Methodology

School-Based Health Care School Need Index
November 2024

This document describes the methods and terminology used in the School-Based Health Center (SBHC) School Need Index created by the Colorado Health Institute (CHI) in November 2024. This work is an update to the methodology developed in January 2021.

Overview

CHI created the school need index to assess which Colorado public schools would most benefit from the establishment of an SBHC. The index calculates a school's relative need for improved access to health services based on 17 indicators.

Inclusion and Exclusion Criteria

All Colorado public schools operating during the 2023-2024 school year with a physical location providing in-person courses, including charter schools and public schools that offer pre-kindergarten programs, were included in the index. Online schools were excluded. Schools that did not have enrollment data available in the public datasets created by the Colorado Department of Education were also excluded.

Calculating Relative Need

The index draws on 17 indicators (or measures) related to health outcomes and risk factors, health insurance coverage, access to and use of care, and student need. Table 1 details all indicators used in the analysis.

For each indicator, schools were assigned a score based on quartile, with schools in the highest-need quartile assigned a 4 and schools in the lowest-need quartile assigned a 1. 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 levels were weighted more heavily than data available at the Health Statistics Region (HSR) level because more geographically granular data allow for more nuanced distinctions between schools within a given region. Finally, natural breaks were used to sort schools into one of five classifications of need: highest need, higher need, average need, lower need, and lowest need.

Data Indicator Selection Process

CHI worked with the Youth Healthcare Alliance and Colorado Department of Public Health and Environment to prioritize and finalize the list of metrics included in the index. CHI also used five principles to guide the selection of indicators for the needs assessment index throughout the process:

- **Salience.** CHI only considered indicators that suggest a high need for health services among children and their families.

- **Nonduplicative.** In cases where more than one indicator addressed the same issue — for example, usual source of care and medical home — CHI used what it considered the strongest option.

- **Geographic Granularity.** CHI sought indicators that were available at the school or county levels over indicators at the HSR level, which are less precise.

- **Timeliness.** CHI chose indicators that reflected the most current data available.

- **Trusted Data Sources.** CHI selected data from trusted and publicly available sources.

Data Geography

Some indicators were available at the school level, including data on free and reduced-price lunch eligibility, English language learners, and dropout rates. Other indicators were available only at the county level, including teen birth rates, uninsured rates, and Medicaid enrollment rates.

Each school's data was geocoded by address to determine its county and HSR. These data were then used to link metrics at different geographies to each school in the analysis.

Comparability Across Assessments

Several SBHC needs assessments have been conducted in Colorado in recent years, including an analysis by CHI in 2021. CHI and partners updated the metrics list in 2024, so the metrics differ from the 2021 index. Changes were made to include indicators more relevant to partners' work and to include metrics that had information available for more recent years. Because of this change, CHI cautions against comparing across years. However, many patterns in the 2024 data are similar to the findings from the 2021 index.

Data Included in the Index

CHI included 17 indicators in the final index, which are outlined in detail in Table 1. Links can be found to each in the Data Source column.

The Colorado Department of Education provided data for specific metrics where some information was suppressed. All suppressed data were defined as missing in these cases. CHI took a similar approach for all metrics with suppressed data and where CHI determined the sample size was too small for reliable estimates.

Table 1. 2024 School-Based Health Center Need Index Indicators.

Metric Definition	Data Source	Geography Available	Year(s) in Analysis
Percentage of students who sometimes, mostly, or all of the time went hungry in the last 30 days	Healthy Kids Colorado Survey	HSR	2023
Percentage of students who have ever been told they have asthma	Healthy Kids Colorado Survey	HSR	2023
Percentage of students who felt so sad or hopeless almost every day for two weeks or more in a row during the past 12 months that they stopped doing some usual activities	Healthy Kids Colorado Survey	HSR	2023
Percentage of students who used any tobacco products (including cigarettes, electronic vapor products, cigars, chewing tobacco, hookah, pipe, or bidis) in the last 30 days	Healthy Kids Colorado Survey	HSR	2023
Teen birth rate per 1,000 females ages 15-19	Vital Statistics	County	2023
Percentage of students who did not use or their partner did not use any method of contraception the last time	Healthy Kids Colorado Survey	HSR	2023

they had consensual sex in the past three months			
Percentage of children under age 18 who are uninsured	American Community Survey	County	2018-2022 (5-year estimates)
Percentage of people under age 21 who are insured by Medicaid (monthly average)	Department of Health Care Policy and Financing; Colorado Demography Office	County	State fiscal year 2023-2024; 2024
Percentage of families with children ages 0-18 who do not have a usual source of care in the past year	Colorado Health Access Survey	HSR	2021-2023 (combined)
Percentage of children ages 0-18 who did not have a dental visit in the past year	Colorado Health Access Survey	HSR	2021-2023 (combined)
Percentage of children ages 0-18 who did not have a general doctor care visit in the past year	Colorado Health Access Survey	HSR	2021-2023 (combined)
Percentage of people ages 5-21 who needed but didn't get mental health care services in the past year	Colorado Health Access Survey	HSR	2021-2023 (combined)
Percentage of students who were eligible for free or reduced lunch	Colorado Department of Education	School	2023-2024 school year
Percentage of students who are English language learners	Colorado Department of Education	School	2023-2024 school year
School dropout rate (all grades)	Colorado Department of Education	School	2023-2024 school year
Percentage of students who are immigrants or migrants	Colorado Department of Education	School	2023-2024 school year

Percentage of students who were treated badly or unfairly in school because of their race or ethnicity in the past 12 months	Healthy Kids Colorado Survey	HSR	2023

Additional Data Assumptions and Calculations

School Dropout Rates. Data available for school dropout rates included schools with low student enrollment or with a small number of students who dropped out. For data protection, the Colorado Department of Education provided dropout rates as ranges for schools with very low or very high dropout rates. To increase the amount of data available across schools in the analysis, CHI set the dropout rate equal to the dropout range. For example, if the rate was reported as "0.5% or lower" as a combined range, CHI set the true value within that range to 0.5%.

Medicaid Coverage. Data were gathered from the Colorado Department of Health Care Policy and Financing for the state fiscal year, which was from July 2023 to June 2024. A monthly average was taken to calculate the number of people under the age of 21 covered by Medicaid. To determine a denominator population for those under 21, CHI used the Colorado Demography Office projection counts for the year 2024, which follows a calendar year. This timing discrepancy of the data may have some impact on the true percentage of those covered by Medicaid during the 2023-2024 period.

Limitations

The limited availability of health-related data at the school level limits the precision of the index. In particular, the inclusion of county- and HSR-level data in the index makes it more difficult to differentiate among schools in the same region and, in some cases, distorts the relative need of individual schools. Weighting school- and county-level data more heavily than HSR-level data helps account for this but does not completely resolve these limitations.

Data availability and missing data across all data sources also influence the relative need calculated from the index. For example, not all schools or districts consistently participate in the Healthy Kids Colorado Survey each year and certain regions have missing data for the 2023 survey year. Some rural areas of the state may have fewer data metrics available than some urban areas where sample size is less of an issue. For these schools, their index score will be more heavily weighted toward metrics that are available for their region or county.

Health Statistics Regions

Several sources of data in the index have data available at the HSR level. Map 1 outlines what counties are included in different HSR regions across the state.

Map 1. Colorado's 21 Health Statistics Regions