evaluate the selection of a school to support in the creation of a new School-Based Health Center, considerations of financial feasibility and qualitative evidence of need should be investigated as well. This must be an on-going process of communication between schools and the CSHA, as well as potential funding sources as the CSHA evaluates where to focus their efforts.

## **Is There Qualitative Evidence of Need?**

While data can tell a story, stakeholder engagement may illuminate the influence of other factors. It will be important for the CSHA to speak with school leaders and local community leaders and health care providers through focus groups and semi-structured interviews to gain a broader and more nuanced understanding of the community's need for additional health care.

A school with a specific health need that is otherwise doing relatively well on the indicators included in the Student Health Index will be missed by this analysis. To illustrate this, one stakeholder in San Diego discussed the case of a school that had significant need for additional mental health care - despite being in an affluent community and having a relatively wealthy student population. This school would likely be missed if qualitative evidence and community voices are not included in the decision of where to focus resources.

## **Is Funding a SBHC Financially Feasible and is there Community Commitment?**

Simply marking a school as needing a health center will not ensure that one can feasibly be created. Spending significant time advocating for a center in a location

that cannot finance it could lead to serious inefficiencies as the CSHA works to support the creation of SBHCs with a small team.

Certain indicators can be used to assess financial feasibility, although conversations with district leaders, non-profits, and providers will be essential to this work as well. Some metrics that could be used include whether a district already has a center and whether a school is located in a medically underserved community. A district that already has SBHCs, for example, may be more inclined to add additional centers and may have more access to resources and funding to do so. They might also have existing data demonstrating the impact of such a center, which could be used in persuasive materials. Advocating for a health center in a community that is currently medically underserved may gain more political traction among legislators since the health center could have two outcomes: providing increased access to care to school children and providing increased access to care in a community currently underserved. Medically underserved areas may also provide more fruitful markets for providers, since this is, in essence, a supply problem and not a demand problem.

The CSHA might also consider advocating for health care opportunities which could be deployed that do not require physical space, such as telehealth or mobile clinics. There may be synergistic opportunities with schools that provide students with mobile technology to develop telehealth apps for students. Resources could be shared across schools since the clinicians would not be physically based.

Ultimately, interest and desire from stakeholders in a given location to support the creation of an SBHC will be key to its construction and success, especially in light of a lack of state-level funding and support. For this reason, commitment must be evaluated through qualitative evaluation, such as stakeholder interviews or creating opportunities for school-wide community input.



# Part V: Report Findings and Recommendations

The aim of this project was to create a Student Health Index to evaluate the need for health centers across all schools in California by asking the following questions:

1. How should a Student Health Index be constructed to assess the need for SBHCs across California?
2. Based on these metrics, what schools and districts have the greatest relative need for additional SBHCs?

## Key Findings

### **1. Indicators included in indexes should be evaluated on key criteria and must be combined using rescaling techniques.**

By analyzing existing indices, it became clear that indicators should be (1) publicly available, (2) backed by evidence, (3) non-duplicative, and (4) geographically specific. Because indicators include percentages, rates, and index values, to include them in a composite measure, each must be transformed and weighted to enable comparisons on a common scale.

### **2. There are key data limitations that cannot be addressed without Statewide data collection and reporting.**

While California does measure some school-level health data via the California Healthy Kids Survey, these data are not publicly available and do not measure specific health diagnoses or outcomes. In addition, educational data is typically collected and managed separately from health data, making it hard for agencies to compare data across domains. Additionally, there are no geographically specific data sources that provide localized information on community or school-level mental health outcomes or needs.

**3. Currently existing School-Based Health Centers are located at higher need schools, but not consistently at the highest need schools.**

Schools with existing SBHCs had statistically significantly higher need across all indicators. However, the average school with a SBHC would not have made the list of highest need schools.

**4. Race is highly correlated with the calculated Need Score of a school.**

Highest need schools serve significantly more students of color than lower need schools. On average, high need schools served populations where 91% of the student body identified as non-white and non-Hispanic.

**5. There are counties and districts with significant levels of unmet need.**

In three counties - Yuba County, Monterey County and Madera County - over half of the included schools were highest need schools. San Bernardino County, Fresno County, San Joaquin County, Kern County, Riverside County and Los Angeles County all have over 100 schools and between 25% and 45% of those schools have the highest relative need level. There are many districts with high concentrations of need as well. The majority of the top ten districts with highest need are located inland, in the Central Valley and southern counties east of Los Angeles and San Diego.

**6. This analysis can be done with a simplified metric looking at just FRPM eligibility, but precision is lost, and some schools will be missed.**

Based on this analysis, FRPM count can be used as a proxy for need score, but it is important to note that using only FRPM eligibility will miss about 27% of highest need schools.

## Recommendations

The following recommendations are provided to guide CSHA as it launches its three-year strategic plan with an intentional focus on supporting more SBHCs across the state.

### **1. Use the data in the Student Health Index in combination with qualitative data collected in partnership with stakeholders and communities to support additional SBHCs across the state in high need locations.**

The CSHA should continue to work in collaboration with school leaders, local community leaders, and health care providers to gain a broader and more nuanced understanding of the community's need for additional health care. In addition, they must consider the feasibility of establishing a new SBHC to avoid spending significant time advocating for a center in a location that cannot finance it or does not have strong community support for it.

The CSHA can also empower partner organizations and local stakeholders with the Student Health Index Dashboard to:

- Enable the retrieval, visualization, exploration and download of uniformly defined data across California for localized information on conditions, school characteristics and risk factors that can be improved through access to school-based health care and have been associated with impacts on educational outcomes.
- Build awareness of the ways in which health and education are reciprocally related, and how health conditions, community socioeconomic characteristics and school demographics overlap to influence wellbeing and academic outcomes.
- Provide publicly available, local data in a comparative way to help them identify opportunities to improve health care access in schools.

### **2. Advocate for better state- and school-level health related data collection and sharing.**

School-level health data is key to making informed decisions about resource allocation. Currently the lack of any school- or community-level mental health indicator is particularly concerning, especially as schools deal with the extensive mental health impacts of the COVID-19 crisis. Columbia Teachers College found seven educationally relevant health disparities affecting school-aged youth that can

be feasibly and effectively be addressed through school health programs: (1) vision, (2) asthma, (3) teen pregnancy, (4) aggression and violence (including bullying), (5) physical activity, (6) hunger, and (7) inattention and hyperactivity. The CSHA should advocate for the collection of data on these health outcomes.

**3. Use the Student Health Index to advocate for state-level funding for SBHCs.**

The current funding model places significant burden on local stakeholders to advocate for, finance and maintain SBHCs. In an effort to continue to advocate for state-level funding for SBHCs, the CSHA and its partner organizations should use the Student Health Index and Dashboard to highlight the disparities in health outcomes and access to care across California.

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# Appendix A

The following pages provide a user guide to the Student Health Index Dashboard, created to accompany the mapping tool available [here](#).

# Appendix B

Below is a data table with the top 200 highest Need Score Schools. The remainder of the data is available for download from the CSHA website.

County	District	School	Type	Need Score	Geography	Currently has an SBHC	19-20 Enrollment
Fresno	Fresno Unified	Addams Elementary	Elementary	68	urban	0	843
Tulare	Visalia Unified	Highland Elementary	Elementary	67	urban	0	500
San Joaquin	Stockton Unified	McKinley Elementary	Elementary	67	urban	0	883
San Joaquin	Stockton Unified	Alexander Hamilton Elementary	Elementary	67	urban	0	818
San Bernardino	Hesperia Unified	Joshua Circle Elementary	Elementary	66	urban	0	657
San Joaquin	Stockton Unified	Van Buren Elementary	Elementary	66	urban	0	561
Sacramento	San Juan Unified	Howe Avenue Elementary	Elementary	66	urban	0	798
San Diego	San Diego Unified	Rosa Parks Elementary	Elementary	66	urban	1	870
San Diego	San Diego Unified	Clark Middle	Intermediate/Middle/Junior High	66	urban	1	933
Sacramento	Twin Rivers Unified	Noralto Elementary	Elementary	66	urban	0	515
San Diego	San Diego Unified	Fay Elementary	Elementary	66	urban	0	566
San Bernardino	San Bernardino City Unified	Bing Wong Elementary	Elementary	65	urban	0	717
Kern	Southern Kern Unified	Rosamond Elementary	Elementary	65	urban	0	877
San Diego	San Diego Unified	Porter Elementary	Elementary	65	urban	0	708
San Joaquin	Stockton Unified	Hazelton Elementary	Elementary	65	urban	0	765
Riverside	Palm Springs Unified	Two Bunch Palms Elementary	Elementary	65	urban	0	784
San Bernardino	San Bernardino City Unified	Lincoln Elementary	Elementary	65	urban	0	689
Riverside	Perris Union High	Pinacate Middle	Intermediate/Middle/Junior High	65	urban	0	1104
San Diego	San Diego Unified	Knox Middle	Intermediate/Middle/Junior High	65	urban	0	591
Los Angeles	Palmdale Elementary	Manzanita Elementary	Elementary	65	urban	0	619
Lake	Konocti Unified	Burns Valley	Elementary	65	urban	0	535
Tulare	Visalia Unified	Houston Elementary	Elementary	65	urban	0	588

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San Joaquin	Stockton Unified	John C. Fremont Elementary	Elementary	65	urban	0	862
San Bernardino	San Bernardino City Unified	Graciano Gomez Elementary	Elementary	65	urban	0	550
San Bernardino	San Bernardino City Unified	Warm Springs Elementary	Elementary	65	urban	0	575
Los Angeles	Long Beach Unified	Washington Middle	Intermediate/Middle/Junior High	64	urban	0	1056
San Bernardino	Victor Elementary	Del Rey Elementary	Elementary	64	urban	0	670
Sacramento	Twin Rivers Unified	Martin Luther King Jr. Technology Academy	Intermediate/Middle/Junior High	64	urban	0	528
Los Angeles	Long Beach Unified	Olivia Nieto Herrera Elementary	Elementary	64	urban	0	777
Los Angeles	Pomona Unified	Washington Elementary	Elementary	64	urban	0	677
Madera	Madera Unified	James Monroe Elementary	Elementary	64	urban	0	668
San Joaquin	Stockton Unified	Wilhelmina Henry Elementary	Elementary	64	urban	0	907
Fresno	Fresno Unified	Homan Elementary	Elementary	64	urban	0	616
San Bernardino	Hesperia Unified	Hesperia Junior High	Intermediate/Middle/Junior High	64	urban	0	1132
Sacramento	Twin Rivers Unified	Frederick Joyce Elementary	Elementary	64	urban	0	569
Los Angeles	Pomona Unified	Emerson Middle	Intermediate/Middle/Junior High	64	urban	0	663
Los Angeles	Lancaster Elementary	Linda Verde Elementary	Elementary	64	urban	0	964
San Bernardino	Colton Joint Unified	Woodrow Wilson Elementary	Elementary	64	urban	0	565
Los Angeles	Inglewood Unified	Woodworth-Monroe K-8 Academy	Elementary	64	urban	0	693
Los Angeles	Lancaster Elementary	Piute Middle	Intermediate/Middle/Junior High	64	urban	0	908
San Diego	San Diego Unified	Joyner Elementary	Elementary	64	urban	0	529
Sacramento	Twin Rivers Unified	Oakdale Elementary	Elementary	64	urban	0	642
San Bernardino	Victor Elementary	Puesta del Sol Elementary	Elementary	64	urban	0	822
Fresno	Fresno Unified	Miguel Hidalgo Elementary	Elementary	64	urban	0	633
Riverside	Palm Springs Unified	Nellie N. Coffman Middle	Intermediate/Middle/Junior High	64	urban	0	1056
Los Angeles	Lancaster Elementary	Discovery	Elementary	64	urban	0	789
Riverside	Moreno Valley Unified	Creekside Elementary	Elementary	64	urban	0	533

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San Bernardino	Hesperia Unified	Eucalyptus Elementary	Elementary	63	urban	0	695
San Bernardino	Hesperia Unified	Lime Street Elementary	Elementary	63	urban	0	837
Sacramento	San Juan Unified	Greer Elementary	Elementary	63	urban	0	527
San Diego	San Diego Unified	Central Elementary	Elementary	63	urban	1	628
Madera	Madera Unified	Sierra Vista Elementary	Elementary	63	urban	0	662
Contra Costa	West Contra Costa Unified	Peres Elementary	Elementary	63	urban	0	553
Fresno	Fresno Unified	Roosevelt High	High School	63	urban	0	2160
San Joaquin	Stockton Unified	Montezuma Elementary	Elementary	63	urban	0	705
San Bernardino	Ontario-Montclair	Kingsley Elementary	Elementary	63	urban	0	603
Ventura	Oxnard	Cesar E. Chavez Elementary	Elementary	63	urban	0	888
Lake	Konocti Unified	Pomo	Elementary	63	urban	0	701
San Bernardino	Victor Elementary	Irwin Academy of Performing Arts	Elementary	63	urban	0	662
Tulare	Visalia Unified	Goshen Elementary	Elementary	63	urban	0	583
Riverside	Hemet Unified	Hemet Elementary	Elementary	63	urban	0	832
San Bernardino	San Bernardino City Unified	Bradley Elementary	Elementary	63	urban	0	530
Sacramento	Twin Rivers Unified	Michael J. Castori Elementary	Elementary	63	urban	0	631
Los Angeles	Long Beach Unified	Whittier Elementary	Elementary	63	urban	0	859
Stanislaus	Modesto City Elementary	Evelyn Hanshaw Middle	Intermediate/Middle/Junior High	63	urban	1	899
Riverside	Perris Elementary	Good Hope Elementary	Elementary	63	urban	0	580
Riverside	Riverside Unified	Longfellow Elementary	Elementary	63	urban	0	724
Riverside	Moreno Valley Unified	Armada Elementary	Elementary	63	urban	0	830
Los Angeles	Los Angeles Unified	Hillcrest Drive Elementary	Elementary	63	urban	0	591
San Bernardino	Victor Elementary	Mojave Vista Elementary	Elementary	63	urban	0	846
San Bernardino	Apple Valley Unified	Phoenix Academy	Elementary	63	urban	0	1215
San Bernardino	San Bernardino City Unified	Arrowview Middle	Intermediate/Middle/Junior High	63	urban	0	1095
Los Angeles	Long Beach Unified	Hamilton Middle	Intermediate/Middle/Junior High	63	urban	1	924
San Diego	San Diego Unified	Balboa Elementary	Elementary	63	urban	0	500
Los Angeles	Lynwood Unified	Lindbergh Elementary	Elementary	63	urban	0	663
Los Angeles	Palmdale Elementary	Yucca Elementary	Elementary	63	urban	0	611

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Los Angeles	Pomona Unified	Vejar Elementary	Elementary	63	urban	0	865
Los Angeles	Lancaster Elementary	Sierra Elementary	Elementary	63	urban	0	624
San Diego	San Diego Unified	Chollas/Mead Elementary	Elementary	63	urban	0	566
San Joaquin	Stockton Unified	Monroe Elementary	Elementary	63	urban	0	578
San Bernardino	San Bernardino City Unified	Muscoy Elementary	Elementary	63	urban	0	769
Los Angeles	Lancaster Elementary	El Dorado Elementary	Elementary	63	urban	0	655
San Bernardino	Colton Joint Unified	Ruth Grimes Elementary	Elementary	63	urban	0	618
San Bernardino	San Bernardino City Unified	Curtis Middle	Intermediate/Middle/Junior High	63	urban	0	929
San Bernardino	Victor Elementary	Green Tree East Elementary	Elementary	63	urban	0	713
San Bernardino	Apple Valley Unified	Yucca Loma Elementary	Elementary	63	urban	0	602
San Bernardino	San Bernardino City Unified	Pacific High	High School	63	urban	0	1084
San Joaquin	Stockton Unified	Taft Elementary	Elementary	63	urban	0	500
San Bernardino	San Bernardino City Unified	Lankershim Elementary	Elementary	63	urban	0	696
Los Angeles	Long Beach Unified	Powell Academy for Success	Elementary	63	urban	0	1025
San Joaquin	Manteca Unified	Lincoln Elementary	Elementary	63	urban	0	651
Sacramento	San Juan Unified	Encina Preparatory High	Elementary-High Combination	63	urban	0	1055
Riverside	Palm Springs Unified	Bella Vista Elementary	Elementary	63	urban	0	782
Los Angeles	Long Beach Unified	Lindbergh STEM Academy	Intermediate/Middle/Junior High	62	urban	0	575
San Diego	Grossmont Union High	El Cajon Valley High	High School	62	urban	0	1557
Los Angeles	Pomona Unified	Garey High	High School	62	urban	0	1723
Los Angeles	Pomona Unified	Marshall Middle	Intermediate/Middle/Junior High	62	urban	0	506
Los Angeles	Long Beach Unified	King Elementary	Elementary	62	urban	0	717
Los Angeles	Pomona Unified	Philadelphia Elementary	Elementary	62	urban	0	623
Fresno	Fresno Unified	Yosemite Middle	Intermediate/Middle/Junior High	62	urban	0	678

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San Bernardino	Victor Elementary	Village Elementary	Elementary	62	urban	0	707
San Bernardino	Apple Valley Unified	Sandia Elementary	Elementary	62	urban	0	897
Yuba	Marysville Joint Unified	Cedar Lane Elementary	Elementary	62	urban	0	548
San Diego	San Diego Unified	Wilson Middle	Intermediate/Middle/Junior High	62	urban	0	695
San Bernardino	Colton Joint Unified	Alice Birney Elementary	Elementary	62	urban	0	630
San Joaquin	Stockton Unified	August Elementary	Elementary	62	urban	0	611
Kern	Mojave Unified	Hacienda Elementary	Elementary	62	rural	0	521
San Bernardino	Victor Elementary	Brentwood Elementary	Elementary	62	urban	0	720
Sacramento	Elk Grove Unified	Florin Elementary	Elementary	62	urban	0	623
Los Angeles	Long Beach Unified	Lincoln Elementary	Elementary	62	urban	0	998
San Bernardino	Barstow Unified	Cameron Elementary	Elementary	62	urban	0	586
San Bernardino	Victor Elementary	Park View Elementary	Elementary	62	urban	0	912
Los Angeles	Los Angeles Unified	Budlong Avenue Elementary	Elementary	62	urban	0	862
Los Angeles	Lynwood Unified	Hosler Middle	Intermediate/Middle/Junior High	62	urban	0	528
Fresno	Fresno Unified	Rutherford B. Gaston Sr. Middle	Intermediate/Middle/Junior High	62	urban	1	853
San Bernardino	San Bernardino City Unified	Cypress Elementary	Elementary	62	urban	0	551
Los Angeles	Los Angeles Unified	Loren Miller Elementary	Elementary	62	urban	0	736
Los Angeles	Eastside Union Elementary	Columbia Elementary	Elementary	62	urban	0	686
San Joaquin	Stockton Unified	Fillmore Elementary	Elementary	62	urban	0	719
Riverside	Val Verde Unified	Manuel L. Real Elementary	Elementary	62	urban	0	610
San Joaquin	Stockton Unified	Elmwood Elementary	Elementary	62	urban	0	811
San Bernardino	Rialto Unified	Charlotte N. Werner Elementary	Elementary	62	urban	0	805
Los Angeles	Long Beach Unified	Lindsey Academy	Intermediate/Middle/Junior High	62	urban	0	746
San Bernardino	Rialto Unified	Georgia Morris Elementary	Elementary	62	urban	0	630
San Bernardino	Adelanto Elementary	Westside Park Elementary	Elementary	62	urban	0	581
Fresno	Fresno Unified	David L. Greenberg Elementary	Elementary	62	urban	0	569
Sacramento	Sacramento City Unified	Pacific Elementary	Elementary	62	urban	0	717

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Imperial	Calexico Unified	Jefferson Elementary	Elementary	62	urban	0	766
San Bernardino	Ontario-Montclair	Mariposa Elementary	Elementary	62	urban	0	668
San Bernardino	Rialto Unified	Casey Elementary	Elementary	62	urban	0	706
Riverside	Banning Unified	Hemmerling Elementary	Elementary	62	urban	0	576
Los Angeles	Eastside Union Elementary	Tierra Bonita Elementary	Elementary	62	urban	0	648
Sacramento	Twin Rivers Unified	Madison Elementary	Elementary	62	urban	0	696
Los Angeles	Long Beach Unified	Franklin Classical Middle	Intermediate/Middle/Junior High	62	urban	0	1258
Fresno	Mendota Unified	McCabe Elementary	Elementary	62	urban	0	982
Sacramento	Elk Grove Unified	David Reese Elementary	Elementary	61	urban	0	963
Riverside	Perris Elementary	Railway Elementary	Elementary	61	urban	0	836
Riverside	Hemet Unified	Acacia Middle	Intermediate/Middle/Junior High	61	urban	0	843
Monterey	Greenfield Union Elementary	Oak Avenue Elementary	Elementary	61	urban	0	662
Riverside	Hemet Unified	Whittier Elementary	Elementary	61	urban	0	836
San Bernardino	San Bernardino City Unified	Captain Leland Norton Elementary	Elementary	61	urban	0	514
Monterey	Salinas City Elementary	El Gabilan Elementary	Elementary	61	urban	0	645
Ventura	Oxnard	Kamala Elementary	Elementary	61	urban	0	1056
Madera	Madera Unified	George Washington Elementary	Elementary	61	urban	0	714
Los Angeles	Los Angeles Unified	Alain Leroy Locke College Preparatory Academy	High School	61	urban	0	1404
Fresno	Fresno Unified	McLane High	High School	61	urban	0	1806
Los Angeles	Lancaster Elementary	Lincoln Elementary	Elementary	61	urban	0	707
Riverside	Palm Springs Unified	Desert Springs Middle	Intermediate/Middle/Junior High	61	urban	0	918
Los Angeles	Long Beach Unified	Roosevelt Elementary	Elementary	61	urban	1	1042
Monterey	Greenfield Union Elementary	Arroyo Seco Academy	Elementary	61	urban	0	612
San Diego	San Diego Unified	Lincoln High	High School	61	urban	1	1421
Kern	Bakersfield City	Bessie E. Owens Primary	Elementary	61	urban	0	685
Riverside	Hemet Unified	Jacob Wiens Elementary	Elementary	61	urban	0	687
Los Angeles	Lancaster Elementary	Desert View Elementary	Elementary	61	urban	0	723
Los Angeles	Lennox	Moffett Elementary	Elementary	61	urban	0	811

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San Bernardino	Rialto Unified	Dunn Elementary	Elementary	61	urban	0	559
Riverside	Coachella Valley Unified	Peter Pendleton Elementary	Elementary	61	urban	0	538
Imperial	Calexico Unified	William Moreno Junior High	Intermediate/Middle/Junior High	61	urban	0	715
Madera	Madera Unified	Cesar Chavez Elementary	Elementary	61	urban	0	768
Imperial	Calexico Unified	Rockwood Elementary	Elementary	61	urban	0	682
Madera	Madera Unified	Millview Elementary	Elementary	61	urban	0	719
Riverside	Moreno Valley Unified	Sunnymead Elementary	Elementary	61	urban	0	799
Los Angeles	Palmdale Elementary	Space Aeronautics Gateway to Exploration Magnet Academy	Intermediate/Middle/Junior High	61	urban	0	990
Los Angeles	Long Beach Unified	Edison Elementary	Elementary	61	urban	0	513
Los Angeles	Los Angeles Unified	Woodcrest Elementary	Elementary	61	urban	0	756
San Bernardino	Rialto Unified	Myers Elementary	Elementary	61	urban	0	532
Riverside	Moreno Valley Unified	Ramona Elementary	Elementary	61	urban	0	599
San Bernardino	Victor Elementary	Lomitas Elementary	Elementary	61	urban	0	882
Fresno	Fresno Unified	Akira Yokomi Elementary	Elementary	61	urban	0	798
Riverside	Moreno Valley Unified	Sunnymead Middle	Intermediate/Middle/Junior High	61	urban	0	1413
Fresno	Mendota Unified	Mendota Elementary	Elementary	61	urban	0	803
Fresno	Fresno Unified	Winchell Elementary	Elementary	61	urban	0	735
Fresno	Fresno Unified	Rowell Elementary	Elementary	61	urban	0	664
Riverside	Perris Elementary	Sky View Elementary	Elementary	61	urban	0	657
San Joaquin	Stockton Unified	Kennedy Elementary	Elementary	61	urban	0	503
Riverside	Banning Unified	Hoffer Elementary	Elementary	61	urban	0	516
San Joaquin	Stockton Unified	King Elementary	Elementary	61	urban	1	1051
Los Angeles	Los Angeles Unified	Telfair Avenue Elementary	Elementary	61	urban	0	669
Sacramento	Twin Rivers Unified	Hazel Strauch Elementary	Elementary	61	urban	0	569
San Bernardino	San Bernardino City Unified	Mt. Vernon Elementary	Elementary	61	urban	0	528
San Joaquin	Stockton Unified	Grunsky Elementary	Elementary	61	urban	0	532
Riverside	Palm Springs Unified	Bubbling Wells Elementary	Elementary	61	urban	0	743
San Bernardino	San Bernardino City Unified	Roger Anton Elementary	Elementary	61	urban	0	688



## California Student Health Index

Riverside	Palm Springs Unified	Cabot Yerxa Elementary	Elementary	61	urban	0	684
San Bernardino	Rialto Unified	Sam V. Curtis Elementary	Elementary	61	urban	0	613
Sacramento	Twin Rivers Unified	Grant Union High	High School	61	urban	0	2002
San Bernardino	Fontana Unified	Randall Pepper Elementary	Elementary	61	urban	0	545
Kings	Reef-Sunset Unified	Avenal Elementary	Elementary	61	urban	0	731
San Joaquin	Stockton Unified	TEAM Charter	Elementary	61	urban	0	735
San Bernardino	Rialto Unified	Preston Elementary	Elementary	61	urban	0	577
Sacramento	Sacramento City Unified	Nicholas Elementary	Elementary	61	urban	0	618
San Bernardino	San Bernardino City Unified	Indian Springs High	High School	61	urban	0	1888
Monterey	Salinas City Elementary	Natividad Elementary	Elementary	61	urban	0	666
Fresno	Fresno Unified	Lane Elementary	Elementary	61	urban	0	626
Los Angeles	Paramount Unified	Captain Raymond Collins	Elementary	60	urban	0	568
Los Angeles	Pomona Unified	Lopez Elementary	Elementary	60	urban	0	551
Ventura	Santa Paula Unified	Isbell Middle	Intermediate/Middle/Junior High	60	urban	0	1200
Los Angeles	Long Beach Unified	Dooley Elementary	Elementary	60	urban	0	956
Los Angeles	Los Angeles Unified	Fifty-Second Street Elementary	Elementary	60	urban	0	740