



NATIONAL CENTER FOR Rural Education Research Networks

NOVEMBER 2022

Improving Rural Attendance

Trends in Student Absenteeism in NCRERN's New York and Ohio Rural Research Network

Katherine Kieninger, Jennifer Ash,
Kellie Solowski, and Elise Swanson



Center for Education Policy Research
HARVARD UNIVERSITY

NCRERN is led by Thomas Kane, Douglas Staiger, Christopher Avery, and Jennifer Ash. The NCRERN team consists of Kellie Solowski, Hayley Didriksen, Elise Swanson, Dean Kaplan, Andrea Cornejo, and Sativa Thompson. The pilots reported on in this brief were also supported by Katherine Kieninger and Lisa Sanbonmatsu. NCRERN would not exist without the participation of our districts in New York and Ohio, along with the Management Council and Regional Information Centers. Thank you for sticking with us through the pandemic to design, implement, and test these interventions.

The research reported here was supported by the Institute of Education Sciences, U.S. Department of Education, through Grant R305C190004 to Harvard University. The opinions expressed are those of the authors and do not represent views of the Institute or the U.S. Department of Education.



Introduction

Student attendance is a critical first step for student learning and development. Absences are strongly predictive of lower performance on standardized assessments (Ginsburg et al., 2014; Gottfried, 2009, 2011), a lower high school GPA (Gottfried, 2010), and higher rates of high school dropout (Hickman et al., 2007; NFES, 2009). Increasingly, student attendance is also the focus of policy initiatives, with the majority of states including chronic absenteeism in their Every Student Succeeds Act (ESSA) plan in some way (Kostyo et al., 2018). Given the negative academic and social implications of absenteeism and its bearing on school accountability measures, reducing absenteeism has become a priority for school districts across the country. Much of the research informing the conversation about the association between absence rates and student outcomes was conducted in urban settings, with relatively little showing the patterns and consequences of absenteeism for students living in rural communities (Chang & Romero, 2008). The National Center for Rural Education Research Networks (NCRERN) was formed in part to address this gap in the literature, focused on generating quantitative evidence in rural settings and partnering with rural districts to improve student outcomes, including attendance.

In this brief, we draw on historical administrative data from rural districts in New York and Ohio to illustrate patterns in student absenteeism, chronic absenteeism, predictors of student absences, and the link between student absences and achievement. The districts included in this brief are part of NCRERN's first rural research network, which began in 2019 with 50 districts classified as 'rural' by the National Center for Education Statistics and/or the Ohio Department of Education. We use administrative data covering the 2014–15 through 2018–19 school years. These descriptive analyses paint an important picture of the trends, context for, and potential consequences of student absenteeism in rural districts.

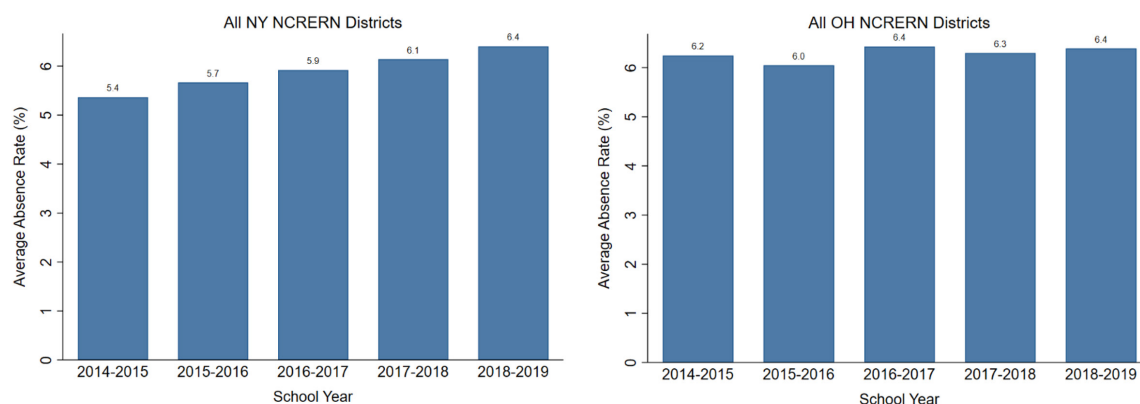
The National Center for Rural Education Research Networks (NCRERN) was founded to expand the use of evidence-based decision-making in rural education. NCRERN partners with networks of rural school districts to generate and evaluate strategies for improving student outcomes.

This brief describes trends in student absenteeism and the relationship between absenteeism and achievement for students in rural districts in New York and Ohio in the years prior to districts' involvement in NCRERN. Descriptive analyses demonstrate that NCRERN districts in New York saw increases in absence rates between 2015–16 and 2018–19, while absence rates in Ohio fluctuated slightly year to year. We also see that absenteeism is not driven solely by chronically absent students, that absence rates are higher among students in upper grades, and that each day absent predicts lower academic achievement, particularly in math.

Student Absenteeism in Rural New York and Ohio

Although the rural research network cuts across states to include districts in both New York and Ohio, we present trends in student absenteeism by state to highlight key differences in the districts' context across states. We begin by looking at students' average days absent¹ over time. In rural New York districts participating in NCRERN, students on average were absent between 9 and 11 days each year between 2014–15 and 2018–19, with the average number of days absent increasing slightly each year. In rural Ohio districts participating in NCRERN, students on average missed between 10 and 11 days of school each year between 2014–15 and 2018–19, although we do not observe a steady increase or decrease in average days absent over time. Figure 1 contrasts average absence rates among rural districts participating in NCRERN in New York and Ohio.

FIGURE 1. AVERAGE STUDENT ABSENCE RATES IN NCRERN DISTRICTS, BY YEAR AND STATE



As shown in Figure 1, absence rates are similar in New York and Ohio districts participating in NCRERN, around 6% each year. However, we see that absence rates are increasing slightly over time in New York, while there is not a clear trend of absences increasing or decreasing over time in Ohio.

We next disaggregate absence rates by grade level, in line with prior work documenting higher rates of chronic absenteeism among high school students than among students in elementary school (U.S. Department of Education, 2019). To examine this, we look at average absence rates by grade across all years, 2014–15 (Ohio) or 2015–16 (New York)

¹ Average days absent is the average of each student's days absent, weighted by the number of days enrolled. Average absence rate is the average of each student's absence rate (days absent/days enrolled), weighted by days enrolled.

through 2018–19, by state. As shown in Figure 2, we see higher average absence among students in upper grades, particularly students in their senior year of high school. This trend is consistent across states.

As shown in Figure 2, absence rates tend to be higher among students in upper middle school and high school than among students in elementary school.

Finally, we examined the relationship between prior-year and current-year absences. We find a strong correlation between the number of days a student is absent in a given year and the number of days they miss in the next year, as shown in Figure 3.

FIGURE 2. AVERAGE STUDENT ABSENCE RATES IN NCRERN DISTRICTS OVER TIME, BY STATE

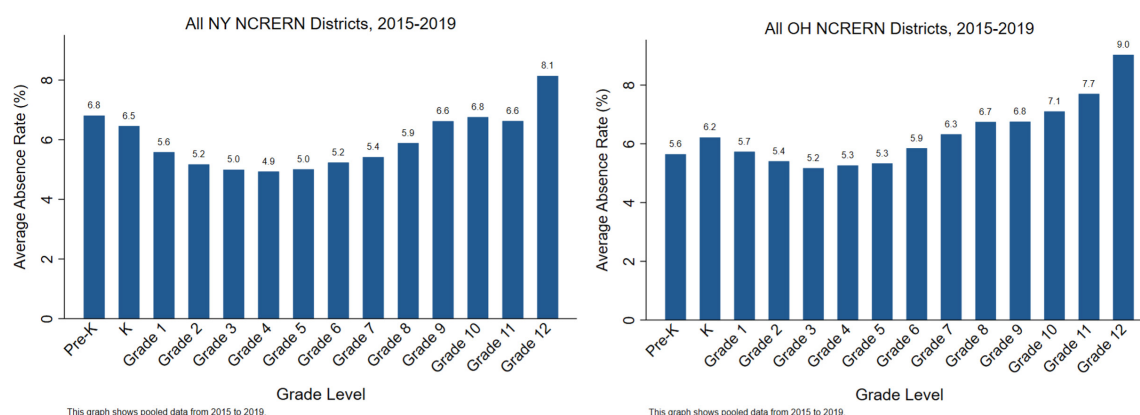
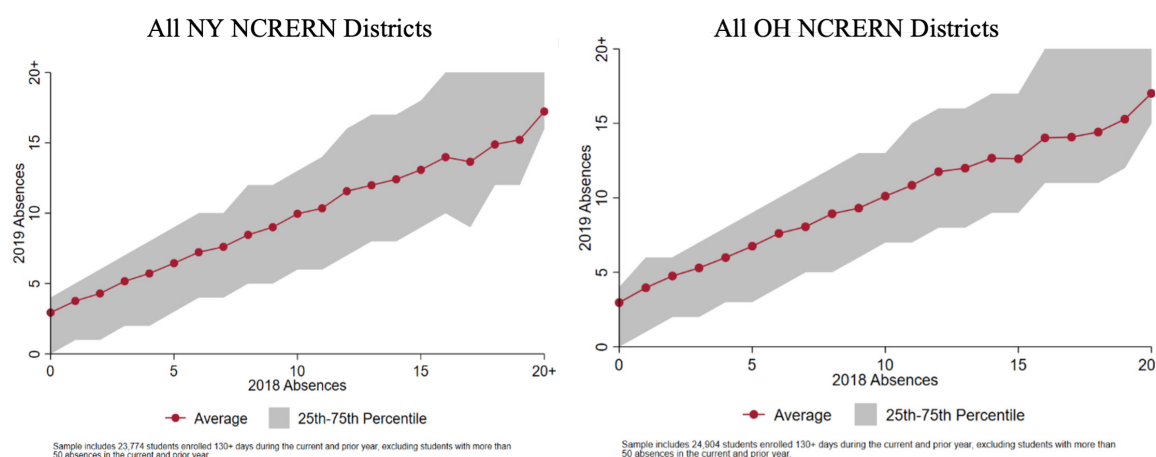


FIGURE 3. RELATIONSHIP BETWEEN CURRENT- AND PRIOR-YEAR ABSENCES, BY STATE

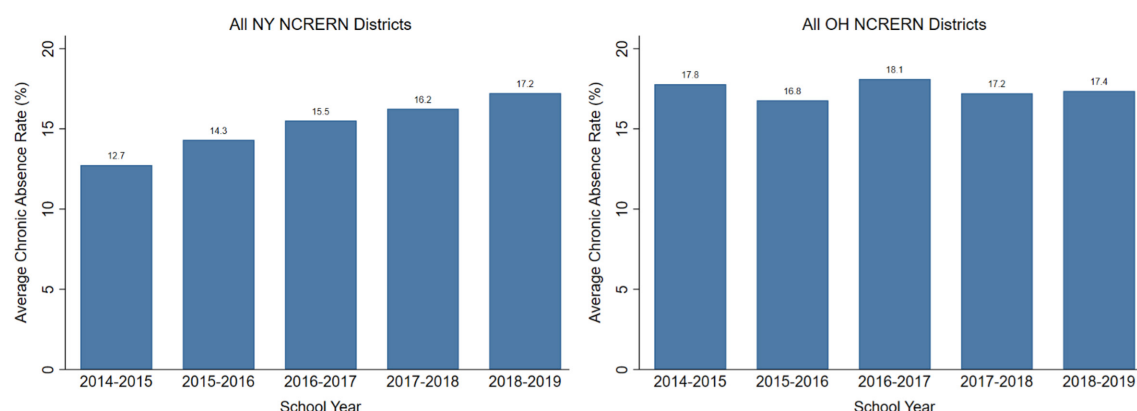


On average, New York NCRERN students who missed five days of school in the 2017–18 school year missed about six days of school in the 2018–19 school year; this tight correlation persists as the number of absences increases. Similar relationships were found in NCRERN Ohio districts. The close correlation between prior-year absences and future absences illustrates how districts can use past attendance data to proactively identify students in need of an attendance intervention.

Chronic Absenteeism in NCRERN Districts

We turn next to chronic absenteeism in rural districts in New York and Ohio participating in NCRERN. Figure 4 shows average chronic absenteeism rates² in NCRERN districts in New York and Ohio over time.

FIGURE 4. STUDENT CHRONIC ABSENTEEISM RATES IN NCRERN DISTRICTS, BY STATE AND YEAR



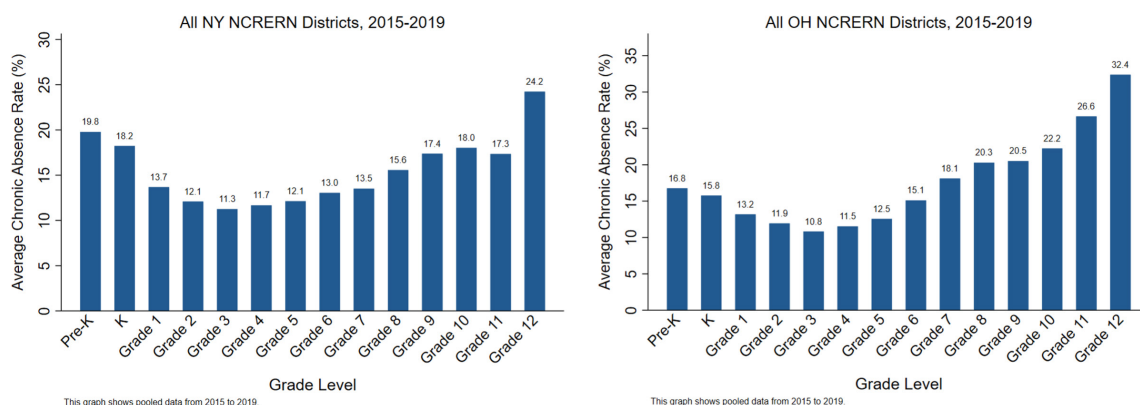
Mirroring the patterns in average absence rates, chronic absenteeism rates in New York increased slightly between 2015–16 and 2018–19, from 14.3% to 17.2%, with increases each year. In Ohio, chronic absenteeism rates were more stable over time, hovering around 17% in each year between 2014–15 and 2018–19.

We disaggregate chronic absenteeism trends by grade level, looking at average rates of chronic absenteeism by grade across years (2015–16 through 2018–19 for New York districts and 2014–15 through 2018–19 for Ohio districts). Similar to overall absence rates, we found much higher rates of chronic absenteeism among students in upper grades versus elementary grades. In New York, on average over 25% of 12th-grade students are

² Average chronic absence rate is the percent of chronically absent students (students with an absence rate of at least 10%), weighed by days enrolled. Average chronic absence rate only includes students who have been enrolled for at least 20 days.

chronically absent, compared to just under 19% of kindergarten students. In Ohio, average chronic absence rates are twice as high among 12th-grade students than kindergarten students: over 30% of seniors versus less than 15% of kindergarteners. Figure 5 illustrates these trends.

FIGURE 5. AVERAGE CHRONIC ABSENTEEISM RATES OVER TIME, BY STATE AND GRADE

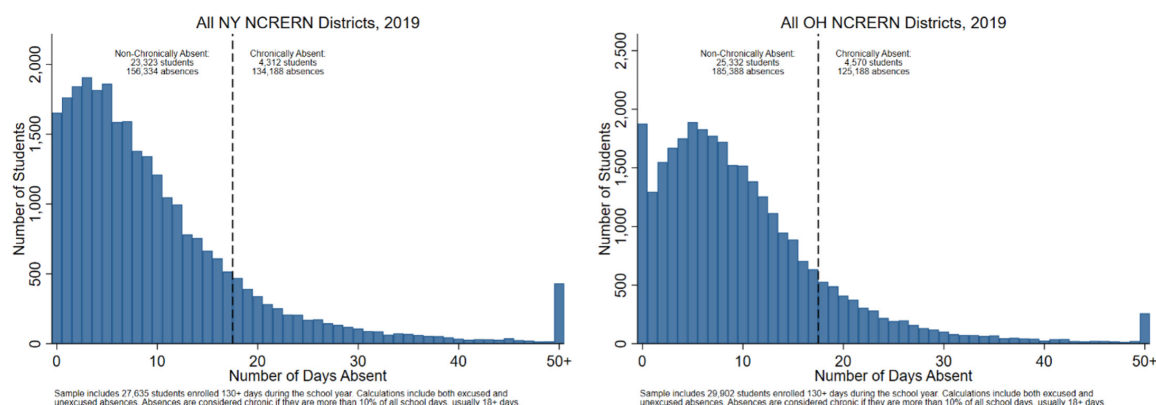


Interestingly, as shown in Figure 5, the prevalence of chronic absenteeism by grade has a roughly u-shaped pattern, with rates highest among the youngest and oldest students and lowest for students in Grades 2 through 6.

While chronic absenteeism is often the focus of policy discussions, a district’s absences may not be driven by chronically absent students. We examined the distribution of absences incurred within NCRERN districts, disaggregated by whether those absences were attributed to chronically absent or non-chronically absent students, focusing just on the 2018–19 school year. This is illustrated in Figure 6.

In New York, 156,334 total absences in the 2018–19 school year were accumulated by 23,323 students who were not chronically absent, compared to 134,188 absences accumulated by 4,312 chronically absent students. In Ohio, 26,305 students accumulated 190,947 absences, compared to 127,086 absences accumulated by 4,640 students. In each state, around 15% of students are chronically absent, yet they account for 40–46% of total absences. Although chronically absent students account for a disproportionate share of missed instructional days, most absences occur among non-chronically absent students. In New York, just over half of absences (54%) occur among non-chronically absent students, while in Ohio around 60% of absences are accumulated by non-chronically absent students. While chronically absent students accumulate a disproportionate number of absences across NCRERN districts, absenteeism is not exclusively a challenge for this population of students.

FIGURE 6. DISTRIBUTION OF ABSENCES BY NON-CHRONICALLY ABSENT AND CHRONICALLY ABSENT STUDENTS IN 2018–19, BY STATE



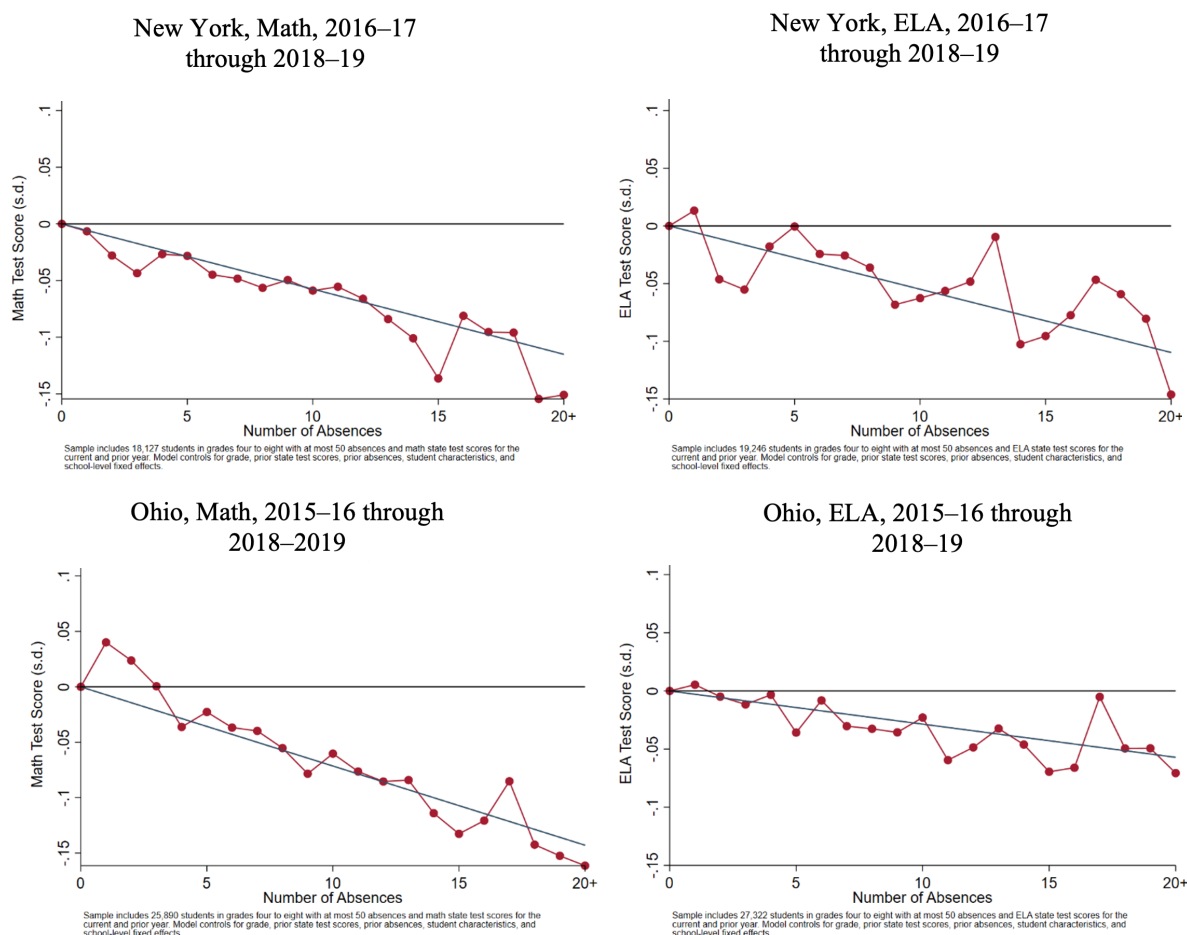
Linking Student Absenteeism and Student Achievement

Across NCRERN districts, the more often students are absent, the worse they perform on end-of-grade math and English language arts (ELA) state assessments in Grades 4 through 8. We examine this relationship using a simple linear regression model (see Figure 7), regressing standardized test scores on current-year absences, prior-year absences, prior-year test score, and school. Note that because of data availability, the years shown differ for New York and Ohio Districts.

As shown in Figure 7, there is a tight, negative relationship between student absences and achievement on state assessments. For example, Ohio NCRERN students who missed 6 days of school scored approximately 0.03 standard deviations lower on their state math assessments than students who were never absent, even after accounting for the influence of students' demographic characteristics, prior-year state test scores, prior-year absences, grade level, and school-level fixed effects. This suggests that every absence is related to incremental losses in student learning, a point that stands in contrast to the emphasis on chronic absenteeism reflected in accountability systems and most policy discourse around absenteeism.

The relationship between absences and performance on ELA assessments is also negative, but the correlation between test scores and absences is weaker for ELA compared to math. Ohio NCRERN students who missed 6 days of school scored approximately 0.01 standard deviations lower on their state ELA assessments. Again, trends are similar for NCRERN districts in New York.

FIGURE 7. RELATIONSHIP BETWEEN STUDENT ABSENCES AND STANDARDIZED TEST SCORES IN FOURTH THROUGH EIGHTH GRADE, BY STATE AND SUBJECT



Why are absences associated with greater losses in math than in English language arts (ELA)?

Analyses of the relationship between absences and achievement consistently find that absences are associated with greater losses in math achievement than ELA. This finding may initially seem puzzling, since students are presumably missing the same amount of math and ELA content on the days they are absent. Partner districts offered a few compelling hypotheses to explain the differences. Math instruction is more sequential and cumulative than ELA instruction, so missing a day of math could lead students to miss key concepts that they need to understand to move on to the next topic covered when they return to math class. Another reason may be that ELA knowledge depends more on out-of-school factors, such as reading habits, than math learning, making it less sensitive to time spent out of school.

Conclusion

The findings in this brief largely echo findings from national studies of student absenteeism. For example, prior work has shown the negative relationship between absences and achievement, as well as higher rates of absenteeism among students in upper versus lower grades. However, little attention has been paid to the question of student attendance outcomes in rural districts. Here, we've begun to address this gap by documenting patterns, correlates, and consequences of student absences in rural New York and Ohio.

These diagnostics, as well as district-specific analyses, were shared with NCRERN districts in the 2019–20 academic year as part of a continuous improvement process.³ Districts then hypothesize potential causes of those patterns of outcomes, and develop, implement, and evaluate interventions designed to improve addresses these root causes and improve student outcomes.⁴ The analyses shown in this brief illustrate how straightforward, descriptive analyses can help drive critical conversations in districts around student absenteeism and focus efforts to improve outcomes. For example, the finding that the majority of absences in a district are accrued by non-chronically absent students may help districts decide to implement universal initiatives to boost attendance rather than focusing exclusively on chronically absent students. Similarly, determining in which grades students are more likely to be absent can help districts focus scarce resources for an intervention aimed at improving student attendance. Absenteeism presents a critical challenge for rural districts. By documenting this challenge and unpacking its nuance, we offer a path forward for districts to address absences and improve student outcomes.

3 For more information on NCRERN's continuous improvement process, please see "Using Continuous Improvement Cycles to Improve Attendance: Lessons from New York and Ohio's Rural Research Networks" (Didriksen, et al, 2022)

4 For additional information on the impact of those pilots please see NCRERN's brief, "Improving Rural Attendance: Results from Six Pilots in NCRERN's New York and Ohio Rural Research Network" (Swanson, 2022).

References

- Chang, H. N., & Romero, M. (2008). *Present, engaged, and accounted for: The critical importance of addressing chronic absence in the early grades*. National Center for Children in Poverty. https://www.nccp.org/wp-content/uploads/2008/09/text_837.pdf
- Didriksen, H., Solowski, K., Ash, J. and Kieninger, K. (2022). *Using continuous improvement cycles to address absenteeism: Lessons from New York and Ohio's rural research networks*. National Center for Rural Education Research Networks.
- Ginsburg, A., Chang, H., & Jordan, P. (2014). *Absences add up: How school attendance influences student success*. *Attendance Works*. https://www.attendanceworks.org/wp-content/uploads/2017/05/Absences-Add-Up_September-3rd-2014.pdf
- Gottfried, M. A. (2009). Excused versus unexcused: How student absences in elementary school affect academic achievement. *Educational Evaluation and Policy Analysis*, 31(4), 392–415.
- Gottfried, M. A. (2010). Evaluating the relationship between student attendance and achievement in urban elementary and middle schools: An instrumental variables approach. *American Educational Research Journal*, 47(2), 434–465.
- Gottfried, M. A. (2011). The detrimental effects of missing school: Evidence from urban siblings. *American Journal of Education*, 127(2), 147–182.
- Hickman, G.P., Bartholomew, M., & Mathwig, J. (2007). *The differential development trajectories of rural high school dropouts and graduates: Executive summary*. The College of Teacher Education and Leadership at the Arizona State University at the West Campus.
- Kostyo, S., Cardichon, J., & Darling-Hammond, L. (2018). *Making ESSA's equity promise real: State strategies to close the opportunity gap*. Learning Policy Institute.
- National Forum on Education Statistics. (2009). *Every school day counts: The forum guide to collecting and using attendance data* (NFES 2009–804). U.S. Department of Education. National Center for Education Statistics.
- Swanson, E. (2022). *Improving rural attendance: Results from six pilots in NCRERN's New York and Ohio rural research network*. National Center for Rural Education Research Networks.
- U.S. Department of Education. (2019). *Chronic absenteeism in the nation's schools: A hidden educational crisis*. <https://www2.ed.gov/datastory/chronicabsenteeism.html>



NATIONAL CENTER FOR
Rural Education
Research Networks



Center for Education Policy Research
HARVARD UNIVERSITY