Higher Chronic Absenteeism Threatens Academic Recovery from the COVID-19 Pandemic

Thomas S. Dee
Stanford University
tdee@stanford.edu

Abstract—The broad and substantial educational harm caused by the COVID-19 pandemic has motivated large federal, state, and local investments in academic recovery. However, the success of these efforts depends in part on students' regular school attendance. Using newly collected data, I show that the rate of chronic absenteeism among U.S. public-school students grew substantially as students returned to in-person instruction. Specifically, between the 2018-19 and 2021-22 school years, the share of students chronically absent grew by 13.5 percentage points—a 91-percent increase that implies an additional 6.5 million students are now chronically absent. State-level increases in chronic absenteeism are positively associated with the prevalence of school closures during the 2020-21 school year. However, these increases do not appear to be associated with enrollment loss, COVID-19 case rates, school masking policies or declines in youth mental health. This evidence indicates that the barriers to learning implied by the sharp increase in chronic absenteeism merit further scrutiny and policy responses.

The substantial, negative effects of the COVID-19 pandemic on multiple indicators of well-being and development among children in the United States are increasingly well-documented. For example, evidence of deteriorating youth mental health recently motivated a coalition of leading health organizations to declare a national emergency as well as the publication of a rare public-health advisory from the U.S. Surgeon General (1, 2). Recently released federal testing data also show that pandemic declines in student achievement in mathematics and reading largely erased the gains of the previous twenty years (3). This evidence motivated an unprecedented federal investment of nearly $190 billion to support schools and students in academic recovery from the pandemic. Tracking data indicate schools are often using these resources to offer new in-school learning opportunities such as tutoring and summer programs as well as to fund specialist support staff (4).

However, the effectiveness of these investments relies in part on the expectation that students—particularly those that are most educationally vulnerable—can access these supports through consistent school attendance. More generally, consistent school attendance is an educationally consequential behavior. Both correlational and quasi-experimental studies find that student absences have negative effects on several academic and longer-run economic outcomes (5, 6, 7).

In this report, I present and examine new and comprehensive data on how the prevalence of chronic absenteeism changed in U.S. public schools over the pandemic. Chronic absenteeism, defined as missing 10 percent or more of school for any reason, is a compelling and widely used index for a diverse variety of barriers to student learning. The underlying causes that contribute to chronic absenteeism include both out-of-school factors related to economic disadvantage and health as well as in-school factors such as school climate, safety, and practices related to instruction, discipline, and student supports (7, 8).

A large majority of U.S. states now collect annual data on chronic absenteeism and use this measure as a key performance indicator in school-accountability systems mandated by the federal Every Student Succeeds Act (9). I gathered these state-level data for both the 2018-19 and 2021-22 school years by canvassing websites for state departments of education and state "report cards," contacting state officials, and filing public-records requests. These two time periods provide information on both the last full school year untouched by the pandemic and the most current data available after schools returned to in-person instruction almost universally. This effort resulted in complete data for 40 states and the District of Columbia. These locations both used a common definition of chronic absenteeism and had data available for both school years (SI Appendix). They also serve 93 percent of K-12 public-school students in the U.S.

Findings

Figure 1 illustrates, for each location, the chronic-absenteeism rates for the 2018-19 and 2021-22 school years. Notably, every state experienced increased chronic absenteeism with magnitudes varying from 4 to 23 percentage points. During the 2018-19 school year, the enrollment-weighted chronic-absenteeism rate averaged 14.8 percent. In the 2021-22 school year, as students returned to in-person instruction, this average grew to 28.3 percent. This increase of 13.5 percentage points represents 91-percent growth relative to the pre-pandemic value. A paired t-test rejects the null hypothesis that these state-level changes were zero ($P < 0.001$). Given that the public-schools in the 50 states and the District of Columbia served roughly 48 million students in the 2021-22 school year, these results imply an additional 6.5 million students became chronically absent during the recent return to in-person instruction.

The large and broad increases in chronic absenteeism indicate many students are failing to re-engage in schooling as in-person instruction returned. However, the underlying factors behind this striking growth are unclear and the leading state-level changes documented here (n = 41) are poorly powered to assess those causes credibly. Nonetheless, I examined the correlates of the state-level

changes to provide initial, descriptive evidence on this question. For example, the growth in chronic absenteeism has a positive and statistically significant correlation with the 2018-19 rate (r=0.310, P = 0.049), indicating the states with higher pre-pandemic levels of chronic absenteeism experienced larger growth.

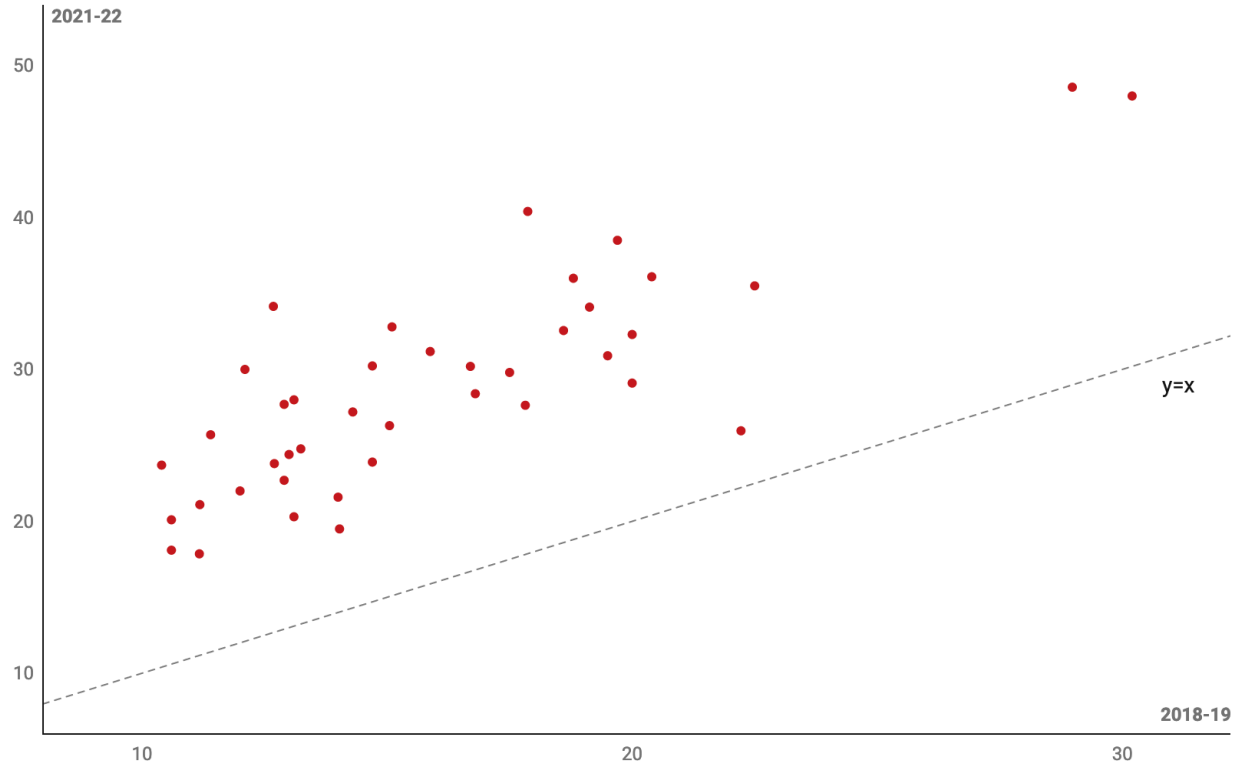

Figure 1—State Chronic-Absenteeism Rates, 2018-19 and 2021-22

One prominent conjecture is the prevalence of remote-only instruction in public schools during the 2020-21 school closures also contributed to increased chronic absenteeism through its impact on students' habits and academic engagement. I find the share of 2020-21 school year in remote-only instruction has a positive and statistically significant correlation with the growth in chronic absenteeism (r=0.464, P = 0.002; SI Appendix). However, in the 32 states with available data, the changed share of teens reporting increased sadness or persistent hopelessness appears unrelated to increased chronic absenteeism (r=-0.085, P = 0.644; SI Appendix).

Increased chronic absenteeism could also reflect attendance responses to increased pandemic-related illnesses and infection risk during the return to classrooms (10). However, the state-level growth in chronic absenteeism has a positive but statistically insignificant correlation with a state-level measure of per-person COVID-19 cases during the 2021-22 school year (r=0.144, P = 0.369; SI Appendix). Relatedly, increased chronic absenteeism could also reflect how school-attendance decisions responded to state masking regulations during the return to classrooms. While most states had no explicit policy, 16 states required masking in classrooms while 8 states explicitly banned such requirements (SI Appendix). The growth in chronic absenteeism was similar across states with different masking requirements. Specifically, an ANOVA indicates chronic-absenteeism growth did not have a statistically significant relationship with these policy choices (P = 0.208).

Other possible challenges to interpreting increased chronic absenteeism concern the validity of the state-constructed measures. For example, between the 2018-19 and 2021-22 school years, U.S.

public schools experienced historically unprecedented enrollment declines of 2.3 percent. These declines reflected demographic change, responses to remote-only instruction, and shifts to private schools and homeschooling (11, 12). If this enrollment loss occurred differentially among those unlikely to be chronically absent, it would bias the observed growth in chronic-absenteeism rates upward. The correlation coefficient between the growth in chronic-absenteeism and the percent change in enrollment, while negative, is statistically insignificant (r=-0.250, P = 0.115; SI Appendix). Furthermore, a bounding exercise demonstrates the direct empirical relevance of enrollment decline can only be negligible. Specifically, under the extreme assumption that enrollment loss only occurred among those who are not chronically absent, the implied increase in the measured chronic-absenteeism rate is roughly one percentage point or less over a range of plausible values for the magnitude of enrollment loss and baseline chronic absenteeism (SI Appendix).

Another potential issue is that, while these states share a definition of chronic absenteeism as missing 10 percent or more of school, they differ in defining a valid day of attendance (13). Most states require a half-day of attendance or more. Others use hourly or period-based measures or allow this to be determined in a local or unclear manner (SI Appendix). However, the growth in chronic absenteeism was similar across states with different definitions of an attendance day. Specifically, an ANOVA cannot reject the hypothesis that these state differences are unrelated to the growth in chronic absenteeism (P = 0.793). Finally, a multiple regression of chronic-absenteeism growth on the measures available for all 41 observations indicates that only the share of the 2020-21 school year spent in remote-only instruction is a significant predictor (b=10.13, P=0.032).

Discussion

This evidence indicates chronic absenteeism grew sharply among students across the U.S. as schools returned to in-person instruction. The exact causes of this striking growth are unclear. However, the state-level changes have statistically significant, positive correlations with baseline levels of chronic absenteeism and the prevalence of 2020-21 school closures to in-person instruction. They do not appear to be correlated with other observed factors such as the declines in youth mental health, COVID-19 infection rates, state masking requirements, enrollment loss, and attendance definitions.

The limited, early evidence from several states that high chronic-absenteeism rates continued through the just-completed 2022-23 school year underscores the continuing importance of these large increases and their underlying causes. A recent survey of 21 school districts also found that chronic absenteeism remains high (14). Notably, the subgroup data available for several states also indicate that the pandemic growth in chronic absenteeism exacerbated pre-existing inequalities. Specifically, these increases, though similar across male and female students, were comparatively large among economically disadvantaged students as well as Black students and Hispanic students

The evidence presented here suggests the imperative both to understand the sources of the rise in chronic absenteeism and to address it with well-implemented, evidence-based policies and practices. Intervention studies suggest that chronic absenteeism can be reduced through both preventative school-wide efforts and more intensive and targeted initiatives that identify and support chronically absent students. Examples of effective school-wide strategies include providing engaging, culturally relevant instruction and school-based supports such as free meals, health care (e.g., asthma management), and social services (7, 15). Another particularly promising school-wide practice is to engage and inform families about their child's school attendance. Doing so through carefully worded postcards and text messages is particularly notable as a low-cost and scalable strategy. For students who are chronically absent, early detection and more intensive engagement through home visits and mentoring programs have also shown positive results. Undertaking these different approaches at scale is likely to require focused leadership as well as financial support as local districts anticipate the "fiscal cliff" of expiring federal support for pandemic recovery.

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Supporting Information for "Higher Chronic Absenteeism Threatens Academic Recovery from the COVID-19 Pandemic"

Sample Construction and Variables

This study necessarily excluded ten states for different reasons. Four states (Hawaii, Montana, New Hampshire, and Wyoming) use alternative definitions of chronic absenteeism. Notably, these measures also show increases similar to those reported here where available for both time periods. Two states (Iowa and South Carolina) have not yet reported their 2021-22 measures while 2018-19 data were unavailable for three states (Idaho, Kansas, and Louisiana). And Vermont does not include chronic absenteeism in its school-accountability system and does not produce a comparable chronic-absenteeism rate.

I measured the state shares of the 2020-21 school year in which public schools offered remote-only instruction by using the "School Learning Modalities, 2020-21" dataset collected by the Centers for Disease Control and Prevention and weighting the district-week observations by school enrollment (1).

To identify COVID-19 cases during the 2021-22 school year, I relied on weekly counts of new COVID-19 cases reported by the Centers for Disease Control and Prevention for each state (2). Specifically, I aggregated by state the weekly counts of COVID-19 cases over the period from August 1, 2021 through May of 2022. I converted these state-level counts to a rate using U.S. Census Bureau's Vintage 2022 estimates of the state resident population as of July 1, 2021 (3).

I relied on a news article to identify state masking requirements (i.e., mask mandate, no policy, masking mandates banned) for the 2021-22 school year (4). Nevada only mandated masking in counties with populations over 100,000. As this covered the vast majority of the state's population, I coded Nevada as a mask-mandate state.

To identify K-12 public-school enrollment changes by state, I relied on Fall 2018 and Fall 2021 counts from different editions of the U.S. Department of Education's Digest of Education Statistics and converted these counts to a percent-change measure (5).

State-constructed chronic-absenteeism rates are based on student-level determinations of chronic absenteeism and the share that miss 10 percent or more of school. However, how states operationalize this common metric differs somewhat. I identified how a state defines a day of attendance for in-person learning as a 5-category variable (i.e., half-day or more; more than a half-day, an hourly or period-based measure, locally determined, and unknown) based on data collection by Attendance Works (6). Based on the language of their definitions, I also coded Illinois, Vermont, and Virginia as using an hourly or period-based measure.

I also note that there are slight differences across states in which students are included in their reported chronic-absenteeism rate. For example, many states (e.g., Illinois, Massachusetts, Tennessee, and New Jersey) base their chronic-absenteeism rate on ever-enrolled students in a year (i.e., "cumulative enrollment") but make the student-level determination based on whether a student attended school for 10 percent or more of the instructional days for which they were enrolled. Other states use this approach but only using data from students who meet a modest minimum-enrollment requirement. For example, the chronic-absenteeism rates in New York and Texas are based on students enrolled for at least 10 days while California's calculation is based on students who have over 30 days of

"expected attendance." Three lower-enrollment states appear to define chronic absenteeism in a manner likely to impart a downward bias to the growth in chronic-absenteeism reported here. Arkansas code specifies a rule in which students who are absent for 10 consecutive school days (and are "unaccounted for or cannot be contacted") are dropped from attendance records. This implies that some students who became deeply disengaged from school during the return to in-person instruction in 2021-22 are dropped from the state's chronic-absenteeism calculation (i.e., imparting a downward bias to the growth in reported chronic-absenteeism). Somewhat similarly, Oklahoma's calculation excludes students who are disenrolled for 10 or more consecutive instructional days. Also, Alabama determines chronic absenteeism based on students who missed 18 or more instructional days "during the time the student was enrolled." This approach won't identify students who missed 10 percent or more of their enrolled instructional days but disenrolled before missing 18 days. Perhaps unsurprisingly, these three states had the lowest reported growth in chronic absenteeism during the pandemic out of the 41 observations. I note that dropping these three states does not meaningfully change the results.

Bounding the Impact of Differential Attrition

One potentially confounding interpretation of this study's main finding is that the well-documented pandemic exodus from public schools contributed meaningfully to the broad and sharp increases in chronic absenteeism documented here. In particular, over this period (i.e., 2018-19 to 2021-22), K-12 public-school enrollment fell by over 2 percent nationally with particularly large declines in several states (e.g., a 5-percent decline in California). If these enrollment declines were differentially among those not likely to be chronically absent, it would impart a positive—and possibly confounding—bias to the changes reported here.

However, a simple bounding exercise illustrates how the maximum bias attributable to enrollment declines could only contribute negligibly to the dramatic increases in chronic absenteeism observed. Specifically, consider a scenario in which the chronic-absenteeism rates in pre and post periods are defined as:

$$C^{Pre} = \frac{n_1^{Pre}}{n_0^{Pre}+n_1^{Pre}} \quad (1)$$

$$C^{Post} = \frac{n_1^{Post}}{n_0^{Post}+n_1^{Post}} \quad (2)$$

where *n* represents the counts of students with subscripts indicating those who are chronically absent (1) and not (0) for a given period (i.e., pre or post). Now suppose that total enrollment fell by α percent over this period:

$$n_0^{Post} + n_1^{Post} = (1-\alpha)(n_0^{Pre} + n_1^{Pre}) \quad (3)$$

And make the highly conservative assumption that the students who left were only those who would *not* be chronically absent. This bounding assumption also implies that "post" count of students who are *not* chronically absent falls to:

$$n_0^{Post} = n_0^{Pre} - \alpha(n_0^{Pre} + n_1^{Pre}) = (1-\alpha)n_0^{Pre} - \alpha n_1^{Pre} \quad (4)$$

This assumption also implies that the count of students who are chronically absent students was unchanged:

$$n_1^{Pre} = n_1^{Post} \quad (5)$$

We can now identify what inflated value the "post" chronic-absenteeism rate, C^{Post}, would take under this scenario of maximum differential attrition by placing values from equations (3) through (5) in equation (2):

$$C^{Post} = \frac{n_1^{Pre}}{(1-\alpha)(n_0^{Pre} + n_1^{Pre})} = \frac{1}{(1-\alpha)} C^{Pre} \quad (6)$$

Equation (6) indicates the values of C^{Post} for different values of α and baseline chronic-absenteeism rates, C^{Pre}. This expression makes it possible to explain the change in the chronic-absenteeism rate, under the most conservative assumption of attrition in terms of the rate of enrollment loss, α, and C^{Pre}.

$$C^{Post} - C^{Pre} = \frac{1}{(1-\alpha)} C^{Pre} - C^{Pre} = \frac{\alpha}{(1-\alpha)} C^{Pre} \quad (7)$$

For a broad range of plausible values, equation (7) implies that the maximum possible bias due to differential attrition is empirically negligible. For example, when both α and C^{Pre} are large (i.e., 0.05 and 0.20, respectively), the implied bias is only 1 percentage point, a small amount relative to the large changes documented in Figure 1.

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