

Using Chronic Absence in a Multi-Metric Accountability System

CORE-PACE RESEARCH PARTNERSHIP

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Summary and policy implications

- Chronic absence as measured in the CORE District’s School Quality Improvement System is feasible for inclusion in California’s accountability measurement system using the Alberta approach for rating school achievement based on outcome and improvement, or alternatively through an approach that simply looks at performance in a given school year.
- Calculating change in the Alberta approach requires 3 years of data, which the state does not currently have. A one-year status measure identifies 91% of schools identified as a “concern,” bringing into question the need for improvement data on this indicator as part of a state accountability system. However, the state could reasonably use just one year of data, which makes the chronic absence indicator feasible to pursue in the short term before there are multiple years of data.
- Measuring change in status does not represent a true growth measure, which can be particularly problematic for statistics such as chronic absenteeism, which hinge on the behavior of only a few students. Therefore, in future years, more sophisticated growth models should be considered that account for student attrition.
- As with all other indicators, the state must consider how a measure of chronic absence will be used in conjunction with other measures and with respect to subgroup performance, particularly in the identification of the lowest 5% of schools.

Purpose

With the passage of the Every Student Succeeds Act (ESSA) of 2015, California must integrate additional measures of student and school performance into the state-wide accountability system. In making decisions about what measures to include and how, we hope the state can learn from the CORE Districts, who have developed a robust measurement system that represents nearly a million of California’s students. To support the conversation as the State Board of Education considers if/how to include chronic absenteeism data in the state’s accountability system, PACE has conducted an analysis of CORE’s student chronic absenteeism data to explore the feasibility and appropriateness for use within California’s accountability measurement system.

In February 2016, WestEd laid out a framework for how the state could use both outcome and improvement in graduation rates in the accountability metric system.¹ The table below lays out this basic framework (which is adapted from the accountability system in Alberta, Canada). In this document, we use this same framework with CORE’s chronic absence data as a demonstration of feasibility and appropriateness.

Improvement	Outcome				
	Very high	High	Intermediate	Low	Very Low
Improved significantly	Excellent	Good	Good	Good	Acceptable
Improved	Excellent	Good	Good	Acceptable	Issue
Maintained	Excellent	Good	Acceptable	Issue	Concern
Declined	Good	Acceptable	Issue	Issue	Concern
Declined significantly	Acceptable	Issue	Issue	Concern	Concern

Approach

In the CORE District’s School Quality Improvement Index (SQII), students are considered to be chronically absent if they have an attendance rate of less than 90%. The number of chronically absent students is then aggregated to the school level to determine the number and proportion of chronically absent students for each school. The analyses here are based on data from Fresno, Long Beach, Los Angeles, Oakland, San Francisco, and Santa Ana Unified School Districts for the three-year period from 2012-13 to 2014-15. 1,075 schools are represented in the analysis, representing 13% of California’s student population.

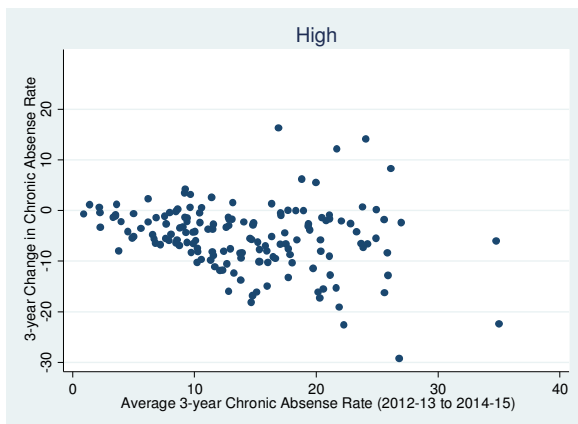
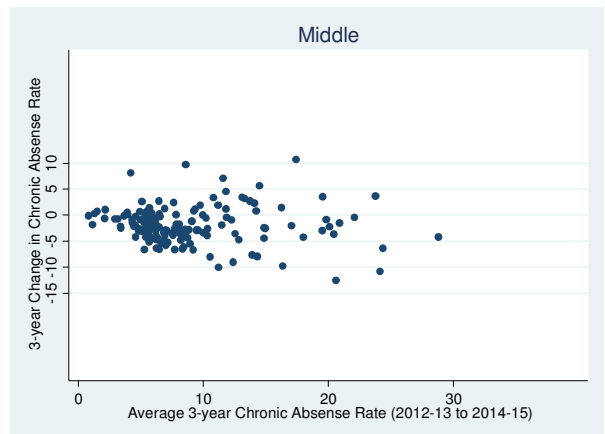
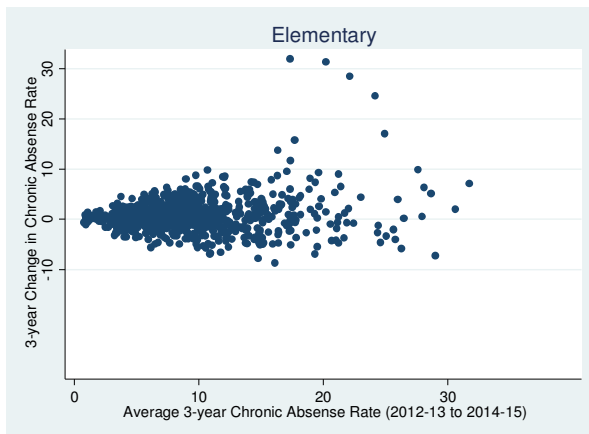
Following WestEd’s analysis, “outcome” was derived from the 3-year average of the chronic absenteeism rate while “improvement” was calculated by measuring the 3-year percentage point change in chronic absenteeism rate (e.g., number of percentage points increased or decreased for each school). It is important to note that the analysis represented here reflects school-level data, not LEA-level data as in the WestEd analysis.²

¹ <http://www.cde.ca.gov/be/pn/im/infomemofeb2016.asp>

² There are 772 elementary schools, 154 middle schools, and 162 high schools represented in the CORE districts’ data used in this analysis. Multi-level schools have duplicated records in the analytic file to reflect data for students

Relationship between outcome and improvement in chronic absence

In CORE’s SQII, a high level of chronic absence represents an undesirable outcome, and a negative change over time is good, as it represents improvement. Using these data, the constructs of outcome and improvement using this methodology are not highly correlated (ES=15%, MS=-9%, HS=-21%). This means that the chronic absence rate for elementary schools increased over the three year period for schools with higher average levels of chronic absence, whereas for middle and high schools, chronic absence *decreased* in schools with high levels of chronic absence. The scatterplots below show these relationships by school level. One of the things we notice in these outcome versus improvement charts is that schools with low levels of chronic absence show much less change than schools with higher levels of chronic absence.



at different levels. We kept only the school record that matched the “API school level.” For example, if a K-8 is listed as an elementary school in “API school level,” we only retained those values.

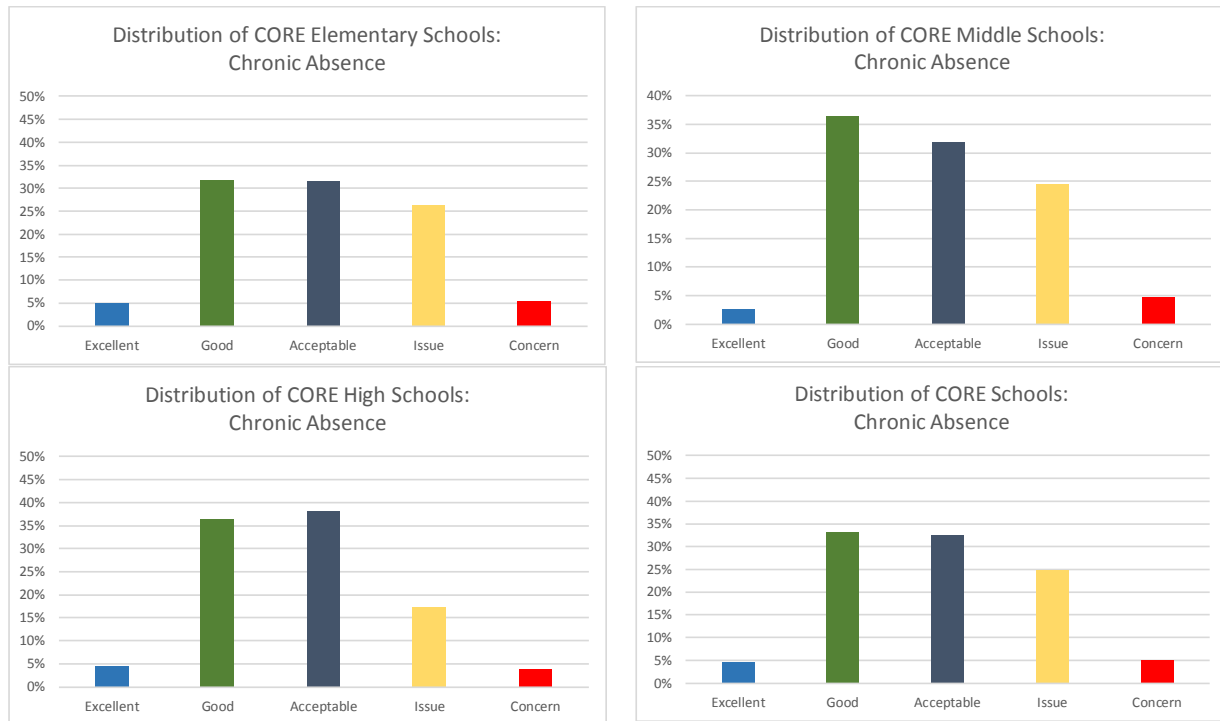
With the goal of replicating the WestEd analysis, we identified schools in the 5th, 25th, 75th, and 95th percentile on outcome and improvement. As shown in the table below, because the relationships vary by school level, the cut points for both outcome and improvement must vary by school level as well. For example, elementary schools at the 5th percentile of performance have 26.1% of students chronically absent, whereas the chronic absence rate for middle schools at the bottom 5th percentile is 20.5%. Similarly, for improvement, elementary schools at the 95th percentile reduced their chronic absence rate by 4.1 percentage points from 2012-13 to 2014-15, whereas high schools at the 95th percentile decreased their chronic absenteeism rate by 16.3 percentage points

Percentile	Elem (N=770)		Middle (N=151)		High (N=158)	
	Outcome	Improvement	Outcome	Improvement	Outcome	Improvement
5 th	26.1	6.0	20.5	3.6	26.1	4.3
25 th	19.6	2.2	11.5	0.2	19.6	-1.4
75 th	9.4	-1.0	5.5	-3.7	9.4	-8.4
95 th	3.6	-4.1	3.1	-7.7	3.6	-16.3

To fit these data to the Alberta model, for outcome we used 5th, 25th, 75th, and 95th percentile cuts, with specific cut points varying by level. (Below 5th percentile is very low, 5th-25th is “low”, 25th-75th is “intermediate”, 75th-95th is “high” and over 95th is “very high.”) For improvement, the cut points need to follow a more practical logic, since values defined as “improvement” also have to show positive change. For this reason, the middle category (25th-75th percentile, or “maintain”) should always include zero. For this reason, in high school, the “maintain” category is expanded to include additional schools that showed no or minimal improvement (less than 1). This calculation method identifies schools as shown in the table below.

Improvement	Outcome				
	Very high	High	Intermediate	Low	Very Low
Improved significantly	0	0	18	20	7
Improved	4	36	128	46	14
Maintained	49	152	268	77	15
Declined	4	27	112	45	5
Declined significantly	0	2	16	22	12

As shown in the charts below, this calculation method roughly follows the distribution suggested in the Alberta model. However, because high schools and middle schools were skewed toward reductions in chronic absence, fewer of them are identified as concern schools.



Alberta approach vs. one-year status

Because the state does not currently have 3 years of chronic absence data to utilize in a state-wide multi-metric framework, we investigated how this 3-year system compares to the 1-year status indicator used in the SQII. The SQII chronic absence indicator uses one year of data (2014-15), with schools given index ratings based on a performance level set in the previous year.³ The below table shows the distribution for all students across the CORE SQII levels compared with the Alberta-style chronic absence indicator.

³ Note: CORE’s SQII ranking levels were set in 2013-14 and will not change for multiple years. For this reason, schools in level 1 do not represent the lowest decile of schools, but rather schools that would have been in the lowest decile based on 2013-14 data.

		Alberta Model				
		Excellent	Good	Acceptable	Issue	Concern
CORE SQII	1	0	1	9	72	49
	2	0	1	4	12	2
	3	0	2	18	48	3
	4	0	5	19	28	0
	5	0	14	62	46	0
	6	0	37	77	43	0
	7	0	24	54	11	0
	8	0	34	49	4	0
	9	0	77	35	2	0
	10	53	163	21	0	0

The relationship between these two approaches presents two major implications. First, the 5-point outcome/improvement indicator is correlated with the CORE SQII at .78, with 91% of the schools in the “concern” category identified in the SQII level 1. Since the 1-year status indicator identifies essentially the same schools as the 3-year outcome/improvement indicator, the state could reasonably use just one year of data, which makes the chronic absence indicator feasible to pursue in the short term before there are multiple years of data.

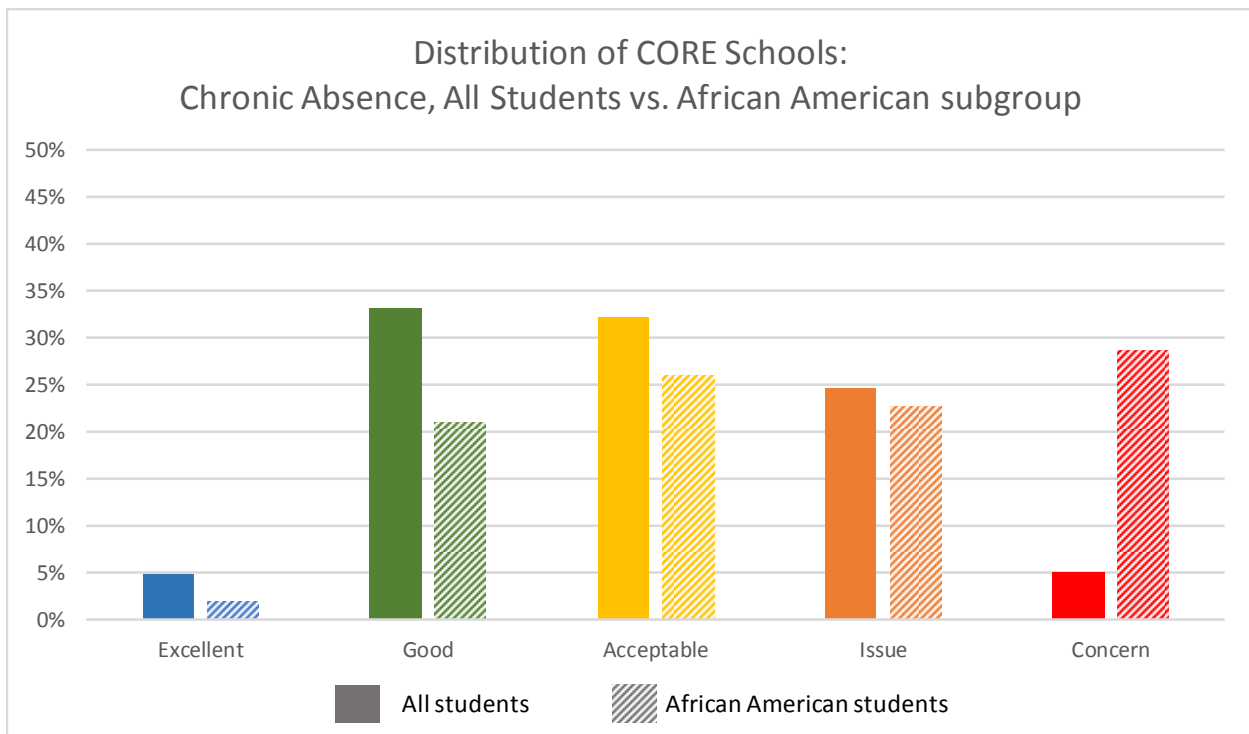
Second, there are 82 schools that are identified in the bottom level of the SQII status indicator that are not identified in the “concern” category of the outcome/improvement approach. Because of the way the Alberta metric is calculated, these schools are not included because they have shown substantial improvement. If we are excluding schools for intervention because they have improved, we want to be very sure that we are observing “real” growth. However, because this measure shows a change in chronic absence across years, it is possible that the change we observe is not “real” growth. For example, the median elementary school enrollment is 539 students; moving from a chronic absence rate of 10% to 8% is a large change in the distribution, but only represents the change in attendance of 10 students. This change could be real, or, particularly in schools with high student mobility, it could be an artifact of a changing student population. (Or worse, this change could represent the strategic movement of offending students from the school.)

Introducing additional dimensions

In the development and selection of any metric, it is important to consider how it functions within the system of measures. Under ESSA, the state will need to incorporate measures of student academic achievement, academic growth, English proficiency, and graduation rates, in addition to the “non-academic” measure that chronic absence could represent, with “substantial weight” on each indicator. Across all of these measures, the state will need to include multiple

subgroups⁴, and the multi-metric system must identify schools in which any subgroup of students is “consistently underperforming.” This multi-metric system produces many dimensions on which schools might be identified for Comprehensive or Targeted Support and Improvement (CSI or TSI).

As an illustration of how subgroups can be used with this framework, we applied the same calculation to the African American subgroup and find that a substantial number of additional schools are identified as a “concern.” As shown in the chart below, nearly 30% of schools are in the lowest category with their African American subgroup, although only 5% are identified as such with all students. In developing this system, California’s policymakers must consider how schools with high chronic absence among their subgroups are treated, both in relation to all student performance on that measure and across all of the measures in the system.



⁴ Subgroups defined under ESSA include each major racial/ethnic group, economically disadvantaged students, students with disabilities, English learner status, gender, and migrant status.