Increasing School Attendance: Seattle

Proactive communications do not change attendance outcomes

Target a Priority Outcome The U.S. Department of Housing and Urban Development's (HUD) strategic plan promotes educational advancement among HUD-assisted residents as a pathway to self-sufficiency. In the United States there are approximately 350,000 Public Housing units in which school aged children reside, presenting an opportunity to reach many students with education-focused interventions.[1] Prior research has shown that school attendance is an important factor for both student achievement and high school dropout rates.[2] In collaboration with HUD, the Seattle Housing Authority (SHA) and Seattle Public Schools (SPS) implemented three pilots during the 2018-2019 school year aimed at identifying effective strategies to increase attendance and reduce chronic absenteeism.

Translate Evidence-Based Insights Poor school attendance is a common problem. Approximately 13.5 percent of K-12 students nationwide were chronically absent in the 2013-2014 school year.[3] Barriers to good attendance include a misunderstanding of the value of daily attendance among students and parents and parents underestimating the true frequency of their students' absences.

Prior research on the effectiveness of proactive communications to parents and students – for example, letters and text messages – have shown decreases in the number of days absent between 2 and 6 percent as well as decreases in the rate of chronic absenteeism between 10 and 15 percent.[4] Effective interventions highlight the value of daily attendance and attempt to combat misinformation by personalizing the actual number of days students have been absent. Effective interventions also make use of social norms to encourage those with many absences to act more in line with their better attending peers.

In SPS the rate of chronic absenteeism is slightly worse than the national average at 17.4 percent for the 2017-2018 school year.[5] The problem is even more pronounced among student living in SHA-assisted housing: 30.9 percent were chronically absent in the 2017-2018 school year.

SHA and SPS tested three distinct interventions during the 2018-2019 school year aimed at improving attendance and reducing chronic absenteeism. Each of the interventions focused on similar messages encouraging better attendance but differed in the mode of communication and the target audience. Although the original design included personalized communications with each student's current number of absent days, complying with relevant privacy rules prevented data sharing that would allow for personalization, and the messages were more generic statements about the value being in class.

Robocall intervention: The first intervention, implemented by SPS, was sending a robocall the week before the beginning of the fall semester to households with students who had poor attendance the prior year. A senior leader within the school district recorded the message, which emphasized the importance of good attendance

[1] Picture of Subsidized Households. https://www.huduser.gov/portal/datasets/assthsg.html.

[2] Allensworth, Elaine M., and John Q. Easton. 2007. "What Matters for Staying On-Track and Graduating in Chicago Public High Schools: A Close Look at Course Grades, Failures, and Attendance in the Freshman Year. Research Report." *Consortium on Chicago School Research*; Balfanz, Robert, and Vaughan Byrnes. 2012. "The importance of being in school: A report on absenteeism in the nation's public schools." *The Education Digest* 78, no. 2: 4; Ginsburg, Alan, Phyllis Jordan, and Hedy Chang. 2014. "Absences Add Up: How School Attendance Influences Student Success." *Attendance Works*.

[3] Defined as missing 15 or more school days in Department of Education data. Data available at: https://ocrdata.ed.gov/StateNationalEstimations/Estimations_2013_14.

[4] Rogers, Todd, and Avi Feller. 2018. "Reducing student absences at scale by targeting parents' misbeliefs." *Nature Human Behaviour* 2, no. 5: 335.; Rogers, Todd, Teresa Duncan, Tonya Wolford, John Ternovski, Shruthi Subramanyam, and Adrienne Reitano. 2017. "A Randomized Experiment Using Absenteeism Information to "Nudge" Attendance. REL 2017-252." *Regional Educational Laboratory Mid-Atlantic*; Robinson, Carly D., Monica G. Lee, Eric Dearing, and Todd Rogers. 2018. "Reducing student absenteeism in the early grades by targeting parental beliefs." *American Educational Research Journal* 55, no. 6: 1163-1192.

[5] SPS defines chronic absenteeism as missing 10 percent of all school days, or 18 days if a student is enrolled the whole year.

Table 1: Interventions, populations, and timing

	Robocall	Postcard	Text
Intervention	An automatically dialed phone call from a leader of the school district encouraging good attendance.	Comparing the effect of a letter versus a postcard sent to SHA students to encourage good attendance over the first 20 days of the semester.	A series of three text messages sent emphasizing the value of learning and in-class time.
Population	SPS students absent 5 percent or more school days the previous year	All students residing in SHA-assisted households	All students residing in SHA-assisted households
Outcomes	Total days and percent of days absent during the **fall** semester	Total days absent over the **first 20 days** of the fall semester	Total days and percent of days absent during the **spring** semester

and the connection between attendance and instructional minutes.

Postcard intervention: The second intervention, implemented by SHA, was to mail households with SHA students either a letter or a postcard encouraging good attendance over the first 20 days of the school year. The goal of the intervention is to test which format was more effective at improving attendance.

Text message intervention: The third intervention, implemented by SHA, was to send a series of three text messages to households with SHA students during the spring semester. The text messages emphasized the importance of daily attendance and encouraged making plans to facilitate better attendance.

Embed Tests The three evidence-based interventions were tested with household-level randomized control trials.[6] The sample for each trial are as follows:

Robocall intervention: Households with students who missed 5 percent of school days or more the prior year – including both SHA residents and other students – were randomly assigned to be sent a robocall (6,626 students in 4,458 households) or were selected into the control group that was not sent a robocall (6,487 students in 4,464 households). The robocall was dialed the week before the start of the fall 2018 semester. The primary analysis compares the total number of days absent and the percentage of days absent over the fall 2018 semester (between September 5, 2018 and January 29, 2019) for the two groups.[7]

Postcard intervention: All SHA households were randomly assigned to be sent either a letter or a postcard at the beginning of the fall 2018 semester. The primary analysis compares the number of days absent over the first 20 days of the school year between the letter and postcard group.[8]

Text message intervention: The third intervention, implemented by SHA, was to send parents of SHA students a series of text messages encouraging good attendance. Households with SHA students were randomly assigned to be sent the messages (2,424 students in 1,492 households) or not (2,364 students in 1,483 households). The primary analysis compares the number of days absent and the percentage of days absent during the spring 2019 semester (between January 31, 2019 and June 27, 2019) for the two groups.

Analyze Using Existing Data SPS provided several administrative data files indicating

[6] Randomization was performed at the household because phone numbers were collected for the household and it is not clear who in the household would or would not see a piece of mail, even if it was addressed to a particular household member. For the purposes of assignment, households containing any student with a history of poor attendance were classified in the poor attendance group.

[7] Unless noted otherwise, all of the analysis reported in this abstract was prespecified in an analysis plan, which can be found at https://oes.gsa.gov//assets/analysis/1809-analysis-plan.pdf.

[8] The robocall and postcard interventions included of the same students (e.g., SHA students with poor prior attendance) but the analysis treated each intervention independently (i.e., did not investigate possible interaction effects)..

Table 2: Estimated Effects

	Robocall		Postcard	Text	
	Total Days	Pct Days	Total Days	Total Days	Pct Days
Mean	10.3 days	13.1 pct	N/A	12.0 days	14.1 pct
Effect	-0.165 days	-0.336 ppt	N/A	0.178 days	0.0424 ppt
p-value	0.350	0.192	N/A	0.628	0.928
95% CI	[-0.511, 0.181]	[-0.841, 0.169]	N/A	[-0.544, 0.900]	[-0.873, 0.958]
Students	13,057	13,057	N/A	4,332	4,332
Households	10,578	10,578	N/A	2,771	2,771
R-squared	0.44	0.41	N/A	0.46	0.44

students' daily attendance and demographic characteristics. These data were linked to data provided by SHA to indicate which students were SHA-assisted residents. The outcomes of interest were created by aggregating all absences (both excused and unexcused) over each student's period of enrollment. The percent of days missed used the number of days each student was enrolled as the denominator.

Estimates were produced by regressing the outcome of interest on a treatment indicator, blocking variables, and the interaction of the treatment and blocking variables.[9] Additional estimates were produced using demographic and other educational characteristics. The results do not differ substantively from the main specifications.

Results The results suggest that the communications did not change attendance outcomes.

Robocall intervention: Students in households sent the robocalls were absent on average 10.3 days during the fall semester, a reduction of 0.16 day from the control group. The difference is not statistically significant from zero (p = 0.35 , 95% CI [-0.511, 0.181]). The average student in the robocall group was absent 13.1 percent of days he/she was enrolled, which was a decrease of 0.34 percentage point versus the control group, also not statistically significant (p = 0.19 , 95% CI [-0.841, 0.169]).

Postcard intervention: OES was not able to complete the analysis as planned. In cases where data are not available or the evaluation did not provide comparable comparison groups, OES does not report results. In this case, outcome data were not available.

Text message intervention: SHA students in the text message group were absent on average 12.0 days during the spring semester. That is an increase of 0.18 day over the control group, but the difference is not statistically different from zero (p = 0.63, 95% CI [-0.544, 0.900]). Students in the text message group were absent on average 14.1 percent of days during the spring semester, an increase of 0.04 percentage point versus the control group. The difference is not statistically significant (p =0.93 , 95% CI [-0.873, 0.958]).

Build Evidence The results suggest that messages containing general information about the importance of attendance may not be effective at changing the behavior of students, regardless of the mode of delivery. Effective interventions in this domain often have relied on providing parents and students with personalized and timely information about how many days the student has been absent. Data sharing limitations did not allow for similar personalization in these pilots, which perhaps limited the effectiveness of the information. Future studies may benefit from a closer focus on the role of targeting and personalization.

[9]Estimates were produced using the Lin estimator as described in: Lin, Winston. 2013. "Agnostic notes on regression adjustments to experimental data: Reexamining Freedman's critique." *The Annals of Applied Statistics* 7, no. 1: 295-318.